

F. Cultural Resources

Existing Conditions

a) Del Mar Highlands Estates

The following analysis for Del Mar Highlands Estates and for the parcels south of Carmel Valley is based, in large part, on a historical and archaeological survey report prepared by Gallegos and Associates for Del Mar Highlands Estates (July, 1995). The report is contained in Appendix F of this EIR.

Literature Survey

A literature search conducted for the Del Mar Highlands Estates area through the South Coastal Information Center at San Diego State University and the San Diego Museum of Man indicates that Del Mar Highlands Estates and the surrounding property have been the subject of numerous previous cultural resource studies. Eleven archaeological sites and one isolate have been previously recorded within the Del Mar Highlands Estates project area, and an additional 72 sites were previously recorded within a one-mile radius (Appendix F). No previously recorded sites are present in the area proposed for main project access to connect with San Dieguito Road. A review of the associated site forms indicates that almost every type of archaeological resource common to San Diego County is represented in the previously surveyed areas. Within the Del Mar Highlands Estates area, previously known resources include nine habitation sites, one shell midden, one historic/prehistoric site, and one isolated artifact (Table 4F-1). For definitions of these resources, see Appendix F. Many of the sites are noted as disturbed.

Several previous investigations addressed specific sites within the current project area in more detail. Bull (1978) conducted a 414-acre survey for the San Dieguito Estates project. Ten archaeological sites were identified during the survey. These sites include all the resources listed on Table 4F-1 but CA-SDI-10,117 and the isolated find. No recommendations were made for sites CA-SDI-5370 and CA-SDI-5371 because of their location outside of the San Dieguito Estates project area. No further work was recommended for site CA-SDI-5372/H because of the limited number of prehistoric artifacts (four) and the conclusion that little knowledge would result from the completion of additional fieldwork (Bull 1978:21). Recommendations for the remaining seven sites included either preservation or testing; including surface collection, systematic subsurface sampling, and photodocumentation.

Following Bull's (1978) work, Norwood and Walker (1980) completed a mitigation plan and carried out a data recovery program for seven of the site's prehistoric cultural resources. Mitigation of potential impacts was completed to the satisfaction of the City

**TABLE 4F-1
PREVIOUSLY RECORDED SITES—
DEL MAR HIGHLANDS ESTATES**

SDI No.	SDM No.	Pre historic	Historic	Site Type	Recording Date	Recorded By	Tested*
194	1586	X		Extensive habitation	1959	Treganza	Unknown
		X			1977	Norwood	Yes
293	1585	X		Habitation	1960	Diamond	Unknown
		X			1977	Walker	Yes
322	1588	X		Habitation	1958	Warren	Unknown
		X			1977	Norwood	Yes
685	1584	X		Extensive habitation	1960	Warren	Unknown
		X			1977	Norwood	Yes
5369	40	X		Extensive habitation	1930	M. Rogers	Unknown
		X			1977	Norwood	Yes
5370	1589	X		Shell midden	1977	Norwood	No
		X			1986	Peter	Yes
5371	1590	X		Temporary habitation	1977	Norwood	No
		X			1986	Peter	No
5372/H	1591	X	X	Prehistoric/historic	1977	Norwood	No
		X			1986	Peter	No
5373	1587	X		Temporary habitation	1977	Norwood	Yes
5612	1667	X		Temporary habitation	1978	Walker	Yes
10,117	3522	X		Temporary habitation	1984	Cardenas & Robbins-Wade	No
-	3636	X		Isolate	1985	Cardenas & Winterrowd	No

*Testing as indicated on this table was all carried out prior to Del Mar Highlands Estates evaluation.

for sites CA-SDI-194 (SDM-W-1586), CA-SDI-293 (SDM-W-1585), CA-SDI-322 (SDM-W-1588), CA-SDI-685 (SDM-W-1584), CA-SDI-5369 (SDM-W-40), CA-SDI-5373 (SDM-W-1587), and CA-SDI-5612 (SDM-W-1667), all located within the Del Mar Highlands Estates area. Full mitigation of impacts for the seven sites included sample surface collection, a single 1×3-m backhoe trench, and excavation of a number of shovel test pits (STPs) and 1×1-m units (Norwood and Walker 1980). Specific test units per site and results of dating efforts are listed in Table 4F-2.

Peter and Whitney-Desautels' (1986) study consists of a record search and survey of approximately 718 acres of land located primarily north of Gonzales Canyon. The purpose of the report was to identify cultural resources that might be impacted by granting an agricultural use permit by the City for the acreage. Because of previous work conducted by Norwood and Walker (1980), seven sites within the project area were not further considered. At site CA-SDI-5370 (SDM-W-1589), visual inspection of fence postholes and the excavation of 20 STPs occurred. Because Peter and Whitney-Desautels' (1986) report identified CA-SDI-5370 as a highly disturbed, low-density lithic and shell scatter with no contextual integrity, no subsurface cultural deposit, and, therefore, no potential to contribute new archaeological information; impacts to this site were considered not significant. No further work was recommended for site CA-SDI-5370. The City concurred with the conclusions for all of these sites in its mitigated negative declaration for the agricultural use permit which was approved in 1989.

CA-SDI-5371 was identified by Peter and Whitney-Desautels (1986) as a highly disturbed, low-density lithic and shell scatter and no additional work was recommended.

Peter and Whitney-Desautels (1986) did, however, identify one site (CA-SDI-5372/H, SDM-W-1591) for which they recommended significance testing; including site mapping, excavation of STPs and two 1×1-m units, and laboratory analysis to determine whether the site warranted additional research.

Project Field Survey

A field survey of the project area was conducted from December 15, 1992, through March 30, 1993. A total of 20 person-days was spent in the field during the survey phase. The entire Del Mar Highlands Estates area was intensively surveyed to locate all visible artifacts and ecofacts using 10- to 12-meter-wide survey interval transects. Often, dense riparian or chaparral vegetation required that survey transects be varied from their intended direction, but in all cases, every attempt was made to survey all difficult areas.

Specific attention was given to relocating the 11 sites and 1 isolate previously identified within the Del Mar Highlands Estates area. Previously recorded sites were identified through review of both site record forms from the South Coastal Information Center and the San Diego Museum of Man and early maps (to identify historic structures). Following

TABLE 4F-2
DESCRIPTION OF NEW AND PREVIOUSLY RECORDED
HISTORIC AND PREHISTORIC RESOURCES

Site Number	Classification	Description
CA-SDI-194/ SDM-1-1586	Prehistoric	This site was originally recorded in 1959 and was updated in 1977. It measures 100 by 300 m and contains cultural material consisting of 6 manos, 10 cores, 40+ flakes of quartzite and metavolcanic materials, and some <i>Chione</i> sp. shell. The site area is presently being farmed and has been disced repeatedly for years. Siltstone and sandstone outcrops occur on the lower southern slopes and have been used for groundstone artifacts such as portable metates. CA-SDI-194 was previously mitigated by Norwood and Walker (1980). Thirty-four 1 by 1 m units and 69 STPs were placed on the site. A single radiocarbon date of 8600 ± 110 (YBP) was produced from a shell sample. Based on results of the data recovery program, Norwood and Walker recommended no additional work.
CA-SDI-293/ SDM-W-1585	Prehistoric	The site was originally recorded in 1960 as a habitation site. Site information was updated in 1977 and it was also relocated for the present study. This habitation site lies on top of a knoll and contains 5 manos, 6 cores, 50+ flakes, and 1 quartz point. In addition, 150 fragments of <i>Chione</i> sp. and several <i>Argopecten</i> sp. fragments were noted on the uppermost portion of the knoll. The site was previously mitigated by Norwood and Walker (1980). Forty-eight 1 by 1 m units and 46 STPs were placed on the site. Obsidian was recovered and two radiocarbon dates, 7400 ± 100 and $8420 \pm$ (YBP), were obtained from shell samples. Based on results of the data recovery program, Norwood and Walker recommended no additional work.
CA-SDI-322/ SDM-W-1588	Prehistoric	Initially recorded in 1958 and updated in 1977, this habitation site was relocated and expanded during the present study. Originally the site was recorded as containing artifacts and shell located near the apex of a slight rise along a ridge. The site now contains two loci. Locus A, a 40 by 40 m area, contains 2 bifacial manos, 10 cores, 6 flakes and at least 60 fragments of <i>Chione</i> sp. shell fragments. Locus B, located 300-350 m south of Locus A, measures approximately 40 by 90 m and contains 1 portable metate, 2 cores and 3 flakes. Both loci are tilled fields with several fragments of lithic debris and some marine shell fragments visible near Locus A. Locus A was previously mitigated by Norwood and Walker (1980). Fifty-four 1 by 1 m units and 71 STPs were placed on the site. Two radiocarbon dates, 7720 ± 100 and 8290 ± 100 (YBP), were produced from shell. Based on results of the data recovery program, Norwood and Walker recommended no additional work.
CA-SDI-685/ SDM-W-1584	Prehistoric	Originally recorded in 1960 and updated in 1977, this habitation site was relocated and updated. The site, measuring 120 by 120 m, is situated on a knoll top. Surface artifacts noted consist of 4 manos, 5 cores, 50+ flakes and 1 hammerstone along with 50 fragments of <i>Chione</i> sp. and some <i>Argopecten</i> sp. No trace of the apparent 1.5 feet of fire-darkened midden sediments reported at the eastern edge of the site were observed. The site was previously mitigated by Norwood and Walker (1980). Thirty-four 1 by 1 m units and 64 STPs were placed on the site. Obsidian was recovered and two radiocarbon dates, 8030 ± 100 and 8450 ± 180 (YBP), were produced from shell samples. Based on results of the data recovery program, Norwood and Walker recommended no additional work.
CA-SDI-5369/ SDM-W-40	Prehistoric	Originally recorded in 1977, this habitation site was easily relocated and updated. The site measures approximately 90 by 240 m. Artifacts observed consist of 10 cores, 15 manos, 4 metate fragments, 50+ flakes, 1 hammerstone and hundreds of <i>Chione</i> sp. and <i>Argopecten</i> sp. shell fragments. There is also limited fire-affected rock near the periphery of the uppermost portion of the knoll. Fire-darkened sediments are present at the uppermost portions of the knoll and a midden deposit is present. Marine shell fragments can be found downslope, although there is little evidence that a midden deposit exists away from the top of the knoll. The site was previously mitigated by Norwood and Walker (1980). Seventy-one 1 by 1 m units and 72 STPs were placed on the site. Obsidian was recovered and two radiocarbon dates, 3930 ± 80 and 8650 ± 110 (YBP), were produced from shell samples. Based on results of the data recovery program, Norwood and Walker recommended no additional work.

TABLE 4F-2
DESCRIPTION OF NEW AND PREVIOUSLY RECORDED
HISTORIC AND PREHISTORIC RESOURCES
(continued)

Site Number	Classification	Description
CA-SDI-5370/ SDM-1-1589	Prehistoric	Originally recorded in 1977 and updated in 1986, this shell midden measures approximately 30 by 20 m; hundreds of shell fragments of <i>Chione</i> sp., <i>Tagelus californianus</i> sp. (razor clam), <i>Epilucina</i> sp. (lucine), and <i>Argopecten</i> sp. in a sand matrix with some depth were noted. This site is suspiciously sandy when compared to sediments of other sites within the region and may have been a sand deposit from an ocean or harbor dredge, or fill from a deep cut of Gonzales Canyon. A determination of shell origin should be made before assuming that this site is prehistoric in origin. Twenty STPs were excavated; results were negative. Peter and Whitney-Desautels recommended no further work.
CA-SDI-5371/ SDM-W-1590	Prehistoric	This site was originally recorded in 1977 and updated in 1986 as a temporary habitation site consisting of a low density shell fragment scatter with 2 fragmented handstones. This site is now a sparse shell midden lacking artifacts and contains only several small fragments of <i>Chione</i> sp. and <i>Argopecten</i> sp. in an area measuring 30 by 15 m. Disturbance appears to be major, with the top of the knoll unnaturally level, as if it was graded.
CA-SDI-5372H/ SDM-W-1591	Prehistoric/ Historic	Originally recorded in 1977 and updated in 1986, this site contains both prehistoric and historic components. Relocated at the base of a ridge, the site consists of two benches. The upper bench contains an historic component with marine shell and the lower bench contains a purely prehistoric component. The site measures approximately 90 by 50 m. The historic component consists of a rectangular, rock-lined cemented foundation which is probably the basement of an early historic structure. Artifacts near the rock-lined feature include 1 fragment of purple glass, several clear and brown glass fragments, 1 fragmented glazed ceramic, and some old lumber with approximately 100 wire and 2 square nails. The lower, prehistoric, bench contains 1 metate fragment, 5 cores and more than 30 flakes. Lithic material is made of porphyritic and fine-grained volcanic rock. Marine shell identified from both benches includes 3 fragments each of <i>Chione</i> sp., <i>Mytilus</i> sp., and unidentified pelecypod. There was no indication of the single fragment of Tizon Brown Ware reported for this site. Apparently, the historic component is deteriorating rapidly, as less exists than was reported on either previous site form (Norwood 1977, Peter 1986). Bottle hunting and potholes excavated for bottles were both mentioned on the earlier site forms and presently no glass exists except small fragments. Peter and Whitney-Desautels recommended mapping, STPs and two 1x1m units, with additional specifics to follow laboratory analysis.
CA-SDI-5373/ SDM-W-1587	Prehistoric	Originally recorded in 1977 as a camp or temporary occupation camp approximately 40 by 80 m, this site contains 3 manos, 2 cores and at least 5 flakes of quartzite and metavolcanic material. Non-artifactual constituents consist of sparsely scattered <i>Chione</i> shell along the uppermost portion of the ridge and knoll. Site CA-SDI-5373 was previously mitigated by Norwood and Walker (1980). Sixteen 1 by 1 m units and 40 STPs were placed within the site. Based on results of the data recovery program, Norwood and Walker recommended no additional work.
CA-SDI-5612/ SDM-W-1667	Prehistoric	This habitation site, originally recorded in 1978, was relocated. Site size is approximately 60 by 60 m, and consists of a scatter of fire-affected rock, marine shell and artifacts. Artifacts relocated include 2 manos, 2 cores and 5 flakes of porphyritic-volcanic materials. Marine shell consists of approximately 70 fragments of <i>Chione</i> sp. and 30 fragments of <i>Argopecten</i> sp. Site CA-SDI-5612 was previously mitigated by Norwood and Walker (1980). Seventeen 1 by 1 m units and 55 STPs were placed on the site. A radiocarbon date of 6490±110 was produced from a shell sample. Based on results of the data recovery program, Norwood and Walker recommended no additional work.

TABLE 4F-2
DESCRIPTION OF NEW AND PREVIOUSLY RECORDED
HISTORIC AND PREHISTORIC RESOURCES
 (continued)

Site Number	Classification	Description
CA-SDI-13094/H SDM-W-5413	Historic/ Prehistoric	Recorded during current field efforts, this historic trash scatter and prehistoric temporary camp measures approximately 140 m by 40 m and can be divided into a northern (upper) prehistoric locus, and a southern (lower) historic/prehistoric locus. The historic portion of the site consists of a trash scatter located within the downslope portion of the site and is mainly at the southern edge of the ridge on a small bluff overlooking Gonzales Creek. Historic refuse consists of brick and concrete foundation pieces, bottles, glazed ceramic fragments, metal pipe and pipe valves, all apparently bulldozed over the edge of the bluff. In addition, prehistoric artifacts consist of 3 cores, 1 broken granitic metate, 5+ pieces of lithic debitage, and several <i>Chione</i> sp. shell fragments. The southern locus measures approximately 40x40 m. A single structure is depicted on the 1903 La Jolla 15' USGS map in the location of the foundation and trash scatter. Neither the structure nor the refuse deposit are intact. On the small ridge immediately west of the eucalyptus stand is a single telephone pole containing 4 glass insulators. The pole contains dating nails with 1905, 1925 and 1974 dates, indicating that telephone service and probably electric power were available at the residence at an early time. The northern component of CA-SDI-13094/H is purely prehistoric and consists of 100 fragments of <i>Chione</i> sp. shell, 1 <i>Polinices</i> sp. shell, 1 hammerstone, 5 cores, and 10 flakes made of porphyritic-volcanic lithic materials. The upslope locus measures approximately 50 by 40 m and is separated from the lower locus by 30-40 m of tilled sediments with a few <i>Chione</i> sp. shell fragments scattered about. Together, both prehistoric portions of site CA-SDI-13094/H compose a small habitation site. Both upper and lower portions of the site contain some probability of a subsurface component, although the southern, lower portion of the site has most likely been destroyed.
SDM-W-3636	Prehistoric	The resource consists of an isolated scraper plane. It was not relocated as part of this study.
CA-SDI-I-597 SDM-W-5392	Prehistoric	The isolate consists of a single green, fine-grained metavolcanic core reduction flake. This flake was collected as part of this study.
CA-SDI-I-600 SDM-W-5412	Prehistoric	The isolated find consists of one porphyritic-volcanic core and one metavolcanic flake. Both artifacts were collected as part of this study.
CA-SDI-I-601 SDM-W-5414	Prehistoric	This isolate consists of a quartzite core. This artifact was collected as part of this study.
STP - Shovel test pit YBP - Years before present		

relocation, previously recorded sites were intensively surveyed in order to locate all visible artifacts and ecofacts, and the site was updated on State of California site record forms. One site (CA-SDI-10,117) and one isolate (SDM-W-3636) were not relocated. The locale of CA-SDI-10,117 is now occupied by several residences and stables. Because of land alteration within the original site area, it is believed that the site has been graded/destroyed.

Based on current project work, the previously recorded sites and isolates are identified as nine habitation sites, one with both historic and prehistoric components; and one shell midden. Only one site (CA-SDI-13,094/H, a habitation site with both historic and prehistoric components) and three isolated finds (I-597, -600, -601) were newly recorded. Descriptions of the updated and newly recorded sites and isolates are found on Table 4F-3.

b) Shell Parcel

Four previously recorded sites are located on the Shell parcel, as listed in Table 4F-4. These sites (CA-SDI-7201 through -7204) include three lithic scatters and a temporary camp. Two of the lithic scatters (CA-SDI-7201 and -7203) were not relocated during survey for Subarea III studies carried out in 1992-93.

Cultural Resources Issue

1. To what extent would archaeological or historical resources be impacted by development of the proposed project components, including off-site improvements?

1) Issue

To what extent would archaeological or historical resources be impacted by development of the proposed project components, including off-site improvements?

Impacts

In all, 12 sites and 4 isolates have been recorded within the Del Mar Highlands Estates area. Eleven sites and one isolate were previously recorded, and one site and three isolates were newly recorded. Of the 12 previously recorded resources, site CA-SDI-10,117 and isolate W-3636 could not be relocated and may have been destroyed or were mismapped and not within the Del Mar Highlands Estates area.

**TABLE 4F-3
DEL MAR HIGHLANDS ESTATES CULTURAL RESOURCE SITES**

CA-SDI Site Number	SDM-W Site Number	Landform	Site Type	Comments	Status
194	1586	Ridge	H	Artifacts w/marine shell	Updated
293	1585	Ridge	H	Artifacts w/marine shell	Updated
322 A,B	1588	Ridge	H	Artifacts w/marine shell	A-Updated B-Newly recorded
685	1584	Ridge	H	Artifacts w/marine shell	Updated
5369	40	Ridge	H	Lit. II & SD-II w/marine shell	Updated
5370	1589	Gentle slope	SM		Updated
5371	1490	Gentle slope	H	Artifacts w/marine shell	Updated
5372/H	1491	Gentle slope	P/H	Historic structure/trash w/prehistoric	Updated
5373	1487	Ridge	H	Marine shell fragments (5)	Updated
5612	1667	Ridge	H	Artifacts w/marine shell	Updated
10,117	3522	Gentle slope	H	Artifacts w/marine shell	Not relocated
13,094/H	5413	Gentle slope	H, P/H	Possible midden	Newly recorded
-	3636	Drainage	I	Scraper plane	Not relocated
I-597	5392	Gentle slope	I	Flake	Newly recorded
I-600	5412	Gentle slope	I	Core and flake	Newly recorded
I-601	5414	Gentle slope	I	Core/core-tool	Newly recorded

H = habitation; SM = shell midden; P/H = prehistoric & historic components; I = isolated lithic find;
Lit. = Littoral; SD = San Dieguito.

**TABLE 4F-4
PREVIOUSLY RECORDED SITES—
SHELL PARCEL**

SDI No.	SDM No.	Pre historic	Historic	Site Type	Recording Date	Recorded By	Tested*
7201	2212	X		Lithic scatter	1979	Talley, Banks	No
7202	2213	X		Lithic scatter	1979, 1993	Gallegos	No
7203	2214	X		Lithic scatter	1979	Gallegos	No
7204	2214	X		Temporary habitation	1979, 1993	Gallegos	No

*Testing as indicated on this table was all carried out prior to Shell parcel evaluation.

The remaining 14 sites and isolates located within the Del Mar Highlands Estates area include 8 habitation sites, 1 shell midden, 2 sites with multiple components (historic and prehistoric habitation), and 3 isolated finds. These resources are discussed in some detail on Table 4F-3. The three isolates were collected. Of the 11 sites, all but two are at least partially located within development areas on project maps and therefore may be subject to direct impacts during custom home development. Adverse direct effects are assessed to nine sites located within project development area boundaries for the Del Mar Highlands Estates area. The two sites located wholly within nondevelopment areas are CA-SDI-5371 and CA-SDI-5372/H. No direct adverse effects have been assessed for these sites, but they are subject to indirect adverse effects.

Significance of Impacts

Impacts which require mitigation are those impacts assessed to significant sites, per CEQA, Appendix K, as discussed previously.

a) Significance Testing

Eight cultural resource sites (CA-SDI-194, CA-SDI-293, CA-SDI-322, CA-SDI-685, CA-SDI-5369, CA-SDI-5370, CA-SDI-5373, and CA-SDI-5612) had been previously tested for significance (Table 4F-5). Site CA-SDI-5371 was identified by Peter and Whitney-Desautels (1986) as a highly disturbed, low-density lithic and shell scatter, and no additional work was recommended. The remaining seven sites (CA-SDI-194, CA-SDI-293, CA-SDI-322, CA-SDI-685, CA-SDI-5369, CA-SDI-5373, and CA-SDI-5612) also had data recovery programs completed to mitigate potential impacts of development. For sites mitigated of impacts through previous data recovery, no additional work is recommended.

One newly recorded site, CA-SDI-13,094/H, was tested and the testing program is summarized here; additional detail is included in Appendix F.

Fieldwork for testing site CA-SDI-13,094/H was conducted July 17 through 31, 1995. The site is divided into two loci. Locus A, the southern locus, includes both prehistoric and historic surface debris and an historic trash deposit located on the toe of a slope at the southern end of the knoll. Locus B, the northern locus, includes the primary prehistoric deposit with shell and flaked lithics visible on the surface.

Testing at Locus A included surface collection, initial excavation of two 1×1-meter units to test the prehistoric deposit, and seven backhoe trenches to test the historic deposit. A subsurface historic deposit was identified on the toe of the knoll; therefore, two additional 1×1-meter units were excavated to further test the deposit.

**TABLE 4F-5
DEL MAR HIGHLANDS ESTATES
CULTURAL RESOURCE IMPACT AND RECOMMENDATIONS SUMMARY TABLE**

Site Number		Site Type	Comments	Site Status	Previous Work ¹	City Mitigated Negative Declaration 1989	Significance	Impacts ²	Recommendations Per City Guidelines
CA-SDI-	SDM-W-								
194	1586	Habitation	Artifacts w/ marine shell	Updated	T,D	Mitigated	Significant	Direct	No Add'l Work
293	1585	Habitation	Artifacts w/ marine shell	Updated	T,D	Mitigated	Significant	Direct	No Add'l Work
322-A	1588	Habitation	Artifacts w/ marine shell	Updated	T,D	Mitigated	Significant	Direct	No Add'l Work
322-B	1588	Habitation	Artifacts w/ marine shell	Newly recorded			Not Significant	Direct	No Add'l Work
685	1584	Habitation	Artifacts w/ marine shell	Updated	T,D	Mitigated	Significant	Direct	No Add'l Work
5369	40	Habitation	Lit. II and SD-II w/ marine shell	Updated	T,D	Mitigated	Significant	Direct	No Add'l Work
5370	1589	Shell midden	Shell	Updated	T	No Potential to Contribute	Not Significant	Direct	No Add'l Work
5371	1590	Habitation	Artifacts w/ marine shell	Highly disturbed		Little Potential to Contribute	Potentially Significant	Indirect	Testing
5372/H	1591	Historic/prehist.	Historic structure/trash w/prehist.	Updated		May yield important info.	Potentially Significant	Indirect	Testing
5373	1587	Habitation	Marine shell fragments (5)	Updated	T,D	Mitigated	Significant	Direct	No Add'l Work
5612	1667	Habitation	Artifacts w/ marine shell	Updated	T,D	Mitigated	Significant	Direct	No Add'l Work
13,094/H	5413	Historic/prehist.	Possible midden	Newly recorded			Locus B-Significant	Direct	Testing ³

¹ T - Tested; T,D - Data Recovery Program.

² Although specific project footprints are not available, direct impacts were assumed for all sites in potentially developable areas in a worst-case analysis. No impacts are expected for the two sites to be held in open space.

³ Significance testing at this site was completed during circulation of the draft EIR. Locus B, a prehistoric component, was assessed as significant.

Testing of the prehistoric deposit at Locus B included excavation of 15 STPs and four 1×1-meter units, and collection of surface artifacts. Upon completion of fieldwork, a map was prepared showing the location of surface artifacts, backhoe trenches, STPs, units, and natural features.

Historic cultural material recovered from CA-SDI-13,094/H Locus A represents a heavily disturbed historic site. Artifacts from the backhoe trenches and units were mixed with artifacts from 1903 through the mid-1960s, as well as prehistoric artifacts found throughout the deposit. A limited number of artifacts (hand-blown and blown-in-mold bottles and ceramic items) date to around the turn of the century and certainly before 1906. The majority of identifiable items were produced after 1932 and several were manufactured after 1945. Excavation of trenches and units within the trash deposit revealed that the more recent artifacts were probably deposited as a result of on-site grading activities when the buildings associated with the farmstead were cleared and the land prepared for tomato crops. This material is not associated with an intact deposit and does not lend itself to comparison with other historic rural resources in San Diego County or elsewhere. The prehistoric artifacts from this locus are similarly disturbed.

Excavation and collection at Locus B has identified a prehistoric deposit to a maximum depth of 110 centimeters (cm) with a primary site area of approximately 420 m². This deposit is intact below the plow zone at approximately 30 cm. Cultural material recovered from Locus B includes debitage, cores, core/cobble tools, flake tools, hammerstones, manos, a pestle, bone (some burned), shell, charcoal, and fire-affected rock. Tools recovered indicate that the prehistoric residents were grinding seeds and other foodstuffs, working bone and possibly hides and wood, processing material for basketry, and gathering shellfish, small mammals, and possibly birds for food. The presence of charcoal and fire-affected rock indicates that meals were prepared at this location. A variety of imported lithic material (i.e., chalcedony, Piedre de Lumbre chert) is present at the site, indicating trade and/or travel was occurring.

Locus B is identified as an intact Early Period habitation site. This determination is based on the absence of pottery and small projectile points and on a radiocarbon date of 5070 ± 70 years before the present as well as the presence of tools and large quantities of shellfish species (i.e., *Argopecten* sp. and *Chione* sp.) associated with Early Period sites.

Site CA-SDI-5371 has been determined to be outside the boundaries of the proposed Del Mar Highlands Estates VTM, and therefore, would not require testing. Documentation from previous technical reports, which clearly describe the site's location relative to the project boundary, indicate the site CA-SDI-5371 is mapped on the terminus of a ridge that is clearly outside the project boundary. There are no indications from completed field studies that the site boundary was changed or that the site was incorrectly mapped. Therefore, there is no basis for completing sampling at this location.

Finally, ~~onetwo~~ previously recorded sites (~~CA-SDI-5371 and CA-SDI-5372/H~~) ~~has~~ have not been tested for significance. ~~Sites not previously tested to determine significance under City of San Diego CEQA and RPO guidelines are considered potentially significant.~~

b) Conclusion

Locus B of site CA-SDI-13,094/H contains an intact prehistoric deposit to 110 cm that dates to approximately 5,000 years before the present and contains material to answer significant research questions regarding chronology, trade and/or travel, and subsistence. Locus B is identified as not significant under the City of San Diego RPO, as neither the prehistoric nor the historic deposit at this location possesses unique scientific, religious, or ethnic value of local, regional, state, or federal importance; it is not an area of important prehistoric or historic activities or events; and it does not contain burial(s), pictographs, petroglyphs, a solstice observation site, or sacred shrines.

~~Sites CA-SDI-5371 and CA-SDI-5372H is~~ are considered potentially significant; ~~however, this site is within a designated open space area and will be tested and evaluated for significance prior to the issuance of a grading permit.~~ Both All three sites are considered potentially significant and unmitigated at this time. The implementation of the proposed mitigation will achieve a lowering of impact to below a level of significance. Site CA-SDI-5371 has been determined to be outside the boundaries of the proposed Del Mar Highlands Estates VTM and, therefore, would not require testing for the project.

Mitigation, Monitoring, and Reporting

The objective of the mitigation program will be to mitigate impacts to CA-SDI-13,094/H Locus B associated with construction of Del Mar Highlands Estates and to provide an indexing of sites CA-SDI-5371 and CA-SDI-5372/H.

a) Site CA-SDI-13,094/H

Prior to the issuance of a grading permit, the following mitigation monitoring and reporting procedures shall be completed. Mitigation measures are provided for sites identified as either significant under RPO and/or important under CEQA. For site CA-SDI-13,094/H, only the habitation area (420 m² of Locus B) is identified as important under CEQA. Impacts to this localized habitation area can be mitigated to below a level of significance through (1) avoidance, capping, and placement of the 420 m² portion of CA-SDI-13,094/H Locus B within permanent open space deeded to the City; (2) completion of a data recovery program prior to construction grading; or (3) in concurrence with the City, a combination of capping, indexing the site through a sample excavation, and placement of deed restrictions to avoid direct or indirect impacts. Mitigation measure 3 assumes that the site will not be built on, that capping will not

exceed a depth of six feet, and that utility lines or deep-rooted plants will not be placed within the primary site area. The exact location of this deposit needs to be professionally mapped prior to completion of mitigation measures. Mitigation of impacts through data recovery will follow the City of San Diego's 15 percent sample excavation requirement and will be conducted in approximately five percent phases. The excavation program will be structured to provide information to address the research questions of chronology, subsistence, trade and travel, environmental setting, and lithic reduction strategy. Additional specifics on the research questions are provided in Appendix F. In addition, CA-SDI-13,094/H Locus B will be compared to Norwood and Walker's sites (1980) to evaluate change in these activities through time.

The data recovery program, designed to mitigate direct impacts to approximately 420 m² of CA-SDI-13,094/H Locus B, will be phased to identify the need for additional work. As noted above, the data recovery program will consist of up to a 15 percent excavation (hand and mechanical) program to be completed in three phases. Phase I will consist of a 100 percent surface collection and a 5 percent random sample excavation (21 m²). Phase II will be based on Phase I results and will consist of a 5 percent excavation focused on features (21 m²). The 5 percent Phase III excavation will include hand excavation, backhoe trenching, controlled grading, and excavation of prehistoric features and activity areas. All features will be completely exposed and documented using photographs and illustrations. Block excavations (i.e., 2x2-meter or 4x4-meter units) will be placed in areas with features and associated artifacts to expose intact living areas.

A random five percent sample will be conducted in the primary habitation area during Phase I. A random number table will be used for unit placement. The Phase I sample (21 m²) will be excavated to determine site content and Phase II unit placement. Upon completion of the five percent sample, the Development Services Department will be consulted and a determination made regarding Phase II excavation. The Phase II five percent sample within the primary habitation area (additional 21 m²) will be used to open features or activity areas identified during the initial Phase I sample. This phase may include block excavation (i.e., 2x2-meter, 4x4-meter). Each unit will be excavated in 10-cm levels using the natural surface contour. All soil will be screened through one-eighth-inch mesh screen, and artifacts and ecofacts will be collected by 10-cm levels. All recovered cultural material will be placed in resealable bags and labeled by site number, unit number, level, and date. Given City concurrence, if no features are encountered in Phase I, Phase II may not be conducted and Phase III may be started.

Upon completion of controlled hand excavation, backhoe pretrenching will be completed within the primary habitation area using shallow scrapes with a small bucket. If a concentration of rock is noted, then the backhoe will be stopped and hand excavation will be conducted to determine feature content.

