Environmental Impact Report

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CARMEL VALLEY AREA PRECISE PLAN
AND RESUBDIVISION
Del Mar, California

Prepared for
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February 4, 1980
Map of Western San Diego County showing the site's regional location.
This Environmental Impact Report addresses the potential impacts from the development of 12.9 acres at the southwest corner of the City of Del Mar. The project is a Precise Plan and Resubdivision which would result in 18 new residences.

The land is quite rugged, heavily eroded in places, and slopes southerly towards the Penasquitos Lagoon. Although relatively sparsely vegetated, it has significant plant species, but lacks other environmental resources. The land is surrounded by developed areas with residences adjacent on the north and east, Camino Del Mar (Highway 101) on the west, and an auto repair shop on the south.

The primary topics of concern are listed below. These and numerous other topics were investigated to establish the site's environmental constraints and to determine what measures (mitigations) might be undertaken to lessen environmental impacts.

Biological Resources include six species of uncommon plants including the Torrey Pine, with native habitat covering approximately 50% of the site. The site drains into the Penasquitos Lagoon which contains numerous sensitive species and is a very unique habitat. All the site's biological resources could potentially be destroyed and drainage (erosion and urban pollutants) could adversely affect the lagoon.

Mitigation will include placing 2.8 acres containing the greatest concentration of uncommon plants in a permanent open space and restricting grading elsewhere. The result should be approximately half of the site left undisturbed. These actions, plus careful landscaping, should result in little impact to the lagoon.

Geological Hazards include a fault zone, potential slope instabilities, severe erosion, and expansive soils. The potential hazards could severely impact future development.

Mitigation measures will be precisely determined after a formal geotechnical survey has been performed. It will recommend slope ratios, and means to insure foundation stability and lessen erosion. Also, trenching will locate the faults so that structures will not be built directly above them. By limiting grading, primarily for aesthetic reasons, potential geologic hazards will be lessened.

Scenic Amenities occur because of the site's naturalness and high visibility from Highway 101, Torrey Pines State Park, and adjacent residences. It also offers excellent views of the lagoon and seascape beyond. The project could substantially affect the area's visual qualities.

Mitigation of potentially adverse visual impacts will occur through careful building and landscape design. Much of the most visible higher ground will not be graded and grading elsewhere will be limited. Buildings will be sited so that adjacent residents' views are not blocked.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. INTRODUCTION</td>
<td>2</td>
</tr>
<tr>
<td>II. PROJECT DESCRIPTION</td>
<td>5</td>
</tr>
<tr>
<td>A. LOCATION</td>
<td>5</td>
</tr>
<tr>
<td>B. THE PROJECT</td>
<td>5</td>
</tr>
<tr>
<td>C. IMPLEMENTATION</td>
<td>7</td>
</tr>
<tr>
<td>III. ENVIRONMENTAL ANALYSIS</td>
<td>8</td>
</tr>
<tr>
<td>A. TOPOGRAPHY AND LANDFORM</td>
<td>8</td>
</tr>
<tr>
<td>B. GEOLOGY</td>
<td>10</td>
</tr>
<tr>
<td>C. HYDROLOGY AND WATER QUALITY</td>
<td>16</td>
</tr>
<tr>
<td>D. BIOLOGICAL RESOURCES -- SUMMARY</td>
<td>17</td>
</tr>
<tr>
<td>E. ARCHAEOLOGICAL RESOURCES</td>
<td>20</td>
</tr>
<tr>
<td>F. LAND USE</td>
<td>21</td>
</tr>
<tr>
<td>G. VISUAL QUALITY AND VIEWS</td>
<td>27</td>
</tr>
<tr>
<td>H. TRAFFIC AND ACCESS</td>
<td>31</td>
</tr>
<tr>
<td>I. ECONOMICS</td>
<td>38</td>
</tr>
<tr>
<td>J. AIR QUALITY</td>
<td>39</td>
</tr>
<tr>
<td>K. NOISE</td>
<td>42</td>
</tr>
<tr>
<td>L. URBAN SUPPORT SERVICES</td>
<td>44</td>
</tr>
<tr>
<td>IV. ENVIRONMENTAL IMPACT SUMMARY</td>
<td>49</td>
</tr>
<tr>
<td>A. SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT</td>
<td>49</td>
</tr>
<tr>
<td>B. ANY SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE PROPOSAL IS IMPLEMENTED</td>
<td>50</td>
</tr>
<tr>
<td>C. MITIGATION MEASURES PROPOSED TO MINIMIZE THE SIGNIFICANT EFFECTS</td>
<td>50</td>
</tr>
<tr>
<td>D. ALTERNATIVES TO THE PROPOSED ACTION</td>
<td>51</td>
</tr>
<tr>
<td>E. ANY SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED</td>
<td>52</td>
</tr>
<tr>
<td>V. REFERENCES</td>
<td>53</td>
</tr>
<tr>
<td>VI. EIR PREPARATION</td>
<td>55</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>56</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

Map of Western San Diego County showing the site's regional location

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>U.S.G.S. Map</td>
<td>1</td>
</tr>
<tr>
<td>Figure 2</td>
<td>Aerial Photograph</td>
<td>4</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Del Mar Carmel Valley Precise Plan</td>
<td>6</td>
</tr>
<tr>
<td>Figure 4</td>
<td>Slope Map</td>
<td>11</td>
</tr>
<tr>
<td>Figure 5</td>
<td>Geologic Map</td>
<td>6</td>
</tr>
<tr>
<td>Figure 6</td>
<td>Photograph of view to the northeast showing some of the fractures</td>
<td>13</td>
</tr>
<tr>
<td>Figure 7</td>
<td>Photograph of view of the fracture exposed in the embankment near the southeast corner of the Parker residence</td>
<td>14</td>
</tr>
<tr>
<td>Figure 8</td>
<td>Biology Map</td>
<td>18</td>
</tr>
<tr>
<td>Figure 9</td>
<td>Del Mar General Plan Map</td>
<td>23</td>
</tr>
<tr>
<td>Figure 10</td>
<td>Torrey Pines Community Plan Map</td>
<td>24</td>
</tr>
<tr>
<td>Figure 11</td>
<td>Del Mar Zoning Map</td>
<td>25</td>
</tr>
<tr>
<td>Figure 12</td>
<td>Panoramic view of the study area from south of the lagoon</td>
<td>28</td>
</tr>
<tr>
<td>Figure 13</td>
<td>Panoramic photograph</td>
<td>30</td>
</tr>
<tr>
<td>Figure 14</td>
<td>Panoramic photograph</td>
<td>30</td>
</tr>
<tr>
<td>Figure 15</td>
<td>Traffic Map</td>
<td>32</td>
</tr>
<tr>
<td>Figure 16</td>
<td>Noise Map</td>
<td>43</td>
</tr>
<tr>
<td>Table</td>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Table 1</td>
<td>Sensitive Plant Species</td>
<td>19</td>
</tr>
<tr>
<td>Table 2</td>
<td>Existing Daily and Hourly Traffic Characteristics</td>
<td>33</td>
</tr>
<tr>
<td>Table 3</td>
<td>Post-Project Traffic Increases on Project-Vicinity Road Links</td>
<td>36</td>
</tr>
<tr>
<td>Table 4</td>
<td>Air Quality Data, Kearny Mesa Monitoring Station (APCD, 1978)</td>
<td>40</td>
</tr>
<tr>
<td>Table 5</td>
<td>Project Emissions in Kilograms/Day</td>
<td>41</td>
</tr>
<tr>
<td>Table 6</td>
<td>Measured Noise Levels</td>
<td>42</td>
</tr>
</tbody>
</table>
Figure 1. U.S. Geological Survey Map, Del Mar 7.5' Quadrangle showing project location.
I. INTRODUCTION

The proposed project consists of a Precise Plan and resubdivision of approximately 12.9 acres in the City of Del Mar as located in Figure 1. If the Plan is adopted by the City, the Precise Plan would override existing zoning applicable to the subject area, and would lead to a resubdivision of property to develop the area according to the Plan. Adoption of the Plan would lead to the ultimate construction of eighteen additional dwelling units in the study area. Approximately 2.8 acres would become perpetual open space, and grading restrictions and landscape provisions defined by the Plan will result in the retention of nearly all of the area which is not directly under structures or roads, as natural open space.

This Environmental Impact Report (EIR) has been prepared to focus on specific areas of concern which were raised during an initial investigation of environmental constraints incumbent on the subject area. These include:

1. Geologic Hazards, including soil erodibility, bluff stability, and seismicity (faults and fault zones);
2. Biological Resources, including six species of rare and/or endangered plants, and several sensitive habitat-types including Coastal Mixed Chaparral and Torrey Pine Woodland;
3. Archaeological Resources potentially on the study area;
4. Noise Impacts to future residents;
5. Scenic Amenities and Views both from and towards the study area; and

Other environmental factors such as hydrology and drainage, land use, economic effects, air and water quality, urban support services, growth induction, and energy effects have also been addressed.

This EIR is intended to meet the standards and requirements of the City of Del Mar and the California Environmental Quality Act (CEQA) as set forth in the State EIR Guidelines. It details specific impacts which may result from the project, as measured against both a present setting "baseline," and a "no-project"
alternative.* Where appropriate, specific measures which would reduce expected project impacts to a level of insignificance have been proposed.

* Baseline Environment is the current environment which is primarily natural.

No-Project Environment is the existing zoning and legal lots which could theoretically be developed now and which could result in the total destruction of the natural environment.
Figure 2. Aerial photograph taken January 27, 1979, showing location of site and location of view of ground photographs in Figures 12, 13, and 14.
II. PROJECT DESCRIPTION

A. LOCATION

The study area is located in the northeast corner of the intersection of Camino Del Mar and Carmel Valley Road, as shown on Figure 1. Figure 2 is an aerial photograph of the study area and surrounding lands.

B. THE PROJECT

The project consists of a Precise Plan and resubdivision to be considered by the City of Del Mar. It comprises a study area of approximately 13 acres of land located immediately north of Carmel Valley Road and east of Camino Del Mar. The planning area is predominantly vacant and characterized by irregular and scenic terrain. Although subdivided years ago, many of the lots are without existing water service or convenient road access. The Precise Plan is a joint effort by the City and affected property owners to comprehensively address the variety of legal, environmental, and land planning issues inherent in the ultimate development of the hillside.

Adopted by ordinance of the City, the precise plan would override conventional zoning standards now applicable to the area. Specifically, the plan calls for ultimate construction of eighteen additional dwelling units on approximately 11.5 undeveloped acres, eight of which will be within a cluster development with common access from Carmel Valley Road. In exchange for the increased density resulting from the cluster, the plan would require the abandonment of three existing legal parcels on the more sensitive hillside area, abandonment of an existing road easement which crosses two canyons to reach those lots, and an easement encumbrance of approximately 2.8 acres for perpetual open space. Actual open space would be much larger, consisting of all areas not defined as "building sites" by the Plan, upon which private landscaping, fences, etc. would be prohibited.

Figure 3 shows the conceptual layout of the proposed Plan. The total number of new residential units (18), their locations, and the location of access roads and perpetual open space are specifically shown. Figure 3 does not represent approved building "footprints" or the precise locations of individual residences. These specific details will be developed further along in the planning process, consistent with environmental opportunities and constraints defined in this EIR. The final Precise Plan provisions will be set forth on four maps as follows:
Figure 3. Del Mar Carmel Valley Precise Plan showing proposed unit locations and perpetual Open Space.
1. Land Use. Delineates the location of building sites, the buildable areas of each site (within which the residences, private landscaping, fencing, etc. will be confined), the proposed lot lines, the cluster development and the open space easement areas;

2. Circulation. Delineates the proposed road locations and widths, the location of driveway accesses, new and vacated road easements, and new pedestrian easements (no improved trails, however);

3. Utilities. Delineates the location and required easements for drainage facilities, for water supply for sewer facilities, and for underground power, gas, telephone and CATV facilities (CATV facilities include a central location for a common TV antenna prior to CATV availability);

4. Architectural and Planning Criteria. Delineates grading restrictions, landscape provisions (private within "buildable areas;" per precise plan outside the buildable areas -- scattered plantings of Torrey Pines), floor area (bulk) restrictions, height restrictions (view corridor preservation), architectural controls for cluster.

C. IMPLEMENTATION

The provisions of the precise plan will be implemented by a resubdivision of the planning area, in which a mandatory Homeowners' Association will be established to provide for private road, drainage, open space and common area maintenance. The Design Review Board will retain discretion over all future improvements proposed within the planning area. Ownership of the + 2.8-acre open space area will be transferred to the Homeowners' Association. Units 9 through 16 (the "cluster" units) will be constructed according to a unified design theme, consistent with the standards included in the precise plan.

