

4.14 NOISE

SETTING

The major noise sources in the vicinity of the project site are vehicular traffic on Interstate 205 (I-205), Byron Road, Patterson Pass Road and Grant Line Road, and potentially trains on the Southern Pacific track adjacent to Byron Road. Sensitive receptors currently on or adjacent to the project site include several residences located along Grant Line Road, Patterson Pass Road, and east of Wicklund Road.

Noise levels have been measured on and in the vicinity of the project site (BASELINE, 1993) (Figure 4.14-1). The highest noise levels occur adjacent to I-205 and Byron Road (Table 4.14-1). (A discussion of the fundamentals of acoustical terms used in this DEIR is included as Appendix E.) Additional noise measurements were conducted by Brown-Buntin Associates along Patterson Pass, Byron, and Grant Line roads (The SWA Group, 1994a). The noise levels presented in that report (The SWA Group, 1994a) are consistent with those presented in the FSEIR (BASELINE, 1993). These measurements, and most particularly, those along the roads serving the project provide background information against which project-generated noise can be compared and then noise impacts, particularly traffic noise impacts, can be estimated.

The Southern Pacific Transportation Company (SP) currently owns a rail line within the project site which runs parallel to Byron Road. During the

TABLE 4.14-1

EXISTING AVERAGE NOISE LEVELS AT KEY LOCATIONS WITHIN AND NEAR THE PROJECT SITE¹

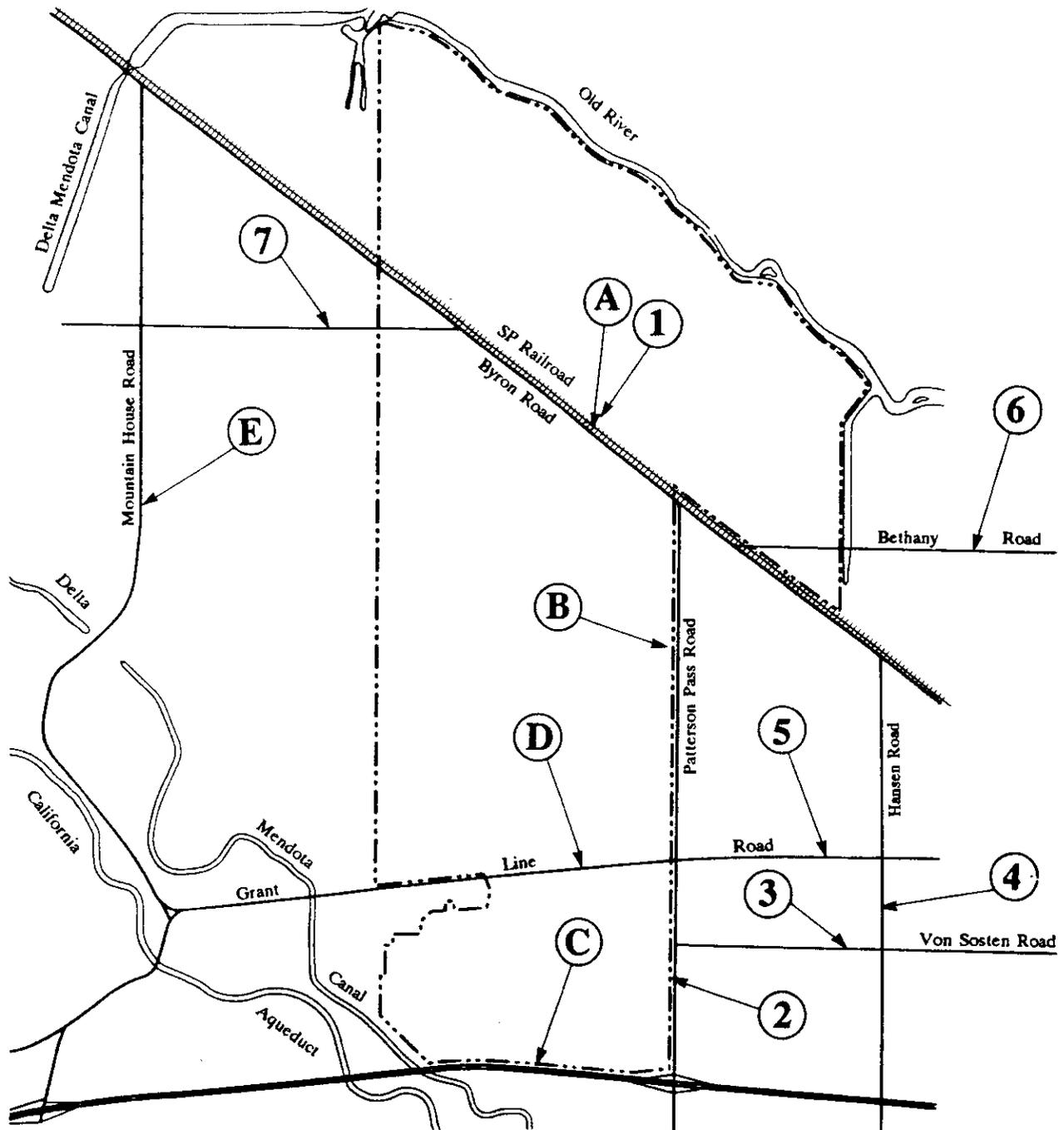
Location ²	Description	Distance to Centerline (feet)	Average Noise Level (dBA)
A	Byron Road	110	L_{dn}^3 of 69
B	Patterson Pass Road	24	L_{dn} of 72
C	Right-of-Way of I-205	115	L_{dn} of 81
D	Grant Line Road	30	L_{dn} of 70
E	Mountain House Road	70	L_{dn} of 66
1	Byron Road	110	L_{eq}^4 of 64
2	Patterson Pass Road	50	L_{eq} of 62
3	Von Sosten Road	82	L_{eq} of 51
4	Hansen Road	50	L_{eq} of 44
5	Grant Line Road	100	L_{eq} of 56
6	Bethany Road	100	L_{eq} of 52
7	Kelso Road	100	L_{eq} of 52

