5.5 Noise

The information summarized in this section was obtained from the noise study dated August, 1996 prepared by Mestre Greve Associates, and the previous Final Environmental Impact Report 447, which is incorporated by reference into this EIR. The complete noise study appears in Appendix G to this DEIR.

The major components of the existing noise conditions in and around the project site are highway, aircraft and jail operations. This section analyzes the existing and future noise conditions in the project area including the impacts of project generated noise on surrounding uses and the impacts of noise from surrounding uses on the project. This section also identifies mitigation measures to reduce the impacts identified.

Highway, aircraft and other sources of noise in the project area are not continuous, but composed of individual high noise events (e.g., a passing jet or car) which are usually separated by periods of comparatively low noise levels. To measure these discontinuous sources of noise, the County and many other California local government agencies use an average of the noise levels which is weighted for the time of day the event occurs. The County General Plan Noise Element uses a time weighted average measurement known as Community Noise Equivalent Level (CNEL) as a policy. CNEL compensates for people's greater sensitivity to evening and night-time noise by adding a 5 decibel (dB) penalty to noise events which occur between 7:00 PM and 10:00 PM and a 10 dB penalty for events between 10:00 PM and 7:00 AM[18]. CNEL numbers are usually presented in map form where lines connect points of equal CNEL numbers. These lines are referred to as CNEL contour lines. For further definition and discussion of noise and noise measurement, refer to Appendix G and the County Noise Element.

5.5.1 Environmental Setting

a. Existing Noise Conditions

For highway and road noise conditions, a Federal Highway Administration (FHWA) highway noise model was used to map noise contour lines in the vicinity of each of the highways which impact the project site and the highways which would be impacted by the project in the future. The highway noise model used was the Highway Noise Model published by the Federal Highway Administration ("FHWA Highway Traffic Noise Prediction Model", FHWA-RD-77-108, December 1978). The FHWA Model uses traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute the "equivalent noise level". A computer code has been written which computes equivalent noise levels for each of the time periods used in CNEL and generates the CNEL noise levels. Table 13

[18] Source: Airport Land Use Planning Handbook, Caltrans, December, 1993.

describes the traffic[19] for existing conditions and Table 14 describes distances to the existing CNEL contours from the centerline of the road. These distances do not reflect the mitigating effect of topographic or barriers which would reduce noise levels and move contours closer to the road. Therefore, they represent the worst case condition.

Table 13
Existing Traffic Volumes and Speeds[20]

Roadway	Average Daily Trips	Speed
Sand Canyon Road		
I-5 Freeway to Trabuco Road	23,000	45
Trabuco Road to Irvine Blvd.	16,000	45
North of Irvine Blvd.	10,000	45
ALTON PARKWAY		
SR-133 to Irvine Center Dr.	20,000	45
Irvine Center Dr. to I-5 Freeway	35,000	45
North to I-5 Freeway	53,000	45
West of Rockfield	45,000	45
Rockfield to Muirlands	45,000	45
Muirlands to Jeronimo	41,000	45
Jeronimo to Toledo	32,000	45
Toledo to Trabuco	14,000	45
BAKE PARKWAY		
Rockfield to I-5 Freeway	16,000	45
Rockfield to Muirlands	15,000	45
Muirlands to Jeronimo	21,000	45
Jeronimo to Toledo	19,000	45
Toledo to Trabuco	21,000	45
North of Trabuco	22,000	45
LAKE FOREST DRIVE		
I-5 Freeway to Rockfield	73,000	45
Rockfield to Muirlands	45,000	45
Muirlands to Jeronimo	36,000	45
Jeronimo to Toledo	32,000	45
Toledo to Trabuco	30,000	45
North of Trabuco	27,000	45
RIDGE ROUTE		
Rockfield to Muirlands	9,000	45
Muirlands to Jeronimo	12,000	45
Jeronimo to Toledo	10,000	45
Toledo to Trabuco	7,000	45

[19]Source for traffic data is the Musick Jail Traffic Analysis dated August, 1996 by Austin Foust Associates, Inc. included in Appendix I.

[20]Source: Musick Traffic Analysis, August, 1996, by Austin Foust Associates, Inc. included in Appendix I.

