

**DRAFT
ENVIRONMENTAL IMPACT REPORT
for the
MARINA STATION SPECIFIC PLAN**

State Clearinghouse #2005061056

Prepared for

City of Marina
Planning Department
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PLANNING AND ENVIRONMENTAL CONSULTING

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1.0 INTRODUCTION

1.1 AUTHORIZATION AND PURPOSE

This document is an Environmental Impact Report (EIR) for the proposed Marina Station Specific Plan, prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 and CEQA Guidelines, as amended. This EIR has been prepared by Denise Duffy and Associates, Inc. (DD&A) for the City of Marina as the "Lead Agency," in consultation with the appropriate local, regional and state agencies.

The purpose of the EIR is to inform the public and decision makers of the significant environmental effects of the project, identify possible ways to minimize the significant effects, and describe reasonable alternatives that support the objectives of the project. As defined by the CEQA Guidelines, Section 15382, "significant effect on the environment" means:

"... a substantial, or potentially substantial adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

The project is the adoption and implementation of the Marina Station Specific Plan and associated Vesting Tentative Map, which allow development of a mixed-use community consisting of approximately 1,360 residential units, 60,000 square feet of commercial/retail space, 143,800 square feet of office space, and 651,600 square feet of industrial space. The mixed-use development includes three village centers, open space features, and recreation areas.

1.2 EIR PROCESS

The CEQA Guidelines require preparation of an EIR when a Lead Agency determines that there is evidence that a project may have a significant effect on the environment. The need to prepare an EIR for the project was established by the City of Marina as a result of preliminary evaluation of the likely environmental effects of the project.

A Notice of Preparation (NOP) was circulated by the City in June and July of 2005 to interested agencies and organizations for the required 30-day review period. The NOP responses from agencies and members of the public are contained in Appendix A.

This Draft EIR will be circulated for agency and public review during a 45-day public review period. Comments received by the City on the Draft EIR will be reviewed and responses to comments will be provided in the Final EIR. The City must certify that it has reviewed and considered the information in the Final EIR and that the Final EIR has been completed in conformity with the requirements of CEQA.

Although the EIR does not control the lead agency's ultimate decision on the project, the City must consider the information in the EIR and respond to each significant effect identified in the EIR. If significant adverse environmental effects are identified in the EIR, approval of the project must be accompanied by written findings, as follows:

- A. Changes or alterations have been required in, or incorporated into, such project that mitigate or avoid the significant environmental effects thereof as identified in the completed EIR.

- B. Such changes or alterations are within the responsibility and jurisdictions of another public agency and such changes have been adopted by such other agency, or can and should be adopted by such other agency.
- C. Specific economic, social or other considerations make infeasible the mitigation measures or project alternatives identified in the EIR.

State law requires that a public agency adopt a monitoring program for mitigation measures that have been incorporated into the approved project to reduce or avoid significant effects on the environment. The purpose of the monitoring program is to ensure compliance with environmental mitigation during project implementation and operation.

2.0 SUMMARY

2.1 Introduction

This summary provides a brief description of the proposed project, project alternatives, the significant impacts identified during the environmental analysis and proposed mitigation measures. Responsibility for implementation of mitigation measures is with the project applicant, unless otherwise noted. This summary is intended as an overview and should be used in conjunction with a thorough reading of the EIR. The text of this report, including figures, tables, and appendices, serves as the basis for this summary.

2.2 Summary of Project Description

The project consists of the development and implementation of the Marina Station Specific Plan. The Specific Plan site is located in the northern portion of the City of Marina, in Monterey County. The site lies on approximately 320 acres of the Armstrong Ranch property, along both sides of Del Monte Boulevard.

The Specific Plan calls for a mixed-use development including 1,360 residential units of varying types (824 single family homes and 536 multi family units), 60,000 square feet of commercial/retail uses, 143,808 square feet of office uses, and 651,624 square feet of industrial uses. The project includes three mixed-use village centers to provide shopping and services to support residential development. In addition, approximately 58 acres of open space and park land is proposed, which includes a buffer area between the proposed project and existing neighborhoods. A full project description is provided in Section 3.0 of this Draft EIR.

2.3 Alternatives Evaluated in this EIR

In compliance with CEQA, this EIR evaluates the comparative environmental effects of a range of reasonable project alternatives. A summary of the alternatives analyzed in the EIR is presented below.

- No Project/No Development
- Existing General Plan
- Mineral Extraction
- All Residential
- No Industrial
- Reduced Project

No Project/No Development. Under the No Project/No Development Alternative, the site would remain in its current condition with no new development. This alternative would avoid all of the environmental impacts of the project, but would increase land use impacts compared to the proposed project, since it would not implement the City's housing and employment goals to achieve a City-wide jobs/housing balance. The No Development Alternative could also encourage leapfrog development by displacing housing demand to less central sites outside the City. The No Development Alternative would fail to meet any of the project objectives to provide an integrated mixed-use community on the portion of the Armstrong Ranch within the City limits and urban growth boundary.

Existing General Plan. Under this alternative, the project would not be implemented and buildout of the project site would occur based on the current General Plan land use designations. The Existing General Plan Alternative would generally result in reduced environmental impacts compared with the proposed project, due to its reduced development intensity and inclusion of more open space. This alternative would likely avoid the project's significant unavoidable regional air quality impact, and would reduce the extent of significant unavoidable noise impacts. In addition, it would reduce the severity of unavoidable visual effects and traffic impacts. This alternative would not avoid significant unavoidable impacts to a scenic vista and mineral resources. Implementation of the land use designations on the General Plan map would not fully adhere to current City goals calling for a wide range of uses on the site, a pedestrian-oriented layout, and 1,300 housing units. This alternative would not meet the project objectives of providing a mixed-use community that integrates residential, industrial, commercial, and park uses on the site.

Mineral Extraction. Under this alternative, mineral extraction would be permitted on approximately 106 acres of the project site east of Del Monte Boulevard (>1,000 feet from existing residences), and the proposed project would not be implemented. Because of its reduced footprint and development intensity, this alternative would reduce most impacts of the project. This alternative would avoid the significant unavoidable mineral resource impacts by providing access to and extraction of on-site mineral resources. This alternative could cause significant unavoidable aesthetic impacts, but would avoid the significant unavoidable regional air quality impacts of the project. It could also reduce the extent of the project's significant and potentially unavoidable noise and traffic impacts. The Mineral Extraction Alternative would be inconsistent with the City's goals for a mixed-use development on the site. The Mineral Extraction Alternative would fail to meet any of the project objectives to provide an integrated mixed use community on the portion of the Armstrong Ranch within the City limits and urban growth boundary.

All Residential. This alternative consists of developing the project site with residential uses only (1,360 units), and eliminating the commercial, industrial, and office components. The designated office/industrial areas would be replaced with parks and/or open space. This alternative would generally result in reduced environmental impacts compared to the proposed project due to its reduced development intensity and inclusion of more open space. This alternative might also eliminate the project's significant unavoidable air quality impact, reduce the extent of significant unavoidable noise impacts, and reduce the severity of traffic impacts. This alternative would not avoid the project's significant unavoidable scenic vista, visual character, and mineral resource impacts. Eliminating the industrial, office, and commercial uses would be inconsistent with the City's goals for a wide range of uses on the site. In addition, this alternative would not meet the project objectives of providing a mixed-use community that integrates residential, industrial, and commercial uses on the site.

No Industrial. This alternative consists of eliminating the industrial component of the project and reserving this area for some type of open space use. This alternative would reduce environmental impacts compared to the proposed project by eliminating development on 38 acres of the site. This alternative is not expected to eliminate any significant unavoidable impacts. It would reduce the severity of the proposed project's significant unavoidable impacts to visual character, regional air pollution emissions, construction and traffic-generated noise, and traffic. This alternative would not eliminate or reduce the project's significant unavoidable impacts to mineral resources or to a scenic vista. This alternative would not meet the project objectives and City goals to provide industrial uses on the site and maximize the provision of housing and jobs within Marina.

Reduced Project. Under this alternative, development on the site would be reduced by 50% to avoid significant air quality impacts. The Reduced Project Alternative would lessen the overall impacts of the project. This alternative could avoid the project's significant unavoidable regional air quality impact and reduce the severity of the project's significant unavoidable aesthetic, noise, and traffic impacts. This alternative would not eliminate the project's significant unavoidable mineral resource impact. The alternative would be inconsistent with General Plan goals to provide approximately 1,300 units of housing on the site and improve the City's jobs/housing balance through additional industrial and commercial development. This alternative would also fail to meet the City's and project's objectives of providing a wide range of uses on the site.

2.4 SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES

A summary of significant project impacts and mitigation measures are provided in Table 2-1. Mitigation measures have been identified to either avoid the impact or reduce the level of significance. The significance after mitigation implementation is also stated.

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
4.1 Aesthetics		
The project would have a substantial adverse effect on a portion of a scenic vista.	<p>4.1-1 The applicant shall provide landscape screening appropriate to the surrounding area in order to integrate the development with the existing natural landscape. Landscape screening shall be focused within areas of development that are visible from Highway 1. Landscaping plans shall be subject to the approval of the City of Marina.</p> <p>4.1-2 All buildings shall be designed with colors and materials that seek to blend the structures with the surrounding landscape as viewed from Highway 1. Building applications for new structures shall include color and material sample photo sheets and shall be approved by the City of Marina.</p>	Significant unavoidable
The project will permanently alter the existing visual character of the site by causing changes to topography, removing vegetation, and adding roads, buildings, pavement, and parking areas. Because this change may be considered a substantial degradation of the existing visual character/quality of the site and its surroundings, this represents a significant unavoidable impact.	See mitigation 4.1-1 and 4.1-2	Significant unavoidable
The project would create new sources of light that would adversely affect nighttime views in the area.	<p>4.1-3 All buildings shall be designed so that reflective surfaces are limited and exterior lighting is down-lit and illuminates the intended area only. Building applications for new structures shall include an exterior lighting plan subject to approval of the Marina Planning and Building Department that includes the following requirements: 1) exterior lighting shall be directional; 2) glare from exterior lighting shall be adequately minimized; 3) the source of directional lighting shall not be directly visible; and 4) vegetative screening shall be considered, where appropriate, as a means of reducing development-related light and glare.</p> <p>4.1-4 Ornamental lighting use for streets, parks, public open spaces, trails, bike paths, parking lots, and walkways shall utilize fixtures consisting of metal halide with cut-off luminaires, or similar types of technology, in order to control light and glare. Lighting plans shall be subject to the approval of the City of Marina.</p>	Less-than-significant