Timing of the development will be at the discretion of the individual lot owners. Most of the owners seem to favor development in the near future with construction to start as soon as all permissions are granted.
III. ENVIRONMENTAL ANALYSIS

A. TOPOGRAPHY AND LANDFORM

1. Existing Conditions

The study area is located on a south- and west-facing hillside, overlooking Los Penasquitos Lagoon and the Pacific Ocean. Most of the area is characterized by steeply dissected sandstone bluffs and ravines. Existing elevations on the study area range from about 62' MSL (above mean sea level) near the southeast corner, to about 232' MSL at the northeast corner. Three ravines which cover the eastern half of the area converge on a relatively flat graded lot at the southeast corner. A smaller ravine cuts the southwest corner of the area, and an abandoned railroad bed crosses the area in an east-west direction. Figure 4 shows the topographic features of the study area. That portion of the site containing slopes of 25% or more with a vertical rise of greater than 20 feet are shown, along with a 20' setback from those areas.

2. Impact

Of the eighteen proposed residential unit locations shown on the Precise Plan (Figure 3), seven are within the 25% slope area, five are partially within the 25% slope area, and six are placed on areas having slopes generally less than 25%. However, grading and design constraints included in the Plan will require each unit to be adapted to the existing topography. In addition, the proposed road which provides access to units 6-18 will follow the existing railroad cut over much of its length. As a result, grading and topographic modification will be limited to the minimum necessary to provide building foundations and access drives.

The proposed Plan provides for the abandonment of three existing legal parcels on that portion of the study area which contains the steepest canyon and bluffs, and the road access easement to those parcels (the development of which would necessitate major alteration of topography). The plan also provides for a resubdivision of the study area, with the reduction of topographic impacts as a major consideration.

Although any development within the study area involves some degree of topographic impacts, the proposed Plan represents a significant reduction over impacts which
Figure 4. Map of existing topographic limitations, showing setback lines in accordance with the City of Del Mar's Bluff, Slope, and Canyon Overlay Zone. Areas not encircled contain slopes in excess of 25%, with prescribed buffers.
would occur in the absence of such a plan. Were the City forced to review development in the area on a lot-by-lot basis, piecemeal development of existing legal lots could result in greater adverse impacts. Adverse effects of topography and landform alteration resulting from project implementation are potentially significant when measured against the present setting. However, potential significant impacts will be mitigated by conditions to development defined by the proposed Precise Plan.

3. Mitigation

The final Precise Plan will fully delineate grading restrictions, acceptable foundation types, building sites, and other criteria designed to minimize landform alteration. These measures, along with the resubdivision and lot abandonment provisions of the Plan, will reduce potential adverse effects of topographic modification to a level of insignificance.

B. GEOLOGY

1. Present Setting

a. General Geology

The site is underlain by three geologic units: (1) Eocene age Torrey Sandstone, (2) Eocene age Delmar Formation, and (3) Pleistocene age Baypoint Formation. The Torrey Sandstone is a sandstone which is moderately well cemented. The Delmar Formation is a yellowish-green claystone interbedded with sandstone. The Baypoint Formation is composed of poorly cemented fossil-bearing sandstone. The above formations are nearly horizontal. Figure 5 illustrates the geologic structure of the study area (Kennedy, 1975).

b. Soils

Onsite soils consist of the Marine Soil series (MIE) and the Loamy alluvial land-Huerhuero complex, severely eroded (LvF3). The Loamy alluvial land occurs on old coastal ridges. The typical landscape is one of strongly sloping to steep, severely eroded soils. Runoff hazards and erosion are severe on the LvF3 and moderate to high in the Marina. A clay sample taken within the Delmar formation and the
Figure 5. A portion of the geologic map of the Del Mar Quadrangle (Kennedy, 1975) showing the property.
LvF3 soils on the site and analyzed by the California Division of Mines and Geology indicates that the liquid limit is 59, which means that this particular sample had expansive characteristics. The LvF3 soil is rated by the U.S.D.A. as having a low to high shrink-swell potential depending upon clay content.

c. Geologic Hazards

A northeast-trending fault has been mapped by Kennedy (1975), as shown on Figure 5. It is mapped as a normal fault with the northwestern side down-dropped. The City of San Diego's Seismic Safety Study Map (1977) also shows this fault and Zony's publication (1973) indicates that the age of the last movement on this fault is unknown.

A reconnaissance of the fault indicates that rather than being a single break it is a series of en echelon (parallel) faults, and thus is more properly considered a fault zone. There are at least five faults with offsets varying from a minimum of six inches to larger amounts, which cannot be calculated due to poor exposure. In each case, the northwestern side is down-dropped in relation to the southeastern side. Figures 6 and 7 show the locations of individual fault observations. Offsite, as the fault traverses the Linda Vista Formation, there is no indication of offset, therefore, the age of the last movement on the fault must be considered to be older than two million years.

Slope stability of the Delmar Formation is generally predicated on the steepness of the slope. Where slopes are oversteepened, due either to natural conditions or grading, slope failure potential increases. Slopes in the Torrey sandstone are more stable than those in the Delmar Formation. Slope stability of the Baypoint Formation is considered poor due to the fact that the material is unconsolidated, and erosion is severe.

2. Impact

Because no geotechnical surveys have been performed on the site, and because no plans have yet been completed, impacts of construction on the site can be only approximated.

Extrapolation of the fault zone through the property would place it traversing units 6 and 7. At the time that
Figure 6. Photograph of view to the northeast showing some of the fractures (arrows) comprising the fault zone mapped by Kennedy (1975).
Figure 7. Photograph of view of the fracture (arrows) exposed in the embankment near the southeast corner of the Parker residence.
plans are finalized for these units, a geologic survey should be performed to determine if, indeed, the fault zone passes through the building site. The potential for finding branches of the fault on other lots appears to be slight.

According to the concept plan, road grading will be minimized. If grading for driveways and housepads are similarly minimal, slope failure potential will be reduced. The use of piers for support of structures, thus reducing grading, is recommended, especially in those areas underlain by the Delmar Formation. A geotechnical report may be required to determine the optimum cut and fill slope ratios, consistent with slope stability.

Erosion potential on the site is severe and any construction will increase the potential for erosion and subsequent siltation of the lagoon and Carmel Valley Road. Erosion from the higher portions of the site, underlain by Torrey sandstone, may impact the lower-lying lots due to subsequent siltation.

The expansiveness of the soil cannot be determined without laboratory examination of the onsite materials. However, construction of roads and buildings on expansive soils will severely impact these structures.

3. Mitigation

Mitigation of impacts due to possible faulting will be suggested following a geotechnical report on the area of the fault zone. Because the existing evidence suggests that movement has not taken place on the fault within the last two million years, it is possible that even if evidence of offset were observed, no mitigation may be required.

Slope failures can be minimized by careful engineering for the proposed roads and by minimizing the amount of grading required for each house pad and driveway. The ratio at which the slopes are to be cut should be determined by a geologist. Houses and garages placed on piers will minimize the impacts of slope failure. It must be remembered, however, that the natural slopes in the Delmar shale and the Baypoint Formation are subject to failure.

Erosion control measures should be instituted following any construction on the site. Landscaping requiring little water and which has deep roots should be implemented. All efforts should be made to prevent water from paved surfaces running over natural or man-made slopes. Siltation of the lagoon could be mitigated by the installation of catchment basins.
Impacts of construction on potentially expansive soils can be mitigated by, first, testing of the material, and secondly, by following whatever recommendations the soil investigation report may suggest. These could include complete removal or recompacktion of soils found to be expansive.

C. HYDROLOGY AND WATER QUALITY

1. Present Setting

The site is near the westernmost part of the Carmel Valley soil drainage basin on the Penasquitos drainage basin. At a point opposite the site, Carmel Valley is draining approximately 15.6 square miles and the creek is flowing through Penasquitos Lagoon. The site is therefore very small compared to the size of the drainage basin. Water flowing from the site enters the lagoon from along the east side of the raised railroad levee, after flowing down and across Carmel Valley Road. Visual inspection of the study area indicates that the highly erodible soils are undergoing active erosion under natural conditions.

2. Impact

The amount of erosion and siltation which will take place after construction will depend on the amount of grading which takes place on the site. The time of year when grading takes place is also an important factor. Due to the degree of current siltation load contribution from the site, impacts could range from adverse (under conditions of landscape failure and poor project timing) to beneficial (under conditions of successful mitigation measures).

3. Mitigation

Proper drainage control structures can control the runoff from the site; however, it will still flow into the lagoon. Construction timing, runoff diversion structures, effective landscape materials, retaining walls, etc., should be incorporated into specific design details for individual units and access roads. Existing engineering design technology is capable of eliminating potential adverse erosion and siltation impacts. Such design criteria should be defined in general terms by the final plan, and approved individually for each housing unit construction permit.
D. BIOLOGICAL RESOURCES -- SUMMARY

(The complete biological survey report is given in the Appendix.)

1. Existing Conditions

The study area supports native habitat over slightly more than 50% of its area. The associations of native plants which exist on the area have been described by Thorne (1976) as: Maritime Sage Scrub, Chamisal Chaparral, and Torrey Pine Woodland. Figure 8 illustrates the location of the area's plant communities.

Several rare and/or endangered plant species were observed during the field survey of the study area. The observed locations for these species are shown on Figure 8. The California Native Plant Society has evaluated the status of the six observed rare and/or endangered plant species as shown in Table 1 (Powell, 1974).*

No rare and/or endangered animal species were observed during the survey, and none are expected to utilize the study area. One observed bird species, Bewick's Wren, is on the "Blue List for 1979"** (Arbib, 1978). This species, however, is abundant in San Diego County. The study area contains habitat suitable for the Orange-Throated Whiptail Lizard (Cnemidophorus hyperythrus), which is protected by a daily bag limit (California Department of Fish and Game).

The study area contains several habitat-types which have been specifically listed as sensitive in the "Biological Survey Guidelines" for San Diego County (San Diego Environmental Biologists, 1978). These include: (1) Torrey Pine Woodland, (2) Coastal Marine Sandstone derived soils, and (3) Coastal Chaparral between Carlsbad and La Jolla. The area is also situated adjacent to Los Penasquitos Lagoon, forming a part of its drainage area. The lagoon habitat is considered to be threatened by a number of factors which are in part related to the development of lands within its drainage area (Prestegaard, 1979).

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* Where the R-E-V-D code given differs from Powell (1974), they represent updated information to be published with the revised listing.

** The Blue List includes species which are currently suffering non-cyclical population declines within all or part of their range.
CARMEL VALLEY LAND USE MAP

HABITATS
- Non-native
- Disturbed habitat
- Torrey Pine Woodland
  (* = tree W/DFA 10")
- Coastal Mixed Chaparral
- Salix (Willow) Riparian Scrub
- Coastal Sage Scrub

SENSITIVE PLANTS
- Pinus torreyana
- Coreopsis Maritima
  (*10 Indiv.)
- Ferocactus viridescens
- Ceonothus verrucosus
  (1 Indiv.)
- Adolphia californica
  (*1 Indiv.)
- Erysimum aquaeformium
<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Status</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pinus torreyana (Torrey Pine)</td>
<td>3. Occurs in the wild in only two highly restricted populations</td>
<td>3-3-3-3*</td>
</tr>
<tr>
<td>Coreopsis maritima (Sea-Dahlia)</td>
<td>2. Occurrence confined to several populations</td>
<td>2-2-1-1</td>
</tr>
<tr>
<td>Ferocactus viridescens (Coast Barrel Cactus)</td>
<td>1. Rare, but with currently low potential for extinction</td>
<td>1-2-2-1</td>
</tr>
<tr>
<td>Erysimum ammophilum (Coast Wallflower)</td>
<td>1. Rare, but currently low potential for extinction</td>
<td>1-2-1-3</td>
</tr>
<tr>
<td>Ceanothus verrucosus (Wartystem Ceanothus)</td>
<td>1. Rare, but currently low potential for extinction</td>
<td>1-2-1-1</td>
</tr>
<tr>
<td>Adolphia californica (California Adolphia)</td>
<td>1. Established</td>
<td>1-2-1-1</td>
</tr>
</tbody>
</table>

* R-E-V-D Code = Rarity: Endangerment: Vigor: Distribution
An evaluation of the significance of expected adverse impacts requires comparison against both the "baseline" present setting conditions, and the expected conditions under a "no-project" alternative. As measured against the present conditions on the study area, the addition of eighteen housing units will have a significant adverse effect resulting from the disturbance of unique biological habitat which supports at least six rare and/or endangered plant populations. Additionally, potential siltation effects on Los Penasquitos Lagoon are considered to be potentially significant. However, if the study area were to be developed on a lot-by-lot basis according to existing zoning and property boundaries, no conceivable mitigation plan for each individual legal lot could approach the level of mitigation achieved under the proposed Precise Plan.

3. Mitigation

The mitigation of potential adverse effects to biological resources as proposed by the Precise Plan would reduce those impacts to a level of insignificance, when measured against the "no-project" alternative. These mitigation measures are based on the resubdivision of the study area to: (1) allow the placement of the northeast canyon area and Torrey Pine Woodland in perpetual open space; (2) avoid major grading projects and consequent erosion hazard which would result from development of existing lots and access easements; (3) impose covenants and restrictions which would limit the extent of landscaping, and provide for the retention of natural plant communities over most of the study area; and (4) place nine of the eighteen units on portions of the site which were identified during the biology survey as non-native/disturbed habitat.