When a feature is identified, either within an excavation unit or during backhoe trenching, the area will be cleared using hand excavation and the feature exposed, mapped, and removed. Any charcoal identified in the feature will be collected for radiocarbon dating. The backhoe pretrenching will be discontinued when the sterile subsurface deposit is encountered.

A standard system of cataloging cultural remains will be used. All cultural material will be washed and separated by material class within each level, prior to cataloging. Artifact classes identified will include flake, angular waste, flaked lithic tool, ground stone, shell, bone, and historic debris. In addition, lithic material for all artifacts will be identified. Flakes are identified as chipping waste containing a striking platform and a bulb of percussion. The remainder of the chipping waste (without a striking platform and a bulb of percussion) is defined as angular waste. Flaked lithic tools will be weighed, measured, and identified by artifact attributes and manufacture technique. Ground stone categories will include manos and metates. Ground stone attributes include shaped/unshaped, number of ground sides, presence of a shoulder, and whether the artifact is pecked, battered, or fire-affected.

Five column samples from five units will be processed either through flotation or by wet-screening through one-sixteenth-inch hardware mesh. The recovered materials will be dried, microsorted, recorded, and weighed. This material may provide a sample of midden contents that could include fish bone, otoliths, shell remains, bird and animal bone, and seeds. These remains will be analyzed by specialists to provide specific species identification.

Each item or group of items will be counted, weighed and/or measured, and given consecutive catalog numbers. Catalog numbers will be marked in ink either directly on the artifact or on an attached label. In addition, each item will then be analyzed for specific material class attributes. Flakes (diagnostic debitage) will be divided by material type and size. All cataloged items will be separated into typological categories by bag and stored in clearly labeled cardboard boxes.

Photographs, field notes, and artifacts will be temporarily curated by the company conducting the data recovery program until a regional repository becomes available. Catalogs and report copies will be stored on both electronic media and hard copies. Upon completion and acceptance of the final report, copies will be submitted to the South Coastal Information Center at San Diego State University and to the San Diego Museum of Man. A site record form update will be filed at the South Coastal Information Center and San Diego Museum of Man.

Ancillary studies that may be completed for this project are described in Appendix F and include faunal and shellfish analysis, obsidian sourcing and hydration rind measurement, radiocarbon dating, lithic analysis, immunological analysis, and soil stratigraphy. Results

of obsidian sourcing, obsidian hydration rind measurements, and radiocarbon dating will be used to answer the chronology question. Lithic analysis will be conducted to identify lithic reduction techniques used by the inhabitants of CA-SDI-13,094/H. Immunological analysis will assist in identification of tool use. Analysis of soil stratigraphy will identify intact cultural deposits and assist in answering the chronology question.

b) Sites ~~CA-SDI-5371~~ and CA-SDI-5372/H

CA-SDI-5372H is located within the Tentative Map area in an area that will be deeded to the City of San Diego as part of a natural open space corridor related to the Draft MSCP. There are no direct impacts identified within or adjacent to the recorded limits of this site. This resource area is identified as a light scatter of flaked lithic debris and the remnants of an historic-era cobble foundation. This site was not tested during previously completed work; however, survey level observations of the site indicate limited resource potential. The recommendation for this site is the completion of an "indexing" program which would provide sufficient information to place the historic and prehistoric portions of this site in context with the region prior to preservation in the open space area. The indexing program that is recommended includes the following steps:

- Conduct archival research of historic-era photographs, maps, and property records to establish background information on the historic-era feature.
- Complete a surface collection of historic and prehistoric materials used as a grid-based plotting system.
- Complete up to 10 shovel test pits in areas of positive surface material and in areas with potential subsurface deposit.
- Complete three sample units of one square meter in size.
- Prepare site map with locations of collected items, shovel test pits, sample units, and surface features.
- Update the site record form with the South Coastal Information Center and the San Diego Museum of Man.
- Clean, separate, and analyze the recovered artifacts and ecofacts. Submit one organic sample for radiocarbon analysis.
- Complete a report of findings and interpretations using the City of San Diego Archaeological Resource Management Report format.

These combined efforts should provide sufficient information to establish a general finding with regard to the quantity, quality, and variety of the archaeological materials that are present at this location and to allow for the placement of this resource site into the developing model of site settlement and chronology for the Carmel Valley region.

~~Prior to the issuance of a grading permit, the following mitigation monitoring and reporting procedures shall be completed:~~

- ~~1. Research. Historic research (i.e., review of early maps, literature review, title search, etc.) will be conducted for the historic components at CA SDI-5372/H.~~
- ~~1. Surface Collection. For sites with less than 200 surface artifacts, all artifacts will be collected using point provenience mapping to show exact location of surface artifacts or a grid-based surface collection. If surface artifacts are estimated to be over 200, then a 10 percent random sample grid-based surface collection will be conducted.~~
- ~~1. Subsurface Assessment~~
 - ~~a. Shovel test pits will be excavated to determine site size and depth.

 - ~~• STPs will be used along a north-south and east-west grid system in 10- to 40-meter intervals. This includes excavation of up to 10 STPs at CA SDI-5372/H and up to 6 STPs at CA SDI-5371.~~
 - ~~• STPs will be excavated in 10-cm levels to 50 cm or bedrock and all excavated soil will be processed through one-eighth-inch screen mesh.~~
 - ~~• All artifacts/ecofacts will be collected and bagged by STP number and depth.~~~~
 - ~~a. One-by-one-meter test units will be excavated at each site.

 - ~~• Unit placement will be determined by either the highest or most likely area to possess subsurface material (based on surface remains or natural features). One 1x1-m unit will be excavated at CA SDI-5371 and three 1x1-m units will be excavated at CA SDI-5372/H.~~
 - ~~• Units will be excavated in 10-cm levels to sterile soil, defined as bedrock or one level with no cultural material present. If two consecutive levels record a significant drop-off in cultural materials with the presence of cultural material explained in terms of natural processes, then that is defined as sterile.~~~~
 - ~~a. Ten to twenty meters of backhoe trenches will be excavated within the historic component at CA SDI-5372/H to determine presence/ absence of a subsurface deposit. If subsurface deposits are present, then two additional 1x1-m units will be excavated at each site.~~
 - ~~a. Map Preparation~~
 - ~~• Sites will be plotted on a USGS 7.5-minute quadrangle map.~~
 - ~~• Sites will be plotted on an engineering base map (either 1" = 100' or 1" = 200').~~
 - ~~• A site map will be prepared for each site showing site boundaries and the locations of STPs, 1x1-m units, significant landform and/or landmarks, and surface artifacts or surface artifact collection grids.~~
 - ~~a. Report~~
 - ~~• All artifacts collected will be cleaned and cataloged. Appropriate special studies will be conducted.~~
 - ~~• Sites/loei will be evaluated in terms of site size, depth, content, integrity, and potential to address important research questions as per City of San Diego guidelines and CEQA.~~
 - ~~• All results will be presented in a City of San Diego report format.~~

G. Paleontology

Paleontology is the science dealing with the life of past geologic periods as known from fossil remains. Paleontological resources (fossils) are the remains and/or traces of prehistoric animal and plant life exclusive of human remains or artifacts. Fossil remains such as bones, teeth, shells, and leaves are often found in the geologic deposits (rock formations) within which they were originally buried. Because of this, the potential for fossil remains at a given location can be predicted based on known correlations between fossil occurrence and the geologic formations with which they are associated. To evaluate paleontological resources on the various sites of the project, the presence and distribution of geologic formations and the respective potential for paleontological resources were reviewed. The following is a summary of the research conducted for the project sites and associated conclusions for paleontological resource potential.

Existing Conditions

The various project sites are located within the coastal area of San Diego County, which is characterized geologically by the presence of Eocene rocks of the San Diego Embayment. The San Diego Embayment area is a northwest-trending basin consisting of Tertiary and Quaternary successional sediments deposited on Upper Cretaceous strata. Sedimentary rocks of the Late Cretaceous, Eocene, Pliocene, Pleistocene, and Holocene age underlie the general vicinity of the project area. On-site geologic and topographic settings are described in Section 4.D of this EIR.

The rocks in the project area were laid down during a period when subsidence of the basin and repeated change in sediment flux resulted in alternating advances and retreats of the shoreline. This period of deposition occurred continuously for nearly 10 million years. The Eocene lithostratigraphic sequence contains fossil organisms representative of deep water marine, littoral marine, lagoonal, and nonmarine fluvial environments. The Eocene succession of the San Diego Embayment is presently the only place known in North America where this part of the Tertiary mammal chronology can be directly compared with invertebrate chronologies.

The City has identified at least six sites containing paleontological resources in the general area (City of San Diego 1992). These sites are listed on Table 4G-1, with relevant maps on file at the City Development and Environmental Planning Division. The noted paleontological sites have been typically encountered during grading/excavation for specific projects.

**TABLE 4G-1
KNOWN PALEONTOLOGICAL SITES IN THE PROJECT VICINITY**

Site No.	General Location	Formation or Deposit
2853, 2987	Outside of FUA, mouth of Carmel Valley	Boundary of alluvial deposits and outcropping of Bay Point Formation
3170	Just north of Los Peñasquitos Canyon at an elevation of approximately 180 feet	Santiago Peak Volcanics
3269	Outside of FUA, just north of Del Mar Heights Road and just east of El Camino Real	Friars Formation
3282	Just south of FUA, between Del Mar Heights Road and Gonzales Canyon	Mission Valley Formation
3284	Outside of FUA, in Carmel Valley, north and east of intersection with Shaw Valley	Alluvial deposits

SOURCES: City of San Diego (1992, n.d.); Kennedy (1975).

In addition to known paleontological loci, there are a number of on-site formations that have the potential to contain significant paleontological resources. Each of these formations has been evaluated for its paleontological resource potential and given a rating from high to low sensitivity based on the following criteria (PaleoServices 1991).

High Sensitivity - These formations contain a large number of known fossil localities. Generally speaking, highly sensitive formations produce vertebrate fossil remains or are considered to have the potential to produce such remains.

Moderate Sensitivity - These formations have a moderate number of known fossil localities. Generally speaking, moderately sensitive formations produce invertebrate fossil remains in high abundance or vertebrate fossil remains in low abundance.

Low and/or Unknown Sensitivity - These formations contain only a small number of known fossil localities and typically produce invertebrate fossil remains in low abundance. Unknown sensitivity is assigned to formations from which there are presently no known paleontological resources, but which have the potential for producing such remains based on their sedimentary origin.

Very Low Sensitivity - Very low sensitivity is assigned to geologic formations that, based on their relative youthful age and/or high-energy depositional history, are judged to be unlikely to produce any fossil remains.

Del Mar Highlands Estates contain four Eocene sedimentary formations—Torrey Sandstone, Friars Formation, Stadium Conglomerate, and Mission Valley Formation—and four Quaternary units—Bay Point Formation, river terrace deposits, alluvium, and colluvium. Each of the four Eocene formations and four Quaternary units are described in detail below. Figure 4G-1 summarizes the paleontological resource sensitivity for the Del Mar Highlands Estates project area.

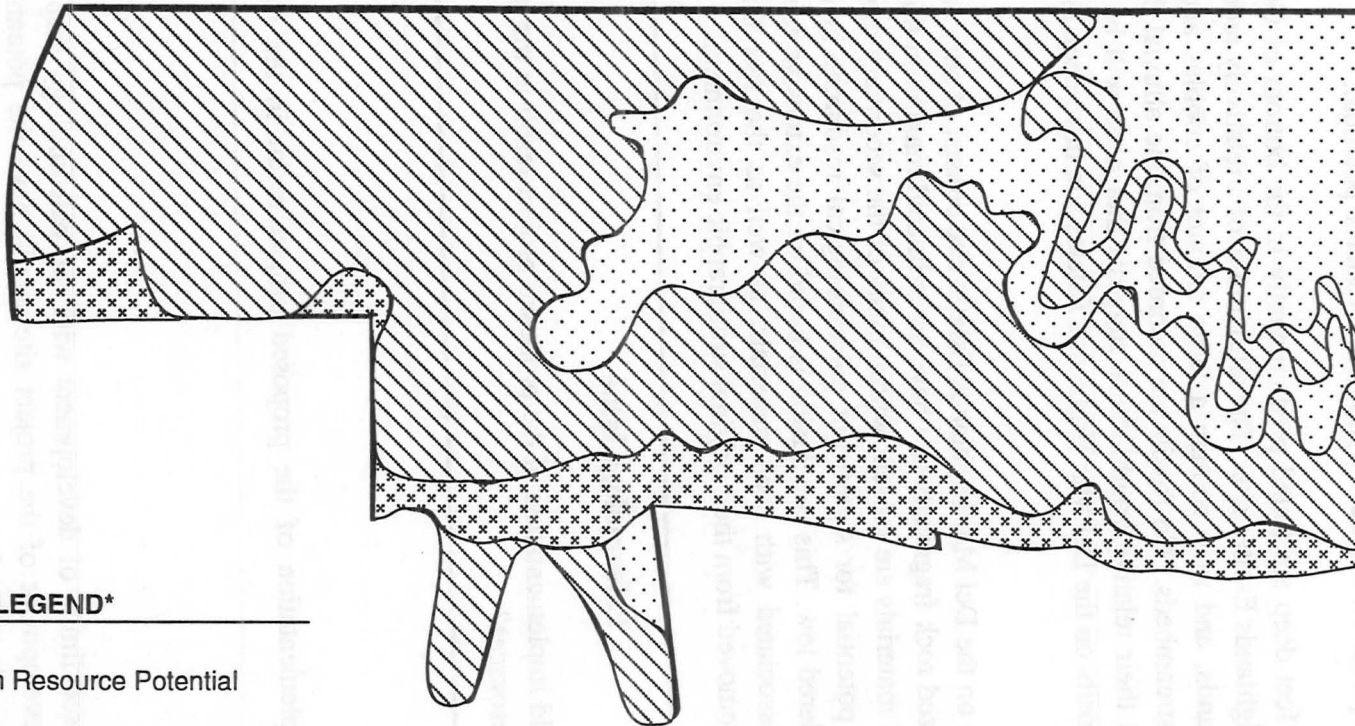
The Torrey Sandstone consists of dense sandstone and includes primarily marine and marginal marine sediments. Locally abundant marine invertebrate and vertebrate fossils as well as fossil leaves have been found within Torrey Sandstone deposits regionally. The resource potential for Torrey Sandstone is low to moderate.

The Friars Formation includes marine and nonmarine sediments forming relatively dense clayey sandstone and sandy claystone. Locally common terrestrial mammal fossils have been identified within this formation, which has a high resource potential.

The Stadium Conglomerate, consisting of very dense clayey sand, gravel, and cobbles, was found to overlie the Friars Formation and Torrey Sandstone. Rare terrestrial mammal and marine invertebrate fossils have been found within this formation. The resource potential for the Stadium Conglomerate is low to moderate.

The Mission Valley Formation outcrops on the Del Mar Highlands Estates site, overlying the Stadium Conglomerate. This geologic unit is generally comprised of relatively dense sandstone interbedded with siltstone and claystone. This formation has the potential for producing important Eocene land mammal remains similar to those recorded in the Miramar Reservoir area (fossil marine invertebrates, fossil marine vertebrates including remains of bony fish and sharks, and rare remains of terrestrial vertebrates). Grading operations for projects in the northern portions of Carmel Valley in this formation have unearthed well-preserved fossil remains, including different kinds of estuarine and nearshore marine organisms (clams, snails, barnacles, sea urchins, sharks, rays, and crocodiles). In addition, several sites in the area have produced important collections of well-preserved fossil plant remains, primarily leaves. The resource potential for the Mission Valley Formation is moderate to high.

The Bay Point Formation occurs on the Del Mar Highlands Estates site, north of Gonzales Canyon. This formation is composed of mostly marine and nonmarine, poorly consolidated, fine- and medium-grained, pale brown fossiliferous sandstone. The marine part of the formation interfingers with nonfossiliferous sandstone that lies generally more than 100 but less than 200 feet above MSL (City of San Diego 1992). Fossils identified within this formation consist primarily of marine mollusks. The resource potential for the Bay Point Formation is low to moderate.



LEGEND*



High Resource Potential



Moderate Resource Potential



Low Resource Potential

*In situations where a formation has been assigned a rating between categories (i.e. "Low to Medium") the more restrictive category is mapped.



Source: Helix Environmental 1995

FIGURE 4G-1
Del Mar Highlands Estates
Paleontological Resource Sensitivity

Thin stream terrace deposits form low benches along Gonzales Canyon in the Del Mar Highlands Estates project area. These deposits typically consist of dense, weakly cemented cobble conglomerates and sandstones. The fossil remains of a Pleistocene ground sloth are recorded from similar deposits in Fairbanks Ranch, just north of the project site. The terrace deposits on-site have a moderate resource potential.

Alluvial deposits 5 to 25 feet deep are found predominantly in the bottom of Gonzales Canyon on the Del Mar Highlands Estates site. The alluvium is of a relatively recent age, consists of brown silty sands, and may contain a large amount of cobbles and some boulders within the main streambeds. No fossils are recorded from the alluvial deposits in the project vicinity and their relative youthfulness suggests that none will be found. Therefore, the alluvial deposits on the Del Mar Highlands Estates site have been assigned a low resource potential.

Colluvial materials located on the Del Mar Highlands Estates site consist of silty sands to sandy clays with cobble-sized rock fragments and have an estimated maximum thickness of 10 to 15 feet. Colluvial materials are present within many of the secondary drainages on the project site. The potential for significant paleontological resources in on-site colluvial deposits is considered low. This conclusion is based on the extensive mechanical weathering typically associated with such materials, as well as the fact that any remnant fossils have been removed from their original stratigraphic environment.

Paleontology Issue

1. To what extent would implementation of the proposed project result in the loss of paleontological resources?

1) Issue

To what extent would implementation of the proposed project result in the loss of paleontological resources?

Impacts

A comparison of the proposed limits of development with the paleontology map (see Figure 4G-1) shows that development of the project site would have the potential to impact areas with high and moderate paleontological resource potential. Future on-site grading would cut into all of the geologic units described for this area, which exhibit moderate to high resource potential. Specifically, these include the Mission Valley Formation, Torrey Sandstone, Friars Formation, Stadium Conglomerate, Bay Point

Formation, and terrace deposits. Paleontological resources potentially occurring in these formations would be damaged or destroyed unless recovered during grading.

Significance of Impacts

Grading for roadway construction and future development on the project site would have the potential for significant impacts to paleontological resources. These impacts could be mitigated below a level of significance as described below.

Mitigation, Monitoring, and Reporting

The following mitigation measures shall be a condition of approval of grading permits within the Del Mar Highlands Estates area and shall mitigate impacts to below a level of significance.

A program for the recovery of paleontological resources during grading and earthwork shall be implemented. This program will include the following steps:

1. A qualified paleontologist and/or paleontological monitor shall be retained to implement the monitoring program. A qualified paleontologist is defined as an individual with a Ph.D. or master's degree in paleontology or geology who is a recognized expert in the application of paleontological procedures and techniques such as screen washing of materials and identification of fossil deposits. A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials and who is working under the direction of a qualified paleontologist.
2. The qualified paleontologist shall attend any preconstruction meetings to consult with the excavation contractor. The requirement for paleontological monitoring shall be noted on the construction plans. The paleontologist's duties shall include monitoring, salvaging, preparing materials for deposit at a scientific institution that houses paleontological collections, and preparing a results report. These duties are defined as follows:
 - a. **Monitoring.** The paleontologist or paleontological monitor shall be on-site during the original cutting of previously undisturbed areas of the sensitive formation to inspect for well-preserved fossils. The paleontologist shall work with the contractor to determine the monitoring locations and the amount of time necessary to ensure adequate monitoring of the project.
 - b. **Salvaging.** In the event that well-preserved fossils are found, the paleontologist shall have the authority to divert, direct, or temporarily halt construction activities in the area of discovery to allow recovery of fossil remains in a timely manner.

Recovery is anticipated to take from one hour to a maximum of two days. At the time of discovery, the paleontologist shall contact the Environmental Analysis Section of the City of San Diego Development Services Department. EAS must concur with the salvaging methods before construction is allowed to resume.

- c. Preparation. Fossil remains shall be cleaned, sorted, cataloged, and then deposited in a scientific institution that houses paleontological collections (such as the San Diego Natural History Museum).
 - d. Monitoring Results Report. A monitoring results report, with appropriate graphics, summarizing the results (even if negative), analysis, and conclusions of the above program shall be prepared and submitted to EAS within three months following the termination of the paleontological monitoring program.
3. The project manager shall notify EAS staff of any preconstruction meeting dates and of the start and end of construction.
 4. A report of findings, even if negative, shall be filed with EAS and the San Diego Natural History Museum prior to issuance of building permits.

It shall be a requirement of the project that the above mitigation measures be conditions of all subsequent tentative maps within the Del Mar Highlands Estates area. EAS shall verify this is a condition of tentative map approval.

A note shall be included on the grading plans that the above measures are conditions of approval of grading permits. EAS shall ensure these measures are conditions of the tentative map prior to approval of the tentative map. Prior to issuance of grading permits, EAS and the Engineering Department shall review the grading plans to ensure that these measures are on the plans.

H. Traffic Circulation

The following discussion is based on an evaluation of transportation/traffic circulation issues associated with the proposed Del Mar Highlands Estates project prepared by Urban Systems Associates, Inc. (1997). This study is summarized below, with the complete report included in this EIR as Appendix G.

Existing Conditions

a) Roadways

The Del Mar Highlands Estates site is located in the northwestern portion of the city of San Diego, with on-site and surrounding areas generally rural in nature. Regional access to the site is provided by Interstate 5, with local access obtained via several streets including Del Mar Heights Road, Via de la Valle, El Camino Real, San Dieguito Road, Old El Camino Real, Derby Downs Road, and Derby Farms Road (Figure 4H-1). Summary descriptions of these roadways are provided below.

Interstate 5

I-5 is a north/south-trending freeway which provides regional access between San Diego and northern coastal cities including Del Mar, Encinitas, Carlsbad, and Oceanside. I-5 is located approximately 1.0 mile west of the project site at its closest point.

Del Mar Heights Road

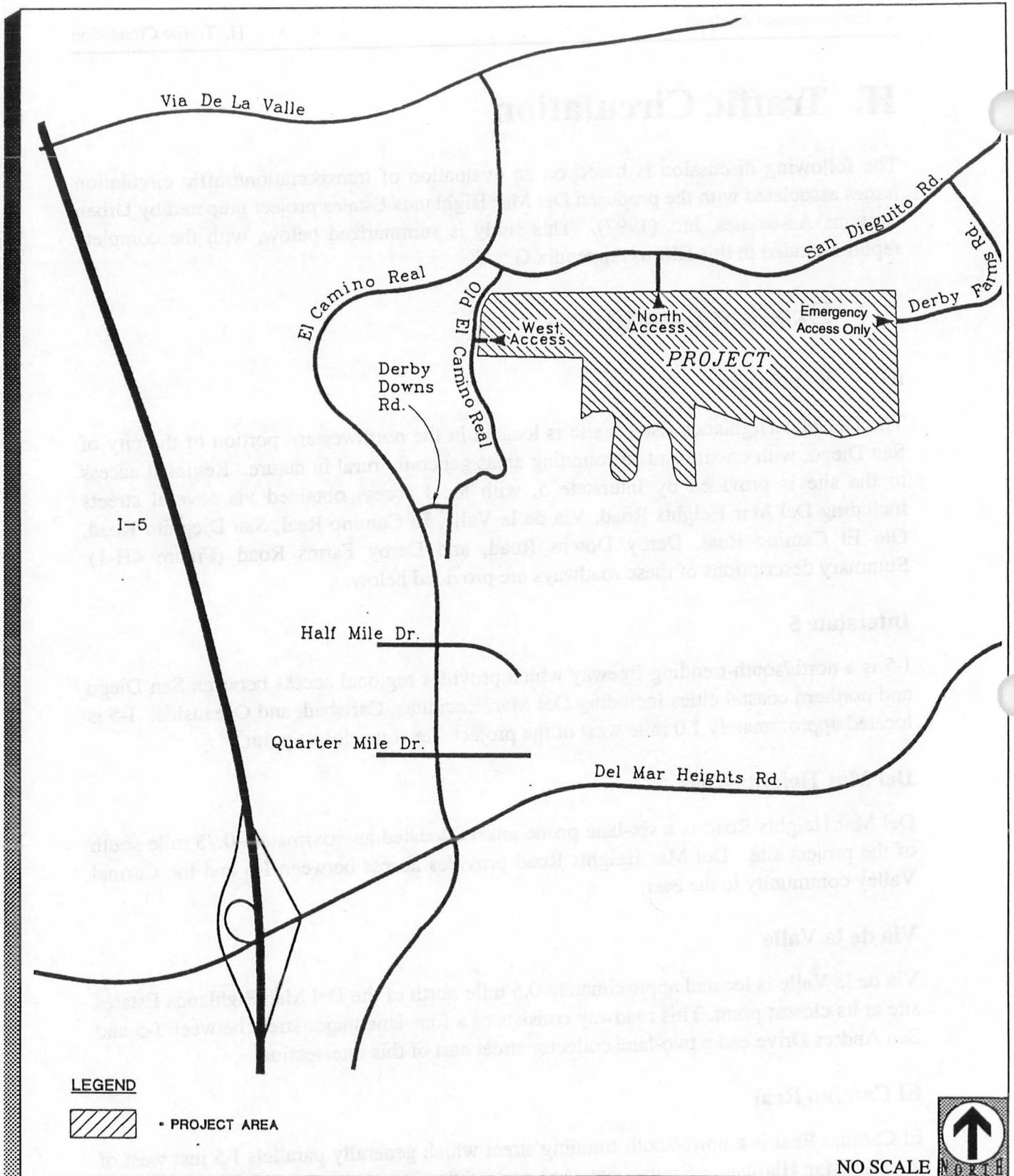
Del Mar Heights Road is a six-lane prime arterial located approximately 0.75 mile south of the project site. Del Mar Heights Road provides access between I-5 and the Carmel Valley community to the east.

Via de la Valle

Via de la Valle is located approximately 0.5 mile north of the Del Mar Highlands Estates site at its closest point. This roadway consists of a four-lane major street between I-5 and San Andres Drive and a two-lane collector street east of this intersection.

El Camino Real

El Camino Real is a north/south-trending street which generally parallels I-5 just west of the Del Mar Highlands Estates site (and east of the freeway). From Del Mar Heights Road to Half Mile Drive (approximately 0.5 mile south of the project site), El Camino Real is a four-lane facility. North of Half Mile Drive, this roadway continues as a two-lane street to its terminus at Via de la Valle (where it forms a T intersection).



SOURCE: URBAN SYSTEMS ASSOCIATES, INC., 1995

FIGURE 4H-1
Del Mar Highlands Estates
Existing Project Area Roadways

San Dieguito Road

San Dieguito Road consists of a two-lane collector street located just north of the Del Mar Highlands Estates site. This roadway extends east from a T intersection with El Camino Real and provides access to the community of Fairbanks Ranch.

Old El Camino Real

Old El Camino Real abuts the Del Mar Highlands Estates site on the west and extends north-south between San Dieguito Road (where it forms a T intersection) and Derby Downs Road. Old El Camino Real includes two lanes.

Derby Downs Road

Derby Downs Road is a two-lane, east/west-trending roadway segment extending between El Camino Real and Old El Camino Real, approximately 0.25 mile southwest of the project site.

Derby Farms Road

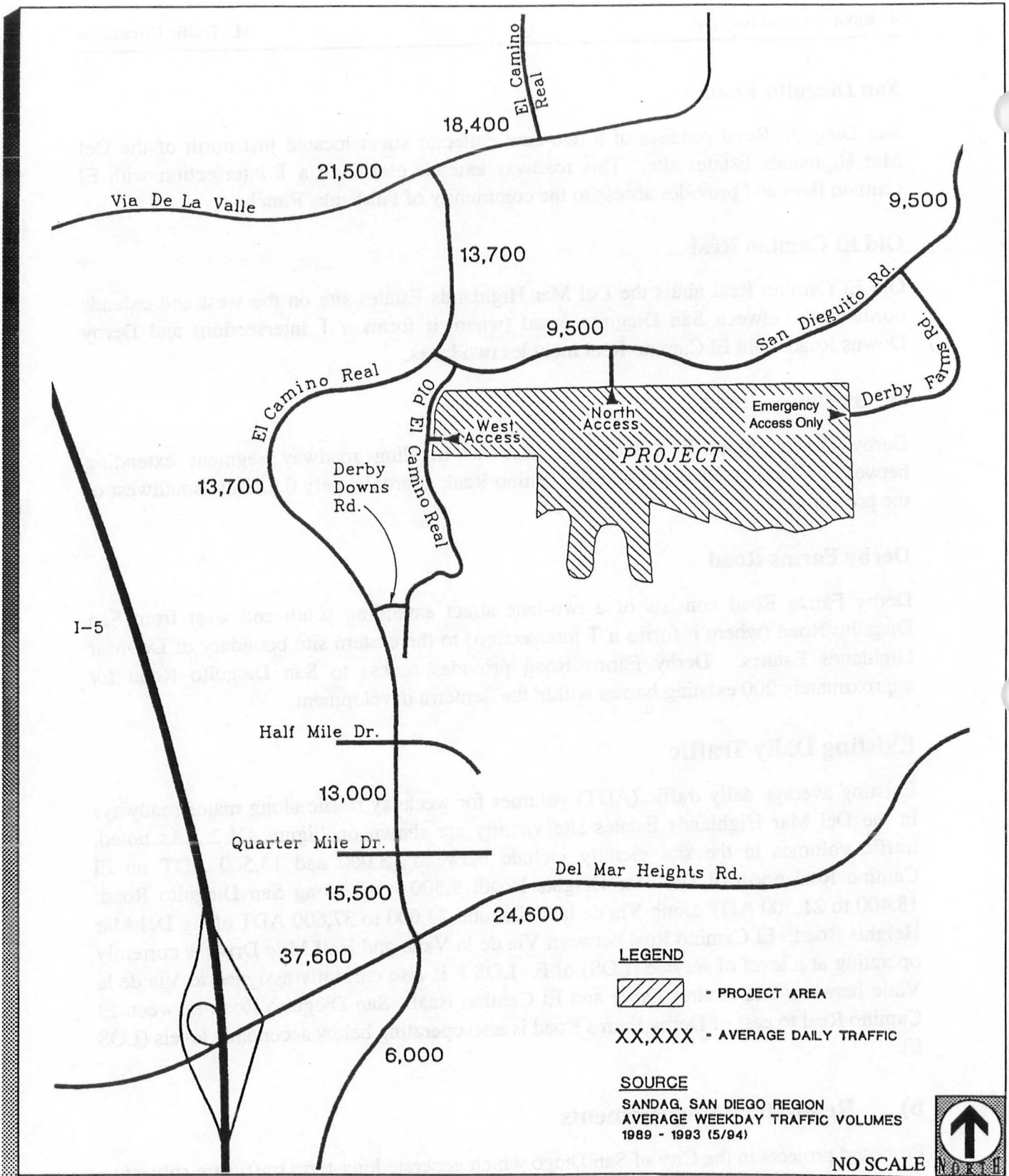
Derby Farms Road consists of a two-lane street extending south and west from San Dieguito Road (where it forms a T intersection) to the eastern site boundary of Del Mar Highlands Estates. Derby Farms Road provides access to San Dieguito Road for approximately 200 existing homes within the Senterra development.

Existing Daily Traffic

Existing average daily traffic (ADT) volumes for weekday traffic along major roadways in the Del Mar Highlands Estates site vicinity are shown on Figure 4H-2. As noted, traffic volumes in the site vicinity include between 13,000 and 15,500 ADT on El Camino Real north of Del Mar Heights Road; 9,500 ADT along San Dieguito Road; 18,400 to 21,500 ADT along Via de la Valle; and 24,600 to 37,600 ADT along Del Mar Heights Road. El Camino Real between Via de la Valle and Half Mile Drive is currently operating at a level of service (LOS) of F. LOS F is also currently assigned to Via de la Valle between San Andres Drive and El Camino Real. San Dieguito Road between El Camino Real to east of Derby Farms Road is also operating below acceptable levels (LOS E).

b) Regulatory Requirements

Proposed projects in the City of San Diego which generate long-term traffic are subject to applicable requirements of the San Diego County Congestion Management Program (CMP) and the City of San Diego Traffic Impact Study Manual.



SOURCE: URBAN SYSTEMS ASSOCIATES, INC., 1995

FIGURE 4H-2

Del Mar Highlands Estates Existing Street System and Average Daily Trips

The San Diego County CMP was developed by SANDAG in response to California Proposition 111 (approved in June 1990) and is intended to directly link land use, transportation, and air quality through level of service performance criteria. The San Diego County CMP requires a detailed analysis of potential transportation-related impacts for all projects which generate more than 2,400 total ADT or 200 peak hour trips.