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	4.1-5 Light reduction and screening measures shall be required in order to reduce nighttime ambient light increases in the area. Lighting levels in commercial and industrial areas shall be kept as low as feasible and controlled to minimize operating time. Light sources shall be installed so that there is no light radiation above the horizontal plane (i.e., dark sky). Lighting shall be focused downward to prevent the splay of ambient light to other areas. Lighting plans shall be subject to the approval of the City of Marina.	
Implementation of the Marina Station Specific Plan would contribute to the cumulative impacts associated with the alteration of scenic vistas and changes in the visual characteristics of the region.	See mitigation 4.1-1 to 4.1-5	Significant unavoidable
4.2 Agricultural Resources		
All impacts less-than-significant	Not applicable	Not applicable
4.3 Air Quality		
The project would require substantial grading and earthmoving that, absent standard mitigation, would result in PM ₁₀ emissions exceeding the MBUAPCD threshold of 82 lbs/day and could cause or substantially contribute to localized, temporary exceedances of the applicable PM standards at the nearest pre-existing receptor locations.	<p>4.3-1 Project construction contractors shall adhere to the following standard abatement measures, to reduce emissions of particulate matter below MBUACPD thresholds.</p> <ul style="list-style-type: none"> ▪ Water all active construction areas as needed at least three times daily. Frequency should be based on the type of operation, soil, and wind exposure. ▪ Prohibit all grading activities during periods of high wind (one-hour average speeds of over 15 mph as measured at a height of approximately 10 feet above ground level within areas scheduled for grading). ▪ Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days). ▪ Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations, and hydro-seed area when grading operations are completed and during the months of October 15 through April 15. ▪ To the extent haul trucks are utilized to move dirt, sand or loose materials, they shall maintain at least 2'0" of freeboard. ▪ To help minimize off-site soiling nuisance, the construction contractor shall install a drift fence between actively graded and otherwise disturbed 	Less-than-significant

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	<p>ground areas on-site and the nearest off-site residential and school receivers.</p> <ul style="list-style-type: none"> ▪ Plant vegetative ground cover in disturbed areas as soon as possible. ▪ Cover inactive storage piles. ▪ Install wheel washers at the entrance to construction sites for all exiting trucks. ▪ Sweep streets if visible soil material is carried out from the construction site. ▪ Reduce speed on unpaved roads to less than 15 miles per hour. ▪ Shuttle to retail establishments at lunch. ▪ Post a publicly visible sign which specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and take corrective action, if required, within 48 hours. The phone number of the Monterey Bay Unified Air Pollution Control District shall be visible to ensure compliance with Rule 402 - Nuisance. 	
Operation of diesel-powered equipment during construction could present a significant cancer and acute health risk to humans from exposure of sensitive receptors to diesel exhaust.	<p>4.3-2 Consistent with MBUAPCD guidance, all diesel-powered construction equipment used at the project site shall be 2002 or later model engine, or shall utilize an appropriate biodiesel blend or operate with an oxidation catalyst (or both) such that diesel exhaust emissions would be reduced below the level that would cause chronic adverse (cancer) health effects to sensitive receptors near the site. The selection of a pollution control method shall be performed in consultation with the MBUAPCD.</p> <p>4.3-3 Consistent with MBUAPCD guidance, all diesel-powered construction equipment used at the project site shall be a 2002 or later model engine, or shall utilize an appropriate biodiesel blend or operate with an oxidation catalyst (or both) such that acrolein emissions would be reduced below the level that would cause acute adverse health effects to sensitive receptors near the site. The selection of a pollution control method shall be performed in consultation with the MBUAPCD.</p>	Less-than-significant
Project operation would result in indirect vehicular and area source generation of up to 221 lbs/day of ROG/VOC. Therefore, the project may contribute to exceedances of the ambient air quality standards for ozone.	<p>4.3-4 The project shall apply the following MBUAPCD recommended “Facility Improvement” measures to the extent appropriate for the specific land uses proposed. The project sponsor shall implement the following measures:</p> <ul style="list-style-type: none"> ▪ Provide preferential carpool/vanpool parking spaces in light industrial and office uses. 	Significant unavoidable

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	<ul style="list-style-type: none"> ▪ Provide bicycle storage/parking facilities (one bike space per 20 vehicle spaces). ▪ Provide shower/locker facilities in light industrial and office uses. ▪ Provide onsite child care centers west of Del Monte Boulevard. ▪ Develop park-and-ride lots along the TAMC right-of-way. <p>The City shall encourage employers at the project site to implement the following measures:</p> <ul style="list-style-type: none"> ▪ Employ a transportation/rideshare coordinator. ▪ Implement a rideshare program. ▪ Provide incentives to employees to rideshare or take public transportation. ▪ Implement compressed work schedules. ▪ Implement telecommuting program. ▪ Implement a parking surcharge for single occupant vehicles. ▪ Provide for shuttle/mini bus service if demand warrants. 	
Operation of the project could result in a potentially significant impacts associated with 1) the exposure of future project occupants nearest to Highway 1 to TAC levels from diesel exhaust, and 2) potential development of industrial uses in the “freight/truck terminals and warehouses” category.	<p>4.3-6 Implement both of the following measures to mitigate TAC impacts associated with the proximity of project occupants to Highway 1:</p> <ul style="list-style-type: none"> ▪ Exclude any dedicated outdoor activity areas, e.g., soccer fields from the portion of the project site, within 500 feet of the near edge of the near (outer northbound) travel lane of Highway 1. ▪ Prohibit the completion of construction and occupancy of any proposed “Neighborhood Edge” residential development within the aforementioned 500-foot setback area until no earlier than 2015. 	Less-than-significant
4.4 Biological Resources		
Grading, excavation, and other activities required for the project would result in a permanent loss or disturbance of 51 acres of Monterey spineflower, a federally threatened plant species.	<p>4.4-1 The applicant shall mitigate for the loss of 51 acres of Monterey spineflower through a program of seed and/or soil bank salvage, establishment of a new spineflower restoration area at a 1:1 ratio to the area impacted (either on- or off-site), and managing and monitoring to assure that there will be no net loss of spineflower affected by the project. A Restoration Plan shall be prepared by a qualified biologist outlining the details pertaining to onsite or offsite restoration areas, plant salvage, seeding, and planting specifications, and monitoring program which describes annual monitoring efforts incorporating success criteria and contingency planning if success criteria are not met. The plan shall be completed and approved by the City and USFWS and funding secured prior to the issuance of any grading or building permit for the project</p>	Less-than-significant

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	and shall not terminate until there has been verification from a qualified biologist and City staff, in consultation with USFWS, that such measures have been successfully implemented. Possible restoration sites include the adjacent Armstrong Ranch, the coastal dune scrub habitat west of Highway 1 within Monterey County Regional Parks land (Marina Dunes Reserve) or private ownership, land south of the project site owned by Monterey Regional Parks District adjacent to Locke Paddon Community Park, or an inland population of Monterey spineflower located along the Salinas River near Soledad. Restoration areas shall be preserved through establishment of a conservation easement.	
Grading, excavation, and other activities required for the project may result in a permanent loss or disturbance of raptors and migratory birds and their habitat.	<p>4.4-2 Retain a qualified biologist to conduct preconstruction surveys to locate active breeding or wintering burrowing owls no more than 30 days prior to the start of construction. If ground disturbing activities are delayed or suspended for more than 30 days after the preconstruction survey, the site shall be resurveyed. The survey shall conform to the CDFG 1995 Staff Report protocol. If no burrowing owls are found, no further mitigation is required. If burrowing owls are found, impact avoidance and mitigation measures shall be implemented, as set forth in the EIR.</p> <p>4.4-3. If project activities cannot avoid the nesting season (generally March 1-August 31), a qualified biologist shall conduct focused preconstruction surveys for nesting birds, including the northern harrier, California horned lark, and loggerhead shrike, in all areas that may provide suitable nesting habitat that exist in or within 300 feet of the construction area. If active nests are found, a suitable construction buffer shall be established by a qualified biologist until the young of the year have fledged. For activities that occur outside of the nesting season (generally September 1 through February 28), preconstruction surveys are not required.</p>	Less-than-significant
Grading, excavation, and other activities required for the project may result in a permanent loss or disturbance of California tiger salamander, black legless lizard, and coast horned lizard, and their habitat.	4.4-4 The applicant shall retain a qualified permitted biologist to perform protocol-level surveys for California tiger salamander pursuant to the 2003 Interim Guidelines. If California tiger salamanders are not found during the protocol-level surveys, a final report shall be submitted to the USFWS for concurrence on the negative findings. No further mitigation will be required. If salamanders are found during the protocol-level surveys, the positive findings shall be included in the report to the USFWS pursuant to the Interim	Less-than-significant

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	<p>Guidelines. The applicant shall coordinate with the USFWS to determine the appropriate course of action per the requirements of the federal ESA (e.g., applying for a Section 10 Incidental Take Permit), and shall implement the construction phase mitigation measures set forth in the EIR.</p> <p>4.4-5 The applicant shall obtain a Memorandum of Understanding (MOU) with CDFG for a qualified biologist to remove and relocate black legless lizards and coast horned lizards from the construction area if encountered during construction activities. The MOU shall include, but is not limited to, the methods of capture and an estimation of the number of individuals expected to be captured and handled, the duration of capture and handling, and a description of the established relocation area. If the relocation is proposed to occur outside of the project site, the City must coordinate and obtain approval from the landowner. Details of this procedure shall be reviewed by CDFG and implemented by a qualified biologist.</p> <p>4.4-6 The applicant shall retain a qualified biologist to conduct a construction monitoring program for black legless lizards and coast horned lizards, which includes procedures for capture and release. The biologist shall remain on-site during initial grading activities to salvage and relocate these species that may be uncovered during earthmoving activities. Recovered individuals shall be placed in appropriate habitat outside of the within the project site in accordance with the MOU with CDFG. The biologist shall walk alongside the grading equipment in each new area of disturbance, and shall have the authority to halt construction temporarily if necessary to capture and relocate an individual. Any individual captured in the grading zone shall be relocated as soon as possible to adjacent suitable habitat outside of the area of impact, pursuant to the MOU.</p> <p>4.4-7 The applicant shall conduct an employee education program for construction crew and City staff prior to construction activities. A biological monitor shall meet with the construction crew at the onset of construction to educate the construction crew on the following: 1) the appropriate access route in and out of the construction area; 2) how biological monitor will examine the area and agree upon a method which will ensure the safety of the monitor during such activities, 3) the special-status species that may be present; 4) the</p>	