Roadway	Average Daily Trips	Speed
EL TORO ROAD		
I-5 Freeway to Rockfield	52,000	45
Rockfield to Muirlands	41,000	45
Muirlands to Jeronimo	37,000	45
Jeronimo to Toledo	34,000	45
Toledo to Trabuco	29,000	45
North of Trabuco	29,000	45
IRVINE BOULEVARD		
West of Sand Canyon Road	21,000	45
East of Sand Canyon Road	24,000	45
TRABUCO ROAD		
West of Alton Parkway	23,000	45
Alton Parkway to Bake Parkway	30,000	45
East of Bake Parkway	25,000	45
West of Lake Forest	30,000	45
Lake Forest to Ridge Route	29,000	45
Ridge Route to El Toro Road	26,000	45
El Toro Road to Los Alisos	26,000	45
TOLEDO WAY		
Alton Parkway to Bake Parkway	12,000	45
Bake Parkway to Lake Forest	8,000	45
Lake Forest to Ridge Route	7,000	45
Ridge Route to El Toro Road	6,000	45
JERONIMO ROAD		
Alton Parkway to Bake Parkway	13,000	45
Bake Parkway to Lake Forest	14,000	45
Lake Forest to Ridge Route	15,000	45
Ridge Route to El Toro Road	16,000	45
El Toro Road to Los Alisos	25,000	45
BARRANCA PARKWAY		
SR-133 to Irvine Center Dr.	15,000	45
Irvine Center Dr. to I-5	20,000	45
I-5 to Technology	23,000	45
Technology to Alton Parkway	20,000	45
MUIRLANDS BOULEVARD		
Alton Parkway to Bake Parkway	42,000	45
Bake Parkway to Lake Forest	21,000	45
Lake Forest to Ridge Route	23,000	45
Ridge Route to El Toro Road	23,000	45
El Toro Road to Los Alisos	24,000	45
ROCKFIELD BOULEVARD		
Bake Parkway to Lake Forest	26,000	45
Lake Forest to Ridge Route	20,000	45
Ridge Route to El Toro Road	22,000	45
El Toro Road to Los Alisos	20,000	45

Roadway	Average Daily Trips	Speed
I-5 FREEWAY		
Jeffrey Road to Sand Canyon Rd.	186,000	60
Sand Canyon Ave. to Alton Parkway	174,000	60
Alton Parkway to I-405 Freeway	156,000	60
I-405 Freeway to Bake Parkway	310,000	60
Bake Parkway to Lake Forest	310,000	60
Lake Forest to El Toro Road	266,000	60
El Toro Road to Alicia Parkway	249,000	60
I-405 FREEWAY		
SR-133 to Moulton Parkway	187,000	60
Moulton Parkway to I-5 Freeway	156,000	60

Table 14
Distance from the Highway Centerline to Existing CNEL Contour Lines

Roadway	Distance to CNEL Contour From Centerline of Roadway (Feet)		
	70 CNEL	65 CNEL	60 CNEL
SAND CANYON ROAD			
I-5 Freeway to Trabuco Road	54	117	252
Trabuco Road to Irvine Blvd.	43	92	198
North of Irvine Blvd.	31	67	145
ALTON PARKWAY			
SR-133 to Irvine Center Dr.	49	107	230
Irvine Center Dr. to I-5 Freeway	72	155	334
North to I-5 Freeway	95	204	440
West of Rockfield	85	183	395
Rockfield to Muirlands	85	183	395
Muirlands to Jeronimo	80	172	371
Jeronimo to Toledo	68	146	314
Toledo to Trabuco	39	84	181
North of Trabuco	--	--	--
BAKE PARKWAY			
Rockfield to I-5 Freeway	43	92	198
Rockfield to Muirlands	41	88	190
Muirlands to Jeronimo	51	110	237
Jeronimo to Toledo	48	103	222
Toledo to Trabuco	51	110	237
North of Trabuco	53	114	245

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Roadway	Distance to CNEL Contour From Centerline of Roadway (Feet)		
	70 CNEL	65 CNEL	60 CNEL
LAKE FOREST DRIVE			
I-5 Freeway to Rockfield	117	253	545
Rockfield to Muirlands	85	183	395
Muirlands to Jeronimo	73	158	340
Jeronimo to Toledo	68	146	314
Toledo to Trabuco	65	140	301
North of Trabuco	60	130	281
RIDGE ROUTE			
Rockfield to Muirlands	29	63	135
Muirlands to Jeronimo	35	76	163
Jeronimo to Toledo	31	67	145
Toledo to Trabuco	25	53	114
EL TORO ROAD			
I-5 Freeway to Rockfield	94	202	434
Rockfield to Muirlands	80	172	371
Muirlands to Jeronimo	75	161	346
Jeronimo to Toledo	70	152	327
Toledo to Trabuco	63	137	294
North of Trabuco	63	137	294
IRVINE BOULEVARD			
West of Sand Canyon Road	51	110	237
East of Sand Canyon Road	56	120	259
TRABUCO ROAD			
West of Alton Parkway	54	117	252
Alton Parkway to Bake Parkway	65	140	301
East of Bake Parkway	57	124	267
West of Lake Forest	65	140	301
Lake Forest to Ridge Route	63	137	294
Ridge Route to El Toro Road	59	127	274
El Toro Road to Los Alisos	59	127	274
TOLEDO WAY			
Alton Parkway to Bake Parkway	35	76	163
Bake Parkway to Lake Forest	27	58	125
Lake Forest to Ridge Route	25	53	114
Ridge Route to El Toro Road	22	48	103
JERONIMO ROAD			
Alton Parkway to Bake Parkway	37	80	172
Bake Parkway to Lake Forest	39	84	181
Lake Forest to Ridge Route	41	88	190
Ridge Route to El Toro Road	43	92	198
El Toro Road to Los Alisos	57	124	267