E. ARCHAEOLOGICAL RESOURCES SUMMARY
(See Archaeological Survey Report in Appendix)

1. Present Setting

Although two sites are recorded in the vicinity of the property, an archaeological survey failed to discover sites on the property. Cultural manifestations on the property were restricted to non-diagnostic, isolated flakes.

2. Impacts

No direct impacts to cultural resources should occur from project development, as no sites were found on the
property. Of the two sites located in the vicinity of the property, one site (W-30) is currently occupied by a parking lot, and site W-23 is located approximately 300' east of and 60' higher than the eastern property boundary, and may be subject to indirect impacts.

3. Mitigation

No mitigation measures are necessary for direct impacts, as none are proposed. Land modification activities, and personnel and equipment associated with such, should be restricted to the property, thereby decreasing the possibility of disturbance to site W-23.

F. LAND USE

1. Existing Conditions

Present Land Use

The study area is currently vacant, with the exception of three homes served by the southward extension of Ocean View Avenue, and one home on Carmel Valley Road at the southeast corner of the area. A vacant lot adjacent to Carmel Valley Road is currently used as an informal and unauthorized parking area for the auto repair garage business across the road, and for beach users during high-use periods. The old A.T. & S.F. Railroad right-of-way which crosses the area shows evidence of pedestrian use, probably as an informal recreational access to the northern segment of Torrey Pines State Reserve, which lies east of the project.

Surrounding Land Use

Residential development bordering the northern side of the study area includes five houses and three vacant lots on the south side of Torrey Pines Terrace (shown on Figures 2 and 3). The eastern boundary of the area is adjacent to Caminito Mar Villa and residential development, separating the subject area from Torrey Pines State Reserve. Carmel Valley Road is adjacent to the south side of the study area. Land to the south is vacant, with the exception of a garage business and beach parking for the State beach. Camino Del Mar, vacant land and the ocean adjoin the western side of the study area.
Community Plan

The Del Mar Community Plan (Figure 9) designates the study area as Very Low Density. This land use designation allows a residential density of 0-1 units per net acre. It is intended to accommodate residential development at a low enough density to preserve the visual and physical amenities of lands which contain steep slopes, bluffs and canyons. The maximum allowable density on the 13-acre study area, according to the Community Plan, would be 13 units. However, 16 legal lots exist within the 13 acres of the study area (see Figure 3). Of those, four contain existing single family residences, leaving 12 vacant, legal lots within the vacant portion of the study area.

Torrey Pines Community Plan

The City of San Diego's Torrey Pines Community Planning Area adjoins the eastern boundary of the subject area. Figure 10 shows the relationship of the study area to that Plan (City of San Diego, 1975). In general terms, the City of San Diego's plan calls for a transition to higher residential densities east and south of the study area in non-park open space areas.

Zoning

Existing zoning on the study area is RL-40 (Very Low Density). This residential land use ordinance is consistent with the Community Plan designation for the area. Figure 11 shows a portion of the City of Del Mar Zoning Map (Adopted, 9/17/77). The entire study area falls within the Bluff, Slope and Canyon Overlay Zone. This zone generally prohibits construction on substantial slopes of 25% or greater.

2. Impacts

The proposed Precise Plan proposes 18 new units on approximately 11.5 undeveloped acres of the study area. It is, therefore, not in conformance with the density limitations of the Community Plan. However, the Community Plan, Bluff, Slope, and Canyon Overlay Zone encourages the clustering of units to preserve scenic land forms. The proposed higher density cluster, in exchange for permanent open space in the more fragile canyon areas, is consistent with the Community Plan. Regardless, the proposed plan represents a major improvement over the "no-project" alternative in several ways: first, the proposed Precise
Community Development Plan

1. Very Low Density
2. Very Low Density Modified
3. Low Density
4. Medium Density Single
5a. Medium Density Multiple
5b. Medium Density Multiple
6. High Density
7. Commercial Central
8. Commercial Residential
9. Commercial Visitor
10. South & West Commercial
11. North Commercial
12. Beaches & Bluffs
13. Floodway/Lagoon Habitat
14. Public Facilities
15. Public Parkland
F. Fairgrounds/Racetrack
RR. Railroad

Scale: 1" = 1615'

Figure 9. Del Mar General Plan Map showing project location.
Figure 10. San Diego's Torrey Pines Community Plan
Map showing project location.
Zoning Map
City of Del Mar

Residential Zones
RI-40 Very Low Density
RI-14 Modified Low Density
RI-10 Low Density
RI-10B Low Density - Beach
RI-5 Medium Density Single Family
RI-5B Medium Density Single Family - Beach
RM-East Medium Density Mixed - East
RM-West Medium Density Mixed - West
RM-Central Medium Density Mixed - Central
RM-South Medium Density Multiple - South
R2 High Density

Commercial Zones
RC Residential - Commercial
CC Central Commercial
BC Beach Commercial
PC Professional Commercial
NC North Commercial
VC Visitor Commercial

Miscellaneous Zones
FR Fairgrounds - Racetrack
RR Railroad Right-of-Way
FW Floodway
PP Public Parkland
PF Public Facilities

Overlay Zones
Floodplain Overlay
Floodplain Overlay Exclusion Area
Open Space Overlay
Bluff, Slope, and Canyon Overlay
Historic Preservation Overlay

Adopted 9/17/77
Effective 10/17/77
Revised R-77-1, effective 7/19/78
Revised, Historic Preservation Overlay, effective 11/1/78
Plan consolidates open space on high-sensitivity areas; second, the proposed Plan provides for a coordinated transition of residential densities from low density on the north and west to densities of 4 du/acre to the east and up to 15 du/acre to the southeast (City of San Diego); and third, the proposed plan provides for strict controls over architectural, landscape, and engineering details of planning area development. The clustering of eight units near the southeastern corner of the site allows for a lower effective density over most of the planning area, over 2 acres of perpetual open space, an orderly transition to the higher densities east on Carmel Valley Road, and a removal of legal building sites from the most environmentally sensitive areas of the study area.

3. Mitigation

The proposed plan will result in no significant adverse effects on land use planning efforts on and adjacent to the study area. No mitigation of impacts is required.

G. VISUAL QUALITY AND VIEWS

1. Existing Conditions

Scenic Amenity

The study area contains a diverse range of sandstone bluffs, canyons, natural vegetation, and open slopes. The location of the study area on the northern headland of Los Penasquitos Lagoon invests it with a high degree of visibility from lower Soledad Valley, north Torrey Pines Road, and the northern view areas of Torrey Pines State Reserve. In addition to the scenic amenity provided by the area to surrounding view points, the visual character of the study area is important as a boundary landmark to the southern edge of Del Mar. In this respect, the area serves as an aesthetic cue to the "coastal village" character of the City of Del Mar (Figure 12).

Views

Several existing homes and future building sites along Torrey Pines Terrace currently have access to open views across the study area to the south and west. In addition, the three existing residences along the south extension of Ocean View Avenue (see
Figure 12. Panoramic view of the study area from south of the lagoon. Photograph taken January, 1980. Camera location shown on Figure 2. Approximate location of visible property is outlined.
Figure 3) have open views to the south and west. View corridors possessed by existing residences and building sites represent an environmental resource of considerable value to those properties. Figures 13 and 14 are panoramic photographs of the study area. The camera location for each figure is indicated on Figure 2.

2. Impacts

Adverse impacts to scenic amenities provided by the area are a function of: (1) unit density on visible portions of the study area; (2) individual unit design and color; (3) landscape planting design and maturity; and (4) the actions of individual residents, subsequent to project implementation. As compared to existing building sites and zoning ordinance, the proposed Precise Plan would have a significantly reduced impact on scenic amenity and view corridor resources. The proposed Plan -- through a resubdivision of the study area -- would reduce unit density on visible portions of the area, and impose permanent covenants and restrictions governing architectural and landscape standards which are specifically intended to protect visual amenities.

Potential view-corridor impacts which could result from implementation of the proposed plan are as follows (see Figure 3):

- Unit 3; could impact views from existing residence to the northeast, unit 5, and unit 2.

- Unit 4; could impact views from unit 3, unit 5, and both existing residences to the east.

- Unit 5; could impact view from unit 2.

- Unit 7; could impact view from unit 6.

- Unit 8; could impact views from units 9-12 and unit 17.

- Units 9-16; could impact views from unit 7 and unit 17.

The existence of view-corridor conflicts described above will depend on the design (placement, height, roofline, landscaping, etc.) of each individual unit.
Figure 13. Panoramic photograph showing view to the southeast. Photo taken March, 1978. Camera location shown on Figure 2.

Figure 14. Panoramic photograph showing view to the northwest. Photo taken January 15, 1980. Camera location shown on Figure 2.
3. **Mitigation**

The proposed Precise Plan incorporates provisions which would serve as an effective means of mitigating potential adverse impacts to visual amenities and views. The finalized version of the Plan should make specific provision for (1) landscaping and unit design; (2) unit heights, placement, and retention of view corridors; (3) limitations to grading and topographic modification. Where possible, landscaping should emphasize native shrubs and trees (e.g., Torrey Pine, Del Mar Manzanita) and building materials should blend with the natural landscape. Parking areas should be screened from view by vegetation, as should large building surfaces and roadways.

H. **TRAFFIC AND ACCESS**

1. **Existing Conditions**

   a. **Project Area Road System**

      The study area is currently accessed from its frontage with Carmel Valley Road on the south and through an extension of Ocean View Avenue on the north. Most of the access road system, which is shown in Figure 15, is located within the corporate boundaries of the City of San Diego. The following road components (as outlined in Table 2) make up the area's access road system:

      - **Carmel Valley Road.** This two-lane link fronts the project site on the south. It represents the southernmost access for the City of Del Mar to Interstate 5. Volumes increase to the east of the project site, indicating an orientation of traffic to I-5. Though the City of San Diego has established a daily design capacity for roads of this configuration at 5,000 ADT, a better indication of the level of use for the road is its hourly-volume-to-capacity relationship during peak hour; under this criterion, the westernmost link of Carmel Valley Road is presently being utilized to about 45 percent of its absolute capacity.

      - **Ocean View Avenue/Nob Avenue/Pine Needles Drive.** These residential streets connect the northern portion of the project site to Del Mar Heights Road. Traffic volumes on these streets are very
Figure 15. Traffic Map.
<table>
<thead>
<tr>
<th>Link</th>
<th>Direction of Travel</th>
<th>Current(^1) ADT</th>
<th>Current(^1) Peak Hour</th>
<th>Hourly(^2) Capacity</th>
<th>Percentage Volume/Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARMEL VALLEY ROAD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East of Camino del Mar</td>
<td>Both</td>
<td>7,000</td>
<td>680</td>
<td>3,000(^3)</td>
<td>45.3%</td>
</tr>
<tr>
<td>East of Del Mar Scenic Pky</td>
<td>Both</td>
<td>9,000</td>
<td>830</td>
<td>3,000(^3)</td>
<td>55.3%</td>
</tr>
<tr>
<td>CAMINO DEL MAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North of Carmel Valley Rd.</td>
<td>North</td>
<td>8,000</td>
<td>1100(^4)</td>
<td>3,000</td>
<td>36.6%</td>
</tr>
<tr>
<td>South of Carmel Valley Rd.</td>
<td>South</td>
<td>8,000</td>
<td>900(^4), 1520(^5)</td>
<td>1,500</td>
<td>60.0%</td>
</tr>
<tr>
<td>South of Carmel Valley Rd.</td>
<td>North</td>
<td>6,700</td>
<td>920</td>
<td>1,500</td>
<td>61.3%</td>
</tr>
<tr>
<td>South of Carmel Valley Rd.</td>
<td>South</td>
<td>7,000</td>
<td>770</td>
<td>1,500</td>
<td>51.3%</td>
</tr>
<tr>
<td>INTERSTATE 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Carmel Vly and Del</td>
<td>Both</td>
<td>101,000</td>
<td>10,100(^4)</td>
<td>16,000(^5)</td>
<td>63.1%</td>
</tr>
<tr>
<td>Mar Heights Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Most recent traffic volumes from City of San Diego, 1979, and Comprehensive Planning Organization, 1979. Peak hour data from weekday counts.

\(^2\) Estimated absolute capacity, calculated using terrain and lane width reductions as outlined in the Highway Capacity Manual, 1965. For planning purposes only.

\(^3\) Two-way capacity; 1,500 estimated capacity for each lane/direction is basis of Volume/Capacity calculation.

\(^4\) Calculated from ADT figures using peak hour rates from nearby road segments.

\(^5\) Peak hour periods for the two directions do not coincide; thus, the total peak hour is less than the sum of the individual directional peaks.
low, and capacity is primarily set by the environmental effects of traffic volumes on surrounding land uses rather than roadway geometrics.