The City of San Diego Traffic Impact Study Manual requires analysis of potential transportation-related impacts based on conformance with applicable community plan land use and transportation elements, as well as associated trip generation. Specifically, projects which conform with the noted elements and generate more than 2,400 ADT or 200 peak hour trips (based on driveway rates) are required to conduct a traffic impact study. Projects which do not conform to local land use and transportation elements and generate more than 1,000 ADT (based on driveway rates) are also required to prepare a traffic impact study, with similar criteria as noted above for determining computer modeling requirements. If a project exceeds these thresholds and the cumulative traffic impacts of the project also exceed 2,400 ADT or 200 peak hour trips, then the traffic study must incorporate computer modeling, pursuant to City guidelines.

Traffic Circulation Issues

1. Would the proposed Del Mar Highlands Estates project result in substantial direct impacts to the existing or planned transportation system?

1) Issue

Would the proposed Del Mar Highlands Estates project result in substantial direct impacts to the existing or planned transportation system?

Impacts

Project Trip Generation

Del Mar Highlands Estates proposes the development of 148 estate lots and 24 affordable housing units. Three access locations are proposed. The northern access is the main entry into the project estate lots via San Dieguito Road (see Figure 4H-2). The eastern access, which will be used for emergency access only, is via Derby Farms Road which extends southerly from San Dieguito Road. Access from the west is via Old El Camino Real and would only provide access to the affordable housing. The north access point would have security gates and all on-site streets would be private.

The Del Mar Highlands Estates project would generate approximately 2,016 ADT and is expected to generate 161 A.M. and 202 P.M. peak hour trips, as shown in Table 4H-1. Also shown on Table 4H-1 are peak hour in/out splits. During the A.M. peak hour, the directional split of expected trips is 32 trips inbound and 129 outbound. During the P.M. peak hour, an estimated split of 142 inbound and 60 outbound trips is expected.

**TABLE 4H-1
DEL MAR HIGHLANDS ESTATES
PROPOSED PROJECT TRIP GENERATION**

Use	Amount	Trip Rate ¹	ADT	AM Peak Hour				PM Peak Hour					
				% ¹	No.	In/Out Split ¹	In	Out	%	No.	In/Out Split ¹	In	Out
Estate	148 lots	12/du	1,776	8	142	2:8	28	114	10	178	7:3	125	53
Affordable	24 lots	10/du	240	8	19	2:8	4	15	10	24	7:3	17	7
TOTALS	172 lots		2,016		161		32	129		202		142	60

SOURCE: Urban Systems Associates (see Appendix G).

¹Source: City of San Diego Trip Generation Manual, 12/93.

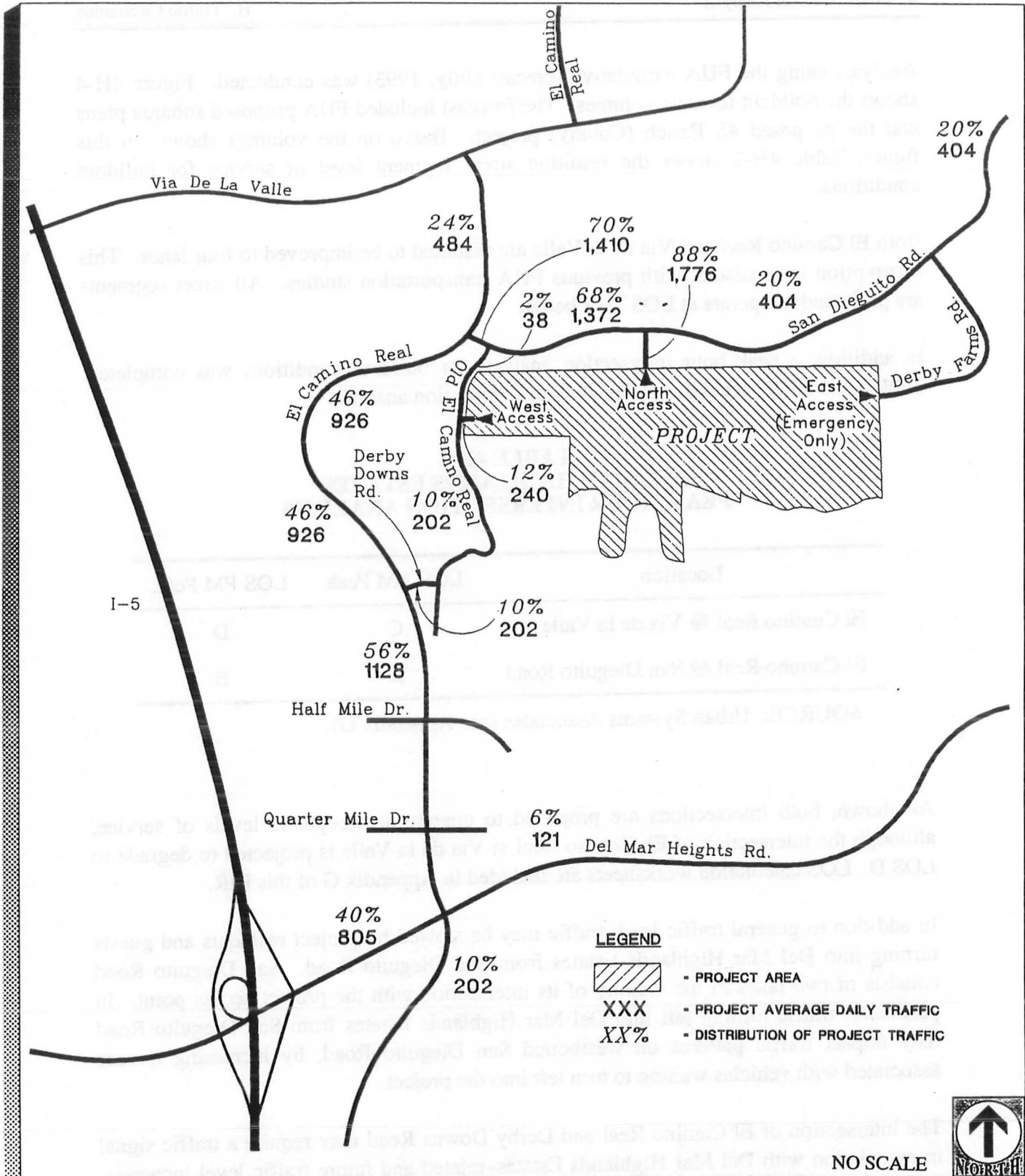
Figure 4H-3 shows the proposed traffic distribution and assignment for the Del Mar Highlands Estates project. As shown, it is estimated that about 88 percent of Del Mar Highlands Estates trips would use the north access. The remaining 12 percent of the projected trips are estimated to use the west access.

City Traffic Manual Required Study

For City traffic impact study purposes, a threshold of 1,000 ADT based on driveway rates determines the nature and extent of City requirements for a traffic impact analysis. Where a project generates between 1,000 ADT and 2,400 ADT, consultation with the City is required to determine the scope of traffic analysis. Since the proposed Del Mar Highlands Estates project would generate 2,016 ADT, a meeting was held with City of San Diego to determine traffic analysis requirements.

Based on this meeting, the City identified two street segments and two intersections to be analyzed for buildout conditions:

Street Segments:	El Camino Real - Via de la Valle to Half Mile Drive Via de la Valle - San Andres Drive to El Camino Real
Intersections:	El Camino Real at Via de la Valle El Camino Real at San Dieguito Road



SOURCE: URBAN SYSTEMS ASSOCIATES, INC. 1996

FIGURE 4H-3

**Del Mar Highlands Estates
Average Daily Trip Generation Rates**

Analysis using the FUA cumulative forecast (July, 1993) was conducted. Figure 4H-4 shows the buildout forecast volumes. The forecast included FUA proposed subarea plans and the proposed 4S Ranch (County) project. Based on the volumes shown on this figure, Table 4H-2 shows the resulting street segment level of service for buildout conditions.

Both El Camino Real and Via de la Valle are assumed to be improved to four lanes. This assumption is consistent with previous FUA transportation studies. All street segments are projected to operate at LOS D or better.

In addition, a peak hour intersection analysis for buildout conditions was completed. Table 4H-3 shows results of the peak hour intersection analysis.

**TABLE 4H-3
DEL MAR HIGHLANDS ESTATES
PEAK HOUR INTERSECTION ANALYSIS**

Location	LOS AM Peak	LOS PM Peak
El Camino Real @ Via de la Valle	C	D
El Camino Real @ San Dieguito Road	B	B

SOURCE: Urban Systems Associates (see Appendix G).

As shown, both intersections are projected to operate at acceptable levels of service, although the intersection of El Camino Real at Via de la Valle is projected to degrade to LOS D. LOS calculation worksheets are included in Appendix G of this EIR.

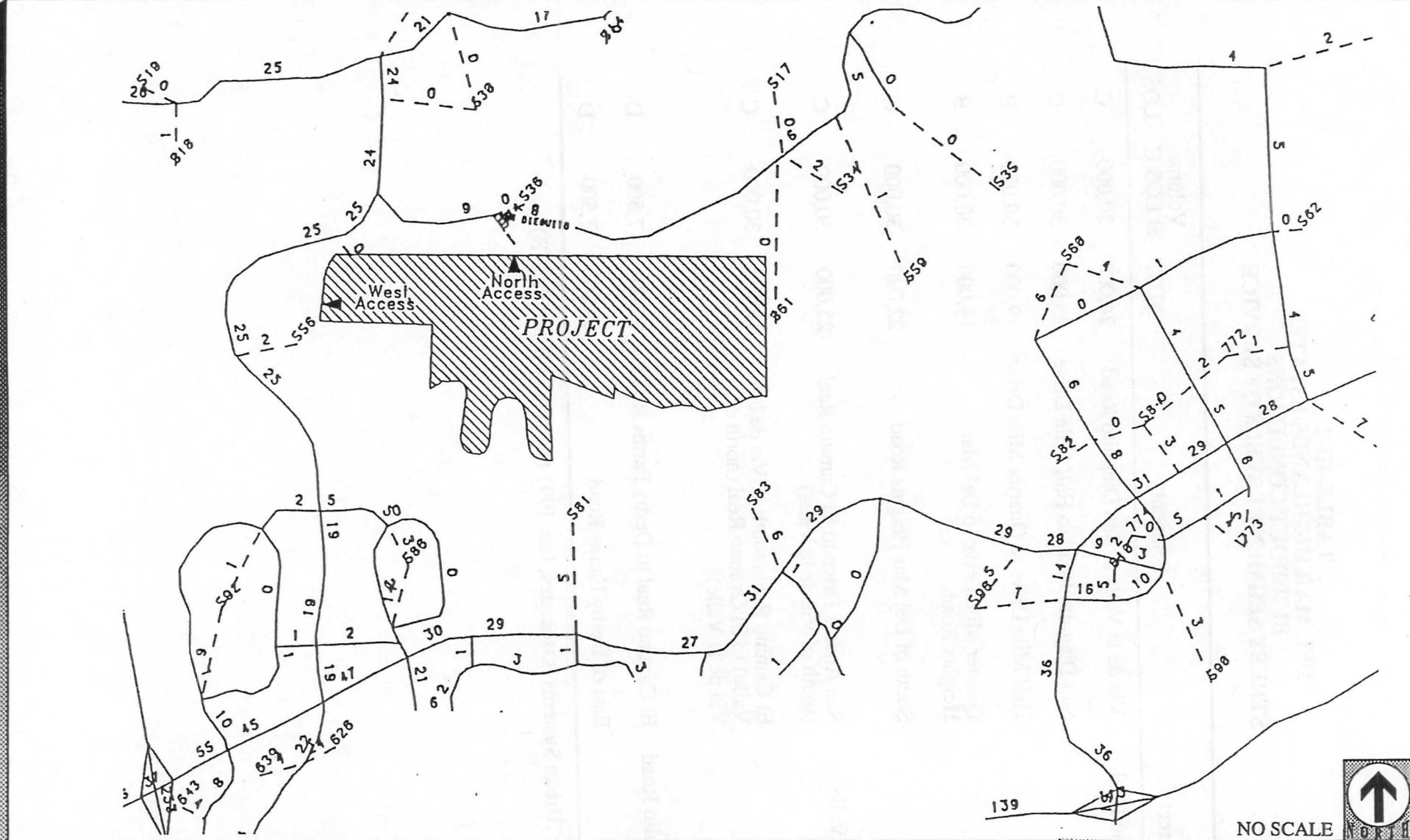
In addition to general traffic load, traffic may be slowed by project residents and guests turning into Del Mar Highlands Estates from San Dieguito Road. San Dieguito Road consists of two lanes in the vicinity of its intersection with the project access point. In particular, traffic turning left into Del Mar Highlands Estates from San Dieguito Road may impact traffic patterns on westbound San Dieguito Road, by increasing queues associated with vehicles waiting to turn left into the project.

The intersection of El Camino Real and Derby Downs Road may require a traffic signal in association with Del Mar Highlands Estates-related and future traffic level increases. (It should be noted that projected ADT levels on El Camino Real at this intersection exceed the City traffic signal warrant standard with or without the proposed Del Mar Highlands Estates.) Finally, traffic loads on segments of El Camino Real and Via de la Valle would also be increased.

**TABLE 4H-2
DEL MAR HIGHLANDS ESTATES
BUILDOUT CONDITIONS
STREET SEGMENT LEVELS OF SERVICE**

Street	Segment	ADT	Volume at LOS C	LOS
El Camino Real	Via de la Valle to San Dieguito Road	24,000	30,000	C
	San Dieguito Road to Half Mile Drive	25,000	30,000	C
	Half Mile Drive to Quarter Mile Drive	19,000	30,000	B
	Quarter Mile Drive to Del Mar Heights Road	19,000	30,000	B
	South of Del Mar Heights Road	22,000	30,000	C
Via de la Valle	San Andres Drive to El Camino Real (south of Via de la Valle)	25,000	30,000	C
	El Camino Real (south of Via de la Valle) to El Camino Real (north of Via de la Valle)	21,000	30,000	C
San Dieguito Road	El Camino Real to Derby Farms Road	9,000	7,500	D
	East of Derby Farms Road	8,000	7,500	D

SOURCE: Urban Systems Associates, Inc. 1997 (Appendix G of this EIR).



(IN THOUSANDS)

SOURCE: URBAN SYSTEMS ASSOCIATES, INC., 1995

FIGURE 4H- 4

NCFUA Cumulative Buildout Forecast

Significance of Impacts

Buildout of the proposed Del Mar Highlands Estates would result in potentially significant impacts to traffic movements at or near the intersection of San Dieguito Road and the project main access. In addition, Del Mar Highlands Estates may contribute to a cumulatively significant regional traffic impact at the El Camino Real/Derby Downs Road intersection. Finally, Del Mar Highlands Estates traffic would contribute to existing significant impacts to traffic flow on El Camino Real between Half Mile Drive and Via de la Valle and on Via de la Valle between El Camino Real (north of Via de la Valle) and San Andres Drive. Both project-specific direct and cumulative impacts would be reduced below a level of significance through the mitigation measures identified below.

Mitigation, Monitoring, and Reporting

The following mitigation measures shall be included as a condition of the tentative map and in the final project design specifications submitted to the City of San Diego Engineering Department. The project Mitigation Monitoring and Reporting Program shall require verification and documentation that these measures have been incorporated into final design prior to approval of the proposed Del Mar Highlands Estates tentative map.

- a. At the intersection of San Dieguito Road and the northern main access point, San Dieguito Road shall be modified to provide both westbound-to-southbound left-turn and eastbound-to-southbound right-turn lanes.
- b. The project applicant shall provide fair share contributions for a signal to mitigate traffic impacts at the El Camino Real/Derby Downs Road intersection.
- c. The project applicant shall provide fair share contributions to widen El Camino Real to four lanes between Half Mile Drive and Via de la Valle.
- d. The project applicant shall provide fair share contributions to widen Via de la Valle to four lanes between San Andres Drive and El Camino Real (north of Via de la Valle).

Implementation of the mitigation measures indicated above will reduce potential traffic impacts associated with buildout of the proposed Del Mar Highlands Estates project to below a level of significance.

I. Air Quality

Existing Conditions

a) Climate

The project area, like the rest of San Diego County's coastal areas, has a cool semiarid steppe climate characterized by warm, dry summers and mild, wet winters. The dominating permanent meteorological feature affecting the region is the Pacific High Pressure Zone, which produces the prevailing westerly to northwesterly winds. The project area has a mean annual temperature of 62 degrees Fahrenheit (F) and an average annual precipitation of 10 inches, falling primarily from November to March. Winter low temperatures in the project area average about 45 degrees F, and summer high temperatures average about 75 degrees F (U.S. Department of Commerce 1992; Pryde 1976).

Prevailing conditions along the coast are modified by the daily sea breeze/land breeze cycle. Fluctuations in the strength and pattern of winds from the Pacific High Pressure Zone interacting with the daily local cycle produce periodic temperature inversions that influence the dispersal or containment of air pollutants in the San Diego Air Basin (SDAB). The afternoon temperature inversion height, beneath which pollutants are trapped, varies between 1,500 and 2,500 feet above MSL. The altitude beneath the inversion layer is the mixing depth for trapped pollutants. In winter, the morning inversion layer is about 800 feet above MSL. Project area elevations range from an approximate high of 450 feet to a low of approximately 40 feet above MSL. In summer, the morning inversion layer is about 1,100 feet above MSL. A greater change between morning and afternoon mixing depth increases the ability of the atmosphere to disperse pollutants. Generally, therefore, air quality in the project area is better in winter than in summer.

The predominant pattern is sometimes interrupted by the so-called Santa Ana conditions, when high pressure over the Nevada-Utah area overcomes the prevailing westerlies, sending strong, steady, hot, dry northeasterly winds over the mountains and out to sea. Strong Santa Anas tend to blow pollutants out over the ocean, producing clear days. However, at the onset or breakdown of these conditions, or if the Santa Ana is weak, air quality may be adversely affected. In these cases, emissions from the South Coast Air Basin to the north are blown out over the ocean, and low pressure over Baja California draws this pollutant-laden air mass southward. As the high pressure weakens, prevailing northwesterlies reassert themselves and send this cloud of contamination ashore in the SDAB. There is a potential for such an occurrence about 45 days of the year, but San Diego is adversely affected on only about 5 of them. When this event does occur, the

combination of transported and locally produced contaminants produces the worst air quality measurements recorded in the basin.

b) Regulatory Framework

Federal Regulations

The federal Clean Air Act was enacted in 1970 and amended in 1977 and 1990 [42 U.S.C. 7506(c)]. In 1971, the U.S. Environmental Protection Agency (EPA) promulgated national ambient air quality standards. The six pollutants of primary concern for which national standards have been established are sulfur dioxide, lead, carbon monoxide, nitrogen dioxide, ozone, and suspended particulate matter (PM-10).

The EPA allows the states the option to develop different (stricter) standards, which California has adopted. Table 4I-1 lists the federal and California state standards.

State Regulations

As discussed above, the state of California has set more stringent limits on the six pollutants of national concern (see Table 4I-1).

Assembly Bill (AB) 2595 became effective on January 1, 1989, and requires that districts implement regulations to reduce emissions from mobile sources through the adoption and enforcement of transportation control measures. At a minimum, air quality plans as a whole must meet an annual emission reduction target of five percent. In major urban areas, this bill will result in greatly enhanced efforts to modify transportation habits and to reduce reliance on the single-occupant vehicle.

Section 15125(b) of the CEQA Guidelines contains specific reference to the need to evaluate any inconsistencies between the proposed project and the applicable/existing air quality management plan, which is the Regional Air Quality Strategies (RAQS) in the San Diego Air Basin.

Local Regulations

The San Diego Air Pollution Control District (APCD) is the agency which regulates air quality in the SDAB. The APCD has prepared the updated 1991/1992 RAQS in response to the requirements set forth in AB 2595. The updated draft was adopted, with amendments, on June 30, 1992 (County of San Diego 1992). Attached as part of the RAQS is the transportation control measures (TCM) for the air quality plan prepared by SANDAG in accordance with AB 2595 and adopted by SANDAG on March 27, 1992, as Resolution Number 92-49 and Addendum. The RAQS and TCM plan set forth the steps needed to accomplish attainment of state and federal ambient air quality standards.

**TABLE 4I-1
 AMBIENT AIR QUALITY STANDARDS**

Pollutant	Maximum Concentration Averaged over Specified Time Period	
	State Standard	Federal Standard
Oxidant (ozone)	0.09 ppm (180 $\mu\text{g}/\text{m}^3$) 1 hr.	0.12 ppm (235 $\mu\text{g}/\text{m}^3$) 1 hr.
Carbon monoxide	9.0 ppm (10 mg/m^3) 8 hr.	9 ppm (10 mg/m^3) 8 hr.
Carbon monoxide	20.0 ppm (23 mg/m^3) 1 hr.	35.0 ppm (40 mg/m^3) 1 hr.
Nitrogen dioxide	0.25 ppm (470 $\mu\text{g}/\text{m}^3$) 1 hr.	0.053 ppm (100 $\mu\text{g}/\text{m}^3$) Annual Average
Sulfur dioxide	0.25 ppm (655 $\mu\text{g}/\text{m}^3$) 1 hr.	0.03 ppm (80 $\mu\text{g}/\text{m}^3$) Annual Average
Sulfur dioxide	0.04 ppm (105 $\mu\text{g}/\text{m}^3$) 24 hr.	0.14 ppm (365 $\mu\text{g}/\text{m}^3$) 24 hr.
Suspended particulate matter (PM-10)	50 $\mu\text{g}/\text{m}^3$ 24 hr.	150 $\mu\text{g}/\text{m}^3$ 24 hr.
Suspended particulate matter (PM-10)	30 $\mu\text{g}/\text{m}^3$ Annual Geometric Mean	50 $\mu\text{g}/\text{m}^3$ Annual Arithmetic Mean
Lead	1.5 $\mu\text{g}/\text{m}^3$ 30-day Average	1.5 $\mu\text{g}/\text{m}^3$ Calendar Quarter

SOURCE: State of California 1995.

ppm = parts per million; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter.

The APCD has also established a set of rules and regulations initially adopted on January 1, 1969, and periodically reviewed and updated. The rules and regulations define requirements regarding stationary sources of air pollutants and fugitive dust.

c) Existing Air Quality

The project area is within the SDAB. Air quality at a particular location is a function of the kinds and amounts of pollutants being emitted into the air locally and throughout the basin and the dispersal rates of pollutants within the region. The major factors affecting pollutant dispersion are wind speed and direction, the vertical dispersion of pollutants (which is affected by inversions), and the local topography.

Air quality is commonly expressed as the number of days in which air pollution levels exceed state standards set by the California Air Resources Board (CARB) and federal standards set by the EPA (see Table 4I-1). The concentration of pollutants within the SDAB is measured at 10 stations maintained by the APCD and the CARB. The station nearest the project area measuring a full range of pollutants is on Overland Avenue in the Kearny Mesa area of the city of San Diego, about 12 miles southeast of Del Mar Highlands Estates (monitoring of sulfur dioxide was discontinued at this station in 1994). The Del Mar station, about three miles southwest of Del Mar Highlands Estates, monitors only ozone levels. Neither station monitors lead concentrations. However, the 1994 lead levels measured at other monitoring stations in the SDAB were well below both federal and state standards.

Table 4I-2 summarizes the number of days annually from 1990 to 1994 during which state and federal standards were exceeded in the SDAB overall, while Table 4I-3 lists these data for the Kearny Mesa and Del Mar monitoring stations.

Ozone

San Diego County exceeded the federal standard for ozone on 9 days and the state standard on 79 days in 1994 and is classified as a state and federal "serious" area for ozone (County of San Diego 1995). The federal standard for ozone was not exceeded at the Kearny Mesa station in 1994, while the state standard was exceeded on two days. At the Del Mar station, the federal standard also was not exceeded during 1994, while the state standard was exceeded on four days.

In 1994, although ozone concentrations measured in San Diego County exceeded the federal ozone air quality standard on nine days, on only two of those days was the peak ozone concentration attributed primarily to emission sources within San Diego County. On the other seven days, ozone transported into San Diego from the South Coast Air Basin was a significant factor (County of San Diego 1995). On average, approximately 42 percent of the days over state standards since 1987 were attributable to pollution

**TABLE 4I-2
SUMMARY OF AIR QUALITY DATA
FOR THE SAN DIEGO AIR BASIN**

Pollutant	Number of Days Over Standard									
	State					Federal				
	1990	1991	1992	1993	1994	1990	1991	1992	1993	1994
Ozone (O ₃) - 1 hour	139	106	97	89	79	39	27	19	14	9
Carbon monoxide (CO) - 8 hour	1	0	0	0	0	0	0	0	0	0
Carbon monoxide (CO) - 1 hour	0	0	0	0	0	0	0	0	0	0
Nitrogen dioxide (NO ₂) - State 1 hour; Federal annual avg.	0	0	0	0	0	NE	NE	NE	NE	NE
Sulfur dioxide (SO ₂) State 1 hour; Federal annual average	0	0	0	0	0	NE	NE	NE	NE	NE
Particulates* (PM-10) - 24 hour	11/80	20/83	7/75	14/76	25/87	0/80	0/83	0/75	0/76	0/87
Lead (Pb) - State 30- day average; Federal calendar quarter	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

SOURCE: State of California 1991, 1992, 1993b, 1994, 1995.

*Number of samples over standard/number of samples collected.

N/A: data not available.

NE: standard not exceeded.

**TABLE 4I-3
NUMBER OF DAYS AIR QUALITY STANDARDS WERE EXCEEDED
AT KEARNY MESA AND DEL MAR MONITORING STATIONS**

Pollutant	Year				
	1990	1991	1992	1993	1994
<u>Kearny Mesa Station</u>					
Ozone					
Federal 1-hour standard (0.12 ppm, 235 $\mu\text{g}/\text{m}^3$)	13	8	6	3	0
State 1-hour standard (0.09 ppm, 180 $\mu\text{g}/\text{m}^3$)	29	25	15	15	2
Carbon monoxide					
Federal 8-hour average (9 ppm, 10 mg/m^3)	0	0	0	0	0
State 8-hour average (9.0 ppm, 10 mg/m^3)	0	0	0	0	0
State 1-hour average (20 ppm, 23 mg/m^3)	0	0	0	0	0
Nitrogen dioxide					
Federal annual average (0.053 ppm, 100 $\mu\text{g}/\text{m}^3$)‡	0.025*	0.027	0.024	0.023	0.024
State 1-hour standard (0.25 ppm, 470 $\mu\text{g}/\text{m}^3$)	0	0	0	0	0
Sulfur dioxide					
Federal annual average (0.03 ppm, 80 $\mu\text{g}/\text{m}^3$)‡	0.004*	0.002	0.004	0.002*	NR
State 1-hour average (0.25 ppm, 655 $\mu\text{g}/\text{m}^3$)	0	0	0	0*	NR
State 24-hour average (0.04 ppm, 105 $\mu\text{g}/\text{m}^3$)	0	0	0	0*	NR
Suspended 10-micron particulate matter (PM-10)					
Federal 24-hour average (150 $\mu\text{g}/\text{m}^3$)†	NR	NR	NR	0/16	0/57
Federal annual arithmetic mean (50 $\mu\text{g}/\text{m}^3$)‡	NR	NR	NR	32.6*	30.0*
State 24-hour average (50 $\mu\text{g}/\text{m}^3$)†	NR	NR	NR	3/16	1/57
State annual geometric mean (30 $\mu\text{g}/\text{m}^3$)‡	NR	NR	NR	27.1*	28.1*
<u>Del Mar Station</u>					
Ozone					
Federal 1-hour standard (0.12 ppm, 235 $\mu\text{g}/\text{m}^3$)	9	7	3	3	0
State 1-hour standard (0.09 ppm, 180 $\mu\text{g}/\text{m}^3$)	23	28	19	19	4

SOURCE: State of California 1991, 1992, 1993b, 1994, 1995

ppm - parts per million
 mg/m^3 - milligrams per cubic meter
 $\mu\text{g}/\text{m}^3$ - micrograms per cubic meter
 NR - not reported at this station

*Data points are valid, but an insufficient number were collected to meet EPA and/or CARB representative criteria.

†Number of samples over standard/number of samples collected.

‡Data shown is in $\mu\text{g}/\text{m}^3$.

transported from Los Angeles (SANDAG 1994: 249-250). The 1994 Regional Transportation Plan concludes that ozone remains the major primary pollutant in the San Diego region.

Carbon Monoxide

No violations of the state standard have been recorded for carbon monoxide since 1991. The basin can be reclassified as a state attainment area for carbon monoxide after three years of no violations (County of San Diego Information Desk, pers. comm. 1993). Therefore, the APCD applied to the CARB for transition status for carbon monoxide (County of San Diego 1992:8). The basin was reclassified as a state attainment area for carbon monoxide on November 10, 1994 (County of San Diego Information Desk, pers. comm. 1995).

The basin currently is classified as a federal nonattainment area for carbon monoxide; however, no violations of the federal standard have been recorded since 1989. Because the process for transitioning from federal nonattainment to federal attainment status is quite involved, the APCD has not yet applied for this change in status. It is expected that application for federal transition status for carbon monoxide will occur in 1995 (Goggin, pers. comm. 1995). It should be noted, however, that the state standard for carbon monoxide is more stringent than the federal standard.

Particulates (PM-10)

Particulates within the respirable range (10 microns in size or less) are reported as a 24-hour and an annual measure. The basin overall is currently in attainment of the federal standard, but has not met the more stringent state standard.

Nitrogen Dioxide, Sulfur Dioxide, and Lead

The basin is in attainment for these pollutants.

Ozone and particulates present special control strategy difficulties in the SDAB because of climatological and meteorological factors. Ozone is the end product of the chain of chemical reactions that produces photochemical smog from hydrocarbon emissions. A major source of hydrocarbon emissions is motor vehicle exhausts. In the SDAB, only part of the ozone contamination is derived from local sources; under certain conditions, contaminants from the South Coast Air Basin (such as the Los Angeles area) are windborne over the ocean into the SDAB. When this happens, the combination of local and transported pollutants produces the highest ozone levels measured in the basin.

Local agencies can control neither the source nor the transportation of pollutants from outside the basin. The APCD's policy, therefore, has been to control local sources effectively enough to reduce locally produced contamination to clean air standards.

For several reasons hinging on the area's dry climate and coastal location, the SDAB has special difficulty in developing adequate tactics to meet present particulate standards.

At present, the air basin is a nonattainment area with respect to both the state and the federal standards for ozone and for the state PM-10 particulate standard. Furthermore, the basin is classified as a nonattainment area for the federal standard for carbon monoxide. However, the basin is classified as attainment for the state standard for carbon monoxide, and the federal standard has not been exceeded since 1989. The SDAB presently meets the attainment standards for nitrogen dioxide, lead, and sulfur dioxide.

d) Standards and Criteria

City of San Diego

The City of San Diego's Significance Determination Guidelines (1991) provide criteria for determining significant direct, localized air quality impacts based on projected project roadway levels of service.

According to the City's guidelines, local air quality impacts can occur if traffic generated in the project area were to result in inadequate traffic flow. Substandard levels of service (below LOS D) create additional delays at the intersections which result in longer idling times for vehicles. Under the City's Significance Determination Guidelines, development which would cause the level of service on a six-lane prime arterial to deteriorate to LOS E or worse, or from LOS D to F, would result in a significant air quality impact. Significant air quality impacts would also occur if development caused levels of service on four-lane prime arterials to degrade to LOS F. If development causes the level of service on four-lane major roads to drop to LOS E or worse, or causes the average daily traffic to exceed the design capacity for these roads of 30,000 average daily trips, then significant air quality impacts would also occur (City of San Diego 1991:7).

California Air Resources Board Guidelines

For long-term emissions, the direct impacts of a project can be measured by the degree to which the project is consistent with regional plans to improve and maintain air quality. The regional plan for San Diego is the 1991/1992 RAQS and attached TCM plan. The CARB provides criteria for determining whether a project conforms with the RAQS (State of California 1989), which include the following:

1. Is a regional air quality plan being implemented in the project area?
2. Is the project consistent with the growth assumptions in the regional air quality plan?
3. Does the project incorporate all feasible and available air quality control measures?

Air Quality Issue

1. To what extent does the proposed project conform with the land use intensities and timing assumed in the Regional Air Quality Strategies?

1) Issue

To what extent does the proposed project conform with the land use intensities and timing assumed in the Regional Air Quality Strategies?