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Roadway	Distance to CNEL Contour From Centerline of Roadway (Feet)		
	70 CNEL	65 CNEL	60 CNEL
BARRANCA PARKWAY			
SR-133 to Irvine Center Dr.	41	88	190
Irvine Center Dr. to I-5	49	107	230
I-5 to Technology	54	117	252
Technology to Alton Parkway	49	107	230
MUIRLANDS BOULEVARD			
Alton Parkway to Bake Parkway	81	175	377
Bake Parkway to Lake Forest	51	110	237
Lake Forest to Ridge Route	54	117	252
Ridge Route to El Toro Road	54	117	252
El Toro Road to Los Alisos	56	120	259
ROCKFIELD BOULEVARD			
Bake Parkway to Lake Forest	59	127	274
Lake Forest to Ridge Route	49	107	230
Ridge Route to El Toro Road	53	114	245
El Toro Road to Los Alisos	49	107	230
I-5 FREEWAY			
Jeffrey Road to Sand Canyon Rd.	495	1,066	2,296
Sand Canyon Ave. to Alton	473	1,019	2,197
Alton Parkway to I-405 Freeway	440	948	2,042
I-405 Freeway to Bake Parkway	695	1,498	3,228
Bake Parkway to Lake Forest	695	1,498	3,228
Lake Forest to El Toro Road	628	1,353	2,915
El Toro Road to Alicia Parkway	601	1,295	2,790
I-405 FREEWAY			
SR-133 to Moulton Parkway	443	955	2,057
Moulton Parkway to I-5 Freeway	393	846	1,823

Note: Does not account for topography or intervening noise barriers that reduce noise levels.

In addition to highway noise, aircraft are a major source noise at the project site. Marine Corps Air Station (MCAS) El Toro is located very near the Musick Jail. The aircraft noise contours used for planning purposes by the County of Orange, the City of Irvine and the City of Lake Forest were published by the military in the 1981 Air Installation Compatible Use Zone (AICUZ) Study. These noise contours were based on 72,000 annual jet operations and included F-4, A-4, and A-6 fighter and attack aircraft as the primary noise sources. Since the 1981 AICUZ the base has transitioned to an F/A-18 aircraft as the primary aircraft using the facility. Further, MCAS El Toro is scheduled for closure by September, 1999. The 65 dB CNEL noise contours published in 1981, adopted as a "Policy Implementation Line" in the County of Orange General Plan Noise Element, and adopted

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as part the General Plan Noise Elements for the City of Irvine and City of Lake Forest are shown in Exhibit 17.

These noise contours show the site to be exposed to noise levels in the range of approximately 67 dB CNEL to 75 dB CNEL. The closure of MCAS El Toro will result in the elimination of these military noise contours on the site. For a more detailed discussion of noise and the El Toro Reuse Plan, please see section 5.5.1.d of this DEIR.

The project site and the residential areas southeast of the project site have been historically exposed to very high military aircraft noise levels. As the base closure has progressed and F/A-18 squadrons have been relocated to MCAS Miramar, the noise exposure has been decreasing.