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	<p>specific mitigation measures that will be incorporated into the construction effort; and 5) the proper procedures if a special-status animal or any other animal is encountered within the project site.</p> <p>4.4-8 A representative shall be appointed by the City who will be the contact source for any employee or contractor who may inadvertently kill or injure a special-status species or find one dead, injured, or trapped. The representative shall be notified immediately to notify USFWS and CDFG. The representative shall be identified during the Employee Education Program and his/her contact information shall be provided to USFWS and CDFG.</p> <p>4.4-9 The applicant shall retain a qualified biologist to monitor all grading, excavation, and other substantial soil disturbance activities on the site.</p> <p>4.4-10 All food-related and other trash shall be disposed of in closed containers and removed from the project area at least once a week during the construction period, or more often if trash is attracting avian or mammalian predators. Construction personnel shall not feed or otherwise attract wildlife to the area.</p>	
Grading, excavation, and other activities required by the project may result in a permanent loss or disturbance of American badgers and their habitat.	<p>4.4-11 The applicant shall retain a qualified biologist to conduct focused preconstruction surveys no more than two weeks prior to construction for potential American badger dens. If no potential American badger dens are present, no further mitigation is required. If potential dens are observed, measures shall be implemented to avoid potential significant impacts to the American badger as set forth in the EIR.</p> <p>4.4-12 No pets or firearms shall be allowed on the project site during construction.</p>	
The project would require grading, excavation, and other activities that may result in a permanent loss or degradation of the coastal dune scrub and native grassland sensitive habitats.	4.4-13 Prior to grading and construction, a Habitat Restoration and Management Plan shall be prepared by a qualified biologist to revegetate and restore impacted coastal dune scrub and native grassland communities (either on-site or off-site). This plan shall include a list of appropriate species, planting specifications, monitoring procedures, success criteria, and contingency plan if success criteria are not met. The plan shall require that the sensitive habitat areas impacted by the project be restored and/or preserved at a 2:1 ratio. The specific requirements of the Restoration Plan are set forth in the EIR.	Less-than-significant

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
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	<p>4.4-14 Trees and vegetation not planned for removal shall be protected during construction to the maximum extent possible. This includes the use of exclusionary fencing of herbaceous and shrubby vegetation, such as hay bales, and protective wood barriers for trees. Only certified weed-free straw shall be used to avoid the introduction of non-native, invasive species.</p> <p>4.4-15 Following construction, the disturbed areas that are proposed as linear parks and native landscaping areas shall be restored to pre-project contours to the maximum extent possible and revegetated using locally-occurring native species and native erosion control seed mix.</p> <p>4.4-16 Protective fencing shall be placed so as to keep construction vehicles and personnel from impacting vegetation adjacent to the project site outside of work limits.</p> <p>4.4-17 Grading, excavating, and other activities that involve substantial soil disturbance shall be planned and carried out in consultation with a qualified hydrologist, engineer, or erosion control specialist, and shall utilize standard erosion control techniques to minimize erosion and sedimentation to native vegetation.</p> <p>4.4-18 No construction equipment shall be serviced or fueled outside of designated staging areas.</p>	
4.5 Cultural Resources		
Construction of the project may result in the discovery and disturbance of unknown archaeological resources and/or human remains.	<p>4.5-1 The applicant shall monitor the construction site. If archaeological resources or human remains are accidentally discovered during construction, work shall be halted within 165 feet (50 meters) of the find until a qualified professional archaeologist can evaluate it.</p> <p>4.5-2 If buried human remains are encountered during construction, work in that area must halt and the archaeologist and the coroner immediately notified. If the remains are determined to be Native American, then the NAHC must be notified within 24 hours as required by Public Resources Code 5097. The NAHC will notify designated Most Likely Descendants who will provide</p>	Less-than-significant

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	recommendations for the treatment of the remains within 24 hours. The NAHC will mediate any disputes regarding treatment of remains.	
4.6 Geology, Soils and Mineral Resources		
The project would be exposed to potential adverse effects from strong seismic ground shaking that may result in damage to proposed structures.	4.6-1 To minimize the potential effects from strong seismic ground shaking on project components, a detailed geotechnical analysis shall be performed by a registered professional engineer with geotechnical expertise, and all recommendations incorporated into final design plans, subject to review and approval by the City Public Works Director. The engineer shall develop plans based upon and in response to the observations and recommendations made in the geotechnical analysis.	Less-than-significant
Construction of the project could result in substantial soil erosion or loss of topsoil.	4.6-2 In order to reduce wind and water erosion on the project site, an erosion control plan and Storm Water Pollution Prevention Plan shall be prepared for the site preparation, construction, and post-construction periods. The erosion control plan shall incorporate best management practices consistent with the requirements of the National Pollution Discharge Elimination System (NPDES). The following measures shall be implemented, where appropriate, to control erosion: 1) Keep construction machinery off of established vegetation as much as possible, especially the vegetation on the upwind side of the construction site; 2) Establish specific access routes at the planning phase of the project, and limits of grading prior to development, which should be strictly observed; 3) Utilize mechanical measures (i.e., walls from sand bags and/or wooden slat or fabric fences) to reduce sand movement; 4) Immediate revegetation (plus the use of temporary stabilizing sprays), to keep sand movement to a minimum; and 5) For larger-scale construction, fabric or wooden slat fences should be placed around the construction location to reduce sand movement. 4.6-3 Areas disturbed by grading shall be stabilized with adequate landscaping vegetative cover. A re-vegetation and landscaping plan shall be prepared by a landscape architect with experience in working with the type of soils that are characteristic of the site, subject to approval by the City.	Less-than-significant
The project could result in localized subsidence, liquefaction, and collapse.	4.6-4 In order to reduce the risk of localized subsidence, liquefaction, and collapse, and allow for adequate foundation and structural fill support, grading plans shall be consistent with a detailed geotechnical analysis to be reviewed	Less-than-significant

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	and approved by the City. The geotechnical analysis shall include recommendations that the top one to four feet of native soil be removed and recompacted, and foundations be designed to resist differential movements ranging from one to two inches.	
The project would eliminate access to and the availability of a known mineral resource on the Armstrong Ranch property.	No feasible measures are available to mitigate the permanent loss of access to these mineral resources.	Significant unavoidable
4.7 Hazards and Hazardous Materials		
The project proposes residential uses in an area near OU-1, which contains VOCs. Release of the contaminants through vapor intrusion could pose a health risk to future residents on the site.	4.7-1 Prior to construction on the Marina Station site, the applicant shall coordinate with the Army to assure that TCE concentrations beneath the project site do not exceed the ACL, and that appropriate remedial measures are implemented, including those identified in the OU-1 Record of Decision (1995).	Less-than-significant
4.8 Hydrology and Water Quality		
Construction and operation of the project could impact water quality.	<p>4.8-1 Prudent construction practices, including implementation of all relevant BMPs in the project's Storm Water Pollution Prevention Plan prepared in compliance with NPDES requirements and the project's Construction Storm Water Permit, shall be employed at all times.</p> <p>4.8-2 Prior to issuance of a grading permit, an erosion control plan shall be prepared for the site preparation, construction, and post-construction periods, subject to review and approval by the City's Public Works Department.</p> <p>4.8-3 The project shall be designed to meet the BMP standards for operational phase storm water runoff and to maintain the onsite BMPs. The project shall implement BMPs to manage water quality by providing onsite runoff treatment in line with the onsite infiltration system.</p> <p>4.8-4 The percolation basin shall be properly maintained and cleaned, at least twice annually.</p>	Less-than-significant
4.9 Land Use and Planning		
All impacts less-than-significant	Not applicable	Not applicable

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
4.10 Noise		
<p>Residential uses developed on portions of the project site would be exposed to exterior noise levels greater than 60 dBA L_{dn}, which exceeds the “acceptable” noise and land use compatibility standards presented in the City’s General Plan. In addition, interior noise levels are expected to exceed 45 dBA L_{dn} on portions of the project site exposed to exterior noise levels greater than 60 dBA L_{dn} without the incorporation of noise insulation features.</p>	<p>4.10-1 Prior to the issuance of building permits, prepare project-level acoustical analyses for proposed residential units where proposed residential exterior use areas are located in noise environments exceeding 60 dBA L_{dn}, or where residential uses interface active parks, commercial uses, or industrial uses, and implement recommendations to assure that exterior noise levels at residential land be maintained in accordance with the standards in the City’s General Plan and Municipal Code.</p> <p>4.10-2 Prior to City development of active parks on the site, prepare project-level acoustical analyses for each park and implement recommendations to assure that exterior noise levels at nearby sensitive receptors are maintained in accordance with the standards in the City’s General Plan and Municipal Code.</p> <p>4.10-3 Construct solid six-foot noise barriers to interrupt the transmission path between the roadway and private outdoor use areas of lots adjoining De Forest Avenue, Crescent Avenue, and Marina Greens Drive. The noise barriers shall generally be located between the residential unit and detached garage. Solid six-foot noise barriers shall be provided to shield private rear yard areas of lots 556, 557, 638, and 639, which adjoin De Forest Road, lots 531, 663, 664, 771, 772, 777, and 794, which adjoin Crescent Avenue, and lot 145, adjacent to Marina Greens Drive. Noise barriers shall be constructed such that they are solid over the surface and at the base, with no cracks or gaps. The minimum surface weight of the proposed noise barrier materials shall be 3 lbs./ft.² Suitable construction materials include masonry block, concrete, and minimum one-inch thick wood boards. A six-foot noise barrier is expected to provide at least 5 dBA of sound attenuation.</p> <p>4.10-4 Prior to issuance of building permits for the Neighborhood Center structures east of Del Monte Boulevard, prepare an acoustical analysis to determine whether the eastern residential outdoor common area would experience average noise levels exceeding 60 dBA L_{dn}. If the analysis shows that the 60 dBA L_{dn} level would be exceeded, implement sound barriers as deemed appropriate by the City, in accordance with the City’s General Plan.</p>	<p>Less-than-significant</p>

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	<p>4.10-5 Limit parking lot cleaning activities in commercial and industrial areas to daytime and evening hours (7 a.m. to 10 p.m.).</p> <p>4.10-6 Locate trash compactors in commercial and industrial areas away from adjacent residential receivers or shielded with noise barriers.</p> <p>4.10-7 Limit loading dock hours of operation to daytime and evening hours (7 a.m. to 10 p.m.).</p> <p>4.10-8 The California Building Code and City of Marina require project-specific acoustical analyses to achieve interior noise levels of 45 L_{dn} on portions of the project site exposed to exterior noise levels greater than 60 dBA L_{dn}. Building sound insulation requirements must include the provision of forced-air mechanical ventilation in noise environments exceeding 60 dBA L_{dn}, so that windows can be closed at the occupant's discretion. Special building construction techniques (e.g., sound-rated windows and building facade treatments) may be required where exterior noise levels exceed 65 dBA L_{dn}. These treatments include, but are not limited to sound rated windows and doors, sound rated exterior wall assemblies, acoustical caulking, prior to issuance of building permits for such residential units. The specific determination of what treatments are necessary shall be conducted on a unit-by-unit basis during project design. Results of the analysis, including the description of the necessary noise control treatments, shall be submitted to the City for final approval. Feasible construction techniques such as these would adequately reduce interior noise levels to 45 dBA L_{dn} or lower.</p>	
Traffic volume increases from the project would increase traffic noise along the local roadway network. In some locations, there would be a substantial, permanent increase in noise levels at sensitive receptors. Measures available to reduce the project noise level increases would not likely be feasible in all areas.	<p>4.10-9 The project shall incorporate noise reduction methods where feasible. Possible methods to reduce noise on the project site include the following measures:</p> <ul style="list-style-type: none"> ▪ Paving streets with "quieter" pavement types such as Open-Grade Rubberized Asphaltic Concrete. This would reduce noise levels by 2 to 3 dBA depending on the existing pavement type, traffic speed, traffic volumes, and other factors. ▪ Constructing new or larger noise barriers could reduce noise levels by 5 dBA L_{dn}. Final design of such barriers, including an assessment of their feasibility and reasonableness, should be completed during final design. 	Significant unavoidable