Source: BASELINE, 1992a.

- ¹ Refer to Figure 4.14-1 for exact locations of measurements.
- ² Locations with letter refer to long-term noise measurements. Locations with number refer to 15-minute noise measurement.
- ³ L_{dn} is a descriptor established by the U.S. Environmental Protection Agency (EPA) for the 24-hour average A-weighted noise level. Sound levels during the hours from 10:00 PM to 7:00 AM are penalized 10 dB to account for increased sensitivity during the nighttime hours (see also Appendix E).
- ⁴ L_{eq} is the average A-weighted noise level during the measurement period (see also Appendix E).

NOISE MEASUREMENT LOCATIONS

Figure 4.14-1



Legend

- (A)** Long-Term Measurement Locations¹
- (1)** Short-Term Measurement Locations¹
- Project Site Boundary



¹Refer to Table 4.6-1 for matching noise levels.

measurements for the FSEIR, no trains were observed on the tracks. However, discussions with SP staff at that time indicated that up to five freight trains per day could operate on the tracks. The FSEIR calculated that the distances to the 60 and 65 dB L_{dn} contours would be approximately 230 feet and 100 feet from the tracks, respectively. During the applicant's noise measurements (The SWA Group, 1994a), there were also no trains observed on the tracks.

Contra Costa County has recently completed a noise study for the expansion of the East Contra Costa County Airport. The study concludes that airport-generated noise levels would be significantly below a CNEL of 55 dB in the proposed Mountain House New Town. Aircraft-generated noise would not cause noise levels to exceed land use compatibility guidelines anywhere in the town. However, the report also concludes that aircraft flying over the town would generate instantaneous noise levels that could conflict with residential land use. Figure 4.14-2 shows the location of the 85 dB single-event level (SEL) noise contour for aircraft passing over Mountain House (Contra Costa County, 1993a). This is equivalent to a maximum instantaneous noise level of about 76 dBA.

IMPACTS AND MITIGATION MEASURES

For the purposes of this DEIR, a significant impact is one that would exceed noise and land use compatibility guidelines adopted by San Joaquin County. San Joaquin County considers sites exposed to an L_{dn} below 65 dB to be compatible with residential development. Noise-sensitive land uses, such as schools, group care facilities, and hospitals, are compatible on sites exposed to noise levels below an L_{dn} of 60 dB.