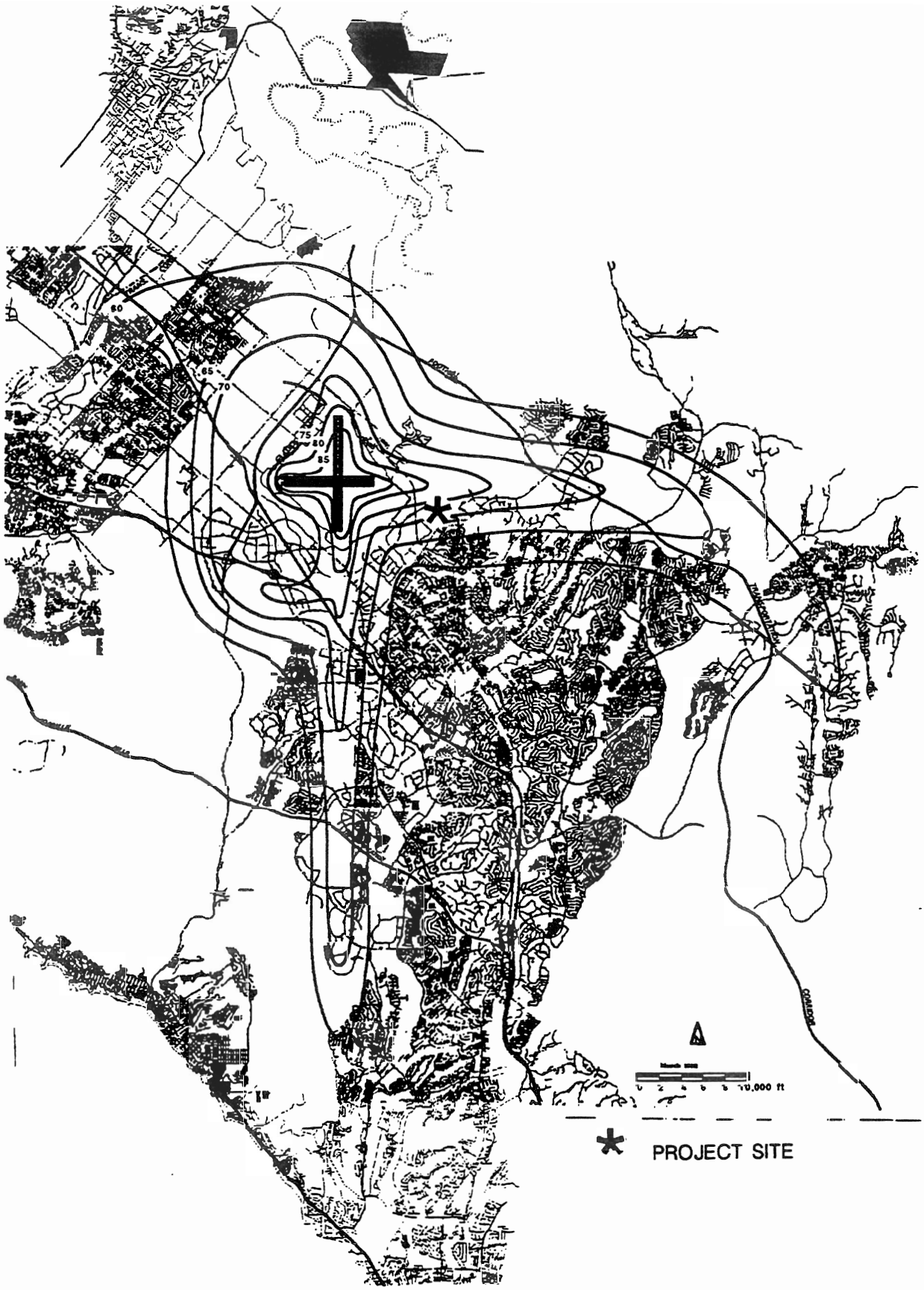
5.5.2 Project Impacts Prior to Mitigation

a. Construction Activities

Construction noise represents a short term impact on ambient noise levels. Noise generated by construction equipment, including trucks, graders, bulldozers, concrete mixers and portable generators can reach high levels. Construction equipment noise comes under the control of the Environmental Protection Agency's Noise Control Program (Part 204 of Title 40, Code of Federal Regulations). Presently, air compressors are the only equipment under strict regulation, and no new regulations are currently under consideration.

Noise levels for equipment which might be used for the excavation and construction of the proposed project are presented in Exhibit 2 of the Noise Study (Appendix G). Note that the noise levels presented are for a distance of 50 feet. The noise levels in Exhibit 2 decrease at a rate of approximately 6 dBA per doubling of the distance. Therefore, at 100 feet the noise levels will be about 6 dBA less than reported in the exhibit. Similarly, at 200 feet the noise levels would be 12 dBA less than indicated in the exhibit. Intervening structures or topography will act as a noise barrier, and reduce noise levels further.

The residential areas that may impacted by construction noise includes the residential area southeast of the site in Lake Forest. There is base housing at MCAS El Toro west of the site; however, the fact that these residential units are more than 3000 feet from the site diminish the potential for construction noise to be a significant impact. The homes southeast of the site in Lake Forest are approximately 700 feet from the boundary of the project. At this distance it is not expected that construction noise would significantly impact any of these residences as long as construction activity is limited to the daytime hours as specified by local ordinance and construction traffic is not permitted on local residential streets.



Source: 1981 AICUZ

CULBERTSON, ADAMS & ASSOCIATES
PLANNING CONSULTANTS

MCAS EL TORO
CNEL NOISE CONTOURS

001814
EXHIBIT 17

b. Noise Impacts on Surrounding Land Uses Resulting from Highway Traffic

The proposed development of the jail site will generate traffic, and as a result may alter noise levels in surrounding areas. To assess the impact of the proposed jail project on noise sensitive land uses adjacent to streets that will serve the jail, the increases in roadway noise along these streets were determined. These roadways were modeled for future traffic conditions with and without the project. The projected increases in the CNEL noise levels as a result of traffic increases are presented in Table 15. The traffic volumes are for the long-range case, with and without the project, analyzed in the project traffic analysis included in Appendix I. Traffic volumes are stated in thousands of trips for the average daily condition.