Impacts

a) Construction Emissions

During construction, temporary emissions would be generated by construction equipment used to build the proposed project. Grading would disturb surface soils and cause a discharge of particulates into the air. Dust control during grading operations would be regulated in accordance with the rules of the San Diego APCD and the regulations of the City of San Diego Land Development Ordinance. All project construction is required to include the following measures to reduce fugitive dust impacts:

1. All unpaved construction areas shall be sprinkled with water or other acceptable San Diego APCD dust control agents during dust-generating activities to reduce dust emissions. Additional watering or acceptable APCD dust control agents shall be applied during dry weather or windy days until dust emissions are not visible.
2. Trucks hauling dirt and debris shall be covered to reduce windblown dust and spills.
3. On dry days, dirt or debris spilled onto paved surfaces shall be swept up immediately to reduce resuspension of particulate matter caused by vehicle movement. Approach routes to construction sites shall be cleaned daily of construction-related dirt in dry weather.
4. On-site stockpiles of excavated material shall be covered or watered.

Additionally, construction would be a one-time, short-term activity.

b) Operations Emissions

The primary air quality impacts which would occur from the future development of the proposed project area would be air pollutant emissions from automobile and truck traffic

to and from the development. Additional local emissions would result from the burning of natural gas for space and water heating, fireplace emissions, and basinwide emissions from power plants generating electricity for use in the development.

The proposed project site is in the city of San Diego, which is within the San Diego Air Basin. The 1991/1992 RAQS will be implemented by APCD throughout the air basin. Therefore, the proposed project fulfills the first criteria from the CARB guidelines described in Existing Conditions.

Normally, if a project is consistent with the City's General Plan or community plan, it can be considered consistent with the growth assumptions in the RAQS (State of California 1989). The proposed Del Mar Highlands Estates project would be consistent with PRD regulations and would generally comply with the land use goals, objectives, and recommendations of the *Progress Guide and General Plan*, the Framework Plan, and City Council Policies 600-29 and 600-30. Furthermore, the proposed project would cluster development and dedicate open space land consistent with the Framework Plan Environmental Tier. Therefore, it can be concluded that the proposed project is consistent with the growth assumptions in the RAQS.

c) **Forecasted Traffic Conditions**

Mobile sources (motor vehicles) account for a large portion of the current emissions of carbon monoxide, nitrogen oxides, and volatile organic gases in the San Diego Air Basin. Localized elevated levels of pollutants above the air basin's ambient conditions can occur adjacent to roadways if the roadways' levels of service are substandard, resulting in slower traffic, stop-and-go traffic, and increased delays at intersections. A degraded LOS would cause individual cars to emit more pollutants for a longer period of time as they travel through an area.

As shown on Table 4H-3 in the traffic section, the intersections with the lowest levels of service would be El Camino Real at Via de la Valle and El Camino Real at San Dieguito Road, which would be at LOS D and LOS B (worst case), respectively, at buildout of the area. Provided the project applicant contributes to the road improvements as proposed in the traffic section of this EIR, there are no intersections in the proposed project area projected to operate below LOS D, and traffic generated by buildout of the proposed project would be adequately accommodated.

Significance of Impacts

Because dust control during grading operations would be regulated in accordance with the rules of the San Diego APCD and the regulations of the City of San Diego Land

Development Ordinance, and since construction would be a one-time, short-term activity, air quality impacts due to construction of the proposed project would not be significant.

In accordance with the City's significance thresholds described previously, there would be no significant air quality impacts since the proposed project would not create LOS E or F conditions at intersections.

The proposed project would be consistent with the RAQS and would not create direct traffic impacts to the surrounding street system provided that the recommended road improvements are constructed. Therefore, direct air quality impacts would not occur if the proposed project were implemented.

Mitigation, Monitoring, and Reporting

No mitigation is required.

J. Noise

An acoustical analysis was prepared for Del Mar Highlands Estates by Giroux & Associates. This report is summarized below and is included in Appendix H of this EIR.

Existing Conditions

The community noise equivalent level (CNEL) is a 24-hour A-weighted average sound level [dB(A)] from midnight to midnight obtained after the addition of 5 dB to sound levels occurring between 7:00 P.M. and 10:00 P.M. and 10 dB to sound levels occurring between 10:00 P.M. and 7:00 A.M. A-weighting is a frequency correction that often correlates well with the subjective response of humans to noise. The 5 dB and 10 dB penalties added to the evening and nighttime hours, respectively, account for the added sensitivity of humans to noise during these time periods.

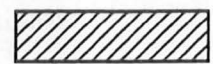
Exterior noise impacts to future sensitive receivers within the project site were evaluated in relation to the noise level standards promulgated in the City of San Diego's Progress Guide and General Plan Transportation Element (City of San Diego 1989:272). Interior noise impacts were also considered in relation to standards established by the City in their General Plan Transportation Element and in their Noise Abatement and Control Ordinance (Municipal Code Section 59.5.0701).

The noise level standards contained in the Progress Guide and General Plan Transportation Element apply to transportation noise sources (City of San Diego 1989:272). The exterior noise level standard is 65 CNEL for residences, parks, and schools [Figure 4J-1]. A maximum interior CNEL of 45 dB(A) is mandated for multi-family dwellings and is considered a desirable noise exposure standard for single-family dwelling units as well.

The City of San Diego assumes that standard construction techniques will provide a 15-decibel reduction of exterior noise levels to an interior receiver. With this criteria, standard construction could be assumed to result in interior noise levels of 45 dB(A) or less when exterior sources are 60 decibels or less. When exterior noise levels are greater than 60 dB(A), consideration of specific construction techniques is required.

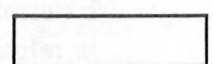
Existing noise levels within the project area derive almost exclusively from transportation sources, especially vehicular sources on Interstate 5. Some distant Naval Air Station Miramar flight activity noise is sometimes faintly heard. Because of its intermittent nature, however, this noise is not loud enough to measurably affect baseline noise conditions which are computed using a 24-hour baseline.

Land Use		Annual Community Noise Equivalent Level in Decibels					
		50	55	60	65	70	75
1.	Outdoor Amphitheaters (may not be suitable for certain types of music)	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
2.	Schools, Libraries	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
3.	Nature Preserves, Wildlife Preserves	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
4.	Residential-Single Family, Multiple Family, Mobile Homes, Transient Housing	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
5.	Retirement Home, Intermediate Care Facilities, Convalescent Homes	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
6.	Hospitals	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
7.	Parks, Playgrounds	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
8.	Office Buildings, Business and Professional	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
9.	Auditoriums, Concert Halls, Indoor Arenas, Churches	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
10.	Riding Stables, Water Recreation Facilities	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
11.	Outdoor Spectator Sports, Golf Courses	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
12.	Livestock Farming, Animal Breeding	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
13.	Commercial-Retail, Shopping Centers, Restaurants, Movie Theaters	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
14.	Commercial-Wholesale, Industrial Manufacturing, Utilities	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
15.	Agriculture (except Livestock), Extractive Industry, Farming	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible
16.	Cemeteries	Compatible	Compatible	Compatible	Incompatible	Incompatible	Incompatible



COMPATIBLE

The average noise level is such that indoor and outdoor activities associated with the land use may be carried out with essentially no interference from noise.



INCOMPATIBLE

The average noise level is so severe that construction costs to make the indoor environment acceptable for performance of activities would probably be prohibitive. The outdoor environment would be intolerable for outdoor activities associated with the land use.

SOURCE: Progress Guide and General Plan (Transportation Element)

FIGURE 4J-1

City of San Diego Noise/Land Use Compatibility Chart

Existing project site noise levels were estimated using a computer model (FHWA-RD-77-108, Calveno modification), which predicts on-site noise levels at 100 feet from the centerline given variables such as traffic volume, distance, and speed. I-5 traffic noise levels were calculated to be 78.8 dB CNEL at 100 feet from the freeway centerline based on current traffic volumes, vehicle mixes, and travel speeds. Assuming a conservative (over-predictive) drop-off rate of 3 dB per distance doubling, the combined effects of atmospheric spreading and molecular absorption produce a baseline exposure of 56.3 dB CNEL at the western project boundary. Under a more likely drop-off rate of 4.5 dB per distance doubling, the westernmost project boundary would have a noise level of 48.0 dB, which decreases eastward in moving across the project site. Such levels do not create any constraint to residential development of the project site. Freeway noise is faintly audible, especially for units near the western site boundary with a direct view of any portion of I-5. With blockage by intervening terrain for most of the site, noise is not a development issue.

Noise Issue

1. Would implementation of the proposed project result in future noise levels compatible with proposed uses?

1) Issue

Would implementation of the proposed project result in future noise levels compatible with proposed uses?

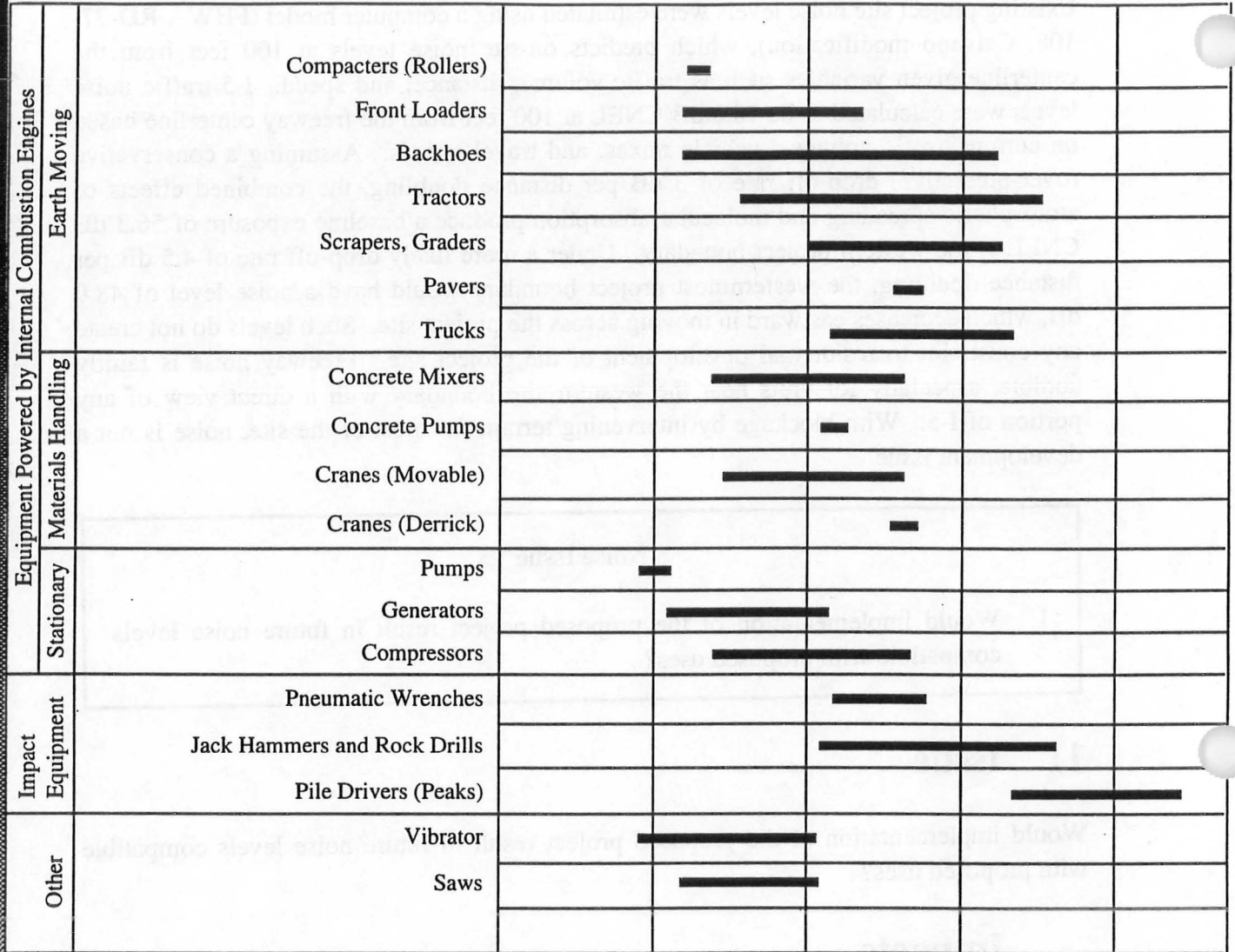
Impacts

a) Construction Noise Impacts

Temporary construction noise impacts vary markedly, because the noise strength of construction equipment ranges widely as a function of the equipment used and its activity level. Short-term construction noise impacts tend to occur in discrete phases dominated initially by site clearing and grading, then by foundation construction, and finally building construction. The earth-moving (grading) activities are the noisiest sources during construction, with equipment noise ranging from 75 to 90 dB(A) at 50 feet from the source (Figure 4J-2). The range of noise levels shown in the figure is meant to indicate that long-term (hourly or more) noise levels are at the lower end of the range, while short-term peaks are at the upper end. As a general rule, noise decreases by a factor of 6 dB per doubling of distance. Based on this rule, quieter construction noise sources are expected to drop below 60 dB by about 300 feet from the source, while the loudest sources might still be detectable above the local background beyond 1,000 feet from the

NOISE LEVEL (dBA) AT 50 FT

70 80 90 100



SOURCE: EPA PB 206717, Environmental Protection Agency, December 31, 1971, "Noise from Construction Equipment & Operations"

FIGURE 4J-2
Typical Construction Equipment
Noise Generation Levels

construction area. With hilly topography in the project vicinity, the terrain shielding effects would limit the “noise envelope” around each individual construction site to considerably less than the theoretical maximum presented above.

Construction noise sources are not strictly related to a noise standard because they occur only during selected times, and the source strength varies sharply with time. The penalty associated with noise disturbance during quiet hours and the nuisance factor accompanying such disturbance usually leads to time limits on grading activities being imposed as conditions on grading permits. The hours from 7 A.M. to 7 P.M., Monday through Saturday, are the times allowed in San Diego’s Noise Ordinance for construction or grading. Section 59.5.0404 of the Municipal Code also contains a performance standard that limits the allowable construction noise levels at the property line of any adjacent residential uses. The allowable average noise exposure during the permissible 12-hour construction “window” is 75 dB.

There is a potential for future Del Mar Highlands Estates residents to receive temporary nuisance noise impacts due to adjacent construction activities if all lots are not developed with homes at the same time. Construction activities would create short-term noise increases within the project site, although the loudest noise generator, the grading equipment and activity, would all be completed prior to home construction on any of the lots. In any event, construction-related noise would gradually decline and would cease completely by buildout of the project. Agricultural activities would continue off-site to the southeast of the project site. The exterior noise level standard for agricultural land uses is 75 CNEL (see Figure 4J-1). Compliance with the construction noise ordinance discussed above will ensure that this noise level standard is not exceeded at the adjacent agricultural users.

b) Development-related Vehicular Noise Impacts

Upon completion, project-related traffic will cause an incremental increase in noise levels throughout the project area. Due to the small number of trips generated by the planned 172 dwelling units, the regional noise impact of this project is limited. Therefore, the impact of ambient noise on the project site, rather than the project’s traffic noise impacts on the entire community, is the focus of this noise analysis.

Project-related traffic may incrementally contribute to the noise exposure of off-site receiver locations. However, high nonproject traffic levels will substantially mask any small project noise contribution. Traffic noise levels attributable to the proposed project are shown in Table 4J-1.

**TABLE 4J-1
TRAFFIC NOISE LEVELS
ATTRIBUTABLE TO THE PROPOSED PROJECT**

Location	Existing Levels	Projected Levels with Project	Increase
El Camino Real			
North of San Dieguito Road	64.7	64.9	+0.2 dB
South of San Dieguito Road	64.7	65.0	+0.3 dB
San Dieguito Road			
North access to El Camino Real	63.1	63.7	+0.6 dB
East of Derby Farms	63.1	63.3	+0.2 dB

Maximum off-site traffic noise impacts are 0.6 dB. Noise level differences of less than 1 dB are not distinguishable even in a laboratory setting—much less in an ambient environment. The project is limited in scope and would not create a discernible change in off-site traffic noise levels.

Two roadways that could affect project site noise exposure are I-5 and El Camino Real. The affordable housing on the proposed project (Lot 149) and Lot 148 would have the maximum exposure to both sources. The future traffic noise exposure was determined (based on previous traffic volume forecasts for Framework Plan buildout) to be 80 dB CNEL at 100 feet from the I-5 centerline and 67 dB CNEL at 100 feet from El Camino Real. These two sources were adjusted for the source-receiver separation between each roadway and the distance to the affordable housing (Lot 149) or Lot 148 building pads. The noise impact from each roadway and the combined noise impacts are shown in Table 4J-2.

**TABLE 4J-2
TRAFFIC NOISE IMPACTS AT THE PROPOSED PROJECT SITE**

Roadway	Distance to Project	CNEL at Project*
I-5	5,000 feet	54 dB
El Camino Real	1,200 feet	51 dB
Both roadways (combined impact)		56 dB

*CNEL is expressed as maximum value assuming no excess attenuation from ground absorption effects (acoustically "hard" surface).

The maximum on-site traffic noise exposure of 56 dB CNEL is well below the City of San Diego standard of 65 dB CNEL for residential uses. With actual limitations of the field of view (and noise exposure) to traffic sources, on-site noise exposure would be

even less than the calculated worst-case 56 dB CNEL noise level. “Ultimate” noise exposure is not a constraint to the development of the Del Mar Highlands Estates property as currently proposed.

In addition to traffic noise, on-site noise generation may result from small-scale agricultural activities on new lots where a portion of the various parcels are devoted to orchards, stables, or other rural activities. Only the six estate lots exceed 2.0 acres, the largest being 11.75 acres. This is likely to preclude agricultural activities involving heavy tractors or similar equipment. Any noise impacts from maintenance of such operations would be infrequent (tree pruning, hay delivery to stables, etc.) and would be consistent with the semirural character of the project site. Experience in comparable semirural estate developments has shown that noise is normally not a source of land use conflict and no adverse effects are assessed for this issue.

Significance of Impacts

The proposed project would not result in significant long-term noise impacts on the project site or adjacent development. Construction activities may create a temporary nuisance impact if new construction occurs adjacent to already completed residences. Construction activities shall be completed in compliance with the City of San Diego Noise Ordinance. Because grading (the noisiest construction activity) will be completed before any homes are built and occupied, and because a reasonable distance buffer will exist on most large lots in the development, custom construction of individual homes is not expected to create any significant temporary noise impacts.

Mitigation, Monitoring, and Reporting

No mitigation measures are necessary.

K. Public Facilities and Services

Existing Conditions

In preparing this section of the EIR, information was requested from responsible public agencies and districts. Because many of the utilities and services issues have a regional setting, Figure 4K-1 has been included to show the locations of community facilities in the project area.

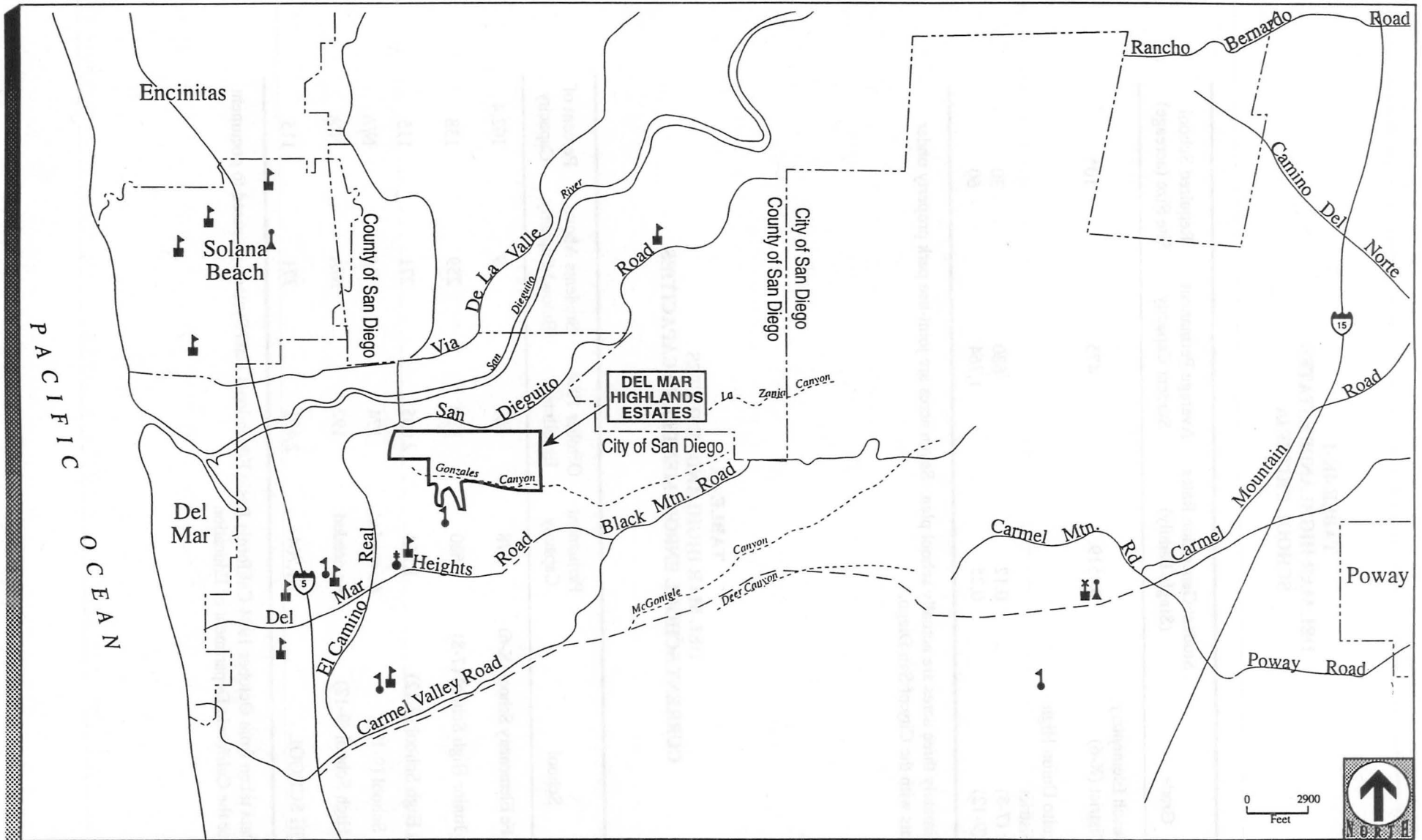
a) Elementary, Junior High, and High Schools

The project site is located within the jurisdiction of the Solana Beach Elementary School District (ESD) and the San Dieguito Union High School District (HSD). The elementary school currently expected to serve the project site is Solana Santa Fe, located at 6570 El Apajo in Rancho Santa Fe, approximately three and one-half miles from the Del Mar Highlands Estates property. Other school facilities operated by the Solana Beach ESD are Solana Highlands Elementary School, Carmel Creek Elementary School, Solana Vista Elementary School, and Skyline Elementary School. These schools would not be expected to serve project-generated children. There is also a parochial elementary school located off Nardo Avenue, approximately three miles northwest of the Del Mar Highlands Estates site.

Earl Warren Junior High School is located at 155 Stevens Avenue in Solana Beach, approximately three miles northwest of the project site. Two other junior high schools (Diegueño and Oak Crest) are also part of the San Dieguito Union HSD but are located in Encinitas, approximately five miles northwest of the project site.

Torrey Pines High School, which currently serves the project vicinity, is located approximately 0.75 mile south of the site, at 3710 Del Mar Heights Road. San Dieguito High School, in Encinitas, is too far north (approximately eight miles) for enrollment of students from the project site. Two special schools are also part of the San Dieguito Union HSD. These schools, Sunset Continuation and North Coast, are responsive to students with special educational or timing needs (e.g., students who work during normal schools hours or are involved in full-time athletic or arts programs). Both are located at 675 Requeza in Encinitas (approximately 8.5 miles northwest of the site). Although these schools are geographically removed from the site, special needs students from the proposed project could enroll at one of these two schools.

The student generation rates, average school capacities, and school site size requirement for each of the school districts serving the project site are identified in Table 4K-1. Table 4K-2 provides a summary of the enrollment status of existing schools and the capacity of existing and proposed schools that could serve the site. Solana Beach ESD



Source: Helix Environmental 1995

-  Schools
-  Fire Stations
-  Libraries
-  Public Parks
-  Police Stations

FIGURE 4K-1

Existing Community Facilities

**TABLE 4K-1
DEL MAR HIGHLANDS ESTATES
SCHOOL CRITERIA**

Grade	Student Generation Rates (Single Family)	Average Permanent Student Capacity	Required School Site Size (acreage)
Solana Beach Elementary School District (K-6)	0.4519	475	10*
San Dieguito Union High School District			
Junior (7-8)	0.12	680	30
High (9-12)	0.25	1,764	60

*Approximately three acres are actually school plan. Seven acres are joint-use park property under agreements with the City of San Diego.

**TABLE 4K-2
DEL MAR HIGHLANDS ESTATES
CURRENT SCHOOL ENROLLMENTS AND CAPACITIES**

School	Permanent Capacity	October 1994 Enrollment	Students Above (Below) Capacity	Percent of Capacity
Solana Santa Fe Elementary School (K-6)	378	387	9	102.4
Earl Warren Junior High School (7-8)	680	939	259	138
Torrey Pines High School (9-12)	1,764	2,035	271	115
Sunset High School (9-12)	As needed	174	N/A	N/A
North Coast High School (9-12)	As needed	192	N/A	N/A
TOTAL HIGH SCHOOL	1,764+	2,401	271	115

SOURCE: Data taken from October 1994 California Basic Educational Data System, prepared to document enrollment for the California Department of Education.

includes both permanent and district-owned relocatable classrooms in calculating total capacity. The latter table shows that for school year 1994-95, Solana Santa Fe Elementary School is operating at 102 percent of capacity. The junior and high schools to which project students would be sent are operating at 138 percent and 115 percent of permanent capacity, respectively. In October 1994, the district approved a Master Development School and Facilities Needs Analysis, which indicates that there is currently no capacity for additional students district-wide. The San Dieguito Union HSD is currently using portable classrooms to alleviate overcrowding in permanent facilities. Currently, Earl Warren has 16 and Torrey Pines has 19 on-site portables. Although the use of portable classrooms is considered a temporary rather than permanent measure, their presence would support absorption of 103 and 140 additional students, respectively.

b) Water

The Metropolitan Water District of Southern California (MWD) has supplied San Diego County, through the San Diego County Water Authority (SDCWA), with a reliable source of water for the past 45 years. MWD's sources of water are the Colorado River and the State Water Project. Future water availability, however, is not guaranteed due to the uncertain reliability of imported water from the Colorado River and the inefficiencies of the California Aqueduct. In addition, Arizona presently withdraws only 66 percent of its legal water entitlement from the Colorado River, enabling California to withdraw more than its legal entitlement. However, Arizona is expected to commence withdrawing its full entitlement in 1996, which would result in reduced water availability in California.

The San Diego region has a limited local supply of water; approximately 90 percent of the region's water is imported. The remaining percentage is obtained from local groundwater or surface runoff into reservoirs. Recent drought conditions in northern California limited the availability of imported water to local suppliers. Regionally, the shortages resulted in mandatory and, for the City of San Diego, voluntary water conservation measures.

The MWD, the SDCWA, and local jurisdictions are actively pursuing alternatives to existing water systems and supplies in response to future water shortages. Alternatives are being pursued to deal with potential problems associated with earthquakes, drought, and continued population growth in the major urban areas. These alternatives include resolution of problems associated with the California Aqueduct, transfer of water provided from federal projects and agricultural operations, construction of local emergency water storage reservoirs, expansion of water conservation and reclamation programs, and use of desalination plants.

~~A Water Master Plan for the City is currently being drafted. Phase I ended in December 1992 and entailed development of project software (water forecasting and modeling tools). Phase II studies are now under way. These will determine the future facility~~

~~needs for the entire city; a completion date is currently unspecified (LaSelle, pers. comm. 1994).~~

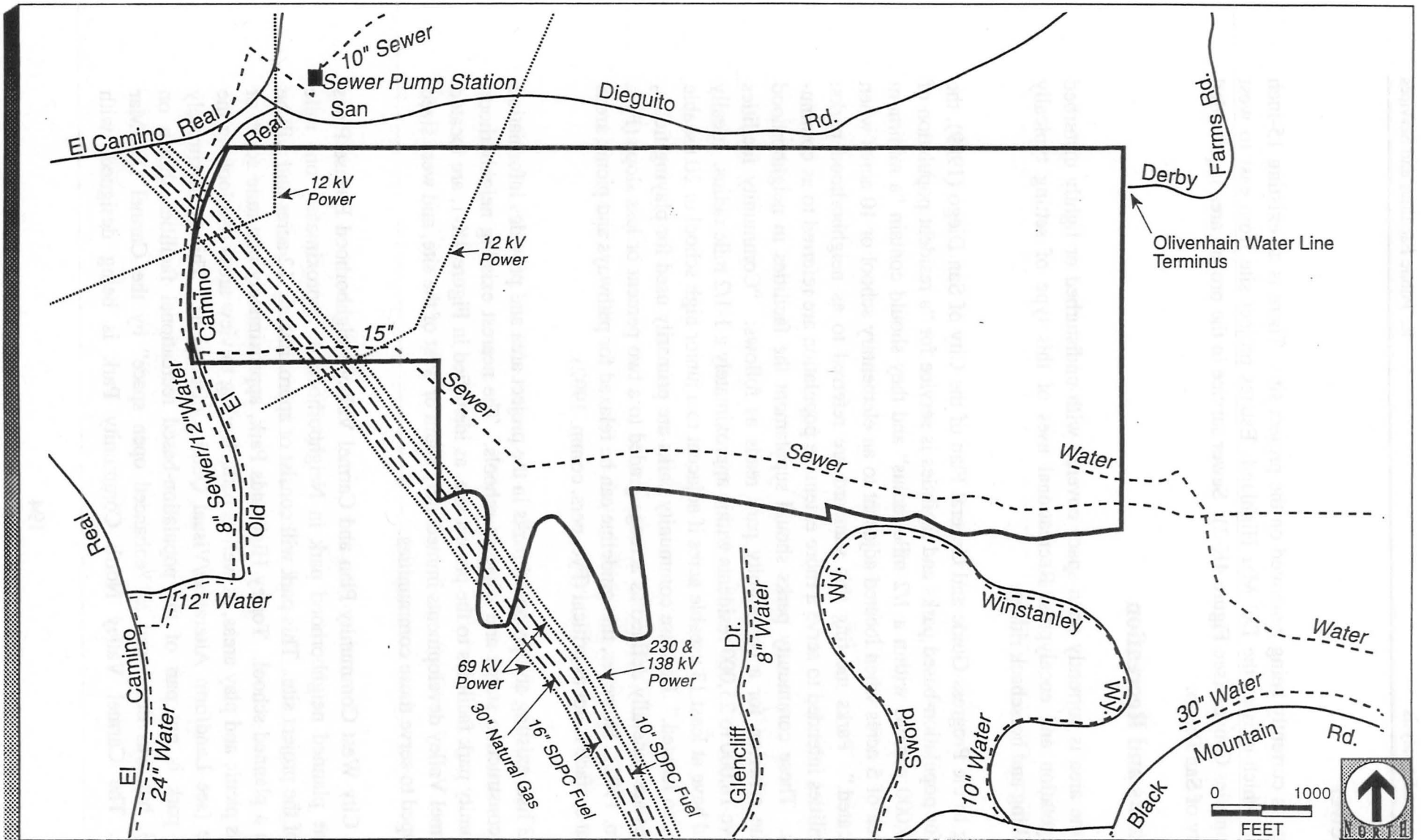
Planned improvements to the City's domestic water supply system include an expansion of the Miramar Water Treatment Plant (under way), future construction of Black Mountain Reservoir (to serve FUA development), and two new major delivery pipelines (Carmel Mountain Road and Green Valley). The Green Valley pipeline has been completed, and the Carmel Mountain Road pipeline will be built based on development demand. A pipeline alignment has not yet been determined.

A potential North City Filtration Plant is in the feasibility stage of review. The service area for this plant has not been determined but may include the FUA (LaSelle, pers. comm. 1994).

The project site is within the water service area of the City's Miramar Water Treatment Plant. Potable water is currently delivered to the vicinity via the 36-inch Rancho Bernardo pipeline and the 30-inch Del Mar Heights pipeline. The closest mains are a 24-inch main in El Camino Real, a 20-inch main in Via de la Valle, a 12-inch pipe in Old El Camino Real, and a 10-inch main within Sword Way. None of these abut the proposed development. The Del Mar Heights pipeline follows the existing alignment of Black Mountain Road through Subarea III of the FUA, approximately 1,500 feet south of the project site, and continuing west to Carmel Valley and ultimately the city of Del Mar (Figure 4K-2). There are two known active private water wells on adjacent properties southwest of the project site, adjacent to Old El Camino Real. (It should also be noted that the service area for Olivenhain Water District has an end point just east of Del Mar Highlands Estates in Derby Farms Road. Water for this project would be provided by the City of San Diego. Therefore, Olivenhain facilities have not been included in this analysis.)