The County criterion for residential development is less restrictive than that recommended by the State of California. The State considers residential developments to be a noise-sensitive land use. The State and most local governments have adopted an L_{dn} of 60 dB as the maximum "clearly acceptable" noise level for outdoor activity areas in residential development. The 60- L_{dn} criterion is based on the desire to protect against speech and sleep interference outdoors and also to protect against speech interference inside dwelling units with the windows open. The criterion is based on studies and research conducted by the United States Environmental Protection Agency (EPA) in the early 1970s. The EPA determined that 60 dB was the limit above which indoor and outdoor speech disturbance becomes significant. The EPA recommended that an L_{dn} of 55 dB be maintained in residential areas to provide for an adequate margin of safety. Since the new town of Mountain House would be a community with its own identity, it is appropriate for the noise and land use compatibility criteria for the town to be more restrictive than the County criteria and in line with the State guidelines, when possible. The significant impact criterion for noise sensitive land uses is therefore an L_{dn} not to exceed 60 dB, when feasible.

Existing residents in and around the project site could be potentially impacted by the proposed project. The San Joaquin County General Plan 2010 does not contain quantitative noise criteria for noise level increases that the County would consider significant. Environmental noise level changes in excess of three dB are generally noticeable. An increase in noise level of five dB is considered

clearly detectable and can result in adverse community response. In this DEIR, an increase of five dB in the L_{dn} at a sensitive receptor is considered significant.

MASTER PLAN

The Draft Master Plan would introduce new development in the project area. The project includes a system of internal roads and a land use plan that would expose new residents in some locations to the noise generated by traffic on existing and proposed roads, to noise generated by new noise sources, and to noise generated by agricultural activities, particularly to the west of the project site. According to projections made by the applicant's consultants, noise levels along I-205, Grant Line Road, Byron Road, De Anza Boulevard, Marina Boulevard, and Central Parkway would all generate noise levels in excess of an L_{dn} of 60 dB at typical building setbacks.

Impact M4.14-1

Residential development, schools, and other noise sensitive land uses on the project site would be exposed to excessive traffic noise levels.

Table 4.14-2 shows the applicant's projections of future noise levels along the major roads in or adjacent to the proposed project which would create an L_{dn} of 60 dB or greater at a typical building setback. The distance to the 60 L_{dn} contour ranges from a minimum of 83 feet along portions of Central Parkway to 2,364 feet along I-205. All contour distances are measured from the center of the road. The calculation of noise levels along I-205 does not take into account the reduction in noise levels experienced on the portion of the site adjacent to I-205 due to the fact that the freeway is elevated about 20 feet above the site and that the fill is very wide to accommodate the ~~aqueduct~~ **Delta Mendota Canal** access road. ~~We calculate that this~~ **It is estimated that the canal fill shielding will reduce the distance to the 60 L_{dn} contour to about 500 feet.**

The applicant's landscaping plans for I-205 show that residential development would be located about 320 feet from the center of I-205. The L_{dn} at this location would be between 60 and 65 dB. The applicant's landscaping plans for I-205 include a berm constructed adjacent to the ~~aqueduct~~ **Delta Mendota Canal** access road. **Typically, an earth berm provides three dB of additional noise attenuation over a soundwall of the same height. A soundwall at the top of an earth berm is more aesthetically pleasing than a soundwall of the same total height, but its performance as a noise barrier is inferior to an earth berm. This** The berm planned along the residential portion of the I-205 freeway would be about six feet higher than I-205 and would provide about an additional one decibel's worth of shielding, reducing the outdoor noise level to nearest residents to about 62 dB at Master Plan buildout.

~~The traffic noise projections performed for this DEIR vary from those made by the applicant and show the traffic volumes in more detail than the applicant's projections. Given the dynamic nature of the planning process, it is likely that there will be changes in traffic projections as the process~~

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~~continues. The noise contour calculations completed by the applicant are indicative of the potential noise problems along the streets in the new town.¹~~

¹~~Final soundwall heights and noise projections should be based on the best available traffic information at the time of specific plan approval. All future noise calculations should be based on the County approved traffic volumes at that time.~~

TABLE 4.14-2

**FUTURE 2010 TRAFFIC NOISE LEVELS
DUE TO BUILDOUT OF THE MASTER PLAN**

Road	From/To	Distance to L_{dn} Contour (feet)	
		60 dB	65 dB
I-205	Past project site	2,364 ¹	1,097 ¹
Grant Line Road	Hansen Road to Patterson Pass Road	448	208
	Patterson Pass Road to Mountain House Road	386	179
Byron Road	Hansen Road to Patterson Pass Road	519	241
	Patterson Pass Road to Mountain House Road	379	176
De Anza Boulevard	Entire length	114	53
Marina Boulevard	Entire length	142	66
Central Parkway	Byron Road to Main Street	83	38
	Main Street to Mascot Boulevard	102	47

Source: The SWA Group, 1994a.