- Camino Del Mar/North Torrey Pines Road. This former highway route (old U.S. 101) fronts the project parcel on the west, but will not be accessed from the site. Within the past year, the portion of the route fronting the project site has been reduced from four lanes to three (one southbound, two northbound) for the purpose of improving the safety conditions at the Carmel Valley Road/Camino Del Mar intersection and the railroad overcrossing bridge.

As shown on Table 2, all of the access roads are operating within their respective capacities. Ultimate regional access for the Del Mar area is provided by the connection of Carmel Valley Road and Del Mar Heights Road to Interstate 5, which is operating within design capacity in the Del Mar area.

b. Existing Traffic Generation

The study area currently contains three residences served by a crude extension of Ocean View Avenue, and a single residence at the southeast corner of the project area which takes its access directly from Carmel Valley Road. Thus, existing traffic generated by the project is minimal, not exceeding about 40 trips per day.

c. Existing Land Division

Given the pre-Precise Plan arrangement of lot lines, there is a potential for significant adverse traffic impacts. Existing lot lines (both "legal" and "illegal") would allow for the construction of eighteen units, half of which could seek direct access to Carmel Valley Road at up to nine separate locations. Especially for those lots nearest the intersection of Carmel Valley Road and Camino Del Mar, this would undoubtedly present a dangerous situation.

d. Future Conditions

A number of planning factors not directly related to the project could affect the post-project
volume of traffic near the project site. Cumulative impacts of those factors would derive from the development of other parcels fronting Carmel Valley Road, and from the implementation of the City of San Diego's North City West.

Existing Zoning South of the Project. The parcels within the City of Del Mar located across Carmel Valley Road to the south are zoned for commercial (BC, approximately five acres) and residential (RL-14, approximately ten acres). If these parcels are built upon, traffic from them could significantly alter the volume/capacity ratio and safety characteristics for Carmel Valley Road and the Carmel Valley Road/Camino Del Mar intersection. However, these areas are constrained by combinations of "Open Space," "Floodplain," and "Slope Area" zoning overlays, and ultimate development will be at a minimum intensity. (See "Land Use," Section "P", and Figure 11.)

Torrey Pines Community Plan (City of San Diego). The Torrey Pines Community Plan indicates the following special handling is appropriate for Carmel Valley Road:

"A low speed, two lane improved street with a bikeway and pedestrian way on the lagoon side and left turn lanes from Camino Del Mar to Portofino Drive. The existing four lane section of Carmel Valley Road at the intersection of Sorrento Valley Road is recommended to be extended west to Portofino Drive, with care taken to preserve as much as possible the topography on the north and to protect the lagoon on the south." (City of San Diego, 1976.)

North City West (City of San Diego). Carmel Valley (the first neighborhood of North City West) is nearing the final stages of the approval process. The City of San Diego has indicated, in the EIR for the project (City of San Diego, 1978), that an external generation of 13,200 vehicle trips can be expected from San Diego's Carmel Valley project, of which seventy percent (or about 9240) will be "directed onto Interstate 5." Because access to the Carmel Valley project is via Del Mar Heights Road and Carmel Valley Road, the remaining trips not directed onto I-5 can be assumed to continue to the west. Thus,
about 4,000 unallocated trips from Carmel Valley will use Del Mar Heights Road and Carmel Valley Road (both of which are parts of the access system serving the project site). The Carmel Valley EIR predicts that this traffic increase will cause pressure for an increased number of lanes on Carmel Valley Road. Similar impacts can be assumed for each additional phase of the North City West.

2. Impacts

a. Direct Impacts

The Precise Plan calls for a total of eighteen new residential units within the planning area, five of which will access to the north via Ocean View Avenue, and thirteen of which will access to Carmel Valley Road via a common private drive. Single family residences generate about ten vehicle trips per day and about one trip each at peak hour, therefore, an increase of 180 new daily trips and 18 new peak hour trips can be expected to result from development of the study area per the proposed Plan (Caltrans, 1974). These trips have been allocated to the network of streets in the manner shown in Table 3, under the assumption that about 40 percent of the trips are oriented toward the central Del Mar area and 60 percent are to be oriented toward Interstate 5.

Table 3. Post-Project Traffic Increases on Project-Vicinity Road Links

<table>
<thead>
<tr>
<th>Link</th>
<th>Project Generation</th>
<th>Peak Hour</th>
<th>Project Generation</th>
<th>Peak Hour</th>
<th>Percentage Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carmel Valley Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West of the Project</td>
<td>58</td>
<td>6</td>
<td></td>
<td></td>
<td>.9%</td>
</tr>
<tr>
<td>East of the Project</td>
<td>72</td>
<td>7</td>
<td></td>
<td></td>
<td>.8%</td>
</tr>
<tr>
<td>Camino del Mar</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North of Carmel Vly. Rd.</td>
<td>48</td>
<td>5</td>
<td></td>
<td></td>
<td>.3%</td>
</tr>
<tr>
<td>South of Carmel Vly. Rd.</td>
<td>10</td>
<td>1</td>
<td></td>
<td></td>
<td>Negligible</td>
</tr>
<tr>
<td>Ocean View Avenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North of the Project</td>
<td>50</td>
<td>5</td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
</tbody>
</table>

1 Existing traffic data not available
Because of the low existing traffic volumes on Ocean View access and the small number of daily and hourly trips that will be generated (fifty and five, respectively), project-generated trips can be easily assimilated by the road system. The 130 daily and 13 peak hour trips to be added to Carmel Valley Road represent a very small incremental increase in its traffic volume, and will have no significant effect on existing traffic conditions.

b. Cumulative Impacts

The completed Precise Plan project could be impacted by external traffic factors related to development of other areas along Carmel Valley Road in the future. In addition, the proposed development of North City West could cause increased traffic volumes on Carmel Valley Road. However, the City of San Diego's Torrey Pines Community Plan calls for the retention of a two-lane alignment of Carmel Valley Road, and because much of the land accessing to Carmel Valley Road is either developed or severely constrained from development, additional travel lanes will not be required in the near term.

c. Internal Street Configuration

Due to topographic and aesthetic considerations, the streets proposed for the project will be constructed to a width of twenty feet, which is below City of Del Mar standards. However, because offstreet parking will be provided at individual house sites, and in guest spaces (Figure 3), there should be no obstruction of through flow by parked vehicles, increasing the effective width of the traveled way. In any case, the common drive and access will represent an improvement over the individual driveways which might result if the Precise Plan approach is not taken.

3. Mitigation

Because the volume of traffic generated by the project is very low, no external road improvements should be required, with the possible exception of an eastbound turn pocket on Carmel Valley Road to service the new residences. Future improvements to Carmel Valley Road may be needed to accommodate future volumes generated by projects within the City of Del Mar and the City of San Diego, but these increases are uncertain at this time and outside the capability of the project to mitigate. During plan
refinement, off-street parking facilities should be retained as a response to the substandard street widths proposed.

I. ECONOMICS

1. Present Setting

The 13-acre study area is currently undeveloped except for four houses between Torrey Pines Terrace and Carmel Valley Road. As such, its tax revenue contribution is quite low, especially since the passage of Proposition 13.

Public agency-supplied service requirements are currently minimal over the undeveloped portion of the study area. The only possible requirement is fire protection. Thus, the area's present cost-benefit to the City is essentially nothing.

2. Impact

The future development of the project site into 18 new residences will result in direct and indirect tax increments to various public agencies, i.e., City, County, schools, etc. If it is assumed that the residences average $400,000 each, totaling $7,200,000, the property tax would be $72,000. This entire amount would go to the County with an undetermined portion possibly being distributed to the City and school districts.

Other tax increments will occur from purchases made by the new residents. If the purchases are made in the City, the City will receive retail sales, gasoline, liquor, and cigarette taxes. The amount of these taxes is difficult to predict. However, if it is assumed that it is related to the per capita average, it would total approximately $2,916 (Healy, personal communication).

This figure is derived from:

<table>
<thead>
<tr>
<th>Tax Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales tax</td>
<td>$179,000</td>
</tr>
<tr>
<td>Cigarette tax</td>
<td>15,700 @ 5200 residents,</td>
</tr>
<tr>
<td>Liquor tax</td>
<td>5,000 per capita,</td>
</tr>
<tr>
<td>Gasoline tax</td>
<td>79,900 revenue = $54</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$279,600</strong></td>
</tr>
</tbody>
</table>

The project is anticipated to generate 54 new residents.
The new residents will require public services such as police, fire protection, education, street repair, library services, recreation, and others. The extent of these costs has not been predicted.

The cost-benefits to the City and School districts are apparently negative, depending on the distribution of property taxes received by the County. This situation is commonplace with all residential developments since Proposition 13, i.e., new developments do not pay their way.

3. Mitigation

Other than the various "construction" fees paid to the City, there are no simple mitigation measures to assure that the overall development is not a long-term financial liability to the City. A similar situation exists for the school district, and has resulted in a letter from at least one local district warning that school capacities and financial abilities are insufficient to meet increased student populations.

J. AIR QUALITY

1. Existing Conditions

The study area is located within the San Diego Regional Air Basin. Air quality is monitored by the San Diego County Air Pollution Control District. The nearest monitoring station is at Solana Beach. However, that station was opened in 1978 and the 1979 Annual Air Monitoring Report was not available at this writing. Therefore, data given is primarily from the Kearny Mesa Monitoring Station, located 11 miles southeast of the study area. Air quality data gathered at the Kearny Mesa station is compared to Federal standards in Table 4.

The undeveloped portion of the study area does not currently generate any measurable air pollutants. However, the area is located in a metropolitan region that frequently exceeds Federal and State standards for oxidants, hydrocarbons, and suspended particulates.

2. Impacts

The primary source of air pollution resulting from implementation of the Precise Plan and subsequent occupation of additional residential units would derive from automobiles. Vehicular emissions which would be
contributed by the study area if developed per the proposed plan are given in Table 5. These data assume an additional project-derived 180 daily vehicle trips and about 1500 daily vehicle miles (see Section "H").

A secondary source of air pollution would be associated with the use of gas and electricity by new residents. Table 5 lists the emissions associated with the generation of electricity for the project, given the "worst case" assumption that all electricity would be generated by residual oil (Grade 5) within the San Diego Air Basin. Also listed are approximate project emissions from natural gas usage, and fireplace, lawnmower and other miscellaneous sources. During construction, emissions would derive from workers' vehicles and construction equipment, as well as short-term generation of fugitive dust.

The total San Diego Air Basin emissions have been approximated at 2,400 tons per day (APCD, 1979). Total daily emissions generated by the project would be less than one ton/day, representing an incremental increase in the overall Air Basin pollutant load of about .001%.

Table 4. Air Quality Data, Kearny Mesa Monitoring Station (APCD, 1978)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Number of Days Exceeding Air Quality Standards (1978)</th>
<th>Standard†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone</td>
<td>62*</td>
<td>(C) 200 μg/m³ (0.10 ppm)</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>0</td>
<td>(C) 470 μg/m³ (0.25 ppm)</td>
</tr>
<tr>
<td>Hydrocarbons (corrected for Methane - 3-hr. average)</td>
<td>103</td>
<td>(F1) 160 μg/m³ (0.24 ppm)</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>0</td>
<td>(F1) 40 mg/m³ (35. ppm)</td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>0</td>
<td>(C) 1310 μg/m³ (0.5 ppm)</td>
</tr>
<tr>
<td>Total Suspended Particulates (24 hrs)</td>
<td>21</td>
<td>(C) 100 μg/m³</td>
</tr>
</tbody>
</table>

* Solana Beach Station
† F1 = Federal Primary Standard
   C = California Standard

40
Table 5. Project Emissions in Kilograms/Day*

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor</th>
<th>Emission Factor</th>
<th>Total Vehicle Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grams/Mile</td>
<td>Grams/Start</td>
<td>Grams/Day</td>
</tr>
<tr>
<td>Hydrocarbons</td>
<td>1.09</td>
<td>8.68</td>
<td>1800</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>9.6</td>
<td>80.68</td>
<td>15700</td>
</tr>
<tr>
<td>Nitrogen Oxides</td>
<td>2.56</td>
<td>N/A</td>
<td>3700</td>
</tr>
<tr>
<td>Particulates</td>
<td>0.25</td>
<td>N/A</td>
<td>370</td>
</tr>
<tr>
<td>Sulfur Oxides</td>
<td>0.13</td>
<td>N/A</td>
<td>190</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>21,760 kilograms</strong></td>
</tr>
</tbody>
</table>

* Emissions calculated from factors supplied by County of San Diego A.P.C.D. (1978)

3. Mitigation

Mitigation of air quality impacts from vehicles is not part of the project design. These are regional problems which are regulated by County and State agencies. The Regional Air Quality strategy has specified a number of measures which may be adopted in order to reduce regional emissions (San Diego Air Quality Planning Team, 1976). These include the use of car pools, van pools, the improvement of mass transit to major work and shopping centers and the expansion of bicycle facilities for local trips. Other air pollutants associated with the new residents cannot be controlled by the project proponents, i.e., power plant emissions. However, energy consumption by project residents can be decreased by taking full advantage of winter sun for heating and westerly breezes for cooling, use of insulation, and use of solar energy for hot water and space heating. Solar heating should be used for the pool in the recreation center.