~~The use of reclaimed water for some domestic uses is currently being evaluated. The City, through the Greater San Diego Clean Water Program, is planning upgrades of existing sewage collection and treatment facilities. Plans involve construction of a system of reclaimed water plants designed to provide tertiary treatment of raw sewage, resulting in reclaimed water suitable for nondomestic irrigation and other nonpotable uses. In September 1994, the City's Metropolitan Wastewater Department implemented the "optimized" reclaimed water distribution system for reclaimed water in the City's northern service area. The project area is outside of this service area and, therefore, will not receive or use reclaimed water from the City within the foreseeable future.~~

~~Existing water consumption due to on-site farming activities is estimated at 300,000 gallons per day (gpd), based on approximately 200 acres of field crops and 1,500 gpd per acre. This factor is based on measured agricultural water usage rates in the Escondido area (Willdan Associates 1992).~~



Source: Helix Environmental 1995

FIGURE 4K-2
Del Mar Highlands Estates
Existing Utility Lines

c) Sewer

No sewage is currently being generated on the project site. There is an existing 15-inch sewer line which crosses the Del Mar Highlands Estates project site from east to west within Gonzales Canyon (see Figure 4K-2). Sewer service in the project area is provided by the City of San Diego.

d) Parks and Recreation

Much of the area is currently open space covered with undisturbed or lightly disturbed native vegetation and eucalyptus. Recreational uses of this type of setting typically include hiking and horseback riding.

According to the Progress Guide and General Plan of the City of San Diego (1989), the criterion for population-based parks and facilities is service for "a resident population of 3,500 to 5,000 persons within a 1/2 mile radius" and they should contain "a minimum useable area of 5 acres when located adjacent to an elementary school or 10 acres when not so located." Parks meeting this standard are referred to as neighborhood parks. Larger facilities intended to serve a more extensive population are referred to as community parks. These community parks should supplement the facilities in neighborhood parks. The criterion for a community park reads as follows: "Community facilities should serve 18,000 to 25,000 residents within approximately a 1-1/2 mile radius. Ideally they should have at least 13 useable acres if adjacent to a junior high school or 20 useable acres if not so located." Because community parks are primarily used for playing fields, usable acres are generally defined as acreage graded to a two percent or less slope (Fye, pers. comm. 1992). However, this guideline can be relaxed for pathways and picnic areas where a flat surface is not as critical (Fye, pers. comm. 1992).

Table 4K-3 lists existing and proposed parks in the project area and provides information regarding construction status and adjacent schools. The nearest existing neighborhood and community park facilities to the project site, as identified in Figure 4K-1, are located within Carmel Valley developments immediately south or west of the site, and were sized and developed to serve those communities.

The North City West Community Plan and Carmel Valley Neighborhood Precise Plans identify one planned neighborhood park in Neighborhood 4, approximately one mile southeast of the project site. This park will consist of approximately 12 acres and will be adjacent to a planned school. Torrey Highlands Park, approximately one mile south of the site, has picnic and play areas, as well as paths leading to view areas overlooking the project site (see Landform Alteration/Visual Quality discussion). This approximately seven-acre park is not part of the population-based recreational facilities shown on Table 4K-3, but was developed as "enhanced open space" by the Carmel Del Mar developers. The Carmel Valley North Community Park is being designed, with

**TABLE 4K-3
PROPOSED AND EXISTING PARKS IN THE PROJECT VICINITY**

Park	Site Developed?	Acreage	Adjacent School
<u>Neighborhood Parks</u>			
Solana Highlands Park	Yes	12	Solana Highlands Elementary
Carmel Del Mar Park	Yes	12	Carmel Del Mar Elementary
Carmel Del Mar 4	No	12	Planned
Crest Canyon Park	No	10*	None
<u>Community Parks</u>			
Black Mountain Ranch	No	30	None
Canyonside	Yes	20	None
Subarea IB	No	35	None
Subarea III	No	35	None
<u>Regional Resource-based Parks</u>			
Black Mountain	N/A		None
San Dieguito River Park	No	80,000†	None
Torrey Pines Golf Course and City Park	Yes	420	None
Torrey Pines State Reserve and Beach	N/A	1,750‡	None
Los Peñasquitos Canyon Preserve	N/A	3,000	None

*This park is adjacent to a 133-acre open space nature reserve.

†This acreage represents the Focused Planning Area boundary of the San Dieguito River Park, which is presently 50 percent publicly owned.

‡State Park beach extends from Sixth Street to Black's Beach; approximately six miles.

construction to start in fiscal year 1997. One existing community park (Canyonside) is located approximately six miles southeast of Del Mar Highlands Estates adjacent to the Los Peñasquitos Canyon Preserve. The preserve itself is comprised of approximately 3,000 acres with associated access trails for hikers, mountain bikers, and equestrians. The preserve can accommodate up to 664 users at one time. The Black Mountain Ranch project, northeast of the project site in Subarea I of the FUA, proposes to provide a community park.

The portion of Gonzales Canyon which crosses the project site is within the Focused Planning Area of the San Dieguito River Valley Regional Open Space Park, a planned resource-based park (defined as a park located at or centered around some natural or man-made feature). Other resource-based parks available to project area residents include the planned Black Mountain Park, Torrey Pines Golf Course and City Park, and Torrey Pines State Reserve and Beach. Los Peñasquitos Canyon Preserve is also located in the vicinity, south of the site.

Fairbanks Ranch and The Farms Country Clubs are also located just north of the project area. These private/semiprivate facilities may be joined by future project site residents.

The Framework Plan for the FUA shows community parks southeast of the project site near the center of Subarea III and northeast of the project site in the northeast portion of Subarea IB. The Framework Plan requires that neighborhood park requirements and locations be determined at the subarea planning stage.

e) Law Enforcement

The City's Progress Guide and General Plan identifies the Police Facilities Plan as the resource document for Police Department standards. The Police Facilities Plan establishes a seven-minute average response time as a department goal. The Progress Guide and General Plan recommends that stations be located near the geographic centers of areas to be served and that the stations have access to major streets and freeways.

Police protection for the project area is provided by the Northern Division of the San Diego Police Department, located at 4275 Eastgate Mall in La Jolla. There are presently 157 sworn police officers and 16 nonsworn personnel assigned to the division. The City of San Diego Police Department presently maintains a city-wide ratio of 1.65 sworn personnel per 1,000 residents.

The City of San Diego is divided into "beats" for patrol purposes. The city-wide average police response time is seven minutes for emergency and priority one calls. The Northern Division response time is seven to eight minutes. The department receives 631.5 calls for service annually per 1,000 population on the average (Camacho, pers. comm. 1994).

Although the Northern Division is currently operating at a minimum staffing level of 80 percent of budgeted strength, the current level of service is within the acceptable range of calls for service/officer ratios.

The police facility at Eastgate Mall is approximately six miles to the south of the Del Mar Highlands Estates project site. The response time goal is an average of seven minutes. Black Mountain Ranch, northeast of the project site in Subarea I of the FUA, has reserved a site for a police station, should it be determined necessary at a future date. The site will be held until a station is built or the Police Department decides it is unnecessary.

The North City FUA Framework Plan states that a police substation should be sited within the FUA to attain the department's goals of an average seven-minute response time. The department indicates that the FUA police station should be a 16,000-square-foot facility, ideally constructed on a three- to four-acre site. The location of the police station within the FUA is to be determined during the subarea planning process for the FUA. A specific plan for Subarea V has been approved. The Subarea V specific plan does not provide for a new police station.

f) Fire Protection

The project area is within the service area of the City of San Diego Fire Department. To provide adequate fire protection to the community, the Fire Department strives to provide a six-minute response time to areas in need of service. The City's Progress Guide and General Plan establishes guidelines and standards for fire protection services. Fire stations should be sited to provide rapid response time within urbanized areas and should occupy a minimum of 0.5 acre of land.

Fire protection services for the Del Mar Highlands Estates project site are provided by City fire stations located in Del Mar Heights and Mira Mesa. As identified in Table 4K-4, the best current response time to the project site from surrounding fire stations is approximately 6.8 minutes from Station No. 24, located approximately 1.2 miles south-southwest of Del Mar Highlands Estates. Currently, there are 4 firefighters at Station 24 and 10 at Station 41 (see Table 4K-4). All firefighters are EMT-D certified and both stations are manned 24 hours a day with a minimum of four firefighters per engine and truck company. Existing fire protection services are currently adequate to serve the existing project site.

**TABLE 4K-4
FIRE STATION RESPONSE TIMES**

Station	Location	Response Time*
San Diego Fire Department Station 24	13077 Hartfield Avenue	6.8 minutes
San Diego Fire Department Station 41	4914 Carroll Canyon Road	7.4 minutes

*Response times were provided by R. Edwards, May 16, 1995.

Additionally, San Diego Fire Department Policy A-93-1, "Fire Access Roadways," requires that dead-end accessways in excess of 750 feet require "special" approval prior to design and construction and, secondly, that where a project has more than 100 units, two means of access are required. Where access is restricted to emergency vehicles only, the access design must be reviewed and approved by the Fire Department.

Required fire protection water flow shall be determined from "Guide for Determination on Required Fire Flow" published by the Insurance Services Office. Fire flow duration shall be sustainable for a minimum of five hours (City of San Diego 1994).

g) Solid Waste

The solid waste disposal needs of the project would be the responsibility of the City of San Diego. At present, the project would be served by Miramar Landfill, which encompasses approximately 1,093 acres, 729 acres of which are used for disposal. In December of 1994, the remaining capacity of Miramar Landfill was estimated to total approximately 13.3 million cubic yards (cy). The landfill currently accepts in excess of 1.3 million tons (approximately 2.1 million cubic yards [cy]) of refuse each year (Tirandazi, pers. comm. 1995).

In 1989 the State Assembly passed the Integrated Waste Management Act, AB 939, which requires each city and county within California to recycle or divert 25 percent of its current waste stream from landfills by December 1995 and 50 percent by December 2000. It is anticipated that with implementation of source reduction and recycling programs and construction of the rock aggregate program (which excavates construction materials from the landfill in order to create additional disposal area), the Miramar Landfill will serve as a solid waste disposal site through the year 2004. A materials recovery facility, proposed to be located at the landfill, could divert approximately 150,000 tons a year from the landfill through recycling and composting. Feasibility studies are under way for this facility. Its appropriateness, potential date of installation, and capacity are all under review.

Environmental analyses are being carried out for three potential future landfill sites (comprising four alternatives). Oak Canyon, a 236-acre site, would have a service life of 48 years and a capacity of 80 million cy. Upper Sycamore Canyon, a 240-acre site, would have a service life of up to 58 years and a capacity of 96 million cy. Spring Canyon, consisting of 385 acres, would have a capacity of approximately 134 million cy and a life span of approximately 80 years. A combined alternative of Oak and Spring Canyons (joined by removing the intervening ridge) would consist of 655 acres and have a capacity of 225 million cy and a life span of 90 to 135 years. All three sites are located in the eastern portion of the city, in the vicinity of the County of San Diego–operated Sycamore Canyon Landfill (Blum, pers. comm. 1994).

The current waste generation rate for city residents is 2.0 tons of refuse per household per year. There are currently no on-site residents. Plant waste generated by the on-site farming operation is mulched on-site. Other farming waste (e.g., fertilizer containers) is hauled off-site for disposal.

Residential solid waste collection service is provided on public streets throughout the project area by the City of San Diego and by private companies such as Laidlaw, BFI, and Waste Management on private roads. Del Mar Highlands Estates will be served by a private company, unless an agreement is entered into between the City and a community association allowing entrance for collection of waste and recyclables.

Public Facilities and Services Issue

1. Are existing public facilities and services adequate to meet the needs of the proposed projects? Would the proposed projects result in a need for new systems or require substantial alterations to existing public facilities?

1) Issue

Are existing public facilities and services adequate to meet the needs of the proposed projects? Would the proposed projects result in a need for new systems or require substantial alterations to existing public facilities?

Impacts

a) Schools

Development of the proposed Del Mar Highlands Estates properties is expected to result in the development of 148 large-lot, single-family residences and 24 units of affordable housing. Table 4K-5 provides a breakdown of the projected student generation according

to grade level and percent of school capacity. Based on the student generation rates utilized by the Solana Beach ESD and San Dieguito Union HSD, the proposed project would add an estimated 74 elementary school students and 63 junior high and high school students to area schools.

**TABLE 4K-5
STUDENT GENERATION
DEL MAR HIGHLANDS ESTATES**

School District/Type of School	Students Generated* (Rate / Students)	School Capacity / Current Enrollment	Students Above (Below) Capacity
Solana Beach/Elementary	0.4330 / 74	378 / 387	9
San Dieguito/Junior High	0.12 / 20	1,042 / 939	(103)†
San Dieguito/High School	0.25 / 43	2,175 / 2,035	(140)†
TOTALS	137	N/A	N/A

*Generation rates are multiplied against total number of units (172).

†School is utilizing portable classrooms; enrollment is over permanent capacity.

As shown above, the elementary school expected to serve the project site is operating above capacity. However, Solana Beach ESD does have a few school facilities operating slightly under capacity.

The Solana Beach ESD has prepared a Districtwide School Facilities Master Plan. The plan evaluates student generation factors, proposed development, future enrollment, and the need for additional elementary school facilities. Although there is apparently excess capacity available at this time in the district, Solana Beach ESD's assessment is that excess capacity will be needed to house students generated by approved development projects—and may even be insufficient for them. It is probable that the district will need to construct a new elementary school to house students generated from this as well as other proposed residential developments in the district (Castanos, pers. comm. 1994). Adverse effects to the district are therefore assessed for the Del Mar Highlands Estates project.

Although both Earl Warren Junior High and Torrey Pines High Schools technically have space if one counts permanent capacity as well as capacity provided by currently used portable classrooms (103 and 140 spaces, respectively), both of these schools are operating at well over permanent capacity. Earl Warren is 259 students, or 38 percent, over permanent capacity and Torrey Pines is 271 students, or 15 percent, over permanent capacity. According to the district, capacity is not available at either school to

accommodate the growth and enrollment anticipated from Del Mar Highlands Estates (Hale, pers. comm. 1994).

In sum, elementary school children generated by the project would potentially attend existing Solana Beach ESD elementary schools until a new elementary school is constructed in the FUA. Middle school students would attend Earl Warren Junior High School until a new junior high school is built to serve the FUA. High school students would attend Torrey Pines High School, until the new high school is built in the FUA. During these interim periods, there is a potential for school overcrowding to occur.

b) Water

Development of the Del Mar Highlands Estates project would result in decreased on-site water consumption. Conversion of approximately 200 acres of agriculture to residential use would reduce on-site water consumption by an estimated 209,700 gpd (70 percent), as calculated in Table 4K-6.

**TABLE 4K-6
DEL MAR HIGHLANDS ESTATES
ESTIMATED WATER DEMAND AND SEWER GENERATION**

Source	GPD	Total GPD
172 units	525/unit - potable	90,300
172 units	280/unit - wastewater	48,160

SOURCE: City of San Diego 1991c.

There are no on-site water distribution facilities. Water distribution pipelines would need to be provided west of Lot 148 to meet an upgraded 24-inch main located in Old El Camino Real and south of the project to join an existing water main in Sword Way.

c) Sewer

Development of the project would result in the generation of an estimated 48,160 gpd of wastewater based on 280 gpd per unit. No sewer service currently exists on-site. Connections would need to be provided south of Del Mar Highlands Estates to the 15-inch sewer that extends through Gonzales Canyon in two locations; from south of Lot 59 and south of the southwestern corner of the site at Old El Camino Real.

d) Parks and Recreation

Buildout of the project site would result in approximately 560 residents, based on the City Parks and Recreation Department's factor of 3.35 persons per dwelling unit for estate residential development (148) and 2.7 persons per affordable housing units (24). Based on the Progress Guide and General Plan specific standards for population-based parks (2.4 acres per 1,000 persons), the project would generate a demand for 1.2 acres of neighborhood park.

The proposed project would be a private, gated community and does not include public or private park and recreational facilities. Open space and recreational trails are planned just north of the site in the San Dieguito River Park (planned for approximately 80,000 acres total). In addition, approximately 57 percent of the project site (approximately 220 acres) remains as nonlandscaped open space. This nondevelopable area, in conjunction with the relatively large size of the residential lots and the proximity to the San Dieguito River Park, is expected to reduce requirements for passive activity facilities (e.g., public park areas oriented toward walking, picnicking, etc.). It is also possible that residents will construct private recreational facilities such as swimming pools, stables, and tennis courts. Project-generated demand for more formal recreation opportunities is expected to remain constant, however (Fye, pers. comm. 1995). Existing park facilities in the project area were developed to serve existing populations. New facilities (or funds for such) are necessary. Until new facilities can be built, project residents will utilize the existing and planned park facilities in the Carmel Valley and Fairbanks Country Club areas, which may experience overcrowding.

e) Law Enforcement

Existing police stations, patrols, and personnel are adequate to serve the proposed projects. The projects will be incorporated into the service area for the existing Eastgate Mall Station, and the number and frequency of patrols would not be increased. Emergency response times to the site are expected to be seven to eight minutes, which is considered adequate by the department (Camacho, pers. comm. 1994). The project is a gated community and would result in an incremental increase in calls for police service. Based on the above discussion, the project-generated increase in demand for law enforcement services would be less than significant.

f) Fire Protection

Due to the relatively small number of units proposed, no adverse impacts resulting from development of the proposed project on fire protection facilities and staff are anticipated. The current stations were built in anticipation of development in the area and existing fire protection services are adequate to serve the proposed projects (Edwards, pers. comm. 1995).

Response time to the western portions of the estate lots (Lots 147-148) development is projected to be approximately 6.8 minutes from the nearest fire station (Station 24). Response times to the project site potentially would improve in the event of future Framework Plan implementation and associated construction of new fire stations.

Fire protection facilities (e.g., hydrants) incorporated into the project must meet City of San Diego and San Diego Fire Department guidelines.

The project proposes a gated community. These gates could result in increased response times for emergency services. The north access gate is proposed to be staffed 24 hours a day. The east access is proposed to be operated by emergency personnel using a master code, key, or card system.

g) Solid Waste

Construction waste from individual projects cumulatively make up a significant portion of the waste stream entering the City's Miramar Landfill. Construction debris is very heavy and disposal is expensive. Therefore reuse, source separation, and recycling are often cost-effective. However, the proposed projects would generate small amounts of construction waste intermittently over several years.

Based on research conducted on the quantity and the types of solid waste generated by the residential sector in the city of San Diego, the primary components of the waste stream are paper (29.6 percent) such as newspaper and mixed paper, yard waste (13.4 percent), plastic (7.2 percent), wood waste (6.2 percent), and glass (5.3 percent). Additional solid wastes may be generated by gardening and equestrian uses on individual lots. However, most of this waste would likely be composted on-site and there is currently no City method for calculating such waste. As per AB 2494, which refined AB 939, the City is required to reduce the amount of waste disposed of rather than waste generated. The City must decrease its waste disposal by 25 percent by the year 1995 and by 50 percent by the year 2000. Future on-site residents could participate in City recycling, source-reduction, and composting programs. It is anticipated that this would result in a 50 percent reduction of waste materials.

Based on the City of San Diego solid waste generation rate for City residents of 2.0 tons per dwelling unit per year, the project would result in the generation of approximately 344 tons of residential solid waste per year.

Significance of Impacts

a) Schools

The proposed project will add an estimated 74 students to the elementary school serving the project site. Given the crowded nature of the schools expected within the project development time frame, significant adverse impacts are anticipated until a new elementary school is constructed. The additional 63 students anticipated to join the junior and senior high school system as a result of the project also comprise a significant impact to an already overburdened district. Mitigation for these significant impacts is identified below.

b) Water

The proposed project would decrease on-site water consumption by replacing the current agricultural operations with residential development. This is not an adverse impact.

c) Sewer

The City currently has no plans to construct new water facilities or modify existing facilities in the area. The applicant would be responsible for extending utility lines, the financial burden of which would therefore not fall on the City. Additional sewage flow generated by the small number of units would be incremental and is expected to be a less than significant burden to the system on a project-specific level.

d) Parks and Recreation

Project residents would be between 0.5 and 6 miles from neighborhood and community parks. Available (e.g., Torrey Pines and Los Peñasquitos Canyon Preserve) and planned (i.e., San Dieguito River Park) resource-based parks are considered sufficient to meet or exceed the needs of proposed project residents. Existing neighborhood and community parks in the area are not adequate to serve new development. This is a potentially significant impact.

e) Law Enforcement

Development of the proposed project would not significantly impact the ability of the San Diego Police Department to provide adequate law enforcement services (with response times of seven to eight minutes). However, there is a potential for significant adverse impacts on emergency access due to the controlled (gated) entrances/exits. As indicated previously, the north access gate is proposed to be staffed 24 hours a day while the east access is proposed to be operated by emergency personnel using a master code, key, or card system.

f) Fire Protection

Fire Department response time to the project would be acceptable for the majority of the project site (under six minutes), except for the westernmost lots (Lots 143 to 148) where response time is projected to be approximately 6.8 minutes. Additionally, access to Lots 143 to 148 is via a dead-end roadway which exceeds 750 feet. These are potentially significant impacts.

It is currently unknown whether adequate water supplies would be available to fire fighters. Again, this issue relates particularly to the isolated lots (143 through 148), as there is a greater potential for distance from hydrant hookups along the street.

Although response time to the project is generally projected to be within acceptable limits, there is a potential for significant adverse impacts on emergency access due to the controlled (gated) entrances/exits. As indicated previously, the north access gate is proposed to be staffed 24 hours a day while the east access is proposed to be operated by emergency personnel using a master code, key, or card system.

g) Solid Waste

Although project construction would result in the generation of recyclable construction wastes, this waste generation would be in regionally less than significant quantities. Over the long term, the projects would have ongoing significant direct and cumulative impacts on solid waste disposal due to the limited landfill capacity in the region.

Mitigation, Monitoring, and Reporting

a) Schools

Prior to the issuance of any building permit for any residential dwelling unit, the applicant shall participate in mitigation through implementation of School Agreement (grades K-6) and the participation in a Mello-Roos Community Facilities District (Mello-Roos) (grades 7-12). Prior to the issuance of any building permit for any residential unit, these fees shall be established through a School Agreement with the Solana Beach Elementary School District and the participation in a Mello-Roos with the San Dieguito Union High School District. ~~The Del Mar Highlands Estates project is within the Mello-Roos and Community Facilities District #1 and, therefore, would pay an appropriate share of school fees. Participation in the Mello-Roos and Community Facilities District #1 would mitigate cumulative impacts as adequate facilities are constructed. Direct impacts would also be mitigated with contribution of Mello-Roos fees and when adequate facilities are constructed.~~

b) Water

Mitigation measures beyond the required development and phasing of water facilities would not be required.

c) Sewer

Mitigation measures beyond the required development and phasing of sewer facilities would not be required.

d) Parks and Recreation

The developer shall pay to the City the development's fair share costs in providing population-based parks to serve future residents (i.e., park fees).

e) Law Enforcement and Fire Protection

In order to mitigate potentially significant impacts to public services (police/fire) and minimize emergency response times to future on-site residences, the following requirements will be incorporated into the design guidelines for Del Mar Highlands Estates:

1. Large, clearly legible address numbers will be provided at the street.
2. Security entrances will either be staffed 24 hours a day or a security gate code, key, or card will be provided to the Police and Fire Departments. Emergency access shall be reviewed and approved by the Fire Department prior to project approval.
3. The developer shall coordinate with the Fire Department to ensure that road widths and turning radii are adequate for all roads and that project fire hydrants are optimally located and meet all City and Fire Department standards. The results of this coordination shall be included within the Del Mar Highlands Estates Design Guidelines and tentative map.
4. Residential fire sprinklers will be required for any structure built on Lots 143, 144, 145, 146, 147, and 148.

f) Solid Waste

No mitigation is required for the proposed project; however, it should be noted that all City projects must comply with the City's recycling program.

L. Public Safety

Background on Electromagnetic Fields

Studies from the late 1970s have suggested a possible relationship between cancer, specifically childhood leukemia, and exposure to electric and magnetic fields or proximity to overhead transmission lines. The available scientific data do not support a conclusion that electric and/or magnetic fields cause health effects. However, due to increasing concern regarding electromagnetic (EMF) fields and health effects and the proximity of the power lines to potential development areas, this issue is addressed in this EIR. CEQA Guidelines Section 15145 states, "If, after thorough investigation, a Lead Agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact." The following discussion summarizes information gathered to date on EMF effects and their possible ramifications.

High-power transmission lines (such as those described below on the project sites) generate electromagnetic fields, which consist of invisible lines of force that surround anything conducting electricity. An electrical field is created when voltage is established on a wire (i.e., when an item is "plugged in"), while magnetic fields are created with the flow of current (i.e., if there is no current, there is no electrically induced magnetic field). These man-made electric and magnetic fields are ubiquitous in modern America and are generated by all electrical items, including many common household appliances. A small sample of common EMF sources includes refrigerators, televisions, stereos, coffee makers, broilers, electric blankets, fax machines, computers, and light bulbs.

Electromagnetic fields are created by charged particles. The electric component of the field pushes or pulls charged particles, such as ions, in the direction of the field. The magnetic component acts on moving charged particles and pushes them perpendicular to their direction of motion.

Commonly, distributed electric power is alternating current. This is in contrast to the direct current produced by batteries. An alternating current does not flow steadily in one direction, but alternates back and forth. The power used in North America alternates at 60 cycles per second (the current changes direction 120 times per second), which is known as 60 hertz (Hz). Consequently, the electric and magnetic fields produced by the electric power also oscillate at 60 Hz. Europe and some other parts of the world use a 50 Hz frequency.

The electromagnetic fields produced by 60 Hz power lines have a much lower frequency and, therefore, lower energy than microwaves or X rays, although they are all forms of electromagnetic energy. For comparison, radio waves operate at approximately 10^6 Hz

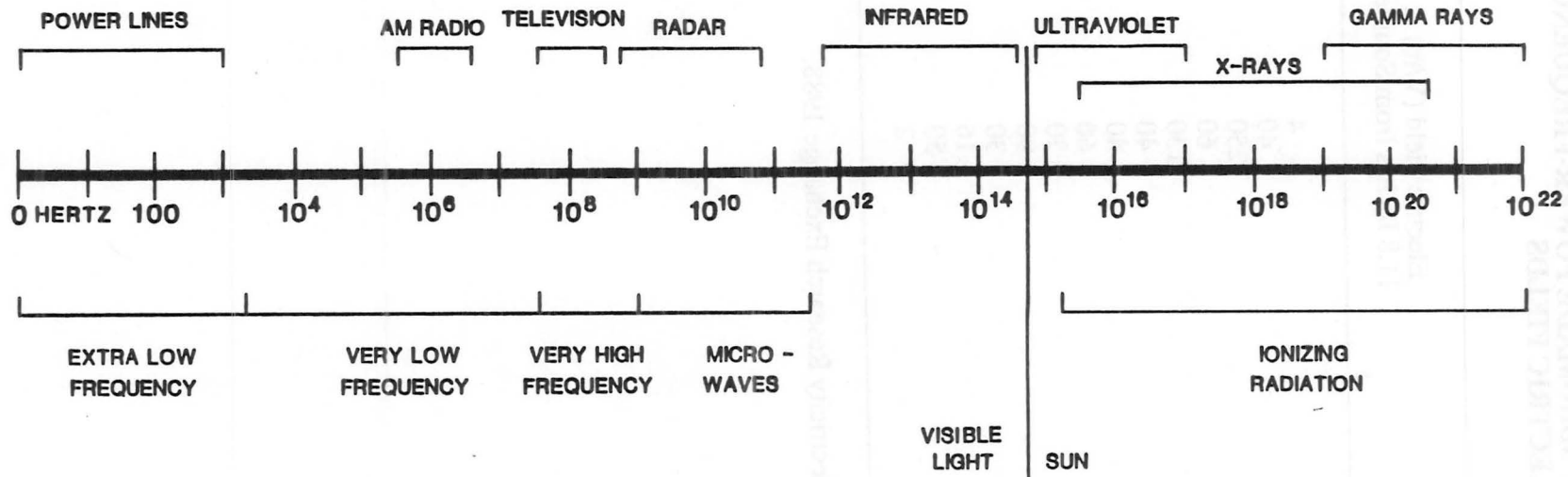
(1,000,000 cycles per second); a television screen operates at approximately 10^8 Hz; visible light occurs slightly below 10^{15} Hz; ultraviolet light ranges from about 10^{15} to 10^{17} Hz; and X rays range from 10^{16} to 10^{20} Hz. The spectrum of electromagnetic wavelengths is shown in Figure 4L-1.

Because X rays have enough energy to break apart the molecules that contain genes, excessive X-ray exposure can lead to mutations and cancer. When microwave energy passes through materials containing water, the energy is absorbed by the materials and converted to heat. This is how a microwave oven works. The electromagnetic fields produced by 60 Hz transmission lines do not have enough energy to break apart molecules, and although they can cause heating in substances, this heat is barely detectable. Normally occurring temperature changes (i.e., temperature changes due to normal biological processes) in human cells are greater than the temperature changes that these electromagnetic fields can produce (Culver Company 1994). Therefore, electromagnetic fields from 60 Hz power transmission lines do not have the same effects on the human body as microwaves or X rays.

Electric fields are measured in volts per meter (V/m) and magnetic fields are measured in teslas or gauss, which equals one ten-thousandth of a tesla. Typical electric field levels within the home or workplace are 1 to 10 V/m; fields within one foot of small appliances reach 20 to 200 V/m; and the field strength directly next to an electric blanket can reach 10,000 V/m. Ten thousand volts per meter is approximately the maximum level directly beneath a 765 kilovolt (kV) transmission line. Electric fields weaken rapidly with increased distance from the source. An electric field with a 10,000 V/m strength at the source will decrease to less than 500 V/m at a distance of 60 meters. Electric fields are also easily blocked by vegetation and buildings. Table 4L-1 shows some common electric field values. Figure 4L-2 shows a lateral profile of an electric field at ground level for typical transmission lines. These profiles assume a flat ground with no intervening obstacles, such as vegetation or walls. The highest-voltage line in the easements in or near the project sites is 230 kV.

The maximum magnetic field value beneath a power distribution line is approximately 50 milligauss (mG), and that directly beneath a 765 kV transmission line is approximately 250 mG. The level directly below a 220 kV line is about 65 mG, which decreases to about 15 mG at a distance of 30 meters. Typical home levels are between 0.1 and 50 mG and the values within several inches of appliances can be 10 to 20 times higher. Unlike electric fields, magnetic fields are not substantially affected by vegetation and buildings. Figure 4L-3 shows a lateral profile of a magnetic field at ground level for typical transmission lines. Table 4L-2 shows some common magnetic field values.