¹ Calculations do not include shielding due to I-205's elevation above the site. The calculations also assume that the I-205 freeway is eight lanes in the year 2010. If the freeway is only six lanes, the distance to the 60 dB and 65 dB contours would be slightly less.

Residential development is proposed along I-205, Grant Line Road, Byron Road, De Anza Boulevard, Marina Boulevard, and Central Parkway. Two high schools are also proposed along Central Parkway. The Draft Master Plan includes a Community Walls Location Plan; that Plan states that the community walls should be no more than seven feet high. Where more height is necessary to provide the requisite noise reduction the walls would be located on top of berms. Preliminary calculations indicate that the seven-foot community walls would be adequate along Marina Boulevard and De Anza Boulevard to mitigate noise but may not be high enough to achieve an outdoor noise level of an L_{dn} of 60 dB at the closest residences along Byron Road and Grant Line Road. These uses would all be potentially exposed to an L_{dn} in excess of 60 dB.

Mitigation Measures M4.14-1

(a) The following ~~Policy~~ **Policies** should be added under Objective 1, Mobile Source Noise Control:

"d) Noise levels in primary outdoor use areas of new residential development, schools, and other noise-sensitive land uses shall not exceed an L_{dn} of 60 dB unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas to an L_{dn} of 60 dB. ~~Where it is not possible to reduce noise in outdoor activity areas to an L_{dn} of 60 dB or less~~

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~~using a practical application of the best available noise reduction measures, an exterior noise level of up to an L_{dn} of 65 dB may be allowed. Under no circumstances shall interior noise levels exceed an L_{dn} of 45 dB. Noise-sensitive land uses include, but are not limited to, schools, group care facilities, hospitals, and park facilities.~~

"e) Interior noise levels for housing proposed to be located in areas exposed to an exterior noise level of an L_{dn} above 60 dB shall be maintained below an L_{dn} of 45 dB. Compliance with this recommended mitigation measure shall be verified prior to issuance of building permits."

(b) The following Implementation should be added under Objective 2 in Mobile Source Noise Control (Noise) (Appendix C):

~~"b) Locating noise sensitive land uses as far as possible from major roadways is the preferable solution. If Residential development were shall be set back 500 to 600 feet from the centerline of I-205, to ensure that the L_{dn} would be below 60 dB and no additional mitigation would be necessary. The exact setback distance shall be determined by additional noise analysis, revising the distances in Table 11.1 in the Draft Master Plan by assuming six lanes on I-205, not eight. Alternatively, earth berms or soundwalls shall be built between the noise source and the noise-impacted area. Typically, an earth berm provides three dB of additional noise attenuation over a soundwall of the same height. A soundwall at the top of an earth berm is more aesthetically pleasing than a soundwall of the same total height, but its performance as a noise barrier is inferior to an earth berm. Alternatively, noise level reductions to an L_{dn} of 60 dB could shall be achieved through site planning and building orientation, construction of earth berms or soundwalls, or a combination of more than one of these methods. Site-specific noise reduction measures shall be determined on a case-by-case basis prior to Development Permit approval."~~

(c) Implementation ~~b)~~ a) under Objective 2 in Noise (Appendix C) should be replaced with:

"Specific Plan and Development Permit Application Requirements. For each Applications for a specific plan or a Development Permit shall include, acoustical studies shall be required for noise-sensitive land uses proposed to be located in areas exposed to noise levels above an L_{dn} of 60 dB. These studies shall be submitted to the County with each specific plan. Appropriate mitigation measures shall be recommended in these studies and implemented by the appropriate party to ensure that the L_{dn} of 60 dB is maintained."