The mitigation of regional air quality insufficiencies is the responsibility of the Air Pollution Control District.

Localized increases in dust levels resulting from construction (site preparation) would be minimized by keeping all surfaces well wetted.
K. **NOISE** (See Appendix)

1. **Existing Conditions**

The study area is subjected to varying levels of noise due to traffic on Camino Del Mar, Carmel Valley Road and the local streets. Some noise also results from Miramar aircraft departures using the Seawolf Route. The A.T. & S.F. Railroad located on the west side of Camino Del Mar is an additional noise source.

Short-term noise measurements were made on the morning of October 9 at two locations within the subject area. See Figure 16 for the site positions. During the measurements, traffic counts were made on those roads that were visible. There were no overflights or trains observed during the measurement period.

<table>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>516/Hr</td>
<td>Carmel Valley Road</td>
</tr>
</tbody>
</table>

Average daily traffic on Carmel Valley Road and Camino Del Mar were obtained from the City of San Diego. These data were used to calculate the Community Noise Equivalent Level (CNEL) due to traffic.

Noise due to the railroad was predicted using a railroad noise prediction model developed by Wyle Laboratories. A total of 12 passenger and 4 freight trips were used. The levels due to railroad noise only are less than the existing CNEL due to traffic.

Noise contours from Miramar Seawolf Departures were obtained from the Navy Air Installation Compatible Use Zone report. The property lies outside of the 60 CNEL lines.

All pertinent noise sources were superimposed upon the property. The resulting present noise contours are shown in Figure 16.
Figure 16. Noise Map.
2. **Impact**

It is proposed to develop vacant lots with single family dwellings. The noise impact of these additional homes will consist of a small added increment of roadway noise due to added traffic and noise during the construction phases of development. Added traffic noise is so small that the contours in Figure 16 will remain unchanged due to development in the study area. Construction noise will represent a temporary noise impact. The noise contours in Figure 16 are a function of traffic on Camino Del Mar and Carmel Valley Road. Should these roads be widened with a consequent increase in average daily trips, the noise can be expected to increase. Train noise is not expected to be an influencing factor in the future.

There is currently renewed talk of moving Lindbergh Field to a new location. One of the sites considered in past studies has been Carmel Valley. Should this occur, the area of Figure 16 will be impacted by takeoff/landing noise. However, the speculative nature of this action makes prediction difficult. The City of Del Mar is on record as opposing the Carmel Valley airport site and also has opposed the widening of Carmel Valley Road. These actions by the City plus the limited area for expansion in Del Mar makes it likely that noise contours in a future time frame will be similar to the present values.

The present noise contours shown in Figure 16 are representative of a quiet suburban neighborhood. The proposed project will, with the exception of short-term construction noise, have a negligible impact upon the area.

3. **Mitigation**

No mitigation is proposed.

L. **URBAN SUPPORT SERVICES**

The proposed project will ultimately generate 18 additional housing units in the study area. According to the 1975 Special Census Bulletin for San Diego County (Integrated Planning Office, 1976) which lists the City of Del Mar as Special Census Tract #172.00, Del Mar's total population in 1975 was 4,734. The household density approximates three persons per household, and 0.151% of the City's population were school-age children (K-12). The project would therefore generate approximately 54 persons living in 18 units, with approximately eight of those persons between the ages of 5 and 17.
1. Water

a. Existing Conditions

The property will be served by the City of Del Mar. Neither existing nor proposed undeveloped lots and building sites within the study area are all currently served with water. Homes currently existing within the area are served by a 6" water line from Ocean View Avenue. Undeveloped portions of the area currently have no effect on local or regional water usage and supply.

b. Impact

Water service pipelines will need to be extended to all proposed building sites. Based on an average water use of 170* gallons per day per person, the project will increase water consumption in the City by approximately 3.4 million gallons (mg) per year.

c. Mitigation

Water service extension will be financed by the property owners through special assessment. The retention of existing natural vegetation over much of the area, the use of drought-resistant vegetation for landscaping, and installation of water-conserving fixtures could reduce water consumption to less than 150 gallons per day per person.

* Based on data supplied by Del Mar Public Works (Geiser, 1980)

- Average flow, July '78 to Feb. '79, from S.D. County Water Authority, was equivalent to 348 mg/year (monthly mean = 1.48 cubic feet/sec).

- Fair and Track Use = 36 mg total

- Average personal use = \( \frac{348 \text{ mg} - 36 \text{ mg}}{5000 \times 365} = 170 \text{ g/ person/day} \)
2. **Sewer**

   a. **Existing Conditions**

   Liquid waste removal from occupied homesites in the study area is currently being accomplished via existing sewer lines on Carmel Valley Road, Ocean View Avenue, and an easement traversing the area. Some portions of the planning area are not currently served, and would require extension of sewer lines to each site. Service is provided by the City of Del Mar through an allocation of .8 mg/day by the City of San Diego's sewage processing facility at Point Loma.

   b. **Impact**

   Implementation of the plan would require revised sewer service to the proposed building sites. Based on an estimated 80%-20% split of water use between household and landscaping uses, the project would generate 2.7* mg/yr of liquid waste, which represents approximately 1% of Del Mar's current dry weather pump rate of about .8 mg/day (Geiser, 1980) to the municipal sewer system.

   c. **Mitigation**

   See Section L.l.c.

3. **Solid Waste**

   a. **Existing Conditions**

   Solid waste collection in the City of Del Mar is provided through the City by a private hauler. Solid waste is processed at the Palomar Transfer Station, from where it is currently diverted to a landfill site in San Marcos (Griffith, 1980).

   b. **Impact**

   Based on an average of approximately 5 lbs. of solid waste per person per day, the project will

   \[
   \text{*(170 g/day/person) \cdot (54) \cdot (.80) \cdot (365.25) = 2.7 mg/yr*}
   \]
generate approximately 270 lbs. of solid waste per day. Additional waste generation will have a slight incremental impact on existing landfill facilities.

c. Mitigation

No mitigation is proposed.

4. Energy

a. Existing Conditions

Gas and electric service to the project area will be provided by San Diego Gas & Electric Company. Currently, the undeveloped portions of the study area are not served and energy utilities would have to be extended to each building site. Gas and electric service will be provided according to existing field rules between SDG&E and the California Public Utilities Commission.

b. Impact

Based on approximately single family residential consumption averages of 600 kilowatt hours of electricity per unit/month and 80 therms of natural gas per unit/month, the completed project will consume an average of approximately 10,800 kwh and 1440 therms of gas per month. This would represent an extremely small incremental increase in total regional energy consumption. Project implementation would not result in a direct requirement for major production facility expansion by the utility company. However, the incremental effect of the project, when added to combined growth in the San Diego region, will require expanded energy production facilities.

c. Mitigation

Mitigation of incremental adverse effects of regional growth on energy utility services is beyond the scope of the project at hand. However, conformance with current energy conservation construction standards will have a mitigating effect. Additionally, solar heating for the proposed recreational facility should be made mandatory, as should the incorporation of architectural guidelines for each unit designed to facilitate the installation of
solar water heating units during original construction.

7. **Schools, Police, Fire**

   a. **Existing Conditions**

      - **Schools.** Del Mar Union High School District provides facilities for grades K-12 for the City of Del Mar.

      - **Police.** Police services are provided by the City under contract with the San Diego County Sheriff. Service is provided out of the North County Sheriff's substation at Encinitas.

      - **Fire.** Fire service is provided through the Del Mar Fire Department.

   b. **Impact**

      - **Schools.** Implementation of the project would contribute approximately eight school-age children to the Del Mar system. This would represent an incremental impact to City schools.

      - **Police.** Project implementation would add 18 units and 54 additional residents to the City service area. This increase would have no significant impact on the quality of police services currently provided.

      - **Fire.** Additional residential units to be added by the project would not require expansion of current services, nor would those services be significantly impacted. Sub-standard roads proposed by the project could impact the accessibility of fire-fighting equipment.

   c. **Mitigation**

      Impacts to local schools, police, and fire protection services would not be significant because of the small size of the proposed project. Incremental impacts will require mitigation through initial builder's fees, increased tax allocation from the General Fund (based on population increase, etc.) and prior approval of design parameters by the Fire Department prior to final approval.
IV. ENVIRONMENTAL IMPACT SUMMARY

The following is intended to briefly summarize the key issues in a format that insures compliance with the California Environmental Quality Act (CEQA). The headings are those to be found in Section 15143 of Title 14, California Administrative Code, which covers the guidelines for the implementation of CEQA. Refer to the prior sections of this focused EIR for full discussions of the issues.

A. SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

As designed (see Figure 3), there are few, if any, impacts which may be considered significant. Those of most concern are related to geologic hazards, biology, aesthetics, and economics. The extent of significance will be dependent on the project's ultimate design and implementation.

1. Geologic Hazards

The site possesses faults, landslide-prone materials, high erodibility, and expansive soils. These characteristics pose severe potential problems if the appropriate mitigation measures are not undertaken. In addition to public safety considerations, the erodibility may adversely impact the nearby Penasquitos Lagoon.

2. Biological Resources

Project implementation would cause the destruction of uncommon plant species and the elimination of unique habitats.

3. Aesthetics

The site's visual characteristics would be substantially modified and may be considered adverse depending on one's perspective. The extent of the aesthetic impact will be determined by the final design and the "maturation" of the project.

4. Economics

The City and schools will be required to provide more services than the project will finance through taxes. Thus, it has a negative cost-benefit to the City and
schools which is commonplace in the post-Proposition 13 era.

B. ANY SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE PROPOSAL IS IMPLEMENTED

The potential significant effects can be substantially reduced by implementing the mitigation measures described below. For some effects, especially biology and aesthetics, judgments regarding overall significance are subjective and must be resolved by public action.

C. MITIGATION MEASURES PROPOSED TO MINIMIZE THE SIGNIFICANT EFFECTS

1. Geologic Hazards

A formal geotechnical investigation should be performed and its recommendations followed. It is probable that all of the potential geologic hazards can be reduced to insignificance if this is done.

2. Biological Resources

Disturbance of the site should be minimized so as to preserve as many uncommon species and unique habitats as possible. The conceptual plan substantially accomplishes this. In addition, landscaping should incorporate native species including those subject to destruction.

3. Aesthetics

Aesthetic impacts may be reduced by the appropriate design. Attention should be paid to grading, landscaping, building appearance, and view corridors. Parameters for these factors will be established by the City during and after public review.

4. Economics

There are no ready mitigating measures for the economic impacts. Through voter action, it is possible to impose special annual fees on residences and thereby provide new City revenues. However, such an action would be required of the entire City and could not be imposed on this project alone.
D. ALTERNATIVES TO THE PROPOSED ACTION

A description of alternatives is necessary to allow the public to determine if the chosen project has the least environmental impact while meeting the intent of the project (i.e., in the case, is this the best design and location for residential development?) The area is already committed to residences according to the General Plan and zoning, thus the options or alternatives are reduced to the timing and design of the project.

1. No or Delayed Development

The area could be left as it is now. However, if it does not come under public ownership as natural open space, it would undoubtedly be ultimately developed with unknown impacts.

2. Development According to Existing Zoning

The area could be developed into 13 additional residential lots according to existing zoning. This would probably result in considerably more intense impacts than the present plan, in that two canyons would have to be extensively graded to provide access to existing lots located in the northeast corner of the planning area. In addition, there would be six driveways accessing Carmel Valley Road. At least two homes would be landlocked, unless the existing topography were significantly altered, and there would be no mechanism available to create the perpetual open space easements.

3. Alternative Design

There are many design variations that could be considered. These range from different physical arrangements to changes in densities. Obviously, any design which restricted development to the already disturbed areas, such as the "parking lot" adjacent to the road, would greatly reduce the major impacts. The present design has evolved from a consideration of all of the above factors and seems to represent a reasonable solution acceptable to both the City and landowners.

The proposed open space dedications of the sensitive hillside properties are contingent upon the ability to transfer development rights to the "cluster" fronting Carmel Valley Road. Any reductions in permitted densities affecting those properties might well jeopardize the agreement between the affected owners to proceed with the transfer.
E. Any Significant Irreversible Environmental Changes Which Would Be Involved in the Proposed Action Should It Be Implemented

The following irreversible changes would occur, but they may not be considered significant, especially if the preceding mitigation measures are undertaken.

1. Implementation of the project would require the use of fossil fuels for construction vehicles, construction materials for the buildings, and, when completed, the project will require the use of energy.

2. Topographic changes are essentially irreversible, although most will occur on areas already disturbed.

3. Much of the biological habitat and associated uncommon species will be lost. Some animals may move to adjacent land, however, only those which are tolerant of human encroachment will remain.
V. REFERENCES


City of San Diego. 1979. Traffic Counts, Department of Transportation.