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	<ul style="list-style-type: none"> ▪ Installing traffic calming measures to slow traffic along Del Monte Boulevard could provide qualitative improvement by smoothing out the rise and fall in noise levels caused by speeding vehicles. ▪ Providing sound insulation treatments to affected buildings, such as sound-rated windows and doors, could reduce noise levels in interior spaces. 	
Noise generated by construction of the project would substantially increase noise levels at existing sensitive receptors in the project vicinity. Although mitigation measures would reduce noise generated by construction, the impact would remain significant and unavoidable as a result of the extended period of time that some adjacent receivers would be exposed to construction noise.	<p>4.10-10 Although the City’s Noise Ordinance permits noise-generating construction activities from 10:00 a.m. to 7:00 p.m. on Sundays and holidays (including New Year’s Day’ July 4th, Thanksgiving, and Christmas), noise-generating construction activities shall not be permitted for the project at any time on those days.</p> <p>4.10-11 Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.</p> <p>4.10-12 Prohibit unnecessary idling of internal combustion engines.</p> <p>4.10-13 Locate stationary noise generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary (8 foot high) noise barriers to screen stationary noise generating equipment when located near adjoining sensitive land uses. Temporary noise barriers could reduce construction noise levels by 5 dBA.</p> <p>4.10-14 Utilize "quiet" air compressors and other stationary noise sources where technology exists.</p> <p>4.10-15 Route all construction traffic to and from the project site via designated truck routes where possible. Prohibit construction related heavy truck traffic in residential areas where feasible.</p> <p>4.10-16 Control noise from construction workers’ radios to a point that they are not audible at existing residences bordering the project site.</p> <p>4.10-17 Prepare and submit to the City for approval a detailed construction plan identifying the schedule for major noise-generating construction activities.</p> <p>4.10-18 Designate a "disturbance coordinator" who would be responsible for</p>	Significant unavoidable

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.	
Cumulative traffic volumes will increase noise levels on the local roadway network. In some locations, the project will significantly contribute to the cumulative noise levels. Measures available to reduce the project noise level increases may not be reasonable or feasible in all areas.	See mitigation 4.10-9	Significant unavoidable
4.11 Population and Housing		
All impacts less-than-significant	Not applicable	Not applicable
4.12 Public Services and Recreation		
The project would result in an increased demand for police and fire services	4.12-1 The applicant/developer shall pay a City Development Impact Fee for each type of development pursuant to the criteria set forth within the Development Impact Fee Study prepared for the City of Marina by Harris & Associates, dated December 6, 2005. Fees shall be paid prior to receiving a building permit for each residential unit, commercial, office or industrial building, or as otherwise stipulated in the fee ordinance.	Less-than-significant
The project would result in an increased demand for educational services.	4.12-2 The applicant/developer shall pay a school impact fee for each type of development pursuant to the criteria set forth within California Government Code Section 65995 and shall reserve two acres of land for expansion of the Olson Elementary School for five years from the date of tentative map approval. Prior to the issuance of building permits, the applicant shall pay required school mitigation fees. As indicated above, the fees set forth in Government Code Section 65996 constitute the exclusive means of both “considering” and “mitigating” school facilities impacts of projects [Government Code Section 65996(a)]. They are “deemed to provide full and complete school facilities mitigation” [Government Code Section 65996(b)].	Less-than-significant

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
4.13 Traffic and Circulation		
<p>The project would have a significant impact on eight study intersections under existing plus project conditions. Under background plus project conditions, the project would significantly impact an additional two intersections and two roadway segments. Impacts at the intersection of Blanco Road/Reservation Road would be unavoidable if adequate funding from the TAMC fee and other sources are not available.</p>	<p style="text-align: center;">Existing Plus Project Conditions</p> <p>4.13-1 Add a left turn pocket on the WB approach at the NB Highway 1 Ramps/Del Monte Boulevard North intersection. This improvement is not included in the City’s CIP or TIF, and shall be funded by the project and paid to Monterey County, assuming Monterey County and Caltrans approve this measure.</p> <p>4.13-2 Add a left turn pocket on the SB approach at the Del Monte Boulevard/North Project Access intersection. This improvement is not included in the City’s CIP or TIF, and shall be funded and implemented by the project.</p> <p>4.13-3 Add a SB left turn lane, and EB and WB right turn lanes at the intersection of Del Monte Boulevard/Marina Greens Drive, in combination with conversion to all-way stop control. These improvements are not included in the City’s CIP or TIF, and shall be funded and implemented by the project.</p> <p>4.13-4 Convert the intersection of SB Highway 1 Ramps/Reservation Road to all-way stop control. This improvement shall be funded and implemented by the project.</p> <p>4.13-5 Signalize the intersection of Del Monte Boulevard/Beach Road and add an EB left turn lane. This improvement will require the reconstruction of the adjacent Beach Road rail crossing and rail crossing preemption. This improvement is included in the City’s CIP and TIF. The project shall pay the City’s traffic impact fee to mitigate the impact at this location.</p> <p>4.13-6 Convert the intersection of De Forest Road/Beach Road to all-way stop control and add a NB left turn lane and a SB right turn lane. These improvements shall be funded and implemented by the project.</p> <p>4.13-7 Signalize the intersection of California Avenue/Reservation Road. This improvement is included in the City’s CIP and TIF; the project shall pay the City of Marina’s traffic impact fee to mitigate impacts at this location.</p>	<p>Less-than-significant. Mitigation 4.13-1 depends in part on discretionary approvals by other agencies. The impact will be unavoidable at this location if these approvals are not forthcoming.</p>

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	<p>4.13-8 Widen and restripe the Imjin Road/Reservation Road intersection to accommodate one NB left, one NB through, and three NB right turn lanes. (This improvement has already been identified as part of previous traffic studies and is included in the City’s CIP and TIF.) The project shall pay the City’s traffic impact fee to mitigate impacts at this location.</p> <p style="text-align: center;">Background Plus Project Conditions</p> <p>4.13-9 Signalize the SB Highway 1 Ramps/Reservation Road intersection. The project shall pay the City’s traffic impact fee to mitigate impacts at this location.</p> <p>4.13-10 Signalize the NB Highway 1 Ramps/Reservation Road intersection. The project shall pay the City’s traffic impact fee to mitigate impacts at this location.</p> <p>4.13-11 Signalize the intersection of Salinas Avenue/Reservation Road. The project shall pay the City’s traffic impact fee to mitigate impacts at this location.</p> <p>4.13-12 Add a second WB through lane at the Blanco Road/Reservation Road intersection. If the City of Marina adds this project to its CIP and TIF prior to the project’s payment of the TIF, the project payment of the TIF would fully mitigate the project’s impacts at this location. If the City does not add this improvement to its CIP and TIF prior to the project’s payment of the TIF, the project would implement this improvement, subject to reimbursement from third parties, as and when available, for all but its proportional share of the cost of implementation.</p> <p>4.13-13 Widen the section of Reservation Road between Cardoza Avenue and the Highway 1 NB Ramps to two lanes to facilitate one right turn lane and one through lane. The WB section of Reservation Road between Beach Road and Cardoza Avenue is already two lanes and only re-striping would be required. The project shall pay the City’s traffic impact fee to mitigate impacts at this location.</p>	

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
The project would have a significant impact on regional roadways outside the study area.	See mitigation 4.13-23 below	Significant unavoidable
The project together with the cumulative developments would have a significant impact on five study intersections. In addition, five roadway segments would be significantly impacted. If adequate funding from the TAMC fee and other sources is not available, impacts at the following locations would be unavoidable: the intersections of Imjin Road/Reservation Road and Highway 68 WB Ramps/Reservation Road, the roadway segments of Highway 1 between Nashua/Molera Roads and Del Monte Boulevard (North), Del Monte Boulevard (North) and Reservation Road, Reservation Road and Del Monte Boulevard (South), and Del Monte Boulevard (South) and Imjin Parkway. Cumulative impacts to regional highways would also be unavoidable without adequate funding.	<p>4.13-14 Add all-way stop control at the NB Highway 1 Ramps/Del Monte Boulevard intersection. The project shall contribute its proportional share of the cost of this improvement, to be paid to Monterey County, assuming Monterey County and Caltrans approve implementation of the improvement and the County establishes a mechanism to collect funding from all responsible parties.</p> <p>4.13-15 Add a SB median left turn acceleration lane on Del Monte Boulevard south of Cosky Drive. The project shall contribute its proportional share of the cost of this improvement, to be paid to the City of Marina. If the City of Marina adds this project to its CIP and TIF prior to the study project's payment of the TIF, the project payment of the TIF would fully mitigate the project's impacts at this location. If the City does not add this improvement to its CIP and TIF prior to the project's payment of the TIF, the project would be solely responsible for implementation of this improvement, and would be eligible for reimbursement (for all but its proportional share of the cost of implementation) via any future payments received by the City of Marina from other future projects towards their individual proportional shares of this cost.</p> <p>4.13-16 Add a second northbound through lane and a second southbound through lane on Imjin Road at Reservation Road at the Imjin Road/Reservation Road intersection. The City of Marina's TIF and CIP improvements at this intersection represent the City's share towards mitigation of this regional interchange. Funding of the remainder of this mitigation should be the responsibility of TAMC and should be included within its traffic impact fee; in this case the project's payment of the TAMC fee would mitigate the project's impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact would remain significant and unavoidable.</p> <p>4.13-17 Widen the intersection of Highway 68 WB Ramps/Reservation Road to facilitate an EB right turn lane. Improvements to this corridor should be added to the TAMC Nexus Study and payment of the TAMC fee would, thus, mitigate</p>	Less-than-significant except at noted locations, where impacts would be unavoidable if funding for improvements is not available

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	<p>the impact at this intersection. However, if either this fee structure is not adopted or this improvement is not added to the TAMC fee program, and if the County establishes no alternative mechanism for the collection and disbursement of improvement contributions from all responsible parties, the impact would remain significant and unavoidable.</p> <p>4.13-18 Widen northbound Highway 1 between Nashua/Molera Roads and Del Monte Boulevard (North) from two to three lanes. This improvement is not included within the City’s CIP, the City’s TIF, the FORA CIP, or the TAMC Nexus study. This improvement is also not currently included in long-range improvement plans for Highway 1. The Caltrans Route Concept Report for Highway 1 includes widening four lane segments of Highway 1 to six lanes. However, there is currently no funded improvement that would widen this segment of Highway 1. As this is a regional improvement, funding of at least part of the mitigation along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee; in this case, the project’s payment of the TAMC fee would mitigate the project’s impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact would remain significant and unavoidable.</p> <p>4.13-19 Widen northbound Highway 1 between Del Monte Boulevard (North) and Reservation Road from two to three lanes. This improvement is not included within the City’s CIP, the City’s TIF, the FORA CIP, or the TAMC Nexus study. This improvement is also not currently included in long-range improvement plans for Highway 1. The Caltrans Route Concept Report for Highway 1 includes widening four lane segments of Highway 1 to six lanes. However, there is currently no funded improvement that would widen this segment of Highway 1. As this is a regional improvement, funding of at least part of the mitigation along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee. In this case, the project’s payment of the TAMC fee would fully mitigate the project’s impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact would remain significant and unavoidable.</p>	