Table 15
Long-Range Increases in CNEL for Average Daily Trips (ADT) in Thousands

Roadway Link	Future ADT No Project	Future ADT With Project	Noise Increase (dB)
SAND CANYON ROAD			
I-5 Freeway to Trabuco Road	26	26	<0.1
Trabuco Road to Irvine Blvd	20	20	<0.1
North of Irvine Blvd.	18	18	<0.1
ETC (EASTERN TRANSPORTATION CORR.)			
I-5 Freeway to Irvine Blvd	53	53	<0.1
North of Irvine Blvd.	19	19	<0.1
ALTON PARKWAY			
SR-133 to Irvine Center Dr.	29	29	<0.1
Irvine Center Dr. to I-5 Freeway	43	43	<0.1
North to I-5 Freeway	62	64	0.1
West of Rockfield	56	58	0.2
Rockfield to Muirlands	46	48	0.2
Muirlands to Jeronimo	52	54	0.2
Jeronimo to Toledo	36	38	0.2
Toledo to Trabuco	25	27	0.3
North of Trabuco	33	33	<0.1
BAKE PARKWAY			
Moulton to I-5 Freeway	43	43	<0.1
Rockfield to I-5 Freeway	49	50	<0.1
Rockfield to Muirlands	53	54	<0.1
Muirlands to Jeronimo	38	39	0.1
Jeronimo to Toledo	39	40	0.1
Toledo to Trabuco	44	45	<0.1
North of Trabuco	28	28	<0.1

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Roadway Link	Future ADT No Project	Future ADT With Project	Noise Increase (dB)
LAKE FOREST DRIVE			
I-5 Freeway to Rockfield	51	51	<0.1
Rockfield to Muirlands	34	34	<0.1
Muirlands to Jeronimo	33	33	<0.1
Jeronimo to Toledo	36	36	<0.1
Toledo to Trabuco	27	27	<0.1
North of Trabuco	27	27	<0.1
RIDGE ROUTE			
I-5 Freeway to Rockfield	17	17	<0.1
Rockfield to Muirlands	13	13	<0.1
Muirlands to Jeronimo	12	12	<0.1
Jeronimo to Toledo	10	10	<0.1
Toledo to Trabuco	9	9	<0.1
EL TORO ROAD			
I-5 Freeway to Rockfield	66	66	<0.1
Rockfield to Muirlands	47	47	<0.1
Muirlands to Jeronimo	53	53	<0.1
Jeronimo to Toledo	48	48	<0.1
Toledo to Trabuco	52	52	<0.1
North of Trabuco	46	46	<0.1
IRVINE BOULEVARD			
West of Sand Canyon Road	35	35	<0.1
Sand Canyon Rd to ETC	33	33	<0.1
East of Sand Canyon Road	34	35	0.1
TRABUCO ROAD			
West of Alton Parkway	36	37	0.1
Alton Parkway to Bake Parkway	42	44	0.2
East of Bake Parkway	36	36	<0.1
West of Lake Forest	36	36	<0.1
Lake Forest to Ridge Route	49	49	<0.1
Ridge Route to El Toro Road	48	48	<0.1
El Toro Road to Los Alisos	31	31	<0.1
TOLEDO WAY			
Alton Parkway to Bake Parkway	8	8	<0.1
Bake Parkway to Lake Forest	16	16	<0.1
Lake Forest to Ridge Route	16	16	<0.1
Ridge Route to El Toro Road	16	16	<0.1
JERONIMO ROAD			
Alton Parkway to Bake Parkway	22	22	<0.1
Bake Parkway to Lake Forest	25	25	<0.1
Lake Forest to Ridge Route	13	13	<0.1
Ridge Route to El Toro Road	16	16	<0.1
El Toro Road to Los Alisos	29	29	<0.1

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Roadway Link	Future ADT No Project	Future ADT With Project	Noise Increase (dB)
BARRANCA PARKWAY			
SR-133 to Irvine Center Dr.	20	20	<0.1
Irvine Center Dr. to I-5	28	28	<0.1
I-5 to Technology	29	29	<0.1
Technology to Alton Parkway	26	26	<0.1
MUIRLANDS BOULEVARD			
Alton Parkway to Bake Parkway	31	31	<0.1
Bake Parkway to Lake Forest	37	37	<0.1
Lake Forest to Ridge Route	29	29	<0.1
Ridge Route to El Toro Road	26	26	<0.1
El Toro Road to Los Alisos	27	27	<0.1
ROCKFIELD BOULEVARD			
Alton Parkway to Bake Parkway	15	15	<0.1
Bake Parkway to Lake Forest	23	23	<0.1
Lake Forest to Ridge Route	35	35	<0.1
Ridge Route to El Toro Road	28	28	<0.1
El Toro Road to Los Alisos	35	35	<0.1
I-5 FREEWAY			
Jeffrey Road to Sand Canyon Rd.	267	269	<0.1
Sand Canyon Ave. to Alton Parkway	228	230	<0.1
Alton Parkway to I-405 Freeway	229	229	<0.1
I-405 Freeway to Bake Parkway	409	410	<0.1
Bake Parkway to Lake Forest	392	392	<0.1
Lake Forest to El Toro Road	382	382	<0.1
El Toro Road to Alicia Parkway	336	336	<0.1
I-405 FREEWAY			
SR-133 to Moulton Parkway	190	191	<0.1
Moulton Parkway to I-5 Freeway	180	181	<0.1