## VI. EIR PREPARATION

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Qualification</th>
</tr>
</thead>
<tbody>
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<td>Project Director</td>
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<td>B.A. Biology and Communications</td>
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<td>Supervisor/Editor</td>
<td>Richard D. Glenn</td>
<td>Ph.D. Biology</td>
</tr>
<tr>
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<td>Marina Riley Brand</td>
<td>M.S. Biology</td>
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<tr>
<td>Contract Supervisor and Editor</td>
<td>William Healy</td>
<td>Planning Director, City of Del Mar</td>
</tr>
</tbody>
</table>
APPENDIX

Biology Report
Archaeology Report
Noise Report
A BIOLOGICAL RECONNAISSANCE
of the
Carmel Valley Precise Plan
Study Area

Prepared for:
The City of Del Mar
County of San Diego

Investigators:

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February 1, 1980
ABSTRACT

Botanical and zoological surveys were made of the study area. Six sensitive plant species were observed on the site, and eight other sensitive species which were not observed have some potential for presence on the area. No rare and/or endangered faunal species were observed during the survey, and none are expected to utilize the study area. The study area contains several habitat-types which are rare, endangered, or known for supporting unusually high concentrations of sensitive plant species. The study area is also situated adjacent to Los Penasquitos Lagoon, forming a part of its drainage area. The lagoon habitat is sensitive, and subject to protection from several state and local agencies.

Development of the study area could result in significant adverse effects on biological resources. Measured against present conditions on the study area, the addition of 18 housing units would have a significant adverse impact. However, if the study area were to be developed according to existing zoning and legal building sites, no conceivable mitigation plan for each individual legal lot could approach the level of mitigation achieved by the proposed Precise Plan.
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. PROJECT DESCRIPTION</td>
<td>1</td>
</tr>
<tr>
<td>II. METHODS AND LIMITATIONS</td>
<td>1</td>
</tr>
<tr>
<td>III. RESULTS</td>
<td>2</td>
</tr>
<tr>
<td>A. PHYSIOGRAPHY</td>
<td>2</td>
</tr>
<tr>
<td>B. VEGETATION</td>
<td>2</td>
</tr>
<tr>
<td>C. FAUNA</td>
<td>3</td>
</tr>
<tr>
<td>D. RARE AND/OR ENDANGERED OR SENSITIVE SPECIES</td>
<td>8</td>
</tr>
<tr>
<td>IV. RESOURCE EVALUATION</td>
<td>11</td>
</tr>
<tr>
<td>V. IMPACT ASSESSMENT</td>
<td>11</td>
</tr>
<tr>
<td>VI. MITIGATION</td>
<td>14</td>
</tr>
<tr>
<td>VII. REFERENCES</td>
<td>15</td>
</tr>
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Figure 1. U.S. Geological Survey Map, Del Mar 7.5' Quadrangle showing project location.
I. PROJECT DESCRIPTION

The study area is located in the northeast corner of the intersection of Camino del Mar and Carmel Valley Road as shown on Figure 1. The project consists of a Precise Plan and Re-subdivision of approximately 13 acres of land which currently contains four existing residential units and 16 legal vacant lots. The Precise Plan provides for the resubdivision of the land to provide for eighteen housing units. The additional units would be clustered on disturbed land near Carmel Valley Road in exchange for the abandonment of three legal parcels to permanent open space on the northeastern portion of the area. The Precise Plan will also provide for strict landscape and building design limitations intended to preserve most of the existing natural plant communities over the entire study area.

II. METHODS AND LIMITATIONS

The intent of this report is to identify and describe potential adverse impacts to biological resources which might result from the proposed project. Where possible, suitable measures to avoid or mitigate these impacts were incorporated into the project design after the completion of fieldwork and environmental constraints identification, and prior to the finalization of the Precise Plan.

Botanical observations were made by C. C. Patterson on 13 March, 1978. The survey was performed on foot over a route which brought all areas of the site under direct visual observation. Limitations to the effectiveness of the survey were imposed by physical and phenological factors. Steep bluffs made some portions of the site inaccessible, and several plant species which could have been observed later in the year were not observable in a March survey. Plant identifications were made in the field, except where observation of floral characters required microscopic examination. Taxonomic nomenclature used herein follows Munz (1974), plant community names follow Thorne (1976) and Barbour and Major (1978), and sensitive plant species are evaluated according to Powell (1974).

A zoological reconnaissance of the project site was made by M. R. Brand on 10 March, 1978, from 0635h to 1035h, and on 14 March, 1978, from 1320h to 1500h. The weather conditions were as follows:

10 March -- cloudy skies, a temperature range of approximately 10°C to 15.5°C, and no significant wind.

14 March -- clear skies, a temperature of 19°C and a wind speed of 5 to 15 mph.
The site was covered on foot such that all areas of the property were viewed. Binoculars, 7 x 35 magnification, were used. No small mammal trapping was undertaken as part of the survey. The survey technique used neglects the detection of nocturnal species. Cryptic species may also be undetected. Migratory species' utilization of the property will vary seasonally. Rodent density and species diversity were not accurately measured since no small-mammal trapping was performed. Nomenclature for the species accounts is from Stebbins, 1954 (Amphibians and Reptiles); American Ornithologists' Union, 1957, Eisenmann, 1973a, 1973b, 1976 (Birds); and Jones et al., 1975 (Mammals).

III. RESULTS

A. PHYSIOGRAPHY

The study area is located on a south- and west-facing hillside, overlooking Los Penasquitos Lagoon and the Pacific Ocean. Most of the area is characterized by steeply dissected sandstone bluffs and ravines. Existing elevations on the study area range from about 62' MSL (above mean sea level) near the southeast corner, to about 232' MSL at the northeast corner. Three ravines which cover the eastern half of the area converge on a relatively flat graded lot at the southeast corner. A smaller ravine cuts the southwest corner of the area, and an abandoned railroad bed crosses the area in an east-west direction.

Onsite soils (USDA-SCS, 1973) consist of the Marina soil series (MIE) and the Loamy Alluvial Land-Huerhuero complex, (LvF3). These soils are formed on Eocene-age sedimentary rock of the Del Mar Formation, Baypoint Formation, and the Torrey Sandstone.

B. VEGETATION

Plant communities present on the study area (as described by Thorne, 1976) include: (1) Torrey Pine Woodland intergraded with (2) Coastal Mixed Chaparral; (3) Coastal Sage Scrub is located along the western slopes; and (4) Disturbed/Annual Grassland covers disturbed portions of the area. Two small canyons which have been impounded by the railroad right-of-way support small areas of Willow/Riparian Scrub. Figure 2 shows the location and extent of these plant communities. These are discussed in greater detail below.

- Torrey Pine Woodland. Defined by the presence of Pinus torreyana, this community lies primarily in the main canyons on the north and eastern portions of the study area. Understory species are identical to those described
Figure 8. Botanical Resources Map showing habitats and sensitive plants.
under Mixed Chaparral and Coastal Sage Scrub.

- Coastal Mixed Chaparral. Defined by the presence of hard shrub species such as Adenostoma fasciculatum and Ceanothus verrucosus, this community has a high species diversity. Other characteristic species include Salvia mellifera, Clematis pauciflora, Heteromeles arbutifolia and many species also common to Coastal Sage Scrub.

- Coastal Sage Scrub. Dominated by Artemesia californica, this plant community has many species common throughout the County's Coastal Sage Scrub such as Rhamnus crocea, Malosma laurina, Haplopappus venetus, and many others. The study area's Coastal Sage Scrub also contains many elements unique to sandstone bluffs adjacent to the sea. Some of these include Gasoul crystallinum, Carpobrotus aequilaterus, Croton californicus var. tenuis, Erysimum ammophilum, Coretherogyne filaginifolia var. linifolia, and Coreopsis maritima.

- Disturbed/Annual Grassland. This community is dominated by ruderal weeds, introduced annual grasses, and early successional native species.

- Willow/Riparian Scrub. These areas include two seasonal ponds where the old railroad crosses the two main ravines. The dominant plants in these areas include Encelia californica, Xanthium strumarium, and Salix lasiolepis.

Table 1 is a checklist of plant species identified on the site during the survey. The species diversity represented in Table 1 is somewhat reduced by the absence of some mid-summer and fall-flowering xerophytes which were not observable or identifiable at the time of the survey.

C. FAUNA

Fauna

The project site is composed of five vegetative communities: Disturbed Annual Grassland, Coastal Sage Scrub, Coastal Mixed Chaparral, Torrey Pine Woodland and Willow/Riparian Scrub. However, these communities intergrade with one another throughout the site. Therefore, since the property is small in total acreage, the entire site was considered as one wildlife habitat type.

Amphibians. No evidence of amphibious species was observed onsite. However, a pool of water was observed in the approximate center of the site (Figure 2). This pool would be suitable for breeding by amphibians. Species which could be expected to utilize the site include Hyla regilla (Pacific Treefrog) and Bufo boreas (Western Toad).
<table>
<thead>
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<tr>
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<tr>
<td>Dudleya edulis</td>
<td>Liveforever</td>
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* denotes non-native species
+ naming authorities follow Munz, 1974
Scientific Name
Dudleya lanceolata
Elymus condensatus
Encelia californica
Eriogonum fasciculatum
Eriophyllum confertiflorum
* Erodium cicutarium
Erysimum ammophilum
Eschscholzia californica
* Eucalyptus globula
Euphorbia polycarpa
Perocactus viridescens
* Poiniculum vulgare
Gallium angustifolium
Gasoul crystallinum
Gnaphalium bicolor
Gnaphalium microcephalum
Haplopappus squarrosus ssp. grindelioides
Haplopappus venetus ssp. vernonioides
Hemizonia fasciculata
Heteromeles arbutifolia
Heterotheca grandiflora
Isomeris arborea
* Lathyrus tingitanus
Linanthus dianthiflorus
Lotus scoparius

Common Name
Liveforever
Giant Wild Rye
California Encelia
California Buckwheat
Golden Yarrow
Stork's Bill
Coast Wallflower
California Poppy
Blue Gum
Pigmy Spurge
Coast Barrel Cactus
Sweet Pennel
Bedstraw
Iceplant
Cudweed
Cudweed
Isocoma
Goldenbush
Tarweed
Summer Holly
 Telegraph Weed
Bladderpod
Tangier Pea
Ground Pink
Deer Weed
<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malacothamnus densiflorus</td>
<td>Bush Mallow</td>
</tr>
<tr>
<td>Malosma laurina</td>
<td>Laurel Sumac</td>
</tr>
<tr>
<td>Marah macrocarpa</td>
<td>Wild Cucumber</td>
</tr>
<tr>
<td>Mirabilis californica</td>
<td>Wishbone Bush</td>
</tr>
<tr>
<td>*Nicotiana glauca</td>
<td>Indian Tobacco</td>
</tr>
<tr>
<td>Opuntia littoralis</td>
<td>Prickly Pear</td>
</tr>
<tr>
<td>Opuntia prolifera</td>
<td>Coastal Cholla</td>
</tr>
<tr>
<td>Pellaea mucronata</td>
<td>Bird's-foot Fern</td>
</tr>
<tr>
<td>Pinus torreyana</td>
<td>Torrey Pine</td>
</tr>
<tr>
<td>Polypodium scouleri</td>
<td></td>
</tr>
<tr>
<td>Rhamnus crocea</td>
<td>Redberry</td>
</tr>
<tr>
<td>Rhus integrifolia</td>
<td>Lemonadeberry</td>
</tr>
<tr>
<td>Salix lasiolepsis</td>
<td>Willow</td>
</tr>
<tr>
<td>*Salsola iberica</td>
<td>Russian Thistle</td>
</tr>
<tr>
<td>Salvia mellifera</td>
<td>Black Sage</td>
</tr>
<tr>
<td>Senicio californicus</td>
<td>California Senicia</td>
</tr>
<tr>
<td>Simmondsia chinensis</td>
<td>Jojoba</td>
</tr>
<tr>
<td>Solanum xantii</td>
<td>Nightshade</td>
</tr>
<tr>
<td>Stephanomeria virgata</td>
<td>Giant Stipa</td>
</tr>
<tr>
<td>Stipa coronata</td>
<td></td>
</tr>
<tr>
<td>*Tetragonia tetragonioides</td>
<td>Garden Nasturtium</td>
</tr>
<tr>
<td>*Tropaeolum majus</td>
<td>Cocklebur</td>
</tr>
<tr>
<td>*Xanthium strumarium</td>
<td>Spanish Bayonet</td>
</tr>
<tr>
<td>Yucca schidigera</td>
<td></td>
</tr>
</tbody>
</table>
Reptiles. Two species (five individuals) of reptiles were encountered on the site including four individuals of the species *Uta stansburiana* (Side-Blotched Lizard) and one individual of the species *Sceloporus occidentalis* (Western Fence Lizard). Due to the presence of buckwheat, black sage and chamise onsite, the species *Cnemidophorus hyperthermus* (Orange-Throated Whiptail) could be expected on the property. No significant rock outcrops exist onsite.