(d) The following Implementation should be added under Objective 1 in Mobile Sources Noise Control (Noise) (Appendix C):

"d) Noise studies for specific residential projects proposed in noise impacted areas (exposed to an L_{dn} above 60 dB) shall address how noise levels in outdoor use areas, such as backyards, patios, and decks, and other noise-sensitive land uses, could be maintained below an L_{dn} of 60 dB. ~~For noise sensitive land uses, such as schools, hospitals, and~~

~~parks, similar studies shall also be required. All Noise studies and recommendations shall be submitted prior to with each Tentative Map submittal application.~~

~~The following Policy should be added under Objective I, Mobile Source Noise Control (Noise) (Appendix C):~~

~~"Interior noise levels for housing proposed to be located in areas exposed to an exterior noise level of an L_{dn} above 60 dB shall be maintained below an L_{dn} of 45 dB. Compliance with this recommended mitigation measure shall be verified prior to issuance of building permits."~~

(e) Table 11.1 In the Draft Master Plan should be revised to reflect the most recent average daily traffic projections for I-205 (assuming six lanes in the future, not eight lanes), and for all other roadways.

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~~(b) The following should be added as a Policy under Objective 1 in Site and Building Design (Noise) (Appendix C):~~

~~"Future residences shall be located outside the 65 L_{dn} noise contour, as estimated before mitigation is included."~~

Impact M4.14-2

Existing residences located adjacent to existing roads in and around the project site would be significantly impacted by project-generated traffic.

Noise levels along those streets leading to the site would increase by 5 to 20 decibels, depending on location, at project buildout (The SWA Group, 1994a) due to increases in automobile traffic.

Mitigation Measure M4.14-2

A new Objective, Policy, and Implementation under Mobile Source Noise Control (Noise) (Appendix C) should be added:

"Objective:

"To minimize impacts on existing residences located along the roads to the Mountain House community.

"Policy:

"Outdoor use areas of existing residences that are projected to be impacted (i.e., would experience an increase of five dB in the L_{dn}) by project-generated traffic noise at buildout shall be protected from excessive noise. Individual residences could take the form of constructing soundwalls along the roadways, soundproofing homes, or building barriers around specific portions of yards to provide shielded outdoor spaces. Because of the nature of the development in the area, solutions will have to be tailored to each specific situation, based on individual noise studies.

"Implementation:

"~~The applicant shall develop a plan for mitigating impacts at individual residences. A plan for mitigating noise levels at existing residences shall be submitted with each specific plan application. The plan shall identify the mitigation necessary to reduce exterior noise levels to an L_{dn} of 60 dB and interior noise levels to an L_{dn} of 45 dB or less. A plan for mitigating noise levels at existing residences shall be submitted prior to approval of each specific plan.~~"

Impact M4.14-3

Proposed noise-sensitive land uses adjacent to agricultural lands could be significantly impacted by agricultural machinery and equipment noise.

The Draft Master Plan proposes residential development next to the western edge of the property, adjacent to land that would remain in agricultural use. North of Marina Boulevard and south of

Grant Line Road, residences would be located within 100 feet of the site boundary where there would be a continuous security fence or wall planted with vines. Where Marina Boulevard adjoins the western boundary there would be a soundwall located along the east side of Marina Boulevard between the homes and the property (the height of the soundwall is not specified). The residences would be set back 100 feet from the eastern right-of-way line of Marina Boulevard (a minimum of 210 feet to the site boundary).

Although the noise generated by agricultural machinery would be non-transportation related and may therefore be mitigated by imposing noise performance standards, the performance standard would be difficult to apply and may not fully avoid noise conflicts between the new residents and adjacent agricultural activity. Preliminary calculations indicate that maximum noise levels generated by helicopters applying pesticides and by agricultural equipment could generate noise levels of 80 to 100 dBA at the nearest proposed residential areas. The proposed soundwalls would not shield residences from the noise generated by helicopters, although the walls would be effective in mitigating ground generated noise levels in the agricultural area. The maximum noise levels generated by helicopters would be expected to awaken people during early morning activity and interfere with indoor activities even with the windows closed. **This is a significant impact which cannot be mitigated to a level of non-significance**

Mitigation Measure M4.14-3

The following should be added to Implementation a) under Objective 6 under Mobile Source Noise Control (Noise) (Appendix C).

"A 500-foot wide on-site or off-site buffer would reduce noise levels generated by agricultural machinery and helicopters by approximately 20 dB and would significantly reduce the potential for noise impacts." Alternatively, "Helicopter use shall not be permitted within 500 feet of the nearest residential dwelling along the western site boundary."