Reports from the Soviet Union of various health complaints among utility workers in high-voltage switchyards in the early 1970s generated worldwide concern regarding the possibility of adverse health effects from exposures to electric fields. Subsequent



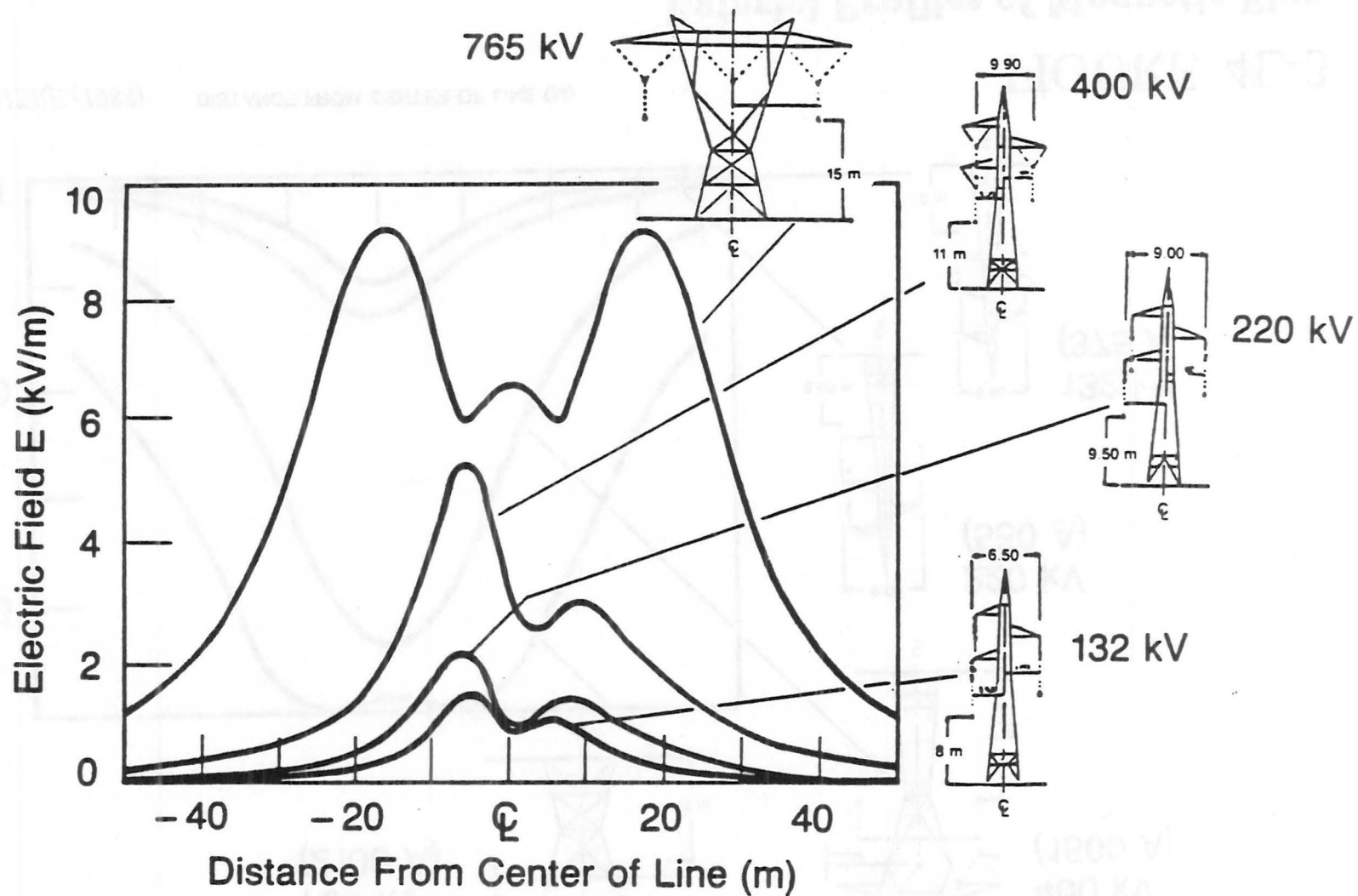
SOURCE : EPRI 1987

FIGURE 4L-1
Approximate Spectrum of
Electromagnetic Fields

**TABLE 4L-1
TYPICAL VALUES OF MAN-MADE POWER-FREQUENCY
ELECTRIC FIELDS**

Source	Electric Field (V/m) at 11.8 Inches from Source
Electric cooking	4
Toaster	40
Electric blanket	250
Iron	60
Broiler	130
Hair dryer	40
Vaporizer	40
Refrigerator	60
Color TV	30
Stereo sound equipment	90
Coffee pot	30
Vacuum cleaner	16
Hand mixer	50
Incandescent light bulb	2

SOURCE: International Electricity Research Exchange 1988.



Source: IERE (1988)

FIGURE 4L-2

Lateral Profiles of Electric Field Intensities
of Typical Power Lines

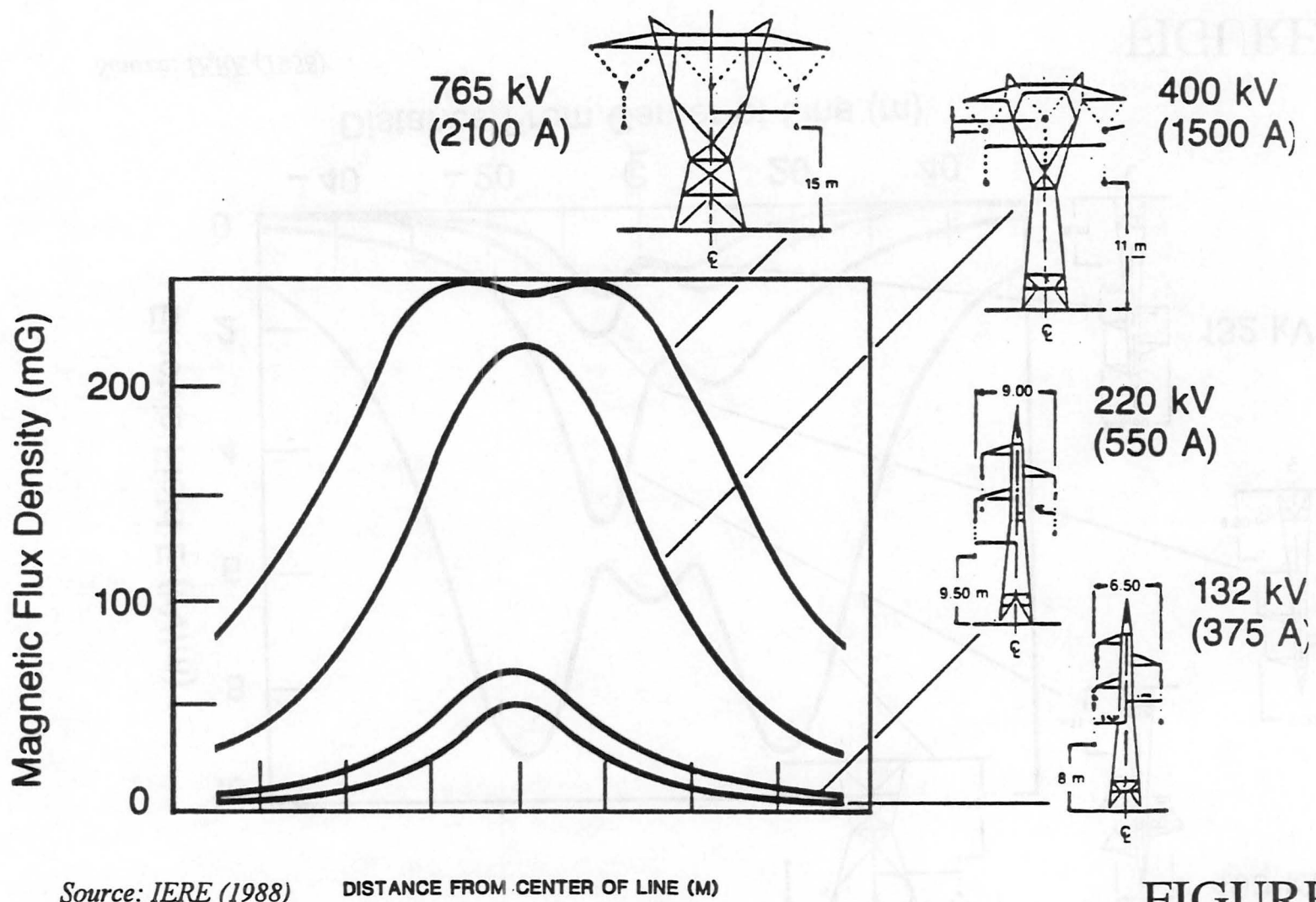


FIGURE 4L-3
Lateral Profiles of Magnetic Flux
of Typical Power Lines

**TABLE 4L-2
MAGNETIC FIELDS MEASURED AT 11.8 INCHES
FROM VARIOUS HOUSEHOLD APPLIANCES**

Appliances	Range of Measured Fields (mG)	
Ranges	3	- 50
Ovens	1	- 50
Microwaves	40	- 90
Disposals	8	- 12
Dishwashers	7	- 14
Refrigerators	<0.1	- 3
Washers	2	- 20
Dryers	0.7	- 3
Coffee makers	0.7	- 1.5
Irons	1	- 4
Can openers	30	- 300
Mixers	6	- 150
Blenders	5	- 25
Vacuum cleaners	20	- 200
Portable heaters	1.5	- 40
Fans	0.2	- 40
Hair dryers	<1	- 100
Shavers	1	- 100
Televisions	0.3	- 20
Fluorescent fixtures	20	- 40
Desk lamps	5	- 20
Saws	10	- 300
Drills	25	- 40

SOURCE: International Electricity Research Exchange 1988.

research on electrical utility workers in Europe and North America failed to confirm the presence of such complaints, and subsequently, Soviet investigators indicated that their earlier concerns had been "overstated" (Bailey Research Associates, Inc. 1992).

In the late 1970s and throughout the 1980s, interest shifted primarily to magnetic fields because of a reported association between the apparent current-carrying capacity of power lines and childhood cancer (Wertheimer and Leeper 1979) and because electric fields from outside sources cannot penetrate building materials and enter homes.

The apparent association to date arises from epidemiological studies, which are based on a statistical association between a pattern of disease (such as cancer) and a factor (such as overhead power lines). This is in contrast to laboratory studies, which develop a cause-and-effect relationship from experimental evidence and are reproducible. Over 20 epidemiological studies have been conducted on this subject with conflicting results, but much of the debate is based on two studies in the Denver area. The first was published in 1979 by Nancy Wertheimer and Ed Leeper. It compared the home environments of childhood cancer victims and a control population to attempt to identify whether any factor related to home environment was statistically associated with the occurrence of cancer. Overhead power lines were identified as a possible factor.

Power delivery systems have high-tension wires which operate at high voltages (up to several hundred kilovolts) to allow power to be transported at relatively low currents. These wires deliver power to distribution substations where the voltage is stepped down, resulting in proportionately higher current in the medium-voltage primary lines. These lines carry power to a local transformer, where the voltage is stepped down again to produce the 240 volts delivered to individual residences. The current flow is greatest in the wires directly issuing from a substation or local transformer. At these points the voltage has been stepped down and "transformed" into current (Wertheimer and Leeper 1979). It was homes particularly close to these transforming points that were over-represented among cancer cases in the Wertheimer and Leeper study.

The magnetic fields produced by the currents in the power distribution lines can be canceled by balancing the supply and return currents (the magnetic field is zero between two lines with currents that are equal in magnitude but opposite in direction). This cancellation is not complete because the wires are often separated in space and because some of the return current does not flow through the wires. Some of the return current may instead go through the ground or, in many cases, through the plumbing system to which most urban electrical systems are grounded at each house. This results in a locally imbalanced current, both in the distribution wires and in the plumbing.

The Wertheimer and Leeper study states that the ground current flows not only in the street plumbing but also through the pipes in the house. Current which enters the plumbing at one house can flow through several homes before it returns to the

distribution wires because the plumbing provides a continuous low-resistance path between houses. The ground current produces a magnetic field which Wertheimer and Leeper state “appears to be roughly related to the types of wiring configurations nearby. This relationship between wires and plumbing is to be expected because, other things being equal, the greatest unbalanced current tends to occur where the total current in the wires is greatest, and the unbalanced portion of the current must detour through ground paths, such as the nearby earth and plumbing.”

The Wertheimer and Leeper researchers classified the houses in the study based on the proximity to high-current configuration (HCC) and low-current configuration (LCC) wires. The HCC category was further divided into three subcategories: (1) homes less than 40 meters from large-gauge primaries or an array of six or more thin primaries; (2) homes less than 20 meters from an array of three to five thin primaries or from high-tension (50-230 kV) wires; and (3) homes less than 15 meters from first span secondary (240-volt) wires. First span secondaries were redefined as those secondaries which issued directly from the transformer and had not yet lost any current through a service drop occurring beyond the transformer pole.

However, no attempt was made to measure the actual magnetic field levels present. In other words, children with cancer were reported to be more likely to have power-line wiring outside the home apparently capable of generating higher magnetic fields than were healthy children, although actual exposures were not determined. Additionally, the studies by Wertheimer and Leeper were criticized for not eliminating confounding factors, such as maternal smoking, use of X rays, air pollution, traffic, noise, exposure to hazardous chemicals, and housing density, which might have contributed to the cancer but are unrelated to power-line fields. The classification of the wires was also considered biased because the researchers knew whether the case person of the house had contracted cancer or not. The classification itself was considered arbitrary based on visual inspection.

A second study in Denver was completed which expanded on Wertheimer and Leeper’s work and improved some of the weaknesses in the previous methodology (Savitz et al. 1988). A modest statistical correlation between children with cancer and the proximity of their homes to HCC power lines was found. But the correlation between cancer and the actual measured magnetic fields in the homes was weak enough to be included in a statistical margin of error.

Another study that made field measurements of magnetic fields in the homes to estimate exposure (rather than using the crude estimations based on the type of utility wiring outside the home and the distance of the lines from the home) did not report a statistically significant association between childhood cancer and measured fields (London et al. 1991). Several other epidemiological studies conducted in community settings have not

detected any association between proximity to power-line sources of magnetic fields and cancer (Fulton et al. 1980; McDowall 1986; Coleman et al. 1989; Myers et al. 1990).

Results of occupational epidemiological studies are also contradictory. Some of these studies indicate a statistical association between some types of cancer and electrical occupations while others do not (California Department of Health Services 1992; Bailey Research Associates 1992). As with the residential studies, the major limitation of the studies completed to date is the lack of data regarding actual exposure, since they use job classification/job titles to estimate exposure (Office of Technology Assessment 1989).

Most recently, a study was completed involving cancer mortality among workers at Southern California Edison Company. No consistent association was found between either work in electrical occupations or magnetic fields measured in the work environment and all cancers combined. A similar study completed in 1992 among Swedish electric utility workers provided results consistent with the Southern California Edison study (Sahl, Kelsh, and Greenland 1993).

There are still relatively little data that give experimental support for a mechanism of cancer development from magnetic fields, but there is growing recognition that these fields may have biological effects based on the fact that every cell in the body has charged particles of various kinds on the two sides of the outer membrane. Thus, cell membranes are much like miniature storage batteries, maintaining a separation of charge across themselves. It is speculated that 60 Hz fields may alter the behavior of charged particles located in or attached to cell membranes. Most investigators agree that the findings are suggestive enough to deserve further inquiry. However, the following conclusion has been reached with regard to the laboratory evidence regarding the association between magnetic fields and cancer:

Extensive laboratory studies of human and animal cells exposed *in vitro* to 60 Hz electromagnetic fields (EMFs) over a wide range of intensities show no indication of damage to DNA, the capacity to repair DNA damage, micronuclei formation or increased chromosomal aberrations. Therefore, the consensus among members of the scientific community is that 60 Hz EMFs are not cancer initiators (Bailey Research Associates 1992).

The epidemiological and laboratory studies conducted to date, as a whole, do not support the conclusion that exposure to magnetic fields is a cause of cancer (California Department of Health Services 1992; Bailey Research Associates 1992; U.S. Environmental Protection Agency 1992). At present, the scientific community does not support the implementation of standards since science has not identified exposure to EMFs as a health hazard nor has it provided any meaningful dose-response data on which to base standards (California Department of Health Services 1992; Bailey Research Associates 1992).

At the local level, the California Public Utilities Commission (CPUC), after investigating the EMF issue, found that available scientific research does not support a conclusion that exposure to low-frequency fields is a health risk. However, the CPUC, SDG&E, and other utilities in California recognize that some public concern and scientific uncertainty exist regarding a potential health risk associated with EMF. As a result, the CPUC issued Decision 93-11-013 on November 2, 1993. In this order, the commission directed California's utilities to standardize guidelines with other utilities where possible.

The bottom line is that there is no established cause and effect relationship between EMF exposure and cancer or other disease. For this reason, we can't define a hazardous level of EMF exposure (EPA 1992).

Since the possible link between electromagnetic fields from power lines and deleterious health effects has not been established, no land use setback distances from power lines or easements has been recommended except for the California State Department of Education, which requires a 150-foot setback from 230 kV transmission lines for adjacent school sites.

Existing Conditions

a) Del Mar Highlands Estates

Electromagnetic Fields

SDG&E maintains a 150-foot right-of-way, which crosses the southwestern corner of the project site in a northwest-southeast direction (see Figure 4K-2). This right-of-way contains one 230 kV line, one 138 kV line, and two 69 kV lines.

High-Pressure Gas and Fuel Lines

The State of California and the United States government regulate the design, construction, operation, and maintenance of high-pressure gas and petroleum fuel lines. The State Department of Education does not currently have setback requirements for schools from these lines nor does the City of San Diego have setback requirements for commercial and residential uses.

A 30-inch-diameter high-pressure natural gas line and two fuel oil lines extend through the western portion of the project site. These lines are located underground and are within the 150-foot on-site SDG&E right-of-way, with additional discussion of these facilities (as well as off-site utility lines) provided in the Public Facilities discussion.

Hazardous Materials

Many pesticides, which could have been used in previous agricultural practices on the project site (see the Natural Resources/Agriculture section, above), have now been banned due to their persistence in nature and unhealthful effects on wildlife and humans. If large quantities of such pesticides have been dumped or leaked into the soil, it would be unhealthful to breathe dust from those soils.

b) Shell Parcel

Electromagnetic Fields

No electric transmission lines cross this parcel.

High-Pressure Gas and Fuel Lines

No high-pressure gas or utility lines are known for this parcel.

Hazardous Materials

No known hazardous waste sites are located on or adjacent to this parcel.

Public Safety Issue

1. Would the proposed project expose people to potential health hazards?

1) Issue

Would the proposed project expose people to potential health hazards?

Impacts

Studies of the potential for adverse public health effects due to electromagnetic fields are inconclusive at this point. A statement or conclusion of impacts would be speculative. In accordance with CEQA Guidelines Section 15145, the known information about electromagnetic fields is summarized above and no conclusion is reached.

a) High-Pressure Gas and Fuel Pipelines

Any project-related activities conducted within the described on-site SDG&E easement could potentially result in safety impacts related to the noted pipelines. However, SDG&E has strict encroachment requirements for SDG&E easements. Therefore, no

impacts to gas or fuel pipelines are anticipated from implementation of the proposed project.

b) Hazardous Materials

No known hazardous waste sites are located on or adjacent to the project site. Any water quality issues resulting from runoff into the two project-proposed impoundment basins (see Hydrology/Water Quality analysis, above) and ultimately into project area drainages would be less significant than those currently experienced due to on-site commercial agricultural activity.

The proposed estate residential uses (with accessory agricultural and/or equestrian uses permitted) are not expected to store, use, or generate significant quantities of hazardous materials which could result in contamination of soils, water, or air.

Significance of Impacts

In accordance with CEQA Guidelines Section 15145, the known information about electromagnetic fields is summarized above and no conclusion of significance is reached; the existing scientific data are inconclusive and potential impacts are speculative in nature.

a) High-Pressure Gas and Fuel Pipelines

No significant impacts are anticipated from project-related development due to restrictions and approval requirements associated with encroachment into SDG&E easements.

b) Hazardous Materials

No significant impacts are anticipated.

Mitigation, Monitoring, and Reporting

a) High-Pressure Gas and Fuel Lines

No mitigation is required provided that all project-related activities comply with existing SDG&E standards regarding easement encroachment.

b) Hazardous Materials

No mitigation is required.

M. Water Conservation

Existing Conditions

a) Water Supply and Distribution

Most of San Diego's water is imported from the Colorado River via the Colorado River Aqueduct or from northern California via the California Aqueduct, which is part of the State Water Project. The SDCWA acquires the imported water from the Metropolitan Water District of Southern California. The SDCWA sells water to 23 member agencies, including the City of San Diego.

Prior to transport south to San Diego, raw water is stored and treated at Lake Skinner in southern Riverside County. From Lake Skinner, the water is transported to San Diego County via the First and Second San Diego Aqueducts. Lake Hodges (to the north of the FUA) and Miramar Reservoir (to the south) are the closest reservoirs. The existing City of San Diego reservoir system is not designed to capture storm runoff to take effective advantage of local rainfall, but stores imported water, the supply of which fluctuates based on snowpack in northern California. Within the past few years, the City experienced severe drought conditions due to high local demands and to low snowfall and recharge rates in the northern part of the state.

Storage, treatment, and distribution facilities throughout the City's system have little remaining capacity to serve new development. The City is evaluating the feasibility of a North City Treatment Plant to treat raw aqueduct water. The service area for this plant has not yet been determined but may include the FUA (LaSelle, pers. comm. 1994).

Del Mar Highlands Estates

As discussed in Public Facilities and Services, current water use due to on-site agricultural activity is estimated to total approximately 300,000 gpd. This water is provided via a spur line constructed by on-site growers which taps into a 30-inch water main located along Black Mountain Road. No sewage is currently generated through on-site uses.

Shell Parcel

This parcel is primarily in open space with a limited amount of agricultural (field crop) activity associated with the parcel. Water consumption for this small field area is not documented.

b) Water Conservation

In compliance with state legislation, the City has an updated Urban Water Management Plan and Conservation Program. Included in the plan is a five-year strategy for water conservation which details measures to promote long-term conservation through public education and to encourage residents to install water-efficient plumbing fixtures. A residential interior plumbing retrofit program targeted to reach 150,000 pre-1981 constructed homes and to provide low-water-use shower heads and toilet upgrades has been successfully completed (Steirer, pers. comm. 1994). The following programs were implemented under the plan in 1991 and are ongoing:

- Ultra-Low Flush Toilet Rebate Program
- Public Information and Education Program
- Water Conservation Hotline
- City of San Diego Water Consumption Data Base
- Ultra-Low Flush Toilet Ordinance for New Construction
- Water Conservation Plumbing Retrofit Ordinance

Other water conservation efforts included the City Council's approval of becoming a signatory to the Memorandum of Understanding Regarding Urban Water Conservation in California, support of proven water conservation strategies, and the creation of the City Manager's Water Conservation Advisory Committee to review proposed long-term water conservation programs. Although no longer in a severe drought condition, San Diego is still in a "drought watch." In addition, the City can experience "structural drought," a condition in which potable water supplies are restricted due to drain-off of available water for other required uses, such as native species preservation.

Overall, water conservation efforts in the city have been effective. The City Council identified a city-wide conservation goal of 20 percent in April 1991. Through programs implemented under the conservation program and the receptiveness of San Diegans to them, city residents have conserved that average annually since then (Steirer, pers. comm. 1994).

Nevertheless, the history of development in the San Diego area includes many golf courses and large expanses of lush landscaped areas. Much of the plant material used in the past was imported from areas with higher rainfall and thus requires significant irrigation in order to survive. Only recently have landscaping trends been towards reducing irrigated areas and using more drought-tolerant plant materials. Although in the near future (perhaps as soon as mid-1997), City-watered golf courses such as Torrey Pines and Naval Air Station Miramar will receive reclaimed water, the maintenance of golf courses and other landscaped areas is currently a major consumer of potable water in the region (Lopez, pers. comm. 1994).

There are presently no sources of reclaimed water or reclaimed water distribution facilities in the vicinity of the project sites. In 1992, the City completed a reclaimed water distribution master plan for the city's northern service area, which shall be primarily served by the North City Water Reclamation Plant, located at Interstate 805 and Eastgate Mall. As part of this master plan, major users of reclaimed water were identified and a backbone reclaimed water distribution system was developed. An addendum to this report was published in November 1992, in which a more cost-effective backbone system was proposed.

For the past several years, the City has been conditioning qualifying development projects within the FUA to install facilities for the use of reclaimed water to offset new planned uses. In September 1994, however, the City's Metropolitan Wastewater Department implemented the "optimized" reclaimed water distribution system for reclaimed water use in the City's northern service area. The optimized reclaimed water distribution system will have a reclaimed water service area which is significantly reduced from that previously planned. Del Mar Highlands Estates is located outside of the optimized system service area and will, therefore, not receive reclaimed water from the City within the foreseeable future (Lopez, pers. comm. 1994).

Water Conservation Issue

1. Would the project result in the use of excessive amounts of water, resulting in the depletion of domestic water supplies or the generation of excessive amounts of wastewater?

1) Issue

Would the project result in the use of excessive amounts of water, resulting in the depletion of domestic water supplies or the generation of excessive amounts of wastewater?

Impacts

Del Mar Highlands Estates

Assuming 172 dwelling units and a water demand for residential units at 525 gpd, the average estimated domestic water use figure for the buildout of Del Mar Highlands Estates would be 90,300 gpd. This anticipated use rate would be 209,700 gpd under the current agricultural use rate in the project area; a 70 percent decrease.

It is also estimated that approximately 48,160 gpd of wastewater would be generated by residential uses at buildout, based on 280 gallons per unit per day. Although this average use rate has been successful in allowing the Water Utilities Department to appropriately size sewage facilities (LaSelle, pers. comm. 1994), wastewater generated by the project may be somewhat lower than this estimate because of the low-flush toilets required by law for new construction.

The exact level to which adverse effects might result from project-related overwatering required to maintain landscaping on the private lots is not known at this time as precise development plans are unavailable. Construction of project roads, however, is expected to impact 14.7 acres through grading, cut, and fill activities. Slopes of up to approximately 110 feet in height are planned, and undoubtedly, some of these slopes will be compacted to minimize erosion or slide potential. Compacting results in poorer water absorption, and vegetation therefore requires more water than it would ordinarily need in order to overcome amounts lost in runoff. A goal of the project design guidelines, however, is to encourage the use of native, naturalized, and drought-tolerant species in order to reduce water usage. A listing is provided in the guidelines of plants considered appropriate for the development with fire-retardant and drought-resistant qualities identified. In addition, project design guidelines state that:

- Plantings on all manufactured and existing slopes that abut areas of natural vegetation shall include annuals, perennials, woody ground covers, and shrubs capable of surviving without continuous supplemental water and shall be predominantly indigenous native species appropriate to the specific site conditions.
- All slopes steeper than 6:1 and greater than five feet in height shall be planted with herbaceous or prostrate shrubby ground covers. All internal slopes greater than 15 feet in height shall be planted with a combination of trees, shrubs, and ground covers (minimum one-gallon size) at an average rate of one tree or shrub per 100 square feet of slope area. A minimum of 50 percent of shrubs and ground covers shall be a deep root variety (root depth of five feet or greater).
- Turf shall be accepted as ground cover within parkways only in areas where it relates to turf plantings in the front yard areas of individual residences, at project entries, and at the enhanced circulation nodes. ~~Turf will not be installed as a ground cover within parkways since it requires intensive watering and maintenance.~~
- All shrubs, ground covers, manufactured and disturbed slope plantings, and lawn areas shall be permanently irrigated. Irrigation systems shall be fully automatic. Low-precipitation sprinkler heads and other water conservation devices will enable the system to distribute water efficiently while maintaining adequate coverage and health of plant materials.

- Design of irrigation systems for Del Mar Highlands Estates shall conform with the requirements set forth in the City's Landscape Technical Manual and shall be installed in accordance with San Diego Area Regional Standard Drawings. Each circuit within the landscape irrigation system shall be capable of meeting the minimum needs of the mature plant material during peak demands within a weekly irrigation schedule. When selecting plant materials, species of similar moisture needs should be grouped together to minimize the need for redundant or highly complex irrigation systems. In addition, the landscape irrigation system shall be designed and operated to minimize runoff and discharge of irrigation water onto adjacent property, nonirrigated areas, walks, roadways, or structures. The use of water-conserving equipment and techniques is highly encouraged.

Given that road grading activities are anticipated to affect less than four percent of the project site and that project design calls for use of drought-tolerant plants as well as low-precipitation sprinkler heads, this portion of project activities is not expected to result in adverse effects to water conservation.

Currently, it is anticipated that single-lot development would also not result in adverse effects as regards compacted slopes or conversion of open space to landscaped space. Eliminating lot acreage and project roadways (a total of approximately 147 acres), approximately 63 percent of the project site would be preserved in open space. These areas contain vegetated internal slopes, sensitive biological resources, and steep slopes as well as Gonzales Canyon. In large part, the "developable" portions of the lots generally correspond to areas which have already been graded for agricultural activities within the upland areas of the site, and overall, project development would reclaim current agricultural portions of Gonzales Canyon to be kept permanently in open space.

Based on these criteria, the effects of development are expected to be less than significant as regards compacted slopes or conversion of open to landscaped space.

Significance of Impacts

Because water usage would be decreased by up to an anticipated 70 percent (to 90,300 gpd), implementation of the proposed Del Mar Highlands Estates project would not have a significant adverse impact on city water supplies. Nonetheless, imported water supplies are limited and the continuing statewide drought watch condition renders water conservation efforts essential to curtail the cumulative effects of development in southern California.

Mitigation, Monitoring, and Reporting

Although significant project-level effects were not assessed based on anticipated water use rates for the 172 lots associated with the Del Mar Highlands Estates development, the following mitigation measures shall be incorporated into project design as noted below: ~~guidelines to address cumulative water usage concerns:~~

1. Limit grading in areas where no construction is proposed; thereby reducing the need for planting and irrigation of graded areas; (landscaping plans)
2. Provide integrated soil amendments in lifts of low-clay content soil in landscaped areas to improve infiltration; (landscaping plans)
3. Reduce runoff potential from landscaped areas by utilizing berming, raised planters, and drip irrigation systems; (landscaping plans)
4. Install soil moisture override systems in all common irrigation areas to avoid sprinkling when the ground is already saturated; (landscaping plans)
5. Identify in the plant materials list in the project design guidelines whether or not plants are native or naturalize easily and incorporate a list of local California sources for native plants; (landscaping plans)
6. Incorporate low-flush toilets, low-flow faucets, and timers on sprinklers (including nighttime watering) into project design; and (building permits)
7. Provide information regarding water conservation measures to new residents at the time of lot purchase. (certificate of occupancy)

N. Natural Resources/Agriculture

Existing Conditions

a) Agricultural Resources

Evaluations of agricultural resource potential are based on two data sources: analyses of project historical use of the area for agricultural purposes and area soil qualities.

Historical Agriculture. Agricultural production in the project vicinity has a lengthy history but is not regionally significant. The McGonigle family started farming in the Carmel Valley area in the 1860s. Farming operations were conducted in Shaw Valley and on the Del Mar Mesa since the early 1900s. Aerial photographs taken in 1928 show farming activities in the western half of McGonigle Canyon, as well as Gonzales Canyon. City of San Diego Agricultural Land Use maps from the 1950s show field crops in the project area. Much of the farming was on hills adjoining and bottomlands of Gonzales Canyon. Two small areas (5-10 acres each) of vegetable and orchard were also shown in Carmel Valley. By 1958, field crops were still located in Carmel Valley, McGonigle Canyon, and the western end of Deer Canyon. A 1966 map shows an overall decrease in agricultural activity, although crops were still present in McGonigle and Deer Canyons, the Carmel Valley area, and north of McGonigle Canyon. South of Carmel Valley, only Neighborhood 10 has recently been used for agriculture.

Soil Characteristics. Two soil rating systems are used to describe soils and their potential agricultural productivity: the soil capability rating system and the Storie Index rating system. The soil capability system indicates the limitations of a soil type for field crops and the way the soil responds to management practices. Soils are grouped in eight classes, from Class I through VIII, with Class I being the least restricted. Class III soils are more severely limited and may require both increased selectivity of cropping programs and conservation practices. Class IV soils require careful management practices, but farming of row, grain, and tree crops is still possible. The capability ratings of all on-site soils are provided in Table 4N-1.

The Storie Index soils rating system numerically expresses the relative suitability of a soil for intensive agriculture. Profile characteristics, soil surface texture, slope, and other miscellaneous conditions are assigned percentages, with the most agriculturally favored condition rated as 100 percent. These percentage factors are multiplied together to achieve the final Storie Index rating.

In addition to the above-described soil classifications, the California Department of Conservation (1992) has established a number of important farmland classifications based on extensive physical and chemical soil parameters, as well as local growing seasons,

**TABLE 4N-1
SOIL TYPES AND ACREAGE
RANKED BY STORIE INDEX AND CAPABILITY CLASS**

Soil	Soil Name	Capability Classification	Acreage	Storie Index	Weighted Storie Index
CsB	Corralitos loamy sand, 0 to 5 percent slopes	IIIs-4	83.9	64	3.82
CsD	Corralitos loamy sand, 9 to 15 percent slopes	IVs-4	0.3	52	0.09
HrC2	Huerhuero loam, 9 to 15 percent slopes	IVe-3	84.2	38	3.25
HrD2	Huerhuero loam, 9 to 15 percent slopes, eroded	IVe-3	1.9	36	0.90
HrE2	Huerhuero loam, 15 to 30 percent slopes, eroded	VIe-3	45.9	32	0.64
LvF3	Loamy alluvial land-Huerhuero complex, 9 to 50 percent slopes, severely eroded	VIIIs-1	40.6	23	1.75
OhE	Olivenhain cobbly loam, 2 to 9 percent slopes	VIe-7	98.0	20	5.0
TeF	Terrace escarpments	VIIIe-1	34.2	<10	0.96

SOURCE: U.S. Department of Agriculture 1973.

moisture supplies, and agricultural history. Specifically, these classifications include prime farmland, farmland of statewide importance, farmland of local importance, and unique farmlands. Farmland of statewide importance includes soil with similar characteristics to prime farmland, but with minor limitations such as slopes or less ability to hold and store moisture. Unique farmland includes lesser-quality soils used in the production of leading cash crops or dry-farmed farmland of statewide importance. Farmland of local importance consists of soils which are important to the local agricultural economy.