Birds. Table 2 lists those species observed on the project site. A total of 19 species (83 observations) were noted. All species were identified by sight. With the exception of Williamson's Sapsucker, Hermit Thrush, Yellow-Rumped Warbler and White-Crowned Sparrow, all species observed breed in San Diego County (McCaskie and Jehl, 1974-75). The onsite Torrey Pines provide nesting sites for larger avian species such as hawks and owls.

Mammals. Evidence of two species of mammals (three individuals) was observed onsite. Two nests belonging to the species *Neotoma sp.* (Woodrat) and tracks of the species *Didelphis virginiana* (Virginia Opossum) were noted. In addition, only a small amount of rodent activity was observed during the onsite survey.

D. RARE AND/OR ENDANGERED OR SENSITIVE SPECIES

- Flora

Six sensitive plant species were observed on the study area. At least eight others could possibly occur on the area, although this possibility is slight due to the favorable season during which the survey was made. In addition to those species listed in Table 3, one other observed species, *Coretherogyne filiginifolia* var. *linifolia* has been proposed for inclusion on the CNPS listing with an R-E-V-D code of 2-1-1-3 (Beauchamp, et al., 1978).

- Fauna

No rare and/or endangered faunal species were encountered on the site and none are expected to occur (California Department of Fish and Game, 1979a, 1979b). However, the avian species, White-tailed Kite, which is fully protected by California State Law, may utilize the site as a portion of its foraging habitat. One observed bird species, Bewick's Wren, is on the "Blue List for 1979"* (Arbib, 1978). However, this species is

* The Blue List denotes those species which are currently suffering non-cyclical population declines within all or parts of their range.
<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aphelocoma coerulescens</td>
<td>Scrub Jay</td>
<td>8</td>
</tr>
<tr>
<td>* Sphyrapicus thyroideus</td>
<td>Williamson's Sapsucker</td>
<td>1</td>
</tr>
<tr>
<td>Toxostoma redivivum</td>
<td>California Thrasher</td>
<td>6</td>
</tr>
<tr>
<td>Lophortyx californicus</td>
<td>California Quail</td>
<td>3</td>
</tr>
<tr>
<td>* Catharus guttatus</td>
<td>Hermit Thrush</td>
<td>5</td>
</tr>
<tr>
<td>Columba livia</td>
<td>Rock Dove</td>
<td>4</td>
</tr>
<tr>
<td>Zenaida macrorora</td>
<td>Mourning Dove</td>
<td>9</td>
</tr>
<tr>
<td>Sturnus vulgaris</td>
<td>Starling</td>
<td>6</td>
</tr>
<tr>
<td>Mimus polyglottos</td>
<td>Mockingbird</td>
<td>7</td>
</tr>
<tr>
<td>Pipilo fuscus</td>
<td>Brown Towhee</td>
<td>8</td>
</tr>
<tr>
<td>* Dendroica coronata</td>
<td>Yellow-Rumped Warbler</td>
<td>3</td>
</tr>
<tr>
<td>Vermivora celata</td>
<td>Orange-Crowned Warbler</td>
<td>1</td>
</tr>
<tr>
<td>Carpodacus mexicanus</td>
<td>House Finch</td>
<td>4</td>
</tr>
<tr>
<td>* Zonotrichia leucophrys</td>
<td>White-Crowned Sparrow</td>
<td>9</td>
</tr>
<tr>
<td>Passerculus sandwichensis</td>
<td>Savannah Sparrow</td>
<td>3</td>
</tr>
<tr>
<td>Thryomanes bewickii</td>
<td>Bewick's Wren</td>
<td>1</td>
</tr>
<tr>
<td>Troglodytes aedon</td>
<td>House Wren</td>
<td>1</td>
</tr>
<tr>
<td>Psaltriparus minimus</td>
<td>Bushtit</td>
<td>2</td>
</tr>
<tr>
<td>Calypte anna</td>
<td>Anna's Hummingbird</td>
<td>2</td>
</tr>
</tbody>
</table>

Total = 19 species                      83 observations

* Denotes those species which are not known to breed in San Diego County (McCaskie and Jehl, 1974-75).
<table>
<thead>
<tr>
<th>Plant Species</th>
<th>R-E-V-D Code</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pinus torreyana (Torrey Pine)</strong></td>
<td>3-3-3-3*</td>
</tr>
<tr>
<td>(R) 3. Occurs in the wild in only two highly restricted populations</td>
<td></td>
</tr>
<tr>
<td>(E) 3. Totally endangered</td>
<td></td>
</tr>
<tr>
<td>(V) 3. Approaching extinction in its native habitat</td>
<td></td>
</tr>
<tr>
<td>(D) 3. Endemic to California</td>
<td></td>
</tr>
<tr>
<td><strong>Coreopsis maritima (Sea-Dahlia)</strong></td>
<td>2-2-1-1</td>
</tr>
<tr>
<td>(R) 2. Occurrence confined to several populations</td>
<td></td>
</tr>
<tr>
<td>(E) 2. Endangered in part</td>
<td></td>
</tr>
<tr>
<td>(V) 1. Stable</td>
<td></td>
</tr>
<tr>
<td>(D) 1. Not rare outside California (Baja California)</td>
<td></td>
</tr>
<tr>
<td><strong>Ferrocactus viridescens (Coast Barrel Cactus)</strong></td>
<td>1-2-2-1</td>
</tr>
<tr>
<td>(R) 1. Rare, but with currently low potential for extinction</td>
<td></td>
</tr>
<tr>
<td>(E) 2. Endangered in part</td>
<td></td>
</tr>
<tr>
<td>(V) 2. Declining</td>
<td></td>
</tr>
<tr>
<td>(D) 1. Not rare outside California (Baja California)</td>
<td></td>
</tr>
<tr>
<td><strong>Erysimum ammophilum (Coast Wallflower)</strong></td>
<td>1-2-1-3</td>
</tr>
<tr>
<td>(R) 1. Rare, but currently low potential for extinction</td>
<td></td>
</tr>
<tr>
<td>(E) 2. Endangered in part</td>
<td></td>
</tr>
<tr>
<td>(V) 1. Stable</td>
<td></td>
</tr>
<tr>
<td>(D) 3. Endemic to California</td>
<td></td>
</tr>
<tr>
<td><strong>Ceanothus verrucosus (Wartystem Ceanothus)</strong></td>
<td>1-2-1-1</td>
</tr>
<tr>
<td>(See Below)</td>
<td></td>
</tr>
<tr>
<td><strong>Adolphia californica (California Adolphia)</strong></td>
<td>1-2-1-1</td>
</tr>
<tr>
<td>(R) 1. Rare, but currently low potential for extinction</td>
<td></td>
</tr>
<tr>
<td>(E) 2. Endangered in part</td>
<td></td>
</tr>
<tr>
<td>(V) 1. Established</td>
<td></td>
</tr>
<tr>
<td>(D) 1. Not rare outside California (Baja California)</td>
<td></td>
</tr>
</tbody>
</table>

* R-E-V-D Code = Rarity: Endangerment: Vigor: Distribution
not suffering a population decline in San Diego County and, therefore, requires no specific mitigation measures. The site contains vegetative elements known to support the Orange-Throated Whiptail, a species protected by a daily bag limit of two. No other "species of special concern in California," threatened, declining or sensitive species are expected onsite. Tables 4 and 5 are a complete listing and description of rare, endangered and/or sensitive species observed and expected onsite.

IV. RESOURCE EVALUATION

Onsite wildlife habitat provides nesting and foraging opportunities for a variety of faunal species. A small reservoir provides water for amphibious breeding, although significant amphibian species probably do not exist onsite. However, none of the faunal species observed onsite constitute a significant resource in San Diego County. No species present is sensitive, declining or threatened (Remsen, 1979; Everett, 1979). Although the probability is low, the site may support individuals of the species Orange-Throated Whiptail.

V. IMPACT ASSESSMENT

Development of the study area could result in significant adverse effects on biological resources. The loss of habitat supporting natural populations of Sea Dahlia, Torrey Pine, or Coast Wallflower would be significant. The loss of, or infringement on, the Torrey Pines Woodland plant community which is known only from Del Mar and Santa Rosa Island would certainly be significant. The proposed units 1 and 2 would impact Torrey Pines Woodland, as would units 3 and 4 to a lesser degree (see Figures 3 and 8 in the Environmental Impact Report). Units 4, 8, 9, 10, 11, 17 and 18 would impact Sea Dahlia populations; and units 8 and 18 would impact Coast Wallflower populations. The addition of eighteen residential units, with an attendant introduction of noise, trampling, cultivated plant escapes*, and domestic pets, would further reduce the ecological function of natural communities on the study area.

Erosion resulting from disturbance of unstable soils on the study area could result in an increased siltation load to Los Penasquitos Lagoon. The lagoon supports a valuable biological resource which is currently experiencing severe stress resulting from development within its drainage area (Prestegaard, 1979).

An evaluation of the significance of expected adverse impacts requires comparison against both the "baseline" present setting conditions, and the expected conditions under a "no-project" alternative. As measured against the present conditions on the study area, the addition of eighteen housing

* plants may invade native habitat thus changing its biological function
Table 4. Sensitivity Index of Faunal Species

A. California State Listing (Department of Fish and Game 1979a, 1979b)

0. Not applicable
1. Endangered
2. Rare
3. Fully Protected
4. Protected by Daily Bag Limits of 1, 2 or 3.

B. Status in California (Remsen, 1979)

0. Not applicable
1. Highest priority, species facing immediate extirpation if current trends continue.
2. Second priority, species definitely on the decline throughout a large part of their range in California, but population still sufficiently substantial that the danger is not immediate.
3. Third priority, species not in any present danger of extirpation, but because of their low population numbers in California, they are potentially vulnerable to extirpation should a threat materialize.

C. Status in San Diego County (Everett, 1979)

0. Not applicable
1. Threatened; species have undergone dramatic, non-cyclical, long-term population declines so that situation is critical throughout its range.
2. Declining; local breeding populations have been steadily reduced or, in some cases, extirpated.
3. Sensitive; declines have not been documented but are regarded as such because of (a) extremely localized or limited distribution, (b) sensitivity to disturbance, (c) actual or impending destruction of essential habitat, or (d) lack of sufficient data on current or past status which significantly increased the potential for serious reduction of a local population.

D. Presence on Current Blue List (Arbib, 1978)

0. Not present or not applicable
1. Present on List
2. Present on List but local (San Diego County) populations stable and/or Southern Pacific Coast Observers voted to delete the species from the List.
Table 5. Status of Rare, Endangered and/or Sensitive Species Observed and Expected OnSite*

<table>
<thead>
<tr>
<th>Species Observed Onsite:</th>
<th>Category</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Thryomanes bewickii</em></td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><em>(Bewick's Wren)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Species Expected Onsite:</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Elanus leucurus</em></td>
<td></td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><em>(White-Tailed Kite)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Cnemidophorus hyperthrus</em></td>
<td></td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><em>(Orange-Throated Whiptail)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* See Table 4 for an explanation of the code.
units will have a significant adverse effect resulting from the disturbance of unique biological habitat which supports at least six rare and/or endangered plant populations. Additionally, potential siltation effects on Los Penasquitos Lagoon are considered to be potentially significant. However, if the study area were to be developed on a lot-by-lot basis according to existing zoning and property boundaries, no conceivable mitigation plan for each individual legal lot could approach the level of mitigation achieved under the proposed Precise Plan.

VI. MITIGATION

The mitigation of potential adverse effects to biological resources as proposed by the Precise Plan would reduce those impacts to a level of insignificance when measured against the "no-project" alternative. These mitigation measures are based on the re-subdivision of the study area to: (1) allow the placement of the northeast canyon area and Torrey Pine Woodland in perpetual open space; (2) avoid major grading projects and consequent erosion hazard which would result from development of existing lots and access easements; (3) impose covenants and restrictions which would limit the extent of landscaping, and provide for the retention of natural plant communities over most of the study area; and (4) place nine of the eighteen units on portions of the site which were identified during the biology survey as non-native/disturbed habitat.
VII: REFERENCES


ARCHAEOLOGY RECONNAISSANCE
CARMEL VALLEY ROAD PROPERTY
CITY OF DEL MAR

Prepared by:
Scott Fulmer
Archaeologist

MSA, Inc.
7343 Ronson Road
Suite H
San Diego, CA 92111
Map of western San Diego County showing the site's regional location
TABLE OF CONTENTS

I. SUMMARY ........................................... 1
II. CURRENT SETTING ................................. 1
III. RECONNAISSANCE ................................. 3
IV. IMPACTS ........................................... 3
V. MITIGATION .......................................... 3
VI. REFERENCES CITED ................................. 4

APPENDIX

LIST OF FIGURES

Map of Western San Diego County showing the site's regional location

Figure 1. U.S. Geological Survey topographic map, Del Mar 7.5' Quad, showing project location ........ 2
ARCHAEOLOGICAL RECONNAISSANCE
of
CARMEL VALLEY ROAD PROPERTY
CITY OF DEL MAR

I. SUMMARY

An archaeological reconnaissance, consisting of searches of records held at San Diego State University and San Diego Museum of Man, and an intensive on-site field survey of the subject property by Susan Gregg of MSA, Inc. was conducted to assess impacts to cultural resources located at the Carmel Valley Road property in Del Mar, California. Both record searches and the field survey failed to locate any physical evidence of significant prehistoric or historic features within the project's boundaries. No adverse effects to cultural resources are proposed by development of the parcel and a negative declaration of impacts is appropriate. (See Figure 1 for project location).