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	<p>4.13-20 Widen northbound Highway 1 between Reservation Road and Del Monte Boulevard (South) from two to three lanes. This improvement is not included within the City’s CIP, the City’s TIF, the FORA CIP, or the TAMC Nexus study. This improvement is also not currently included in long-range improvement plans for Highway 1. The Caltrans Route Concept Report for Highway 1 includes widening the four-lane segments of Highway 1 to six lanes. However, there is currently no funded improvement that would widen this segment of Highway 1. As this is a regional improvement, funding of at least part of the necessary mitigations along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee. In this case, the project’s payment of the TAMC fee would mitigate the project’s impact in this location. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact would remain significant and unavoidable.</p> <p>4.13-21 Widen northbound Highway 1 between Del Monte Boulevard (South) and Imjin Parkway (12th Street) from three to four lanes would be required. This improvement is not included within the City’s CIP, the City’s TIF, the FORA CIP, or the TAMC Nexus study. This improvement is not currently included in long-range improvement plans for Highway 1. Widening Highway 1 beyond the existing 6-lane section south of Imjin Parkway is not anticipated in the Caltrans Route Concept Report. As this is a regional improvement, funding of at least part of the mitigation along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee. In this case, the project’s payment of the TAMC fee would mitigate the project’s impact in this location. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact would remain significant and unavoidable.</p> <p>4.13-22 Implement improvements to southbound Highway 1 between Del Monte Boulevard (South) and Imjin Parkway, in order to improve weaving operations. Multiple improvement options are possible, including grade-separating the ramps and increasing the weaving distance between the ramps (the preferred improvement). The results of the on-going Project Study Report for the Highway 1/Imjin Parkway interchange improvements will make the final determination of the ultimate weaving improvement. Funding for</p>	

Table 2-1 Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
	<p>construction of the interchange modification is identified in the City’s CIP and TIF. Through payment of the City’s TIF, the project would contribute its fair share towards the development of a long-range improvement plan for the Highway 1/Imjin Parkway interchange; the interchange improvements would, in turn, be expected to improve the operation of the weaving segment. Funding for construction of the interchange modification is identified in the City’s TIF; however full funding has not been identified and interchange improvements at this location are not included in the TAMC Nexus Study. Since this is a regional improvement, funding of at least part of the necessary improvements along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee. In this case, the project’s payment of the TAMC fee, in combination with payment of the City of Marina TIF, would mitigate the project’s impact in this location. If the City, TAMC, or other validly enacted fee structures for improvements that would address the weaving segment are in place prior to the issuance of the building permits for this project, the project would pay its fair share of the costs of the improvements and its cumulative impact would be mitigated. However, if such a fee structure is not adopted, the cumulative impact would remain significant and unavoidable.</p> <p>4.13-23 Contribute funding towards the improvement of deficient operations along Highway 1 through the greater Monterey Peninsula, Highway 1 north of Castroville, Highway 68 through the Del Monte Forest, Highway 68 between Monterey and Salinas, Highway 101 through Prunedale, Highway 101 south of Salinas, and Highway 156 between Castroville and Prunedale through the payment of the TAMC regional traffic impact fee. Funding for improvements along Highway 1 in Seaside, Highway 68 east of Monterey, Highway 101 through Prunedale, Highway 156 between Castroville and Prunedale, and for right-of-way acquisition along Del Monte Boulevard, are all included within the current TAMC fee program. The remaining regional improvements along these highways should also be included by TAMC within its traffic impact fee. In this case, the project’s payment of the TAMC fee would mitigate the study project’s impacts on these regional highways. However, if this fee structure is not adopted, or if all of the necessary improvements to improve operations are not added to the fee program, the cumulative impact would remain significant and unavoidable.</p>	

Table 2-1		
Summary of Significant Environmental Impacts and Mitigation		
Environmental Impact	Mitigation	Level of Significance After Mitigation
4.14 Utilities and Service Systems		
All impacts less-than-significant.	Not applicable	Not applicable

3.0 PROJECT DESCRIPTION

The project consists of the development and implementation of the Marina Station Specific Plan (November 2006, revised 2007). The Specific Plan calls for a mixed-use development including 1,360 residential units of varying types (824 single family homes and 536 multi family units), 60,000 square feet of mixed commercial uses, 143,808 square feet of general office uses, and 651,624 square feet of industrial uses.¹ The project includes three mixed-use village centers to provide shopping and services to support proposed residential development. In addition, approximately 58 acres of open space and parkland is proposed, which includes a buffer area between the proposed project and existing neighborhoods. A Vesting Tentative Map that incorporates the requirements of the Specific Plan has been prepared by the applicant (October 2006, revised 2007). The Specific Plan and Vesting Tentative Map are on file and available for review at the City of Marina. Project approvals would also include a development agreement.

3.1 PROJECT LOCATION

The project is located in the City of Marina, approximately 15 miles north of Monterey and 65 miles southwest of the San Francisco Bay Area, in Monterey County (refer to Figure 3-1). The project site is located on a 320-acre portion of the Armstrong Ranch property, situated within the City's corporate limits.² The project site is located on three parcels east and west of Del Monte Boulevard at the north end of Marina (refer to Figure 3-2). The Assessor's Parcel Numbers for the site are 175-011-038, -045, and -046.

3.2 PROJECT OBJECTIVES

The Marina Station Specific Plan proposes a mixed use community on a currently undeveloped site within the corporate limits and Urban Growth Boundary of the City of Marina. The Specific Plan has been developed in accordance with relevant General Plan framework goals, and land use, development, and design provisions. The project objectives, consistent with the City's overall planning goals, are summarized below:

- Provide additional housing to advance the City's goal of accommodating a fair share of Monterey County's future population and employment growth within the City's Urban Growth Boundary.
- Provide approximately 1,300 units of residential development in the portion of Armstrong Ranch that is within City's Urban Growth Boundary.
- In order to promote a jobs-housing balance that would allow residents to both live and work in Marina, provide office, research, commercial and industrial uses, as well as housing, in the portion of Armstrong Ranch that is within the City's Urban Growth Boundary.
- Provide a variety of housing types for all economic levels and ages.
- Create a community using neotraditional design principles, including an integrated mix of housing, commercial services, businesses, and community facilities.

¹The originally proposed Specific Plan included 1,504 rather than 1,360 residential units. The traffic study for the EIR was conducted prior to the unit reduction; therefore, the EIR overstates the traffic, traffic-based air quality, and traffic noise impacts of the residential component of the final proposed Specific Plan by approximately 10%.

²The project site is 320 acres, but offsite grading would be required on approximately five additional acres. This area will be restored to its current condition upon completion.

- Create a community with varied uses that are within easy walking or bicycling distance from each other.
- Support the local economy by increasing income on the site through property taxes, sales taxes, and job creation.

3.3 PROJECT CHARACTERISTICS

Land Use

The project consists of implementation of a Specific Plan that would allow for the creation of a mixed-use development consisting of residential uses, retail uses, office space, and industrial areas. The proposed Specific Plan land use plan is presented in Figure 3-3. A vesting tentative map has also been prepared to implement the Specific Plan, and is illustrated in Figure 3-4. The Plan includes three traditional-style neighborhoods featuring shopping, service businesses, and civic uses. These neighborhoods are proposed at the following locations: 1) north of DeForest and Beach Roads (southern), 2) at the north end of the DeForest Road extension (eastern), and 3) along Del Monte Boulevard (western), as shown in Figure 3-5. Each neighborhood contains a neighborhood center that includes recreational, retail, entertainment, and service amenities within walking distance of residential uses. Proposed open space and recreation area include parks, playgrounds, and open space buffer areas (between proposed uses and surrounding neighborhoods), as shown in Figure 3-3. The land use plan also reserves two acres of the project site for future expansion of Olson School.

The western neighborhood center is proposed along Del Monte Boulevard and contains a civic plaza, Victorian-style train platform, and courtyard areas. The eastern neighborhood center is created around a large circular village green and contains a soccer field and public park. The southern neighborhood center was designed around the expansion of Windy Hill Park and the existing eucalyptus grove. The western and southern centers are intended to serve existing as well as future residents in the area.

The Specific Plan calls for a variety of residential types, including apartments, townhouses, and small and large detached homes. The project proposes the application of Neo-Traditional principles that incorporate design features including the following: multi-modal circulation systems that link residential with neighborhood activity and commercial areas; quality craftsmanship in the built environment; a mix of residential uses, employment opportunities, shopping, and community services in close proximity; and incorporation of open space and natural features.

The land use designations identified in the Specific Plan consist of Neighborhood Edge, Neighborhood General, Neighborhood Center, Office, Industrial, Parks, and Open Space. The density within the residential areas gradually increases from the Neighborhood Edge zone's low-density boundary through the Neighborhood General zone to the high density neighborhood center zone. The project would create a total of 880 lots. A description of the proposed land use zones is provided below.

The Specific Plan will be the primary body of standards for development within the Plan area boundaries. The design and development standards for each zone are provided in the Specific Plan (Sections 6 and 7). Permitted uses within each zone are presented in Appendix B of this EIR. Any future modifications to the land uses or zoning standards identified in the Specific Plan for individual projects would be subject to review and approval by the City pursuant to its normal procedures, including appropriate CEQA analysis.

Land Use	Acres	% of Site	Dwelling Units	Population ¹	Non-Residential (s.f.)	Jobs ²
Neighborhood Edge	47	15%	146	407	-	-
Neighborhood General	132	41%	678	1,892	-	-
Neighborhood Center	30	9%	536	1,495	60,000	166
Office	12	4%	-	-	143,808	575
Industrial	38	12%	-	-	651,624	1,303
Parks ³	20	7%	-	-	-	-
Open Space	38	12%	-	-	-	-
Olson School Expansion Site	2					
Total	319	100%	1,360⁴	3,794	855,432	2,044

¹Based on 2.79 persons per household (City of Marina General Plan Housing Element, January 2004).
²Based on the creation of 0.03 jobs per unit for apartment management and maintenance, 2.5 jobs per 1,000 s.f. of commercial retail, 2 jobs per 1,000 s.f. industrial, and 4 jobs per 1,000 s.f. of office.
³Includes 3-acre civic plaza.
⁴Secondary units (one bedroom carriage apartments) behind some large lot single family and villa homes are included in the above NE and NG zones. The analysis in this EIR includes 40 secondary units.
Road right-of-way acreage included within gross acreages shown.
Source: EMC Planning Group Inc. and Creekbridge Homes, 2007.