Impact M.14-4

Noise levels generated by the noisiest of individual aircraft flyovers would reach 76 dBA on portions of the site. The L_{dn} due to aircraft flyovers would be less than 60 dB.

The authors of the East Contra Costa County Airport study calculate that the noisiest jets using the airport would generate an **single-event level (SEL)** of up to 85 dB as they fly over the southern portion of the new town (Figure 4.14-2). The SEL is a measure of the acoustical energy generated during an aircraft flyover normalized to a one-second flyover time. It allows for a comparison of events with different flyover times and acoustic output. Thus, a very short duration high noise level event could be equivalent to a much longer event generating a lower noise level. For the durations typical of jets approaching an airport, an SEL of 85 dB is typically associated with a maximum instantaneous noise level of 76 dB as the aircraft passes directly overhead. This same maximum noise level would be generated by a truck passby at a distance of 50 feet on a local street.

A typical home with the windows closed will reduce an exterior noise level of 76 dBA to about 55 dBA indoors. The FAA has concluded that a maximum interior noise level of 55 dBA will not

create significant sleep disturbance. Since only the occasional noisy jet would generate even a level of 55 dBA indoors with the windows closed, this is not considered a significant impact. A mitigation measure is recommended below to assure that prospective homeowners are notified that aircraft do fly over the site.

Mitigation Measure M4.14-4

The following Implementation should be added under Objective 5, Mobile Source Noise Control (Noise) (Appendix C):

"b) In the airport overflight zone, the applicant shall provide a disclosure to potential home buyers that property offered for sale is located in an area subject to aircraft flyover noise.

SPECIFIC PLAN I

Specific Plan I proposes to use the 65- L_{dn} criterion of the San Joaquin County General Plan for outdoor noise levels. ~~As above in the Draft Master Plan impact assessment, an L_{dn} of 60 is recommended to protect residents from outdoor activity interference, when possible. Specific Plan I indicates that there may be certain locations where short fences or walls would reduce the L_{dn} to 60. It does not propose that this would be the goal of the design.~~

Specific Plan I indicates that it is too early to identify the appropriate mitigation measures to achieve acceptable outdoor noise levels at proposed residential developments. Residential development should be located far enough from the roads to keep the L_{dn} below 65 dB due to distance alone. Reducing the noise level further to an L_{dn} of 60 dB in outdoor areas could then be accomplished through the use of property fences. Specific Plan I does not include an assessment of the feasibility of altering the land use plan to achieve this goal. While it may be too early to determine exact heights of berms or soundwalls where they must be used, it is an appropriate time to evaluate the feasibility of limiting the need for these walls by changing the land use plan to include interposing buildings between noise sensitive uses in the streets or using distance as a buffer.

Specific Plan I does not include provisions for a 500-foot buffer along the western site edge to mitigate agricultural noise levels to noise-sensitive land uses..

Impact S4.14-1 (C,O,M)

The Specific Plan does not define how an L_{dn} of 60 dB will be achieved at noise sensitive areas.

Mitigation Measure S4.14-1 (C,O,M)

(a) Refer to Mitigation Measures M4.14-1(a) and M4.14-2.

~~*(b) Draft Specific Plan I should be revised to provide data on how an exterior noise level of 60 dB L_{dn} and an interior noise level of 45 dB will be achieved.*~~

Impact S4.14-2 (M)

Specific Plan I does not include a 500-foot buffer along the western site boundary or a restriction on helicopter use.

The recommended revision to the Draft Master Plan includes a 500-foot buffer along the western site boundary to mitigate noise impacts from agricultural activities. The buffer could be either on- or off-site. The Specific Plan I land use map does not contain this buffer.

Mitigation Measure S4.14-2 (M)

Refer to Mitigation Measure M4.14-3.

Impact S4.14-3 (C,O,M)

Implementation of the Specific Plan I would increase noise levels at existing residences to a noticeable level.

The Draft Specific Plan I does not mitigate noise impacts at existing residences along Grant Line Road, Patterson Pass Road, Von Sostan Road, Hansen Road, and Byron Road; these residences could be adversely affected by increases in the noise environment.

Mitigation Measure S4.14-3 (C,O,M)

Refer to Mitigation Measure M4.14-2.