II. CURRENT SETTING

The project site is situated above the Soledad Slough at its western extent; it encompasses portions of an eroding coastal marine terrace, characterized by relatively flat mesa dissected by irregular erosional features. The underlying structure is a sandstone formation, devoid of major lithic resources utilized by aboriginal groups. No fresh water sources exist on-site. The property does support a variety of vegetal species utilized as supplemental food resources including Rhus, Opuntia, Dudleya, Salvia, Artemesia and Erigonium, all found in coastal sage scrub associations throughout the area. One primary food resource, the relictual Torrey Pine, is present on the property.

These supplemental food resources are not likely to have significantly influenced the location of settlements in the area; and other critical resources, especially fresh water sources, are lacking. Warren (1964) notes that coastal adaptations are normally focused around slough/lagoon environments, and that fresh water was a critical factor in site placement. Fresh water sources are usually available at the inland aspects of the coast, and site concentrations are higher in these areas behind the brackish wetlands or lagoons. Sites are located along the present coastal mesas, however, perhaps due to the overriding importance of food resources, such as Torrey Pine, or differences in current and prehistoric environmental characteristics, or as specific deviations from general practices.
Figure 1. U.S. Geological Survey topographic map, Del Mar 7.5' Quad, showing project location.
Although the potential for encountering sites in such a setting is only moderate, sites are known to be located nearby and in similar settings, such as W-30, southwest of the property, and Warren's assertions should be considered only as a general model.

III. RECONNAISSANCE

Records of previously recorded archaeological and historical sites were solicited from San Diego State University and the San Diego Museum of Man. Although eight La Jollan middens are recorded within a mile of the project site, none are located within the projects boundaries. Two sites are located adjacent to the property: W-30, a La Jollan midden eroding along the ocean cliffs southwest of the project, and W-23, which was situated on a mesa west of the project, but is now probably destroyed by development. Both sites were recorded by Malcolm Rogers in the 1930's.

An intensive on-foot field survey of the knolls and erosional drainages found on the property was conducted by Susan Gregg of MSA, Inc., in May, 1978. Survey conditions were good, and all portions of the property thoroughly examined.

No physical evidence of prehistoric or early historic land use was encountered. No significant sites or features were noted, nor evidence that W-30 or W-23 extended onto the property.

IV. IMPACTS

As the survey results were negative, no impacts to cultural resources within the project site are proposed by development. As two sites are, or were, located nearby, indirect impacts to these resources may occur from cumulative increases in population in the area, increasing the likelihood of informal collection or vandalism, or other disturbances.

V. MITIGATION

No mitigatory measures are necessary for direct impacts, as none are proposed. Increases in the potential for indirect impacts off-site through increases in population from continuing development should be monitored by the lead agency and considered even if no direct impact is proposed. Periodic inspection of sites located near developing areas for changes in the condition and integrity of surface and subsurface materials should be undertaken. These cumulative indirect impacts are as serious
as direct impacts in many cases, and should be considered in assessing the level of impact to cultural resources from future developments in the area.

VI. REFERENCES CITED

Warren, Claude

Submitted by:

[Signature]
SCOTT FULMER
Archaeologist
APPENDIX

Record Searches

San Diego State University
Department of Anthropology

San Diego Museum of Man
SAN DIEGO MUSEUM OF MAN
1350 El Prado, Balboa Park, San Diego, California 92101, Telephone (714) 239-2001

REPORT ON ARCHAEOLOGICAL SITE FILES RECORD SEARCH

Source of Request: MSA, INC. - Richard D. Glenn

Date of Request: 20 April 1978 (X) Letter ( ) Telephone ( ) In Person

Date Request Received: 24 April 1978 (X) Map Received (X) Map Returned

Name of Project: Carmel Valley Road Property

( ) The Museum of Man files show no recorded sites for the project area.

( X) The Museum of Man files show the following sites ( ) within ( X) in the vicinity of the project area.

Site No. W-10 Culture(s): La Jolla I (?); La Jolla II; Yuman (trace)
Description: Laminated middens; cobbles hearths; tools; sherds; arrowpoints; manos; metates; choppers.
Recorded by: M. Rogers

Site No. W-11 Culture(s): La Jolla I; La Jolla II (?)
Description: Coastal midden; shell.
Recorded by: M. Rogers

Site No. W-20 Culture(s): La Jolla II; Yuman III (trace)
Description: Large shell midden and scattered camping; hearths; obsidian knife; flaking; metates; manos; choppers; planes; scrapers; pestle; burial.
Recorded by: E.L. Davis 1966

Site No. W-21 Culture(s): La Jolla I and II; Yuman III
Description: Slough margin laminated middens; hearths; flakes; metates; sherds; projectile points.
Recorded by: M. Rogers

Site No. W-23 Culture(s): La Jolla II
Description: Middens; hearths; roasting platforms; metates; manos.
Recorded by: M. Rogers

Site No. W-24 Culture(s): San Diego II (trace); La Jolla II
Description: Occupation site; hearths; platforms; metates; manos.
Recorded by: M. Rogers

Please note: The project area may contain archaeological resources in addition to those noted above. This report is made from San Diego Museum of Man files only and may not include data pertaining to localities other than those covered in previous Museum of Man surveys or gathered by other institutions or by individuals.

Record check by: Ken Hedges/Grace Johnson

Date: 26 April 1978

Signed: Lowell E. English
Source of Request: MSA, INC. - Richard D. Glenn

Name of Project: Carmel Valley Road Property

Site No. W-29 Culture(s): La Jolla II
Description: Midden; hearths; fire broken rock; flaking.
Recorded by: M. Rogers

Site No. W-50 Culture(s): La Jolla I (?); La Jolla II
Description: Ocean cliff midden; cobble hearths; flakes.
Recorded by: M. Rogers

Site No. ______ Culture(s):
Description:
Recorded by:

Site No. ______ Culture(s):
Description:
Recorded by:

Site No. ______ Culture(s):
Description:
Recorded by:

Site No. ______ Culture(s):
Description:
Recorded by:

Site No. ______ Culture(s):
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Recorded by:

Site No. ______ Culture(s):
Description:
Recorded by:

Site No. ______ Culture(s):
Description:
Recorded by:

Site No. ______ Culture(s):
Description:
Recorded by:

Site No. ______ Culture(s):
Description:
Recorded by:
DEPARTMENT OF ANTHROPOLOGY
San Diego State University
San Diego, CA 92182
(714) 266-6300

REPORT ON ARCHAEOLOGICAL SITE FILES RECORD SEARCH

Source of Request: MSA, INC.

Date of Request: April 20, 1978
Date Request Received: April 21, 1978

(x) Letter ( ) Telephone ( ) In Person
(x) Map Received (x) Map Returned

Name of Project: Carmel Valley Road Property

( ) The San Diego State University files show no recorded site for the project area.
(x) The San Diego State University files show the following sites ( ) within (X) in the vicinity of the project area.

Site No. SDI-195
Culture(s): Recorded by Treganza, no site description.
Description:

Site No. SDI-4612
Culture(s): Unknown
Description: Material appears to be eroding out of cliff, 1 sandstone mortar.
(Colbern, 1973)

Site No.
Culture(s):
Description:

Site No.
Culture(s):
Description:

Site No.
Culture(s):
Description:

Site No.
Culture(s):
Description:

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Culture(s):
Description:

Note: This report includes only that information available from the San Diego State University files and may not include data on file at other institutions. A lack of sites recorded in our files cannot be taken as assurance of the absence of archaeological materials. If it should occur that any cultural remains are encountered during the course of construction, a qualified archaeologist should be notified.

Record check by: [Signature]
Date: April 28, 1978
Signed: [Signature]
ENVIRONMENTAL NOISE ANALYSIS

Del Mar Carmel Valley Precise Plan

1.0 INTRODUCTION

This report addresses the existing and projected noise environment on the several pieces of property bounded on the south by Carmel Valley Road, on the west by Camino Del Mar, and on the north by Torrey Pines Terrace. The location is subjected to varying levels of noise due to traffic on Camino Del Mar, Carmel Valley Road and the local streets. Some noise also results from Miramar aircraft departures using the Seawolf Route. The A.T.&S.F. railroad located on the west side of Camino Del Mar is an additional noise source.

2.0 PRESENT SETTING

Short term noise measurements were made on the morning of October 9 at two locations within the subject area. See Figure 1 for the site positions. Instrumentation used was a General Radio 1945-7200 Community Noise Analyzer. During the measurements traffic counts were made on those roads that were visible. There were no overflights or trains observed during the measurement period.

<table>
<thead>
<tr>
<th>Site</th>
<th>Leg</th>
<th>L50</th>
<th>L10</th>
<th>Traffic</th>
<th>Street</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>47</td>
<td>42</td>
<td>40</td>
<td>936/HR</td>
<td>Camino Del Mar</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5/HR</td>
<td>Torrey Pines Terrace</td>
</tr>
<tr>
<td>2</td>
<td>57</td>
<td>52</td>
<td>44</td>
<td>936/HR</td>
<td>Camino Del Mar</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>516/HR</td>
<td>Carmel Valley Road</td>
</tr>
</tbody>
</table>

Average daily traffic on Carmel Valley Road and Camino Del Mar were obtained from the City of San Diego. These data were used to calculate the Community Noise Equivalent Level due to traffic.

Noise due to the railroad was predicted using a railroad noise prediction model developed by Wyle Laboratories. Ref (1).
A total of 12 passenger and 4 freight trips were used. The levels due to railroad noise only are less than the existing CNEL due to traffic.

Noise contours from Miramar Seawolf Departures were obtained from the Navy Air Installation Compatible Use Zone report. The property lies outside of the 60 CNEL lines.

All pertinent noise sources were superimposed upon the property. The resulting present noise contours are shown in Figure 1.

3.0 PROJECT IMPACT

It is proposed to develop vacant lots with single family dwellings. The noise impact of these additional homes will consist of a small added increment of roadway noise due to added traffic and noise during the construction phases of development.

Added traffic noise is so small that the contours in Figure 1 will remain unchanged.

Construction noise will represent a noise impact having noise levels such as those shown in Table I. This will cause a temporary impact.

4.0 OTHER NOISE INFLUENCES

The noise contours in Figure 1 are a function of traffic on Camino Del Mar and Carmel Valley Road. Should these roads be widened with a consequent increase in average daily trips the noise can be expected to increase.

Train noise is not expected to be an influencing factor in the future.

There is currently renewed talk of moving Lindbergh Field to a new location. One of the sites considered in past studies has been Carmel Valley. Should this occur the area of Figure 1 will be impacted by takeoff/landing noise. However, the speculative nature of this action makes prediction difficult.

The City of Del Mar is on record as opposing the Carmel Valley airport site and also has opposed the widening of Carmel Valley Road. These actions by the City plus the limited area for expansion in Del Mar makes it likely that noise contours in a future time frame will be similar to the present values.

5.0 SUMMARY OF IMPACT

The present noise contours shown in Figure 1 are representative of a quiet suburban neighborhood. The proposed project will, with
the exception of short term construction noise, have a negligible impact upon the area.

Carole Sue Tanner
Registered Professional Engineer

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Noise Level (dBA) at 50 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compactors (Rollers)</td>
<td>H</td>
</tr>
<tr>
<td>Front Loaders</td>
<td></td>
</tr>
<tr>
<td>Backhoes</td>
<td></td>
</tr>
<tr>
<td>Tractors</td>
<td></td>
</tr>
<tr>
<td>Scrapers, Graders</td>
<td></td>
</tr>
<tr>
<td>Pavers</td>
<td>H</td>
</tr>
<tr>
<td>Trucks</td>
<td></td>
</tr>
<tr>
<td>Concrete Mixers</td>
<td></td>
</tr>
<tr>
<td>Concrete Pumps</td>
<td>H</td>
</tr>
<tr>
<td>Cranes (Movable)</td>
<td></td>
</tr>
<tr>
<td>Cranes (Derrick)</td>
<td>H</td>
</tr>
<tr>
<td>Pumps</td>
<td></td>
</tr>
<tr>
<td>Generators</td>
<td></td>
</tr>
<tr>
<td>Compressors</td>
<td></td>
</tr>
<tr>
<td>Pneumatic Wrenches</td>
<td></td>
</tr>
<tr>
<td>Jack Hammers and Rock Drills</td>
<td></td>
</tr>
<tr>
<td>Pile Drivers (Peaks)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>Vibrator</td>
<td></td>
</tr>
<tr>
<td>Saws</td>
<td></td>
</tr>
</tbody>
</table>

Note: Based on Limited Available Data Samples

**FIG. 1. CONSTRUCTION EQUIPMENT NOISE RANGES.**