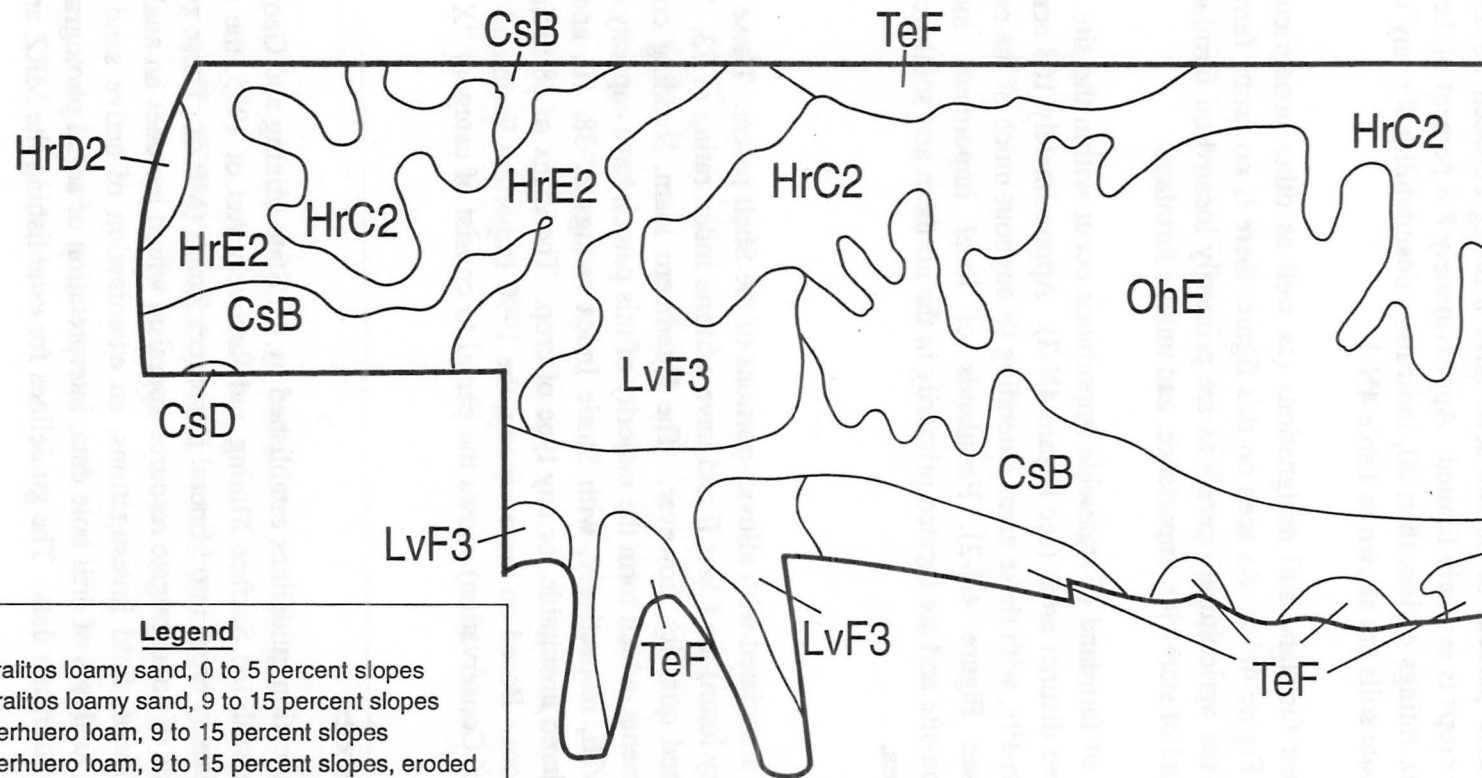
Del Mar Highlands Estates

Information on more recent agricultural uses in the project site and vicinity has been gathered from local owners and leaseholders. Agricultural use in the project site vicinity has generally diminished in recent years, although substantial portions of the site are currently in agricultural production. These areas are all located within the Gonzales drainage and were on the hilltops above the associated tributary drainages (see Photograph 2-1).

Existing on-site agricultural use includes approximately 200 acres planted predominantly in tomatoes. This activity is associated with the San Dieguito Valley Agricultural Permit, issued by the City of San Diego in 1989. The noted permit incorporates approximately 690 acres, including the entire project site and additional areas to the east. Of the total permit area, approximately 388 acres are authorized for irrigated agricultural uses (with specific identified crops including tomatoes, cucumbers, and peppers) and 302 acres are slated for nondisturbance. Generally, this latter designation is intended to protect sensitive resources by restricting agricultural use in drainages and areas with important biological and cultural values. Current agricultural use within the project site (approximately 200 acres) is located predominantly on rolling mesa tops (167 acres) and in Gonzales Canyon (33 acres), with most on-site drainages and steeper areas preserved as native vegetation.

There are no known Williamson Act lands or other agricultural preserve designations within the project site.

Mapped soil types within the project site are depicted on Figure 4N-1. No Class I or II soils are present on-site. Approximately 84 acres (21.6 percent) of the project area, primarily associated with Gonzales Canyon, are defined as having Class III soils. Approximately 86.4 acres (22.2 percent) of the site are defined as having Class IV soils and are, in fact, the areas where the majority of agricultural activity is currently taking place. Approximately 56.3 percent of the soils on-site are classified below Class IV and are not suitable for cultivation of coastal crops; their uses are mainly restricted to pasture, range, or recreational uses.



Legend

- CsB - Corralitos loamy sand, 0 to 5 percent slopes
- CsD - Corralitos loamy sand, 9 to 15 percent slopes
- HrC2 - Huerhuero loam, 9 to 15 percent slopes
- HrD2 - Huerhuero loam, 9 to 15 percent slopes, eroded
- HrE2 - Huerhuero loam, 15 to 30 percent slopes, eroded
- LvF3 - Loamy alluvial land - Huerhuero complex,
9 to 50 percent slopes, severely eroded
- OhE - Olivenhain cobbly loam, 2 to 9 percent slopes
- TeF - Terrace escarpments

SOURCE: U.S. Soil Conservation Service (1973)

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FIGURE 4N-1

**Del Mar Highlands Estates
Soil Types**

The best on-site soils under the Storie system have a rating between 60 and 80 and account for approximately 21.6 percent of project area soils. Soils with this rating are suitable for most crops and have few special management needs. Less than one percent of the soils have a rating between 40 and 60 and are suited to crops which require special management. Another 69.5 percent of on-site soils have a rating between 20 and 40, indicating that usage for crops is severely limited. Approximately 8.8 percent of the soils on-site have Storie Index ratings of less than 20, indicating unsuitability for any crops. Storie indices for all on-site soils are shown in Table 4N-1.

The location of important farmland soil designations (as well as other nonagricultural categories) is shown on Figure 4N-2. As seen on this figure, there is no prime farmland on the project site. On-site agricultural operations are primarily located on farmland of local importance, farmland of statewide importance, and unique farmland.

Approximately 45 acres of farmland of statewide importance occur within the site, with these soils located in three distinct areas (see Figure 4N-2). Approximately 168 acres of unique farmland occur on-site, with these areas extending throughout much of the central portion of the site (see Figure 4N-2). Farmlands of local importance include approximately 85 acres on-site and are located primarily in the northern and southwestern portions of the project area.

Shell Parcel

Prime farmland soils are associated with alluvial portions of the Shell parcel. These soils (consisting of Salinas clay loam) are Class II and have a Storie Index rating of 73. They are present in very limited quantity, however. The Huerhuero loam, Redding cobbly loam, and terrace escarpments, which form the majority of this parcel, have capacity class ratings of IV, VI, and VIII, respectively, with Storie Index ratings of 38, 10, and 10. Index 10 soils are considered unsuitable for any type of crop. The index of 38 indicates soils with severe limitations. Based on these criteria, the 1990 Important Farmland Map (California Department of Conservation) shows the parcel to consist of category "X," or Other Land.

b) Mineral Resources

In accordance with classification guidelines established by the State Mining and Geology Board and in compliance with the Surface Mining and Recovery Act of 1975, the state geologist is required to classify areas into Mineral Resources Zones (MRZ). These zones are established on the basis of an aggregate resource appraisal which includes an analysis of geologic reports and maps, field investigations, an examination of active sand and gravel mining operations, analyses of drill hole data, interpretation of aerial photographs, and evaluation of private company data. The guidelines for establishing the MRZ are as follows:

S = FARMLAND OF STATEWIDE IMPORTANCE. Land with a good combination of physical and chemical features for the production of agricultural crops

U = UNIQUE FARMLAND. Land of lesser quality soils used for the production of the State's leading agricultural cash crops

L = FARMLAND OF LOCAL IMPORTANCE. Nonirrigated Prime and Statewide soil mapping units, and cultivated farmlands not covered by any above category, but are of significant economic importance to the County

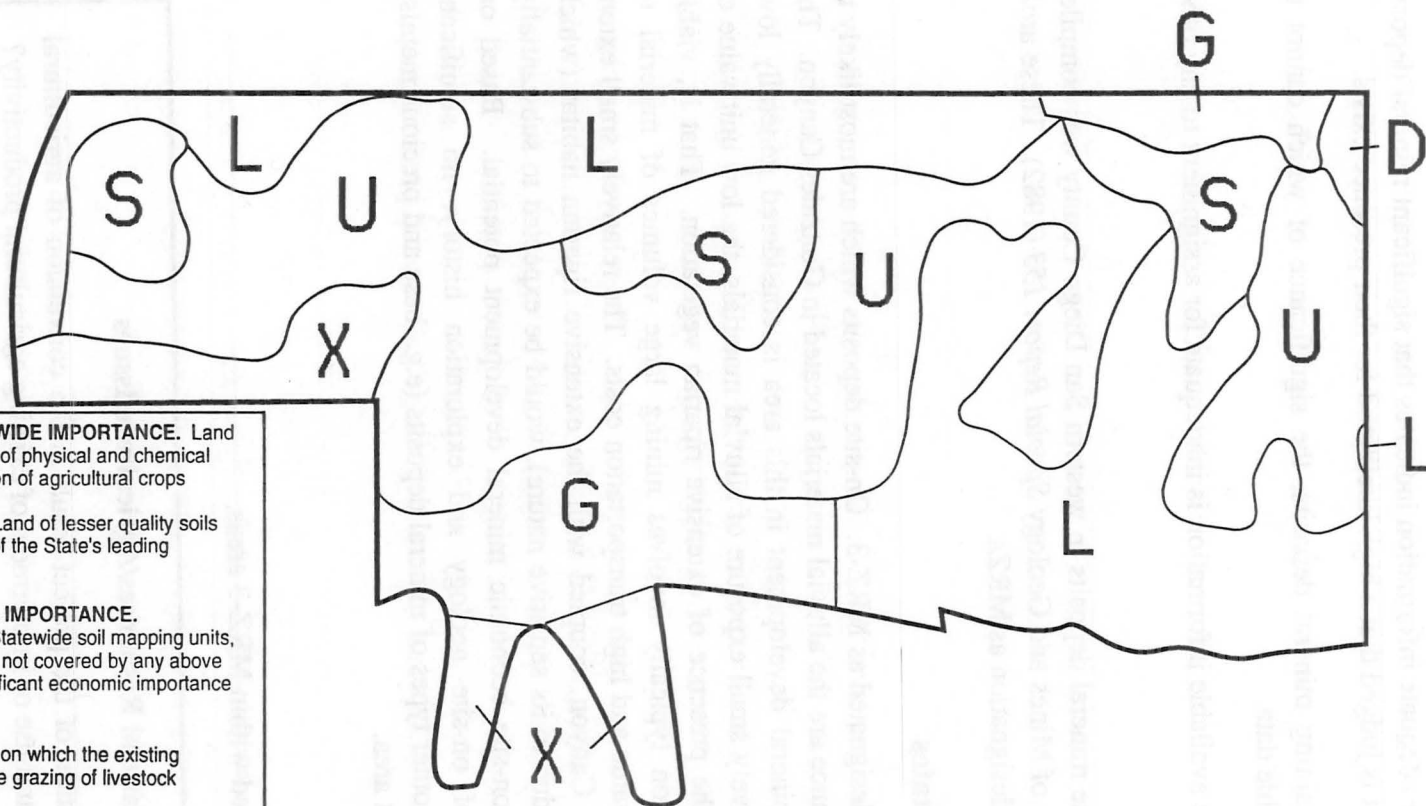
G = GRAZING LAND. Land on which the existing vegetation is suited to the grazing of livestock

D = DEVELOPED LAND

X = OTHER LAND. Land which does not meet the criteria of any other category

The above definitions are summarized from the "Advisory Guidelines for the Farmland Mapping and Monitoring Program"

SOURCE: STATE OF CALIFORNIA IMPORTANT FARMLAND MAP, 1992b



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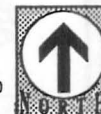


FIGURE 4N-2

**Del Mar Highlands Estates
Important Farmlands**

- MRZ-1. Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.
- MRZ-2. Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.
- MRZ-3. Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- MRZ-4. Areas where available information is inadequate for assignment to any other MRZ.

Classification of aggregate mineral deposits in western San Diego County was compiled in the California Division of Mines and Geology *Special Report 153* (1982). These areas were then considered for designation as MRZs.

Del Mar Highlands Estates

The entire project site is designated as MRZ-3. On-site deposits which are most likely to have an economic importance are the alluvial materials located in Gonzales Canyon. The potential for economic mineral development in this area is considered generally low, however, due to the relatively small exposure of alluvial materials, the low unit value of aggregate minerals, and the presence of extensive riparian vegetation. That is, viable sand and gravel production typically involves mining large volumes of material to compensate for low unit value and high transportation costs. The relatively small extent of materials in Gonzales Canyon, coupled with the extensive riparian habitat (which would restrict operations due to its sensitive nature), would be expected to substantially reduce the potential for on-site economic mineral development potential. Based on preliminary evaluation of on-site geology and exploration history, no significant development potential for other types of mineral deposits (e.g., base and precious metals) is anticipated in the project area.

Shell Parcel

The Shell parcel is contained within MRZ-3 areas.

Natural Resources/Agriculture Issues

1. Would implementation of the project result in the conversion of agricultural land to nonagricultural use or impairment of existing agricultural productivity?
2. Would implementation of the project result in the prevention of future extraction of sand and gravel resources?

1) Issue

Would implementation of the project result in the conversion of agricultural land to nonagricultural use or impairment of existing agricultural productivity?

Impacts

Project implementation would permanently convert the site's commercial agricultural use to undisturbed open space, roads, and residential uses, with ancillary (including potential small-acreage agricultural) uses permitted in designated areas. Developable areas within lots total a maximum of approximately 148 acres, roads account for approximately an additional 15 acres, and the remaining approximately 280 acres would remain in open space.

Specifically, 200 acres of agricultural land would no longer be in production after project implementation. Because of the sensitive nature of most of the proposed nondevelopable area, however (i.e., mostly riparian or coastal sage scrub corridors), it is unlikely that agricultural use would be authorized in these areas. The existing on-site agricultural permit issued by the City of San Diego specifically excludes these sensitive areas and requires their retention as a natural preserve. Therefore, the loss of this agricultural land, including State of California lands mapped as farmland of statewide importance and unique farmland (see Figure 4N-2), would be cumulatively significant.

Significance of Impacts

No significant direct impacts to agricultural use or potential are anticipated as a result of proposed project implementation. This conclusion is based on a number of factors, including the lack of prime farmland on Del Mar Highlands Estates, very limited areas of prime farmlands on the Shell parcel, lack of agricultural preserves, the fact that local agriculture is not regionally significant, and the presence of numerous limiting factors for agricultural production (e.g., topography and sensitive habitats).

Mitigation, Monitoring, and Reporting

No mitigation is required.

2) Issue

Would implementation of the project result in the prevention of future extraction of sand and gravel resources?

Impacts

There are no existing on-site mining operations which would be replaced during project implementation. As mentioned previously, the entire project site is designated as MRZ-3, with the most likely location for previously unidentified mineral resources located within Gonzales Canyon. Project implementation includes the identification of developable and nondevelopable areas within the project site, in conformance with the City's RPO. The project would preclude on-site mineral extraction, which would be incompatible with both residential use and preservation of the proposed nondevelopable areas.

Significance of Impacts

The project site has unknown potential for aggregate mineral deposits. The most likely location for occurrence of such deposits is the alluvium in Gonzales Canyon. Any potential value associated with on-site mineral resources would be lost due to the proposed project, which places these areas into open space in perpetuity. This is not considered significant, however, due to the generally low potential assigned to on-site aggregate mineral development. This conclusion is based on the relatively small extent of on-site alluvial materials, the low unit value of aggregate minerals, and the presence of sensitive habitats (as described above).

Mitigation, Monitoring, and Reporting

No mitigation is required.

Chapter Five

CEQA Mandatory Discussion Areas

A. Any Significant Irreversible and Unavoidable Environmental Changes Which Would Be Involved in the Proposed Action Should It Be Implemented

The most apparent irreversible environmental change associated with the Del Mar Highlands Estates project and its implementation would be the continuation of a planned commitment of a major portion of the site to residential, recreational, and open space uses. This conversion of land for these uses is a permanent change. These include significant changes to existing landform, land use, noise, and archaeological and biological resources. The existing landform would be altered by grading operations that include cutting the mesa top areas and filling canyon heads to provide development areas. These alterations in the existing landform would be irreversible and, since they are a result of the project land use changes, cannot be avoided without changing the development concept.

The existing uses of the property (agriculture, biological habitat, unauthorized off-road-vehicle uses) would be changed with the implementation of the proposed project, whereby the project would be used for residential, educational, recreational, and open space uses. These changes in the land uses of the site would be irreversible.

Implementation of the project as proposed would cause significant irreversible impacts to biological resources that exist on the property. Approximately 169 acres of the existing project site land area would be affected by the residential and street development designated for the proposed project. Approximately 220 acres would be preserved as open space as a result of the proposed project.

Because of the commitment of land to these uses, implementation of the proposed project would result in the consumption of energy derived from nonrenewable sources, such as fossil fuel and nuclear fuels. Building materials would be considered permanently used.

B. Growth-Inducing Impacts of the Proposed Project

Section 15126(g) of the CEQA Guidelines describes growth-inducing impacts as “the ways in which the proposed project could foster economic or population growth, or the construction of new housing, either directly or indirectly in the surrounding environment.” If a project has characteristics which may “encourage or facilitate other activities that could significantly affect the environment, either individually or cumulatively,” then this aspect of the project must be discussed as well. The following discussion primarily focuses on two factors: (1) potential for stimulation of development of property at a greater density than allowed by existing planning and zoning; and (2) a change in the timing of development resulting from extension of public services or road access into an area where previously unavailable.

The 389-acre Del Mar Highlands Estates project site is located in an area of approximately 12,000 acres identified as the North City Future Urbanizing Area. The Del Mar Highlands Estates site is in the western portion of Subarea III of the FUA and adjoins Subarea II to the west, the Carmel Valley community to the south, the Fairbanks Country Club Specific Plan development to the north and east, and agricultural and undeveloped land in Subarea III to the southeast.

All lands in the FUA are designated as agricultural (with A-1-10 zoning) on an interim basis to prevent premature urbanization and protect environmental and fiscal resources by precluding leapfrog development. A Framework Plan for the FUA has been adopted by the City as an amendment to the General Plan. This plan would permit the development of up to 14,780 residential units in the FUA, including 5,460 units within Subarea III. The Framework Plan identifies the Del Mar Highlands Estates project site for estate residential development at up to 0.2 du/ac (77 units total). Implementation of the Framework Plan is dependent on a phase shift from “future urbanizing area” to “planned urbanizing area.”

According to the City of San Diego’s Progress Guide and General Plan, the FUA designation may be removed upon one of the following:

- The Urbanizing Area and Planned Urbanizing Area communities of the City approach buildout, or
- Significant opportunities arise to implement the City’s balanced housing, land use, or other goals.

At such time as it is determined that one of the two situations has occurred, a General Plan amendment for a phase shift may be prepared. If approved by the City Council, the

amendment would be brought to the voters in a city-wide election for final action in accordance with Proposition A, the Managed Growth Initiative (R-264708, 12-16-85). A subarea plan for Subarea III must also be prepared and adopted by the City prior to development at the densities permitted in the Framework Plan. See the Land Use discussion in Section 4.A for additional background information on phase shift and subarea planning requirements. A phase shift for the FUA was put to the voters on the June 1994 ballot and did not pass.

In the absence of a phase shift and adopted subarea plans for the FUA, the Framework Plan and Council Policy 600-29 permit development within the FUA consistent with the underlying A-1-10 zoning (one unit per ten acres), Planned Residential Development regulations (not to exceed one unit per four acres), Rural Cluster regulations (at the A-1-10 zoning density), and with a Conditional Use Permit.

The current project proposes 172 dwelling units on Del Mar Highlands Estates. This proposed number of units exceeds the allowable density discussed above for the parcel. The overage, however, results from two causes:

- Transfer of units from the Shell parcel held by the applicant which will be dedicated to open space (Table 5-1).
- Construction of 24 units of affordable housing.

**TABLE 5-1
PROJECT ANALYSIS**

Parcel	Acreage	Units at 0.25 du/ac	Density Bonus Units	Lots Proposed by Applicant	Affordable Housing Units
Del Mar Highlands Estates	389.0	97.25	54	148	24
Shell (unit transfer)	84.0	21.0	0	0	0
TOTALS	473.0	118.25	54	148	24

The transfer parcel (84 acres) could have supported 21 dwelling units under Council Policy 600-29 clustering provisions. Units on Shell (21) are being transferred to Del Mar Highlands Estates. When combined with the possible total of units for Del Mar Highlands Estates (97), the number of potential dwellings on the parcel totals 118. In addition, by inclusion of the affordable housing, the applicant would receive a 46 percent density bonus, or an additional 54 units ($118 \times 0.46 = 54$), bringing the total number of potential dwellings on Del Mar Highlands Estates to 172. This is precisely the number

proposed by the applicant: 148 market rate units and 24 affordable housing units to be developed under this project.

In addition to the fact that total housing units would comply overall with planned Policy 600-29 densities, when combined with the state-mandated density bonus granted through inclusion of affordable housing, the proposed project would not have a growth-inducing impact for the following reasons:

- The proposed project would not directly or indirectly foster significant economic or population growth through provision of employment opportunities and construction activities related to development of the surrounding area. Also, as described above, the overall density of proposed development within the FUA for the parcels considered in this EIR does not exceed these densities allowed by existing planning and zoning regulations.
- The proposed project does not represent leapfrog development. With regard to Del Mar Highlands Estates, the site is surrounded on three sides by development and the fourth side of the project abuts a roadway with existing utility lines. Although the project will extend roadways, utilities, and water service into a previously unserved area, it will not remove obstacles to growth for any adjacent areas and thereby stimulate development of surrounding properties at a higher density than currently allowed.

C. Effects Found Not to Be Significant

Based on the Initial Study, which was conducted by the City of San Diego to develop the scope of issues for the EIR, and the preceding environmental impact analysis (Chapter 4), several issues were found not to have potentially significant effects. These are briefly explained below.

1) Risk of Upset

None of the proposed project components would increase the risk of an explosion or release of hazardous substances to the environment due to an accident or upset conditions. There are no land uses proposed on any of the sites which would be expected to store, use, transport or generate large quantities of hazardous substances. Since there is currently no public vehicular access through the project site, project construction is not expected to result in interference with an emergency response or evacuation plan.

2) Population and Housing

There are no existing residences on either of the project component sites (Del Mar Highlands Estates and Shell parcel). Due to the consistency of the project with the density limits in local plans, no significant impacts on population and housing are anticipated.

3) Energy

Implementation of the proposed project would not result in substantial demand for or consumption of energy. Future home development would be in compliance with the energy conservation requirements in Title 24 of the California Administrative Code and would not be high-energy-demand land uses.

4) Light and Glare

The design guidelines for the proposed project components place limitations on lighting for the project. Due to the low number of hours and low density of the proposed project, no significant light and glare impacts are anticipated.

Chapter Six

Cumulative Effects

Cumulative effects are two or more effects which, when considered together, are considerable or compound or increase other impacts; and the incremental effects of a project which by themselves are not significant but, when considered with impacts occurring from other past, present, and reasonably foreseeable projects in the vicinity, would result in a significant impact.

Specific past, present, or reasonably foreseeable projects are reviewed to assess cumulative effects. These include the adopted Framework Plan, approved and proposed precise plans in Carmel Valley, the Via de la Valle Specific Plan, the Showpark Equestrian Center, and the Rhodes tentative map. Other ongoing planning efforts which are also included in this analysis discussion are the San Dieguito Lagoon Enhancement Program, the San Dieguito River Park Concept Plan, and the Multiple Species Conservation Program. Table 6-1 lists these above projects along with other specific proposals.

Cumulative Projects Considered

a) Subarea I of the Framework Plan

Subarea I of the adopted Framework Plan consists of Area 1A and 1B. According to the Framework Plan, Area 1A consists of approximately 4,680 acres. Projected land uses and acreages identified for Area 1A in the Framework Plan included designations of estate (352 acres), very low (2,071 acres), moderately low (156 acres), peripheral (32 acres), local mixed-use (20 acres), and open space (2,050 acres).

Within Subarea I, a revised vesting tentative map was approved in 1995 for 3,777 acres of this site known as Black Mountain Ranch. This map includes plans for 1,121 dwelling units, one 250-acre 18-hole golf course, one 300-acre 18-hole golf course, one 30-acre community park, two 5-acre parks, and 2,171.2 acres of natural open space. The plan also includes a reclaimed water reservoir, potable water reservoir, fire station, community hall, library, senior citizen center, day-care center, church, recreation center, and

**TABLE 6-1
CUMULATIVE PROJECTS**

Name of Project	Gross Acres	Proposed Development	Status
Subarea I of Framework Plan	5,100	Various residential densities, open space, and mixed use	Subarea plan in process
Subarea II of Framework Plan	830	Estate and low density residential use and open space	Subarea plan in process
Subarea III of Framework Plan	2,640	Various residential densities, open space, and mixed uses	Subarea plan in process
Subarea IV of Framework Plan	1,330	Various residential densities, open space, and mixed use	Subarea plan in process
Subarea V of Framework Plan	2,042	Various residential densities and open space, and school and park	Approved
Black Mountain Ranch TM	3,777	Within Subarea I consisting of 1,121 dwelling units, one 250-acre 18-hole golf course, one 300-acre 18-hole golf course, one 30-acre community park, two 5-acre parks, and 2,171.2 acres of natural open space	Approved
The Bougainvillea	383	Within Subarea V consisting of a golf course, 140 units, and resort hotel	Approved
Bame parcel subdivision	17	4 dwelling units	Approved
San Andres West	17.6	47 dwelling units	Under construction
State Route 56	9 miles	Connects I-5 and I-15	Proposed
Draft Multiple Species Conservation Program	260,000	Regional habitat conservation plan	Draft plan; not approved
Neighborhood 8	350	CVREP channel with residential use	Approved
Neighborhood 8A	402	952 dwelling units	Proposed
Neighborhood 8B	100	Very low density residential	No precise plan proposed

**TABLE 6-1
CUMULATIVE PROJECTS
(continued)**

Name of Project	Gross Acres	Proposed Development	Status
Neighborhood 10	806	1,438 dwelling units	Approved, amendment proposed
Via de la Valle Specific Plan	123.5	421 dwelling units and open space	Approved, being amended
Rhodes Vesting Tentative Map	10.2	42 dwelling units	Approved
Showpark Equestrian Center	64	Equestrian center	Existing
San Dieguito Lagoon Restoration	NA	Wetlands restoration	In process
San Dieguito River Park	80,000	Preserve natural resources and provide public recreational opportunities	Approved JPA

elementary, middle, and high school sites. The project will construct an extension of Carmel Valley Road from Black Mountain Road to the westerly segment of SR-56. Approximately 900 acres would be subject to future development under existing land use policies or, after a phase shift, under Framework Plan policies. No construction has begun in Area 1A.

According to the Framework Plan, Area 1B consists of an estimated 500 acres. Projected land uses and acreages identified in the Framework Plan for Subarea 1B include residential very low (76 acres), core residential (79 acres), peripheral (123 acres), mixed-use core (41 acres), employment (42 acres), community park (35 acres), and open space (100 acres). A Supplemental EIR and subarea plan are currently being prepared for the North and South Village plans, the resort hotel, and the perimeter properties within Area 1B.

Plans for the North Village include 3,340 dwelling units; 450,000 square feet of industrial, office, or other uses as an employment center; 140,000 square feet of commercial retail space; and 13 acres of medical, police, and fire facilities. The plan also calls for 10 acres of neighborhood parks and a 10-acre school site.

The South Village is planned to contain 200 dwelling units and 60,000 square feet of commercial retail development. Covering an area of 26 acres, the resort/hotel will be developed to provide overnight lodging open to the public and ancillary services for golf course visitors. The resort is planned to contain 450 rooms.

Along the Subarea I perimeter, there are four cluster areas which total 515 acres that are not owned by the Black Mountain Ranch Limited Partnership. The southwest perimeter is comprised of 515 acres held by five separate owners. The properties are designated "Estate Residential" and have a capacity to develop 163 units within 151 acres adjacent to and compatible with the Rancho Santa Fe Farms area.

The southeast perimeter is comprised of 282 acres held by five separate owners. The property has the capacity to develop 373 units within two areas of 72 acres and 13 acres adjacent to and compatible with the Rancho Peñasquitos residences.

The southern perimeter is a small 16-acre triangle under single ownership located along the southern Subarea I boundary. Approximately 10 dwelling units are planned in an isolated six-acre area.

The northeast perimeter of the subarea is a single ownership totaling 67 acres. Up to 232 dwelling units are planned within a development area of 18 acres. This property should develop at densities compatible with the adjacent northern village and ultimately function as an integral element of the village.

b) Subarea II of the Framework Plan

The Framework Plan estimates Subarea II to contain 830 acres. The Framework Plan estimated land use designations to include residential estate (25 acres), very low (220 acres), and open space (580 acres). The Framework Plan projected 230 units within Subarea II. Three projects, referred to as the Stallions Crossing projects, were proposed in this subarea (The Villas, The Ranch, and The Villages TMs), but were not approved.

c) Subarea III of the Framework Plan

The Framework Plan estimates Subarea III to contain 2,640 acres. The Framework Plan estimated the subarea would contain the following land uses: estate (172 acres), very low (147 acres), moderately low (231 acres), low (409 acres), peripheral (161 acres), core residential (56 acres), mixed-use core (46 acres), community park (35 acres), school (90 acres), and open space (1,300 acres). The Framework Plan also estimated 5,460 housing units for Subarea III. Currently within Subarea III, the Rancho Glen Estates project, a 128.22-acre project on 264 acres, has graded and is building on 30 of the 32 lots.

d) Subarea IV of the Framework Plan

The Framework Plan estimates Subarea IV to consist of 1,330 acres located east of Subarea III, south of Subarea I, and west of the Rancho Peñasquitos community. Projected land uses and acreages identified by the Framework Plan included residential-very low (437 acres), moderately low (213 acres), low (109 acres), peripheral (117 acres), local mixed-use (40 acres), service/commercial (32 acres), employment (80 acres), school (30 acres), and open space (270 acres). The Framework Plan also projected an estimated 2,850 units within Subarea IV.

e) Subarea V of the Framework Plan

The Framework Plan estimates that Subarea V consists of 2,290 acres, located south of State Route 56, north of the Peñasquitos Canyon reserve, between Carmel Country Road and Camino Ruiz. Projected land uses and acreages identified by the Framework Plan included residential estate (249 acres), very low (356 acres), peripheral (25 acres), local mixed-use (20 acres), and 1,640 acres of open space. The Framework Plan estimated 840 dwelling units within Subarea V. A subarea plan was approved for Subarea V.

Within Subarea V is the 385-acre Bougainvillea project site. This project, which has been approved, includes an 18-hole golf course, restored and natural open space, clustered residential dwelling units (at a density of one unit per four acres), and affordable housing units. A second phase of a resort hotel is being planned, and a third phase of a mixed-use development along Shaw Ridge Road may also be included in this plan.

f) Bame Parcel Residential Subdivision

The approved Bame parcel subdivision includes 17 acres located along the east side of Old El Camino Real, approximately 0.2 mile south of the Del Mar Highlands site. Proposed development in the Bame project includes four estate residential homes on 13 acres (with lot sizes ranging between 2.0 and 4.5 acres) and 4 acres of open space.

g) San Andres West Residential Development

The San Andres site includes 17.6 acres located north of Via de la Valle and west of San Andres Drive, approximately 1.1 miles northwest of the Del Mar Highlands Estates property. The approved development at San Andres West includes 47 single-family residential lots, two lots for private streets (1.66 acres), and four slope (open space) lots (8.54 acres). On-site excavation includes 80,000 cubic yards of balanced cut and fill (i.e., with no net material import or export). A Mitigated Negative Declaration (DEP No. 94-0437) was approved for the proposed project in December 1994 (Planning Commission Resolution No. 2152-1-PC). Key environmental issues identified for the San Andres West project in that document included biological resources and erosion/sedimentation. The project is under construction.

h) State Route 56 Mid-Portion

This six-lane state highway would be extended through Subareas III, IV, and V of the Future Urbanizing Area, connecting with the existing segments of State Route 56 located to the east and west of the Future Urbanizing Area. Caltrans originally evaluated seven alternative alignments for State Route 56 in a Project Work Program analysis. Caltrans is currently preparing a Project Report for a more in-depth analysis of the remaining two alternative alignments for State Route 56. The City of San Diego is the lead agency for preparation of the environmental documentation for this project. The City has completed an environmental constraints analysis for the project and a Notice of Preparation has been issued for the preparation of an environmental impact report.

i) Multiple Species Conservation Program

Following the listing of the coastal California gnatcatcher as a threatened species by the U.S. Fish and Wildlife Service in 1993, the City of San Diego and other land use jurisdictions in southwestern San Diego County began development of the Multiple Species Conservation Program to meet the Metropolitan Wastewater Department's need to mitigate the direct biological impacts associated with mandated improvements to the region's sewage treatment facilities. The MSCP effort was also directed toward mitigating the secondary biological impacts associated with projected growth in the region.