Neighborhood Edge (NE) – Low Density Residential Edge

Neighborhood Edge (NE) zones occur on approximately 47 acres of the Plan area. These low density areas are located along Plan area boundary and open space corridors. A total of 146 units are proposed within the NE zone, at a density of approximately 3.1 units per acre. Housing types consist of villas and large single family homes, as well as carriage house apartments. Lot sizes range from approximately 6,600 to 15,000 square feet.

Neighborhood General (NG) – Low and Medium Density Residential

Neighborhood General (NG) zones are located on 132 acres of the site between the Neighborhood Edge and Neighborhood Center zones. This area consists of a mix of low and medium density housing. Housing within the NG zone includes small and large single-family homes, villas, cottages, row houses, townhouses, lane homes, and carriage house apartments. Lots range from approximately 2,500 to 14,900 square feet in size. The mix of housing is intended to provide a diverse neighborhood with housing offered at a broad range of price levels. The average dwelling unit density of the 678 homes within the NG zones is approximately 5.1 units per gross acre or 8.7 units per net acre.³ The density of each block within the NG zone gradually increases from the NG zone's edges to the neighborhood center.

³Density allowances in the City's General Plan are given as either "per gross acre" or "per net acre." Where the term "units per gross acre" is used, the specified area excludes major roadways, open spaces, and lands occupied by public facilities, but includes local streets, sub-neighborhood parks, recreation areas, and other common open space. When the term "units per net acre" is used, the specified area is limited to land occupied by residential parcels for single-family houses and the sites of multi-family housing developments exclusive of required street or open space dedications.

Neighborhood Center (NC) – Mixed Use

The Neighborhood Center (NC) zone allows several different uses in one location. These uses include commercial retail, residential, office, entertainment, and recreation. The three neighborhood centers are intended to form focal points within the community and create gathering places for residents. These areas are also intended to promote alternative travel such as biking and walking, by reducing the need for residents to travel far to obtain basic services.

Marina Station proposes three neighborhood centers on a total of 30 gross acres located in the southern, eastern, and western portions of the Plan area. Each neighborhood center is surrounded by a mix of low and medium density residential development, and contains park and open space areas. Approximately 60,000 square feet of commercial uses and professional office space, as well as 536 condominium apartments are proposed within the NC zones. This equates to about 26.3 dwelling units per net acre. Residential condominium apartments would be located on the first, second, and third floors, generally above the commercial uses.

Office and Industrial

Office and industrial designations are proposed within the southern portion of the project area. The intent of the office and industrial district is to attract job opportunities to Marina, and to decrease commuting by locating these uses near neighborhood centers and residential communities. Master development of the office and industrial area includes measures to minimize land use conflicts on surrounding residential uses. These measures consist of restrictions on the types of industrial uses permitted and construction of an eight-foot sound wall around the perimeter of the industrial/office area, with a landscaping buffer on either side of the wall. In addition, a solid multi-layer evergreen tree grove will be planted between the existing neighborhood to the west and the office and industrial district (refer to Figure 3-3). Where the industrial and office uses abut the residential areas to the north and south, the evergreen tree grove will be planted continuously between the alley paving and the building setback line.

Parks and Open Space

The Specific Plan designates 58 acres of land for park and open space uses, including 38 acres of open space area and about 20 acres of formal parks. This represents approximately 15 acres of open space and parkland per 1,000 residents within the Specific Plan area. The formal parks include a community park/plaza, neighborhood parks and playfields, as well as picnic, tot lots, and garden areas. The park locations are shown in Figure 3-3. The Specific Plan also incorporates open space areas referred to as linear parks. These areas provide a greenbelt around the project boundaries and are designated for native habitat, passive recreation, and a trail system. Trails and sidewalks are proposed to connect the formal parks with the neighborhood commercial centers and linear parks.

Grading

The project will require extensive grading on the site to facilitate construction of proposed uses. Proposed grading would occur throughout most of the site, and would involve approximately 2.5 million cubic yards (CY) of cut and 2.5 million CY of fill. The grading plan, showing the proposed areas of cut and fill, is presented in Figure 3-6. All grading is proposed to balance upon completion of the project. No import or export of material will be required.

Building Construction/Design

Residential structures will generally be of wood-frame construction. The proposed single family residential units will be one and two story structures; apartment and mixed-use buildings will be two to four stories with a maximum height of 45 feet. Office buildings will be limited to three stories with a maximum height of 35 feet. Industrial uses will be limited to two stories with maximum height of 35 feet. Elements such as spires, clock towers, and other unoccupied space may extend to 75 feet provided permission is obtained from the Airport Land Use Commission.

The design standards for all proposed uses are identified in Section 6.0 of the Specific Plan. The zoning standards for implementing the proposed land uses are provided in Section 7.0 of the Specific Plan. The building height, setback, and parking requirements are provided in Appendix B of this EIR.

Sustainable Design Features

The Specific Plan incorporates sustainable community features, including the following: providing employment opportunities near housing to minimize vehicle commuting; linking a mix of land uses with alternative transportation facilities (e.g., bikeways, sidewalks, and trails); clustering high density housing with neighborhood-serving commercial services; and incorporating efficient irrigation systems including the use of reclaimed water (when available) for non-residential uses. Sustainable design features proposed by the Marina Station project include use of green building techniques such as equipping single family homes with solar energy panels, recirculating hot water systems, and high efficiency appliances.

Street System

The project proposes a public street system to serve the development. Access will be provided from Del Monte Boulevard, Reservation Road, Beach Road, Drew Street, Cardoza Avenue, Paul Davis Drive, De Forest Road, and Crescent Avenue. Direct access into the site would be provided via three new access points from Del Monte Boulevard, in addition to northerly extensions of De Forest Road and Crescent Avenue. The proposed roadway system for the project also includes extensions of Drew Street, Cardoza Avenue, and Paul Davis Drive (refer to Figure 3-4). The project proposes to relocate the existing portion of Marina Greens Drive to the north, and extend it across Del Monte Boulevard to the east.⁴ Truck access to the industrial portion of the site will be provided via Del Monte Boulevard and along the north and east project boundaries.

The Specific Plan contains a roadway circulation plan and street sections. The circulation plan is presented in Section 4.13 Traffic and Circulation, Figure 4.13-4. Roadways within the Specific Plan area are proposed in accordance with the standards and policies of the Marina General Plan, and will be built to City structural standards.

Storm Drainage System

The project will construct a storm drainage system to convey storm runoff from the site into an onsite percolation basin. Drainage inlets will be located in proposed streets and alleyways. In park and landscaped areas, flat grate inlets will be installed at low points. The storm drainage mains will be located within the streets, except where they exit the street to discharge into the percolation basin. The

⁴ The project may be required to provide full access from the discontinuous ends of Michael Drive to the project site, as a condition of project approval. No trucks would be allowed on this route. The impacts from this access are addressed in the traffic analysis for this EIR.

percolation basin will be located at a low point on the western portion of the site, and have a capacity of 20 acre-feet. The proposed drainage plan is evaluated in Section 4.8 Hydrology and Water Quality.

Sanitary Sewer System

The Monterey Regional Water Pollution Control Agency (MRWPCA) is responsible for treatment and disposal of wastewater for the project area. The sanitary sewer collection system is operated and maintained by the Marina Coast Water District (MCWD). Wastewater is carried by the MCWD sanitary collection system to the MRWPCA pump stations. From local pump stations, the wastewater is transported to the MRWPCA treatment plant located two miles north of Marina. Buildout of the project would generate approximately 340,120 gallons per day of wastewater. Sanitary sewer lines will be located within the proposed street right-of-ways, and connect to the existing MCWD sanitary sewer lines that serve the City. The sanitary sewer system is evaluated in Section 4.14 Utilities and Service Systems.

Water System

Water would be provided to the project site by the Marina Coast Water District (MCWD). The project would generate the demand for an average of approximately 654 acre feet of water per year. MCWD has determined that there is sufficient water supply allocated to development on the Armstrong Ranch to serve the project under various conditions for the next 20 years. Water lines will be installed within the proposed street right-of-ways, and connect to the existing MCWD water lines that serve the City. The water system is evaluated in Section 4.14 Utilities and Service Systems.

Public Improvements

The project would provide public improvements including the following: public roads, curb and gutter, sidewalks, pedestrian paths, streetlights, and public parks. In addition, roadway and intersection modifications would be provided to provide mitigation improvements to accommodate project traffic volumes (refer to Section 4.13 Traffic and Circulation of this EIR).

Schedule/Phasing

Construction of the project is planned to begin in late 2007, with development of basic infrastructure. Total development of the site would occur over a 10 to 20-year period. Buildout of the Specific Plan area is broken into eight phases. Phases one and two would include construction of all streets, as well as the provision of utility services for the industrial and office uses. Phases one and two would also include laying the foundation for the Plan area infrastructure for the industrial, office, and residential uses. Phases one through eight include development of the residential and commercial retail uses.

General Plan Amendments

Implementation of the Specific Plan would require a series of amendments to the City of Marina General Plan. Proposed General Plan amendments are summarized as follows:

2. Community Land Use

- Add new policies calling for the use of neotraditional neighborhood designs
- Update policies regarding Armstrong Ranch
- Revise language describing updated regulations for airport land use plan
- Modify commercial floor area ratios
- Remove reference to future school site(s) on Armstrong Ranch

3. Community Infrastructure

- Update circulation-related policies

4. Community Design and Development

- Revise street design policies to provide flexibility for the Specific Plan area
- Update design and certain housing policies for Armstrong Ranch