In community noise assessments, changes in noise levels greater than 3 dBA are often identified as significant, while changes less than 1 dBA will not be discernible to local residents. In the range of 1 to 3 dBA residents who are very sensitive to noise may perceive a slight change. No scientific evidence is available to support the use of 3 dBA as the significance threshold. In laboratory testing situations, humans are able to detect noise level changes of slightly less than 1 dBA. However, in a community noise situation the noise exposure is over a long time period, and changes in noise levels occur over years, rather than the immediate comparison made in a laboratory situation. Therefore, the level at which changes in community noise levels become discernible is likely to be some value greater than 1 dBA, and 3 dBA appears to be appropriate for most people. The greatest increase in noise projected is 0.3 dBA and this will occur along Alton Parkway between Toledo Way and Trabuco Road. None of the increases are significant and none would be discernible to nearby residents.

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c. Other On-Site Noise Source Impacts on Surrounding Community

The major on-site stationary noise is the Central Plant. This is a centralized boiler facility that is the mechanical center of the facility. The central plant is located in the south western corner of the project site, on the opposite side of the site from the existing Lake Forest residential area. The Central Plant is located approximately 1800 feet from the eastern boundary of the site which results in a total distance of approximately 2500 feet between the Central Plant and the residential area of Lake Forest Closest to the site. This distance of nearly 1/2 mile and the intervening structures will ensure that Central Plant noise will not exceed the noise standards of the County of Orange Noise Ordinance. The maintenance facility is adjacent to the Central Plant and is similarly isolated from the residential area of Lake Forest by distance and intervening structures.

The design of the proposed jail facility is such that audible warning/alarm devices or public address systems are not located or used outdoors, as there are no outdoor use areas included in the facility. The Sheriffs Station in the southeast corner of the site nearest the Lake Forest residential area is the most likely location of a warning device noise source. This would be associated with the siren on a sheriff's vehicle. This type of noise, while it may occur at any time of the day or night, should not be a frequent occurrence. Sheriff's vehicles are normally on patrol throughout the community and dispatched to an emergency from their patrol location. This is in contrast to a fire station where the emergency vehicles are staged at the station and dispatched from the station. The result is more siren noise near a fire station than near a police or Sheriff's station.

d. Noise Levels On-Site

Traffic Noise

Traffic volumes reported in the project traffic analysis (Appendix I) were used with the FHWA Highway Traffic Noise Model to project future unmitigated noise levels for the roadways that will impact the project site. The traffic volumes used are presented in Table 16. These volumes represent cumulative plus project traffic conditions.

Table 16
Long-Range Traffic Volumes and Speeds in the Project Area

Roadway	Average Daily Trips	Speed
Alton Parkway North of Trabuco	33,000	45
Bake Parkway North of Trabuco	28,000	45
Trabuco Road Alton Parkway to Bake Parkway	44,000	45

The modeling results are reported in Table 17 in the form of distances to the 60, 65, and 70 CNEL contours for highways near the project site. These projections do not take into account any barriers or topography that may reduce noise levels.

Table 17
Long-Range Highway Noise Levels at the Project Site

Roadway	Distance to CNEL Contour from Centerline of Roadway (Feet)		
	70 CNEL	65 CNEL	60 CNEL
Alton Parkway North of Trabuco	69	149	321
Bake Parkway North of Trabuco	62	133	288
Trabuco Road Alton Parkway to Bake Parkway	84	180	389

Note: Does not account for topography or intervening noise barriers that reduce noise levels.