The MSCP is designed to identify lands that would conserve habitat for federal and state endangered, threatened, or sensitive species, including the federally listed threatened California gnatcatcher. The MSCP is intended to be the equivalent of a Natural Community Conservation Plan for the area, consistent with the federal Endangered Species Act Section 4(d) rule for the coastal California gnatcatcher that would define conditions under which “take” of the species could occur without violation of the Endangered Species Act. That is, the MSCP is a plan and process for the issuance of permits under the federal and state Endangered Species Acts and the state’s Natural Community Conservation Planning Act of 1991.

In August of 1996, the MSCP Plan and related resource documents were released for public review. A joint final federal EIS and state EIR was released in January 1997 on the MSCP Plan. The MSCP includes a compilation of information related to vegetation, land use, and generalized land ownership mapping and the preparation of biological standards and guidelines, a habitat evaluation model, a population viability analysis for the coastal California gnatcatcher, and an analysis of the acreage necessary for a viable preserve system. The MSCP Plan also includes an implementation strategy, preserve design, and management guidelines. When adopted by local jurisdictions and approved by the U.S. Fish and Wildlife Service and CDFG, a final MSCP Plan and report will be prepared.

Using the MSCP Plan as a framework plan, subarea plans may be prepared by local general-purpose agencies. The City of San Diego has prepared a subarea preserve plan to guide implementation of the MSCP Plan within its corporate boundaries. The subarea plan is intended to guide land uses and preserve management but has not yet been adopted. The project site is within the northern subarea of the City’s subarea plan as part of the Future Urbanizing Area preserve area. Within the northern subarea, the City proposes to “preserve two-thirds of the Los Penasquitos Lagoon/Canyon/Del Mar Mesa core area within its jurisdiction” (City of San Diego 1995:8-11). To do so, “[p]reserve areas would be acquired or a conservation easement applied, as necessary, to assure wildlife movement and habitat restoration/protection.” The subarea plan contains a list of specific guidelines for the proposed North City FUA subarea; none of these directly apply to the proposed project area.

The MSCP mapping and planning effort could refine identified open space boundaries for projects undergoing current planning. These areas could include the project site and the San Dieguito River Regional Open Space Park Focused Planning Area (FPA).

j) Carmel Valley Neighborhood 8

Neighborhood 8 is an approved precise plan north of Neighborhood 8A covering approximately 350 acres. This precise plan consists of the Carmel Valley Restoration and Enhancement Plan channel, low-density residential, and open space uses.

k) Carmel Valley Neighborhood 8A

A precise plan is currently being processed for the 390.2-acre Neighborhood 8A, which is located south of Neighborhood 8 and west of Neighborhood 10 and Subarea V. Proposed land uses include 952 residential units ranging from very low density to low-medium density, a 20-acre elementary school/community park site, and open space. A final EIR has been completed for the project, but the project has not been approved.

l) Carmel Valley Neighborhood 8B

Neighborhood 8B has initiated the processing of a precise plan for the existing Arroyo Sorrento area, north and west of Neighborhood 8A.

m) Carmel Valley Neighborhood 10

The approved Neighborhood 10 Precise Plan covers 806 acres located southwest of Subarea V, in the southern portion of the Carmel Valley community. The precise plan would provide for 1,438 dwelling units, with 125 units as multi-family, 4 acres of commercial, 5 acres of school sites, 10 acres of neighborhood parks, and 430.4 acres of open space. The EIR for this project has been completed as final, the project has been approved, and much of the site has been cleared pursuant to approved vesting tentative maps. An amendment to the approved precise plan is currently being processed to increase the number of single-family residential units from 1,438 to 1,566, a 128-unit increase.

n) Via de la Valle Specific Plan 1

The Via de la Valle Specific Plan 1, which was adopted in 1984 and amended in 1989, plans for 123.5 acres located north and east of I-5 and south of the San Diego/Solana Beach city boundary. The plan provided for 421 dwelling units and 57 acres of open space. Currently, approximately two-thirds of the plan area is developed with no current proposal to build out the remaining area. Recently, an amendment to the plan was submitted by an adjacent landowner under which 9 acres would be added to the plan, increasing the unit potential by 16 dwelling units.

o) Rhodes Vesting Tentative Map

This approved vesting tentative map is located adjacent to and south of The Villas project site. It is within the Carmel Valley community plan area and consists of 42 single-family residential lots on 10.2 acres. The final EIR for the project identified significant, unmitigated cumulative impacts to biological resources, landform alteration/visual quality, and hydrology/water quality. All the identified direct environmental impacts were mitigated. The project was approved in February 1994.

p) Showpark Equestrian Center

The Showpark Equestrian Center is located on 64 acres southwest of the intersection of El Camino Real west and Via de la Valle. The western boundary of the property is adjacent to The Villages project site. The entire site is disturbed, with a show ring, public viewing grandstands, horse boarding facilities, and parking.

q) San Dieguito Lagoon Restoration Project

The Lagoon Restoration Project is part of an extensive study being conducted for the western portion of the San Dieguito River valley. Analysis to date includes a baseline biology study, conceptual restoration alternatives, and a resources summary for the lagoon. The conceptual alternatives study identified 14 possible alternatives. Of these 14, three are presently being studied further and modeled hydrologically. Part of the wetlands restoration will be implemented by Southern California Edison as mitigation for impacts to ocean habitat from the San Onofre Nuclear Power Plant ocean discharge.

r) San Dieguito River Park Concept Plan (1994)

Planning for a regional open space park along the San Dieguito River and its tributary canyons extending from the Pacific Ocean inland to Volcan Mountain has been ongoing for several years. A Joint Powers Authority was established in 1989 to create an agency with a regional view of the park. The FPA boundaries and goals and objectives for the park have been adopted.

The JPA has prepared a concept plan to provide general planning for properties within the FPA. It is intended that detailed master plans will be prepared for each of the 14 planning units within the FPA (known as "landscape units") with different topographic, vegetative, and land use characteristics. The FPA extends approximately 55 miles from the Pacific Ocean in Del Mar to the desert just east of Volcan Mountain and encompasses approximately 80,000 acres.

Cumulative Effects Issue

1. What are the cumulative impacts of the proposed project when considered with impacts occurring from the other projects in the area?

Impacts

The following discussions examine only those issues which have the potential to create significant cumulative impacts.

a) Hydrology/Water Quality

The potential for cumulative sedimentation impacts to San Dieguito Lagoon exists from the development of approved and proposed projects near Del Mar Highlands Estates. For those projects that drain to the San Dieguito River and Lagoon, potential water quality impacts related to erosion, siltation, and discharge of construction-related contaminants would be mitigated but not to a level below significance by incorporating BMPs for each project's storm water permits approved by the Regional Water Quality Control Board and contributions to the Los Peñasquitos Lagoon Enhancement Fund.

b) Landform Alteration/Visual Quality

Grading and development of the proposed project site would significantly alter the existing landform. This project, along with other projects proposed in the area, would have a cumulative impact on landforms and visual quality in the region because of the widespread changes from undeveloped open space to urban and suburban environments which would occur if all proposed projects in the areas were built out.

c) Biological Resources

Although the Del Mar Highlands Estates project has been designed to be consistent with the draft MSCP regarding biological core areas and wildlife corridors, the potential for significant cumulative biological impacts has not been eliminated. Del Mar Highlands Estates, along with other projects in the North City area, would contribute to a significant cumulative loss of biological resources.

d) Traffic Circulation

The Del Mar Highlands Estates project would result in potentially significant cumulative impacts to traffic movements at or near the intersections of San Dieguito Road/Old El Camino Real and San Dieguito Road/project main access. In addition, the project may contribute to a potentially significant regional traffic impact at the El Camino Real/Derby Downs Road intersection. Finally, project traffic would contribute to significant impacts to traffic flow on El Camino Real between Half Mile Drive and Via de la Valle and on Via de la Valle between El Camino Real (north of Via de la Valle) and San Andres Drive.

e) Air Quality

Considered with other new development in the air basin, this project would contribute to the nonattainment of clean air standards and cumulative impacts to air quality would be considered significant. The resulting increase in emissions would be due to increased emissions from mobile sources, which would degrade existing air quality in the project area. Also, cumulative traffic impacts would degrade the peak hour levels of service of

some of the region's intersections, which would also create significant cumulative air quality impacts.

Because air quality is affected by the cumulative release of pollutants across the entire basin, cumulative impacts to the SDAB can be reduced only through implementation of regional strategies. The 1991/1992 RAQS for the SDAB have been designed to achieve conformance with state and federal air quality standards. It is the responsibility of the San Diego APCD to implement the RAQS throughout the SDAB.

f) Natural Resources/Agriculture

Considered with other development in the area, the loss of 200 acres of agricultural land in the Del Mar Highlands Estates component of the project is cumulatively significant. Neighborhood 10, the Bame subdivision, Bougainvillea, the MSCP, and Stallions Crossing all represent the permanent change from agricultural uses to other uses.

Significance of Impacts

Although the proposed project (Del Mar Highlands Estates) is consistent with the adopted traffic master plans and phasing plans applicable to the subregion, the potential cumulative traffic impacts area roadways identified above are considered regionally significant and unmitigable. Cumulative hydrology and water quality impacts are not significant because all of the project components would be required to comply with all NPDES requirements and contribute to the Los Peñasquitos Lagoon Enhancement Fund. Cumulative impacts concerning air quality, agriculture, landform alteration, and biology are considered significant and unmitigated.

Mitigation, Monitoring, and Reporting

No other mitigation is possible within the currently proposed project design. However, alternatives to the proposed project that would reduce the project's contribution to these cumulative impacts are discussed in Chapter 7 of this EIR.

Chapter Seven

Project Alternatives

The focus of evaluating alternatives to the project is identification of alternative actions that would avoid or mitigate significant effects of the project as proposed. For the Del Mar Highlands Estates project, the potentially significant impacts include land use, agricultural resources, and landform alteration. CEQA also directs that the specific alternative of no project be discussed. Other alternatives assess development under existing land use policies and regulations.

A. Alternatives Considered but Rejected

1) Subarea III Plan Alternative

In 1993, the applicant proposed development of the entire 2,725-acre Subarea III of the North City Future Urbanizing Area with 6,500 residential units, as well as commercial, industrial, and employment center uses. This plan included an estate residential development of 110 units covering 176 acres of the subject 389-acre project site. The remainder of the project site (213 acres) was proposed to be retained in open space within an area similar to that shown as Environmental Tier on the Framework Plan diagram. Similar to the proposed project, Gonzales Canyon would have been maintained in open space and a north-south connection to the San Dieguito River valley would have been preserved in the northwest corner of the parcel.

This alternative was pursued by the applicant for several years as part of the FUA and Subarea III planning process. Work completed included the accumulation of a significant environmental data base for the subarea, participation in the development of the Framework Plan and a Citizens Advisory Committee alternative to the Framework Plan, and the preparation of a draft Subarea III plan and accompanying screencheck draft EIR. Proposition C, a ballot measure to shift the FUA from its future urbanizing to a planned urbanizing designation, was defeated by a majority of the City's voting electorate in June, 1994. Because a phase shift is necessary to implement a subarea plan in the FUA, the defeat of Proposition C eliminates this alternative from further planning consideration and it has, therefore, been rejected as a viable alternative for the purposes of this EIR.

2) Reduced Project Alternative

As originally proposed, the Del Mar Highlands Estates project had significant unmitigated impacts related to the visual impact from the San Dieguito River valley and Gonzales Canyon. These areas are identified as major natural features in the Framework Plan for the Future Urbanizing Area. The originally proposed design guidelines for the project did not include measures to reduce visual quality impacts from the public viewsheds of the river valley and the canyons, as specified in the San Dieguito River Regional Plan and San Dieguito River Park Concept Plan. Therefore, a reduced project alternative was discussed in the previous EIR for the project which would have provided setbacks and design requirements along the project's southern perimeter as specified in the above-referenced plans.

With the current Del Mar Highlands Estates project, the applicant has modified the design guidelines to incorporate additional measures which would substantially lessen the visual quality impacts. As described in Section 4.C, Landform Alteration/Visual Quality, these measures now incorporated into the design guidelines include limiting buildings to a single-story within 50 feet of the rear-yard property line for the perimeter lots above Gonzales Canyon, building height limits, rear-yard fencing and wall standards for perimeter lots, architectural treatments, and landscaping requirements for external slopes adjacent to natural open space. All of these design guidelines measures serve to buffer the residential development and provide a transition to Gonzales Canyon and the San Dieguito River valley. As such, the reduced project alternative has been rejected because of the incorporation of the mandatory design measures included into the design guidelines.

B. No Project Alternative

The project site would remain essentially in its existing condition, utilized primarily for agricultural production. The significant impacts associated with project implementation and the potentially significant cumulative impacts of proposed and approved developments in the area would not occur under this scenario. These impacts include potential direct and indirect impacts to sensitive biological habitat, landform alteration, loss of mature trees, paleontological resources, cultural resources, runoff and erosion patterns, traffic circulation, public facilities and services (schools, parks, fire, and police services), cumulative water supply (conservation), and public safety.

On the other hand, this scenario would result in the continued agricultural use of over half of the project site, including portions of Gonzales Canyon. This existing land use is dusty and noisy, consumes large amounts of water, and prevents the reestablishment of wildlife habitat and wildlife movement. It results in erosion, sedimentation, use of pesticides and herbicides, and related water quality impacts. This scenario would not

facilitate the establishment and enhancement of the Environmental Tier and the MSCP wildlife habitat and corridor in Gonzales Canyon and the connection of Gonzales Canyon to San Dieguito River valley, which would occur with the proposed project. The affordable housing units provided by the proposed project would also not be available to the market.

C. A-1-10 Rural Cluster Alternative

One of the development alternatives allowed on the project site under the adopted Framework Plan, its current Future Urbanizing Area land use designation, and existing A-1-10 zoning is to develop the property under the City's Rural Cluster Development guidelines. This would allow development of the site according to the density of the applicable zone, but clustered to promote more efficient land utilization. The rural cluster alternative's site plan is shown on Figure 7-1. This alternative would develop 37 lots clustered in the northeastern corner of the property, with the remainder of the project (Lot 38) undevelopable unless a phase shift occurs, changing its land use status from a future urbanizing area to a planned urbanizing area. Agricultural use would most likely continue in the agricultural permit areas within Lot 38. Access to the site would be provided from the east via Derby Farms Road, with three roads stubbed at the project limits that could eventually be incorporated into a roadway system throughout the property in conjunction with future development.

Significant landform alteration would be substantially reduced with the implementation of this alternative. Development would be primarily located on the previously farmed mesa tops which would avoid nearly all of the impacts to biological resources. Although impacts to landform alteration/grading and biological resources would be reduced, the impacts would remain significant. Other mitigated impacts of the proposed project, such as impacts to hydrology, cultural resources, transportation, geology, paleontology, air quality, noise, landform alteration/visual, and public safety, would be further reduced by implementation of this alternative.

The rural cluster alternative would have the following potentially significant impacts if mitigation is not incorporated into the project: inconsistencies with the FUA Framework Plan regarding the Environmental Tier; loss of Diegan coastal sage scrub; erosion and subsequent sedimentation in the San Dieguito River and Lagoon; landform alteration in excess of City significance thresholds; significant on-site geologic conditions; potential loss of paleontological resources; impacts to local schools and parks; impacts regarding the provision of water and sewer service; and potential for construction within contaminated soils. Cumulative impacts related to the addition of project traffic to existing queues occurring at the intersections of El Camino Real/San Dieguito Road and San Dieguito Road/Derby Farms Road, increased traffic through the intersection of El



SOURCE: T&B PLANNING CONSULTANTS, 1995

FIGURE 7-1
Del Mar Highlands Estates
A-1-10 Rural Cluster Alternative

Camino Real/Derby Downs Road, solid waste disposal, and water conservation could also occur.

All of the above impacts are mitigable with the possible exception of the landform alteration. In addition, the feasibility of the proposed water and sewer service connections is not known at this time.

Chapter Eight

EIR Preparation

This Environmental Impact Report was prepared by the City of San Diego Development Services Department, Development and Environmental Planning Division, located at 1222 First Avenue, Fifth Floor, San Diego, California. The following professional staff participated in its preparation:

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Chapter Ten

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is shown in the Framework Plan as Environmental Tier. The Shell and Deer Canyon parcels would be transferred to the City as mitigation for biological impacts associated with development of Neighborhood 8A. Rights to development currently held by the applicant would be transferred as follows:

- 21 dwelling units from Shell parcel to Del Mar Highlands Estates
- 9 dwelling units from Deer Canyon parcel to Lorenz parcel

The primary goal of the project for the Shell and Deer Canyon parcels is to remove them from future residential development and place them into Environmental Tier in perpetuity.

Significant Impacts of the Project Components and Proposed Mitigation Measures

A. Land Use

Significant Impacts

1. Consistency with Existing Plans and Policies

a) Neighborhood 8A Precise Plan

The proposed precise plan proposes less development and more open space than the community plan. It also differs in eliminating the designated neighborhood commercial center and in relocating the community park/elementary school complex. However, the project would result in significant impacts to land use due to the uncertainty of the two FPAs identified in the precise plan.

b) Acquisition Option

This option for the Neighborhood 8A Precise Plan, while providing substantial additional acreage to the draft MSCP preserve design, would result in significant impacts due to the uncertainty of the FPAs. The FPAs could be developed and these developments may preclude future preserve planning.

c) Torrey Surf Vesting Tentative Map

The residential development proposed by this VTM is consistent with the proposed precise plan. No significant impact would result from implementation of this VTM.

d) Del Mar Highlands Estates

The proposed Del Mar Highlands Estates project would be consistent with PRD regulations and would generally comply with the city land use goals, objectives, and recommendations. Furthermore, the proposed projects would cluster development and dedicate open space land consistent with the Framework Plan Environmental Tier. No significant adverse impacts are anticipated.

e) Lorenz Parcel

The impacts of developing the Lorenz parcel will be evaluated further at the tentative map stage. However, until a specific development is brought forth, the impacts are considered significant and unmitigated.

2. Consistency with the Local Coastal Program**a) Neighborhood 8A Precise Plan**

No development is designated or proposed in the Coastal Zone, so there would be no significant impact from implementation of the Neighborhood 8A Precise Plan. A determination on the future uses within the Mesa Top FPA is considered speculative.

b) Acquisition Option

This area is not within the Coastal Zone

c) Torrey Surf Vesting Tentative Map

No significant impact would result from implementation of this VTM.

d) Del Mar Highlands Estates and Lorenz Parcel

Neither project site is within the Coastal Zone and neither would affect the North City Local Coastal Plan.

3. Open Space**a) Neighborhood 8A Precise Plan and Torrey Surf VTM**

The land uses and open space designated in the Neighborhood 8A Precise Plan and Torrey Surf VTM are reasonably compatible with adjacent existing or planned uses and with the Multi-Habitat Planning Area presented in the draft MSCP. No significant impacts would result from their implementation. If, however, after three years the FPAs are developed, significant impacts could result.

b) Neighborhood 8A Acquisition Option (Pardee Parcels A and B)

The acquisition option for Pardee Parcels A and B could affect the funding for the Carmel Valley Facilities Benefit Assessment (FBA) and create adverse land use planning impacts. This impact is considered potentially significant.

c) Del Mar Highlands Estates and Lorenz Parcel

The Del Mar Highlands Estates project is compatible with the City's equestrian plan and draft MSCP. No significant impacts are anticipated.

No significant impacts to adopted environmental plans or policies are identified for the Lorenz parcel.

4. Resource Protection Ordinance and 600-40**a) Neighborhood 8A Precise Plan**

The development proposed by the revised Neighborhood 8A Precise Plan is not consistent with the encroachment allowances permitted by RPO for hillsides, wetlands, and biologically sensitive lands. Additionally, the precise plan does not provide the proper assurances that the project would cluster all development together, which is a significant land use impact.

b) Acquisition Option

The acquisition option would not fully implement the goals and objectives of Council Policy 600-40 because of the uncertainty associated with the FPAs and is a significant impact.

c) Torrey Surf Vesting Tentative Map

The proposed VTM would not be consistent with development regulations regarding encroachment allowances into sensitive biological lands in conformance with the Resource Protection Ordinance. This is a significant land use impact.

d) Del Mar Highlands Estates

The proposed project would exceed the encroachment allowance for RPO but would provide adequate on-site mitigation to reduce impacts to a level below significance.

e) Lorenz Parcel

RPO analysis and significance of impacts is considered potentially significant and unmitigated at this time. At the TM stage of development, mitigation will be provided.

Mitigation, Monitoring, and Reporting

1. Consistency with Existing Plans and Policies

a) Neighborhood 8A Precise Plan and Torrey Surf VTM

Adoption of project alternatives 4, 5, and 6a and 6b, which would comply with Council Policy 600-40 (see EIR Chapter 7) as well as the acquisition alternative, would mitigate the potentially significant land use impacts to below a level of significance. These alternatives would provide designated open space for all or a portion of the FPAs within the precise plan.

b) Acquisition Option

Adoption of project alternatives 4, 5, and 6a and 6b, which would comply with Council Policy 600-40 (see EIR Chapter 7) as well as the acquisition alternative, would mitigate the potentially significant land use impacts to below a level of significance. These alternatives would provide designated open space for all or a portion of the FPAs within the precise plan.

c) Del Mar Highlands Estates and Lorenz Parcel

No mitigation is required for the Del Mar Highlands Estates PRD. Appropriate mitigation for the Lorenz parcel will be identified when specific development is proposed.

2. Consistency with the Local Coastal Program

a) Neighborhood 8A Precise Plan, Acquisition Option, Torrey Surf VTM, and Del Mar Highlands Estates

Mitigation measures are not necessary.

3. Open Space

a) Acquisition Option

Mitigation for the potential impact to the facilities financing from the acquisition option of Pardee Parcels A and B would consist of amending the Carmel Valley FBA.

4. RPO and 600-40

a) Neighborhood 8A Precise Plan

The precise plan's inconsistency with the RPO encroachment provisions can be avoided with implementation of one of the alternatives which would allow compliance with Council Policy 600-40 or the acquisition/preservation alternatives. These alternatives are discussed in Chapter 7 of the EIR.

b) Acquisition Option

Mitigation under this option for the precise plan's inconsistency with the goals of Council Policy 600-40 could also be achieved through the implementation of one of the alternatives presented in Chapter 7.

c) Torrey Surf Vesting Tentative Map

Mitigation for the inconsistency with RPO encroachment provisions (e.g., loss of RPO-sensitive biological resources) is not provided within the VTM as proposed. The RPO alternative would reduce the impact to RPO-sensitive resources. These alternatives are discussed in detail in Chapter 7 of the EIR.

B. Hydrology/Water Quality**Significant Impacts****1. Natural Drainage Modification****a) Neighborhood 8A Precise Plan and Torrey Surf VTM**

Without appropriate temporary erosion control measures and landscaping, development under the proposed precise plan, including the proposed Torrey Surf VTM, could create significant hydrologic impacts. In addition, due to increased erosion, the amount of sediment carried downstream and into Carmel Valley Restoration and Enhancement Program (CVREP), without control measures, could increase, creating a significant impact. All development within the Los Peñasquitos watershed, including the proposed precise plan and Torrey Surf VTM, would contribute to cumulatively significant impacts to the lagoon.

b) Del Mar Highlands Estates

The alteration of existing drainage patterns associated with proposed roadway and lot development could result in significant local change to the direction and velocity of on-site flows. However, any increase in on-site runoff volumes associated with the proposed project is not considered significant on a direct basis due to its incremental nature, but is considered cumulatively significant.

c) Lorenz Parcel

Local erosion and sedimentation effects into these relatively unaffected drainages would be potentially significant. Detailed environmental review will occur following submittal of a project-specific proposal. The impact to rate and amount of runoff is considered to be potentially significant and unmitigated.

2. Downstream Water Quality

a) Neighborhood 8A Precise Plan

Installation of the storm drain system incorporating best management practices (BMPs) to control urban pollutants would reduce direct impacts from urban runoff to a level below significance. However, the incremental increase in amount of urban pollutants in runoff to CVREP and Los Peñasquitos Lagoon is considered a cumulatively significant impact.

b) Del Mar Highlands Estates

The proposed development of the project site has the potential to significantly impact water quality (both directly and cumulatively) in Gonzales Canyon and the San Dieguito River and Lagoon. The runoff of urban-generated pollutants is not considered significant (on a direct basis) due to the presence of existing regulatory controls and the anticipated incremental nature and extent of such pollutants.

c) Lorenz Parcel

Initial significance assessments would be similar for the Lorenz parcel as impacts to downstream water quality are considered to be potentially significant at this time. Project-specific environmental review will determine significance and identify appropriate mitigation measures.

3. Alteration to Floodwaters

a) Neighborhood 8A Precise Plan

Potential project-related impacts from the alteration of floodwater directions, velocities, or volume would be less than significant.

b) Del Mar Highlands Estates

Potential direct and indirect project-related impacts from the alteration of floodwater directions, velocities, or volume would be reduced below a level of significance through the implementation of proposed design measures (i.e., detention basins).

c) Lorenz Parcel

No significant direct, indirect, or cumulative impacts related to floodwaters are expected in association with proposed development of the Lorenz parcel. This conclusion will require verification, however, through review and approval of a site-specific hydrologic study by the City of San Diego.

Mitigation, Monitoring, and Reporting

1. Natural Drainage Modification

a) Neighborhood 8A Precise Plan

In order to ensure that the increased runoff and potential erosion generated from development within the precise plan does not adversely impact CVREP or Los Peñasquitos Lagoon, the following measures would be incorporated into the project design as conditions of approval for each of the future tentative maps and development plans within the precise plan area. These measures would reduce runoff and erosion impacts to less than a significant level.

1. A grading plan that incorporates runoff and erosion control procedures to be utilized during all phases of the project development shall be prepared and submitted concurrently with proposed subdivision improvement plans, where such development is proposed on land that will be graded or filled. Runoff control shall be accomplished by establishing on-site catchment basins, detention basins, and siltation traps along with energy-dissipating measures at the terminus of storm drains or other similar means of equal or greater effectiveness.

The grading plans for each future map shall incorporate a maintenance program for erosion and runoff control measures which shall be approved by the City Engineer and Planning Department. The erosion and runoff control measures shall be designed and bonded prior to recordation of final maps; erosion control measures shall be implemented prior to acceptance of the grading and public improvements by the City. The applicant and future property owners shall be responsible for the specialized maintenance program and shall maintain records of the maintenance.

2. Per the Clean Water Act, "best management practices" to control sediment and pollutants from entering stormwater runoff are required for the precise plan, under the City's municipal permit. The precise plan will provide source control BMPs via landscaping of all slopes and street rights-of-way to prevent erosion and a grading/drainage concept which directs water away from easily erodible areas, such as the bluffs. The water is to be directed into a drainage system designed to safely handle the stormwater runoff. Additionally, desilting basins/water quality basins will be provided at strategic locations within the precise plan area. Any other applicable source control or BMPs which may be implemented on a city-wide basis in conjunction with the City's municipal National Pollutant Discharge Elimination System (NPDES) permit (Permit No. CA 0108758) and State Regional Water Quality Control Board Order No. 90-42 shall be incorporated into the precise plan, as applicable. Such measures shall include the use of grass swales in parking lots for

commercial and multi-family residential areas where determined applicable by the City Engineer.

3. All grading activities shall be prohibited during the rainy season, which is designated by the City as the period from November 15 to March 31 unless special erosion control measures are implemented. Prior approval from the Development Services Department shall be required.
4. Landscaping of cut/fill slopes and the undeveloped building pads shall be accomplished within 30 days of completion of grading activities. The proposed landscape plan and project design shall include drought-resistant, low-fertilizer vegetation and a low-precipitation irrigation system.
5. The exact locations of additional basins shall be determined at the tentative map planning stage. The basins shall be located in an area with practical, feasible access. The TM applicant shall provide access to all basins to the satisfaction of the City Engineer.

Mitigation for cumulatively significant impacts is beyond the scope of this project.

b) Del Mar Highlands Estates

A detailed hydrologic study for the proposed project ~~has been~~ ~~will be completed~~ ~~prior to issuance of a grading permit~~. This study will be incorporated into the project design and submitted to the City Engineering Department for review in conjunction with the project TM. All applicable comments and recommendations resulting from this review shall be incorporated into the project design prior to its approval by the City. Based on existing information, the project hydrologic study is expected to include (but not be limited to) the types of analyses and requirements cited above for Neighborhood 8A.

c) Lorenz Parcel

Although specific mitigation cannot be determined until a project-specific proposal is submitted for the Lorenz parcel, measures similar to those described above would be required.

2. Downstream Water Quality

a) Neighborhood 8A Precise Plan

Urban runoff control steps which would reduce direct but not cumulative impacts from project pollutants to a level below significance are stated below. These measures shall be made conditions of the proposed Torrey Surf VTM and any subsequent tentative maps

and development plans in the precise plan area and shall be shown on the final grading and improvement plans.

1. The use of BMPs as described under Issue 1 above.
2. The City Development Services Department shall verify that the precise plan mitigation measures are conditions for the approval of each of the subsequent tentative maps within Neighborhood 8A. The City Engineering Department shall assure that these mitigation measures are conditions of approval of the tentative map and that they have been completed prior to issuance of building permits.

b) Del Mar Highlands Estates

Potential water quality impacts related to erosion and siltation and discharge of construction-related contaminants would be mitigated below a level of significance by incorporating the anticipated design measures to be identified as part of the ongoing project hydrologic study (see Issue 1 above).

c) Lorenz Parcel

Mitigation measures which could reduce potential adverse effects to a level of less than significant would include contribution to the Los Peñasquitos Lagoon Enhancement Fund, provision of adequate erosion and siltation devices, and implementation of applicable best management practices pursuant to City guidelines.

3. Alteration to Floodwaters

a) Neighborhood 8A Precise Plan

Potential impacts related to floodwaters would be lessened by incorporating the anticipated design measures to be identified as part of ongoing project hydrologic studies required for future precise plan development.

b) Del Mar Highlands Estates and Lorenz Parcel

Prior to the issuance of a grading permit, a complete hydrologic study will be reviewed and approved by the City of San Diego; measures will be incorporated into the final tentative map.

Additionally, a number of mitigation measures identified above for Issue 1 would reduce identified adverse (but not significant) impacts related to floodwaters.

C. Landform Alteration/Visual Quality

Significant Impacts

1. Topographic Change

a) Neighborhood 8A Precise Plan

Grading for the precise plan would require substantial alteration of the topography and creation of 18 slopes in excess of 30 feet in height to develop and access the site. Additionally, the headward extensions of several small finger canyons will be filled. These alterations to the existing topography are considered to be significant landform alteration impacts.

b) Acquisition Option

The option of the City of San Diego acquiring Pardee's Parcels A and B for permanent open space would eliminate the grading required for the proposed residential development on Parcel A. The elimination of this portion of the precise plan as a development area would preserve the existing topography and ground surface relief features. Under this option, Street A would still be constructed and landscaped as discussed above.

c) Torrey Surf Vesting Tentative Map

Grading proposed in the VTM would result in cuts of about 60 feet from a ridgetop that is the southern extension of Carmel Mountain and replacing the existing topography with a wide, level pad area. This alteration of the existing topography is considered to be a significant landform alteration impact.

d) Del Mar Highlands Estates

Project-related landform alteration impacts for Del Mar Highlands Estates would be significant due to the extent of earthwork, the anticipated level of disturbance to 25 percent or greater slopes, and the construction and length of 157 manufactured slopes up to 100 feet in height.

e) Lorenz Parcel

As no specifics are known for future development on the Lorenz parcel, significance cannot be assessed with certainty. It is possible, however, that filling of the westernmost canyon portions could result in significant impacts. These potentially significant impacts are considered unmitigated at this time.