5. Program and Implementation Element

- Remove reference to future middle school site on Armstrong Ranch

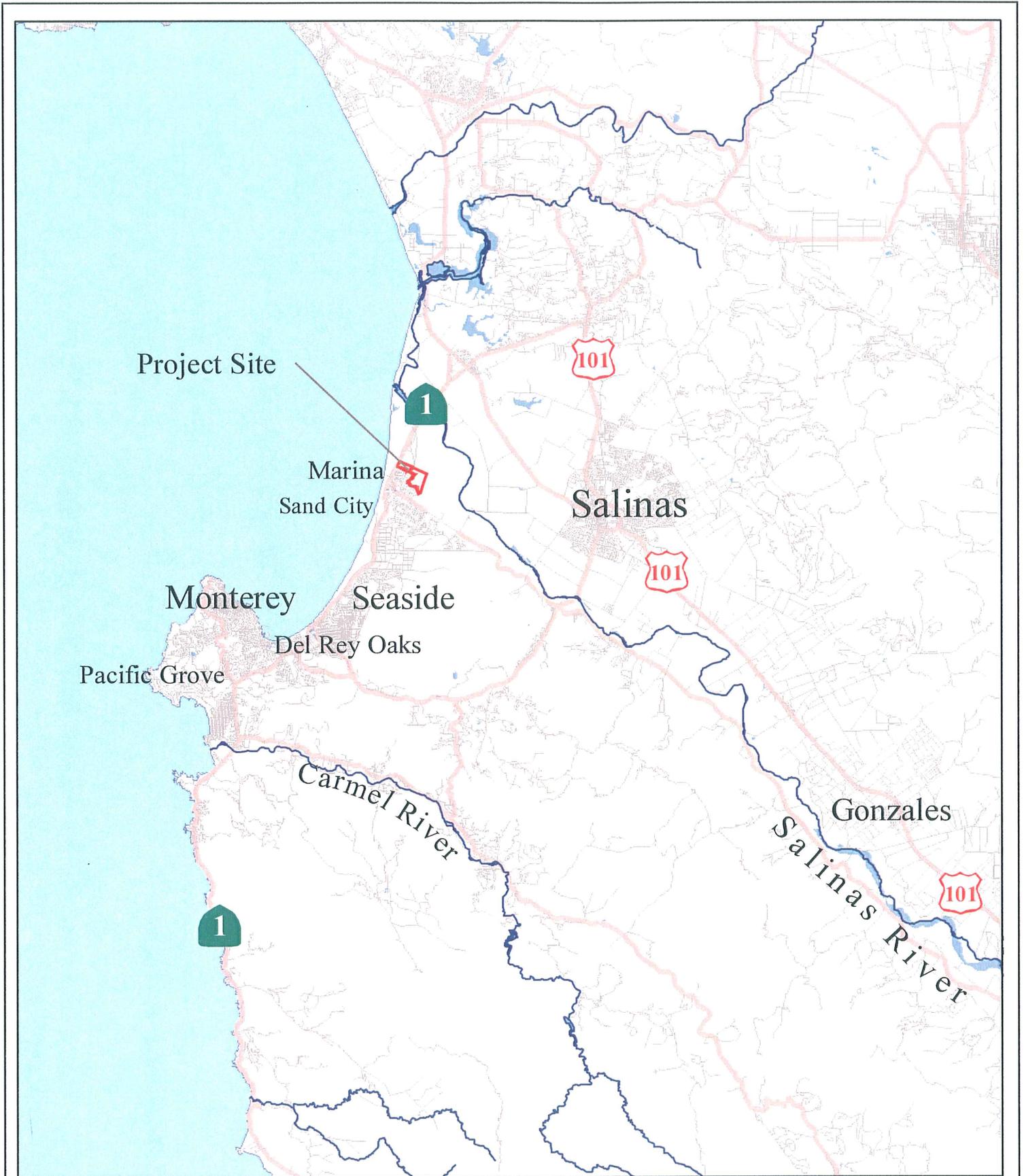
3.4 REQUIRED PERMITS AND APPROVALS

The City of Marina is the lead agency responsible for certification of the Final EIR and approval of the Specific Plan. In addition to adoption of the Specific Plan, the following actions would be required to allow development of the project.

- Amend the General Plan to incorporate the land use designations illustrated in the Land Use Plan, and certain policies included in the text of the Specific Plan.
- Amend the Zoning Ordinance to add the zoning designation of “SP” for all properties within the Specific Plan area.
- Review and approve the tentative map that illustrates the development of the Specific Plan area shown in the Land Use Plan, consistent with the design and zoning standards set forth in the Specific Plan.
- Approve and execute a Development Agreement governing development of the project, including financing and installation of infrastructure.
- Review and approve all required permits, including, but not limited to, building, grading, encroachment, and occupancy permits.
- Review and approve inclusionary housing agreement.

Other agencies with permit or review authority over some aspect of the project are as follows:

- LAFCO – approval of annexation to MCWD
- Monterey County – grading permits for temporary off-site grading; approval of traffic mitigation measures within county jurisdiction
- Monterey Bay Unified Air Pollution Control District –potential review of conditional use permit applications for stationary sources at proposed industrial uses
- Marina Coast Water District – annexation; utility connections
- Regional Water Quality Control Board – NPDES permit, waste discharge
- Caltrans – encroachment permits for certain traffic mitigation measures
- U.S. Fish & Wildlife Service – potential incidental take permits



Regional Map

Figure
3-1



Vicinity Map

Figure
3-2



- | | |
|--|--|
|  Neighborhood Center |  Marina Station |
|  Neighborhood General |  Olson School Expansion |
|  Neighborhood Edge |  Open Space |
|  Office |  Park |
| |  Industrial |

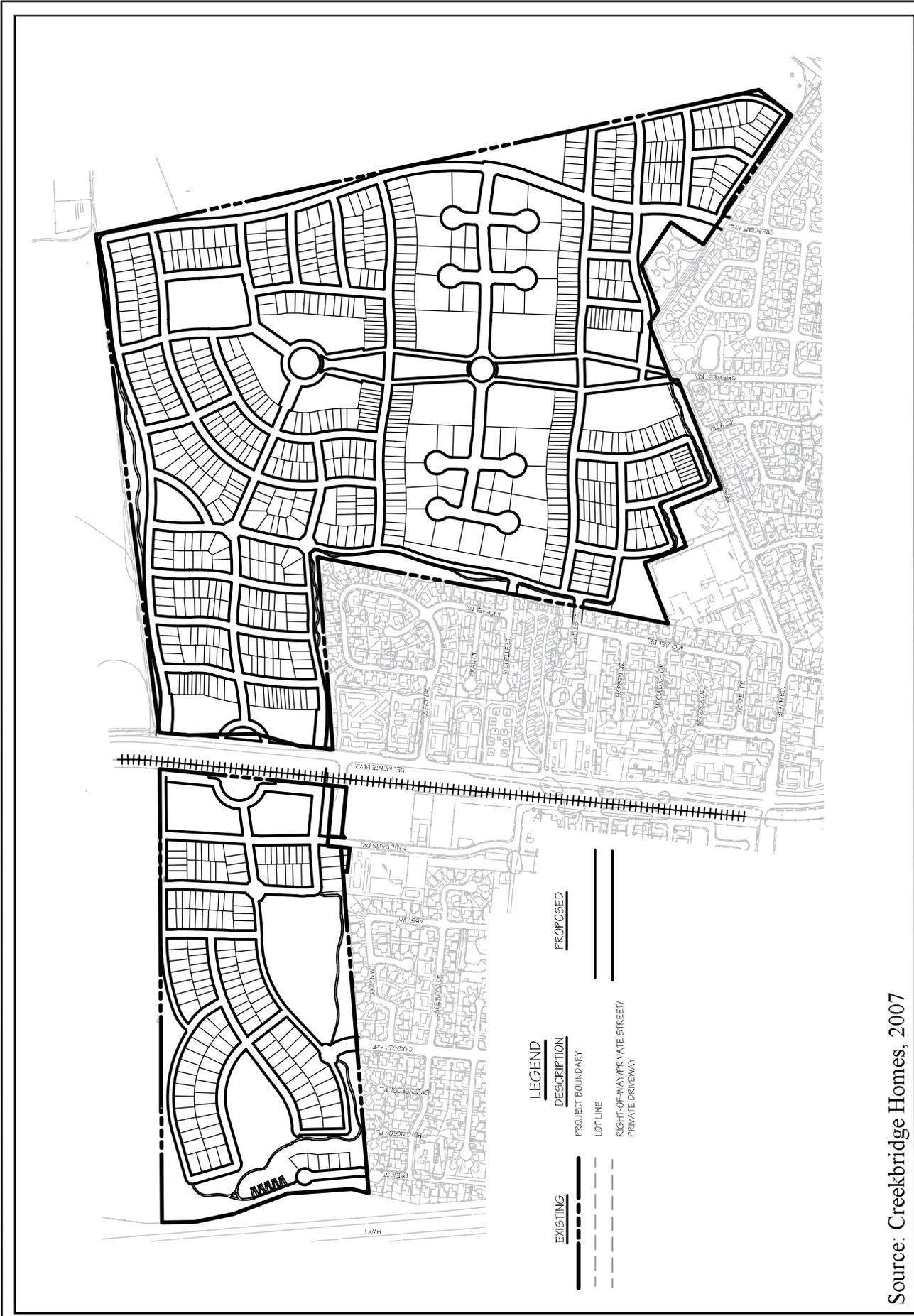
0 1250 feet

Source: EMC Planning Group Inc., 2007

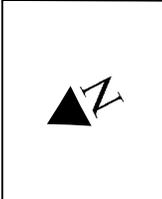


Land Use Plan

Figure
3-3

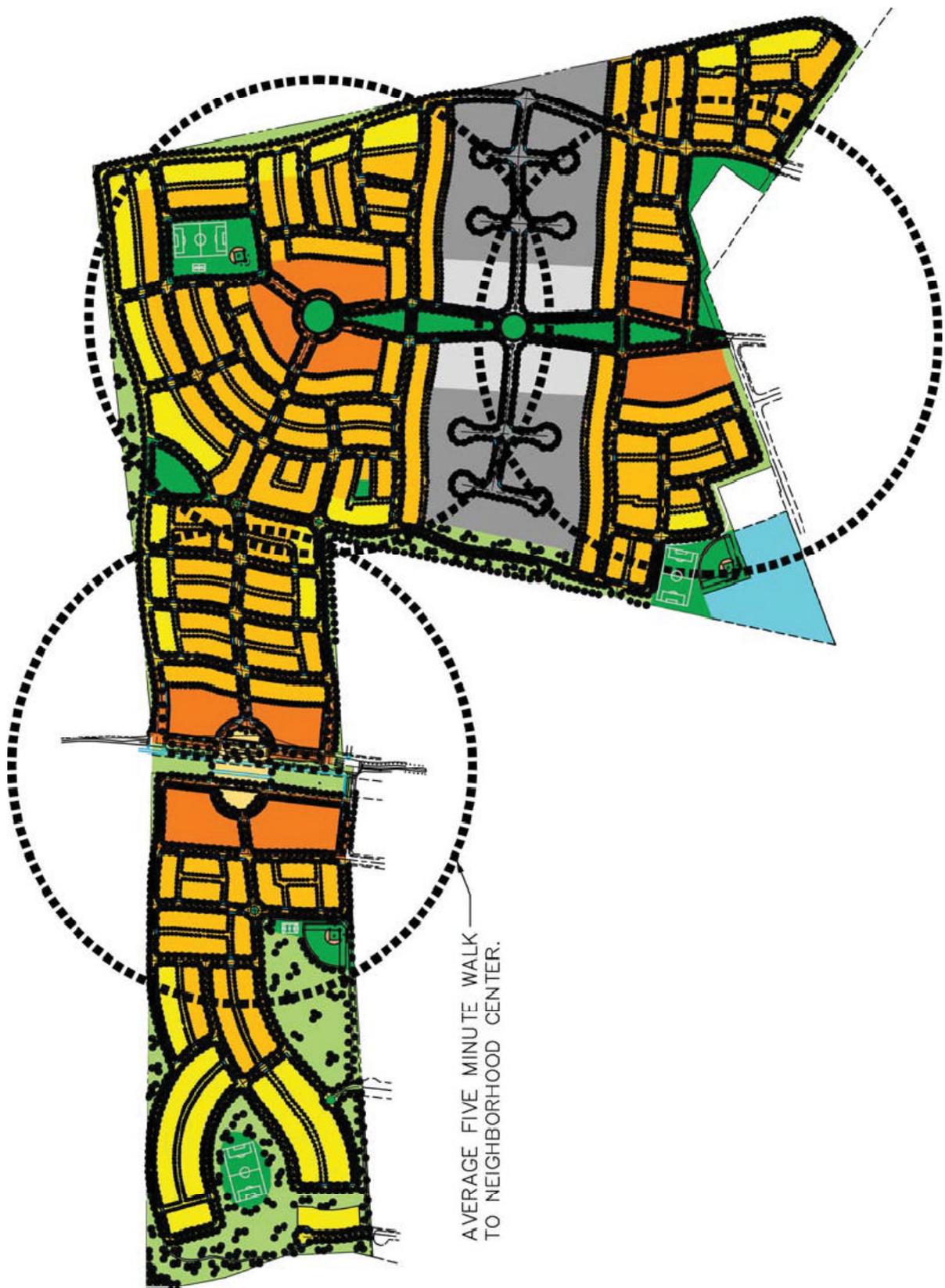


Source: Creekbridge Homes, 2007



Vesting Tentative Map

Figure 3-4



AVERAGE FIVE MINUTE WALK
TO NEIGHBORHOOD CENTER.