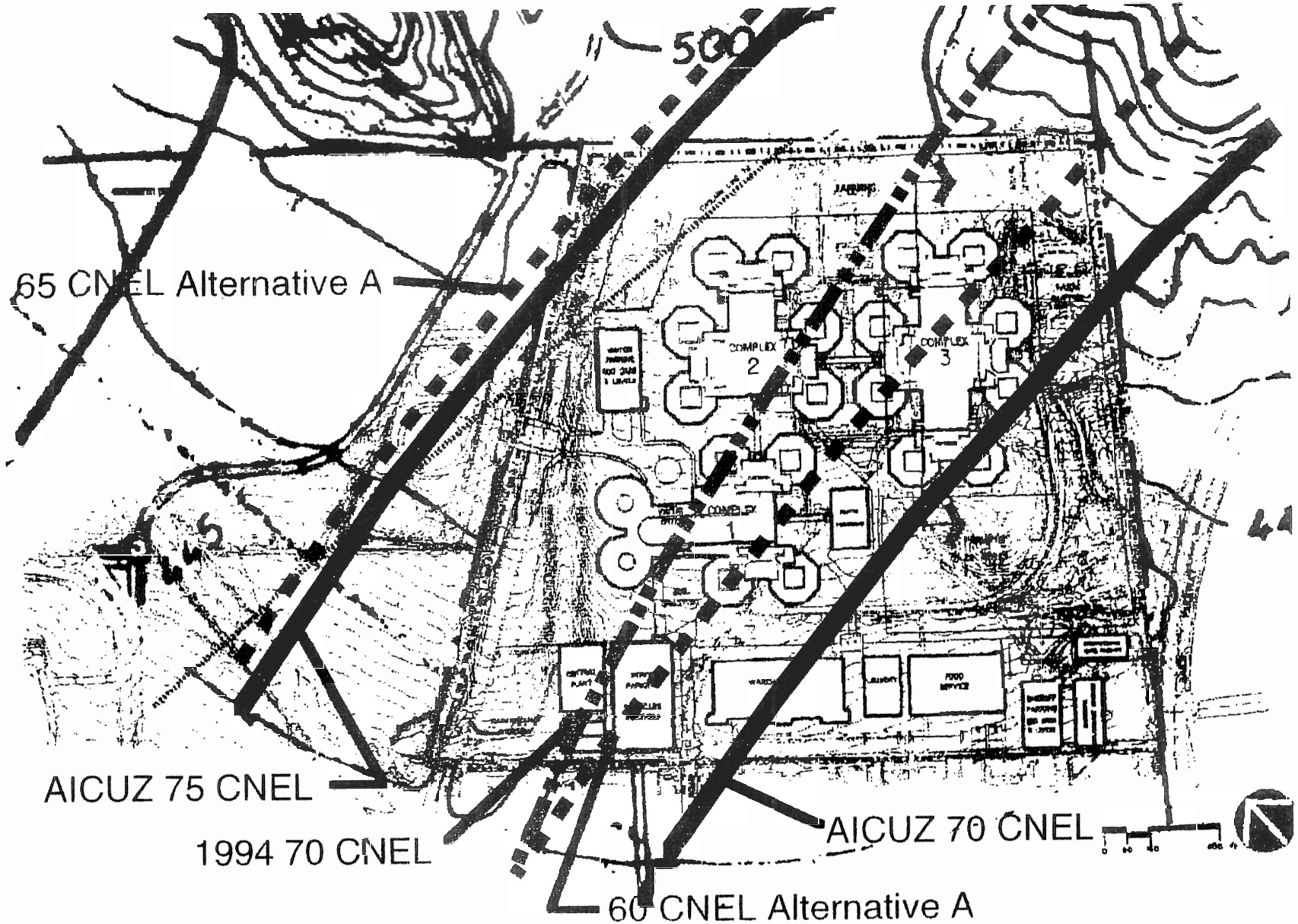
Aircraft Noise

The project site is located adjacent to MCAS El Toro. The CNEL noise contours historically used for planning purposes and adopted by the County of Orange in the General Plan Noise Element were shown in Exhibit 17. These contours do not account for the closure and reuse of the base. The County of Orange, acting as the Local Redevelopment Authority, is currently reviewing alternative reuse plans and environmental documentation related to the reuse of the base. The Draft EIR for the reuse plan is considering five alternatives that include a civilian use air carrier airport alternative, a cargo and general aviation airport alternative, a non-airport alternative, a no project (i.e., no development) alternative that considers continued military use and a no project alternative that considers no reuse or activity on the base. The Draft EIR identifies the civilian air carrier airport as the proposed project. If the Board of Supervisors adopts this proposal, a Master Plan for the airport will be prepared. Until that time the Draft EIR recommends that the 'Policy Implementation Line' (PIL) contained in the Orange County General Plan Noise Element be retained for the evaluation of noise/land use compatibility. The PIL is considerably larger than the noise contours for the civilian use air carrier airport. While the PIL shows a CNEL exposure of 67 to 75 dB CNEL (southern end of the site to the northern boundary), the noise contours for a civilian air carrier airport are estimated to be from less than 60 dB CNEL to approximately 66 dB CNEL (southern end of the site to the northern boundary).

Exhibit 18 shows the approximate location of noise contours across the project site for three separate conditions. These include the County Noise Element contours (including the PIL) which are labeled as 'AICUZ' contours on Exhibit 18, the calendar year 1994 actual CNEL contours, and the proposed Alternative A civilian air carrier noise contours labeled as 'Alternative A' in Exhibit 18. These latter contours were taken from Draft EIR #563.

In terms of land use/compatibility, the difference in contours may not be significant relative to County of Orange land use/noise policies. These policies are reproduced here as Exhibits 4 and 5 of the Noise Study in Appendix G. These tables are somewhat complex, but do provide substantial guidance on how to review this project. Essentially the policies prohibit new residential development where aircraft noise exposure exceeds 65 dB CNEL because outdoor living areas cannot be feasibly protected from aircraft noise. Jails are not specifically identified as a land use category. However, for uses similar to the proposed jail (i.e., no outdoor living areas) such as hospitals or hotels/motels, the only policy is that interior noise standards be met. For uses such as Group Quarters, Caretakers Units, and Executive Apartments an interior and exterior noise standard is applied. This latter group distinction from residential uses allows these uses in areas with airport noise exposure greater than 65 dB CNEL when there are no outdoor uses associated with the project. Because the proposed project does not include any outdoor activity areas, the outdoor noise limits do not apply. Only the interior noise requirement is applicable. Therefore, the project is consistent with the County Noise Element policies as they are applied to the existing military noise contour lines (i.e., the 1981 AICUZ lines) and the 1994 military noise contour lines. Finally, the project is consistent with the County Noise Element policies as they would be applied to the noise contour lines of Alternative A of the Reuse Plan. The possible exception to this conclusion may be in reference to the Interim Care Facility (ICF) where an outdoor recreation use has been requested. Relative to the existing General Plan Noise Element Policy Implementation Line and the 1994 calendar year noise exposure this use would not be compatible with the General Plan if the ICF were evaluated as a residential use. However, the ICF can be evaluated as a hotel/motel on the basis that the use is a temporary residence and that occupants are not housed on a permanent basis. Thus the ICF and its outdoor area may be considered consistent with the General Plan.

With respect to interior noise levels, the amount of building attenuation required to achieve the 45 dB CNEL interior noise level does vary between the 'policy implementation line' and the civilian air carrier airport noise contours. With respect to the 'policy implementation line' the buildings with noise sensitive uses would have to provide 22 to 30 dB of outdoor to indoor noise reduction. With respect to the estimated civilian air carrier airport the buildings with noise sensitive uses would have to provide less than 15 to 21 dB of outdoor to indoor noise reduction. Even the higher noise reduction requirement is practical and achievable with normal construction provided that adequate window and door designs are used. Given that the jail is mechanically ventilated and built of very special construction, meeting these interior noise requirements will not be difficult.



Source: 1981 AICUZ and Draft EIR #563

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PLANNING CONSULTANTS

APPROXIMATE LOCATION OF
NOISE CONTOURS ON SITE PLAN

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EXHIBIT 18

For example, the jail buildings are designed such that inmates are not housed adjacent to exterior walls. Staff and utility rooms are adjacent to the exterior walls with interior walls and corridor separating the inmate areas from the exterior walls. Such a separation would provide a substantial amount of additional exterior noise attenuation. The Interim Care Facility (ICF), which is designed much more like a residential home, may require upgraded doors and windows to meet the interior noise standards. Actual specification of upgrades should be determined at the time of architectural design.

With respect to other miscellaneous uses within the jail and sheriffs station complex, the County of Orange General Plan Noise Element also identifies interior noise standards for other uses. These are defined in Exhibits 4 and 5 and include interior Equivalent Noise Level (Leq) limits of 45 dB for private offices, school rooms, and conference rooms; 50 dB for general offices, reception areas and clerical areas; 55 dB for restaurants; and 65 dB for kitchens. These noise limits are achievable with normal construction, with the exception of private offices, schoolrooms, and conference rooms where window and/or door upgrades may be necessary to meet the interior noise standard.

5.5.3 Mitigation Measures

34. *At the time that project grading and construction jobs are bid, the Director of Public Works shall ensure that project specifications require contractors to comply with the County of Orange Noise Ordinances and standard conditions of approval. This will result in restricting the hours and days of construction per the local ordinance.*

35. *If any on-site public address systems, bells, or other audible signal systems are used in new buildings, they should be designed to be inaudible in the adjacent residential areas or prohibited. If any such devices are included in the project, the Director of Public Works shall ensure that project specifications require installation to comply with the requirements of Orange County Noise Ordinance, except for emergency warning devices.*

36. *At the time that project grading and construction jobs are bid, the Director of Public Works shall ensure that final plans require that ingress and egress should be taken only on arterial highways or industrial collector streets and should not utilize any residential streets. This includes service vehicles as well as all other jail traffic.*

37. *At the time that project construction jobs are bid, the Director of Public Works shall ensure that project specifications require contractors install mechanical equipment, including the Central Plant, to conform to the requirements of the Orange County Noise Ordinance.*

38. *At the time of final construction plan development, the Director of Public Works shall ensure that plan specifications require that interior noise levels including noise sensitive*

interior areas (per the County of Orange General Plan Noise Element) shall comply with County standards.

39. *Prior to establishing the Interim Care Facility at this site, the County of Orange Health Care Agency shall determine whether the noise environment is acceptable with the therapeutic mission undertaken at this facility.*

5.5.4 Level of Significance After Mitigation

There are no significant effects produced by this project in the area of noise. Furthermore, the noise environment of the area will not have a significant effect on the jail or Southeast Sheriff's Station. The mitigation measures serve to reinforce the aspects of the project as proposed which avoid impact.