Source: EMC, 2006

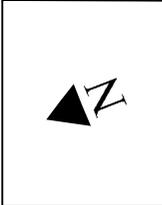


Marina Station Neighborhoods

Figure 3-5



Source: Ruggeri, Jensen, Azar & Associates, 2006



Grading Plan

Figure 3-6

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4.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

This section describes each of the environmental categories affected by the proposed project. Each category consists of three parts: Introduction, Environmental Setting, and Impacts and Mitigation Measures. Environmental impacts can be described as: less-than-significant impacts, potentially significant, significant adverse impacts, and unavoidable significant impacts. The specific criteria for determining the significance of a particular impact are identified prior to the impact discussion in each issue section, and are consistent with significance criteria set forth in CEQA Guidelines and local, regional, state or federal standards. Although not required by CEQA, mitigation measures may be identified for less-than-significant impacts to further reduce potential effects.

A separate Mitigation Monitoring and Reporting Program (MMRP) will be developed prior to the presentation of the project to the City Council for action, which will outline the mitigation measures and the monitoring and reporting methods that will be employed. The MMRP will be considered for adoption by the City Council at the time it considers approval of the proposed project.

Under CEQA, a significant impact is defined as a substantial, or potentially substantial, adverse change in the environment (Public Resources Code 21068). The guidelines implementing CEQA direct that this determination be based on scientific and factual data. The specific criteria for determining the significance of a particular impact are identified prior to the impact discussion in each section, and are consistent with significance criteria set forth in the guidelines implementing CEQA.

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4.1 AESTHETICS

Introduction

This section assesses the existing visual quality of the project site and potential changes to the visual and aesthetic environment that would result from proposed development. In assessing the visual quality of a site, it is important to consider that visual quality is not determined solely by the physical attributes of a project, but also by the relationship between the project and the total visual environment.

The visual analysis for the proposed project is based on the potential for the project to alter the existing visual character of the site and surrounding areas. Visual simulations were created based on a modeled environment through photography, mesh geometry, and use of textures, figures, and light (refer to Figures 4.1-6 to 4.1-10). The EIR consultant also conducted a field survey, and took photographs of the project site from various vantage points and circulation routes (refer to map on Figure 4.1-1). These photos are presented in Figure 4.1-2. Prior to the site visit, aerial photographs, maps, and visual simulations were studied and areas of special interest or potential scenic value were noted for assessment during the field survey. The Marina Station Specific Plan includes proposed design guidelines, setbacks, height limits, and zoning to reduce potentially adverse visual effects.

Letters were received from the general public during circulation of the Notice of Preparation for this EIR, calling for a thorough analysis of the aesthetic impacts resulting from the project. The predominant issue of concern involved neighborhood and greenbelt design compatible with surrounding residential areas. The following section evaluates the potential for aesthetic impacts and presents mitigation in accordance with CEQA Guidelines.

Setting

The project site is located near the northern terminus of the Salinas River Valley in north Marina. The visual character of this area is comprised of distant mountain ranges, Monterey Bay, beach coastline, sand dunes, farmland, grazing land, urban development and Highway 1. As viewed from Highway 1, undeveloped Armstrong Ranch is distinguished by its size and visual dominance. The project site's western edge fronts Highway 1 and is highly visible by cars traveling on the highway. Other views of the project site are available from surrounding urban areas (e.g., Del Monte Boulevard and adjacent residential, commercial, and industrial development).

The site is composed of three separate but contiguous parcels totaling approximately 320 acres. The project area consists of rolling grassland that is currently used for cattle grazing. The 320-acre project site is located completely within Marina's Urban Growth Boundary (UGB) and contains an incorporated portion of the larger Armstrong Ranch. The UGB is the area within the City where growth, new development, and required community services are planned until 2020. The project site is immediately contiguous to already developed areas of Marina to the south. The property is currently surrounded by various urban uses (residential, commercial, industrial, etc.) to the south, Highway 1 to the west, grazing land to the north and southeast, and farmland to the northeast.

California State Scenic Highway Program. The California State Scenic Highway Program was created by the Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The program includes a list of highways that are either designated or eligible for designation as scenic highways. The status of a state scenic highway changes from eligible to officially designated when the local jurisdiction adopts a scenic corridor protection program, applies to the California Department of Transportation for scenic highway approval, and receives notification from Caltrans that the highway has been designated as a Scenic Highway. Portions of Highway 1 along the California coastline are both designated and eligible State

Scenic Highways. The section of Highway 1 adjacent to the project site is considered an eligible State Scenic Highway.

City of Marina General Plan. The Community Design and Development Element of the General Plan guides the City's future physical and spatial form and appearance. Please refer to Table 4.9-2 of section 4.9 Land Use and Planning of this EIR for a detailed analysis of the project's consistency with the relevant aesthetic and visual resource protection provisions of the Marina General Plan. The provisions below apply directly to development within the UGB portion of the Armstrong Ranch and were used to assist in the visual analysis:

4.126.3. The visual character and scenic resources of the Marina Planning Area shall be protected for the enjoyment of current and future generations. To this end, new development proposed for the Armstrong Ranch should maintain an adequate setback from Highway One; landscape screening and restoration shall be provided as appropriate; new development should be sited and designed to retain scenic views of inland hills from Highway One, Reservation Road, and Blanco Road; and architectural review of projects shall continue to be required to ensure that building design and siting, materials, and landscaping are visually compatible with the surrounding areas.

4.126.4. The environmental review for the Armstrong Ranch specific plan shall provide for adequately detailed visual simulations of how proposed development will look when viewed from Highway 1. The specific plan for Armstrong Ranch shall give special attention to minimizing visual impacts and ensuring attractive development. In addition to adequate setbacks from the highway, building and site design measures that shall be employed include, but are not limited to, height restrictions, landscape screening, appropriate color and architectural schemes, and the use of non-reflective building materials.

Environmental Impact Report on the Marina General Plan. The General Plan EIR evaluated potential aesthetic and visual impacts associated with the adoption and implementation of the Marina General Plan, including future development within the Marina Station project site. This program-level EIR focused on general impacts associated with implementation of the General Plan, rather than project-specific impacts associated with individual development projects, such as the Marina Station Specific Plan project. According to the General Plan EIR, the following relevant aesthetic and visual impacts were identified: 1) loss of scenic vistas at Armstrong Ranch, identified as a significant unmitigable impact; 2) change in visual characteristics within the Marina planning area, identified as a significant unmitigable impact; and 3) increased light and glare within the Marina planning area, identified as a significant mitigable impact. The General Plan EIR evaluated the visual impacts assuming buildout of the entire 2,000-acre Armstrong Ranch; the Marina Station project would only occur on 320 acres of the Armstrong Ranch and would have fewer and less intense visual/aesthetic impacts than identified for this area in the General Plan EIR.

Marina Station Specific Plan. Section 5.8 of the Marina Station Specific Plan identifies policies and implementation measures to ensure adequate preservation of aesthetic value in the Plan area. Open Space (OS) Policy 3-4 states "Develop an attractive community that preserves the visual quality of the Plan area." Implementation measures to support this policy are as follows:

- Developers shall adhere to the design standards in Section 6 of this Plan to ensure that the community is visually attractive when viewed from within the community, as well as from off-site public view locations including State Route 1.
- Developers submitting building plans within the office/industrial areas shall prepare a landscape-screening plan. The plan shall define the location, types, and density of landscaping needed to screen the office and industrial buildings from the surrounding residential neighborhoods. The plan shall be subject to review and approval by the City in accordance with its normal procedures.



Figure
4.1-1

Viewpoints Map





1. View of the site from across Highway 1 looking to the southeast.



2. View of the site across Highway 1 looking to the southeast. (zoomed in)



3. View of the site south of Highway 1 looking to the south.



4. View of the site from Del Monte Blvd looking to the south towards Marina.



Site Photos

Figure
4.1-2



5. View of the site from Paul Davis Road looking to the west from Marina.



6. View of the site from Cosky Drive looking to the east towards the proposed Industrial/Office area.



7. View of the site from Beach Street looking to the north through an existing eucalyptus grove.



8. View of the southern portion of the project site looking to the north.



Site Photos

Figure
4.1-2

- Developers shall design all signage, including street lighting, to minimize the amount of lighting and minimize glare and casting of light to locations not intended for illumination. Improvement plans shall be reviewed for consistency with this measure by the appropriate City staff prior to approval of any final map or commercial development plan.

Relevant Project Characteristics

The project proposes a mixed-use development consisting of residential, commercial, and industrial uses, and will include three village centers, open space buffers, and recreation areas. Linear parks are proposed along the perimeter of the Specific Plan area for the purpose of conserving the visual integrity of the surrounding landscape. Site grading will consist of conventional cut/fill construction methods on approximately 315 acres of the 320-acre project site, and will involve about 2.5 million cubic yards of cut and 2.5 million cubic yards of fill, so no import or export of fill will be required. Limited grading will occur on approximately five acres just outside the northern and eastern project boundaries on Monterey County land. These activities will be temporary in nature, and the disturbed land outside of the project boundaries will be restored back to its current condition upon completion.

The proposed single family residential units will be one and two story structures; apartment buildings and mixed use retail/residences will be two to four stories. Building heights for office and industrial structures will not exceed 35 feet. Architectural features, such as clock towers, spires, and other non-habitable space, may extend to 75 feet in height with approval of the Airport Land Use Commission. The design of industrial and office buildings will be dependent on the businesses that ultimately occupy the property. Architectural renditions of the various types of development proposed at the Marina Station site are presented in Figures 4.1-3 to 4.1-5.

Thresholds of Significance

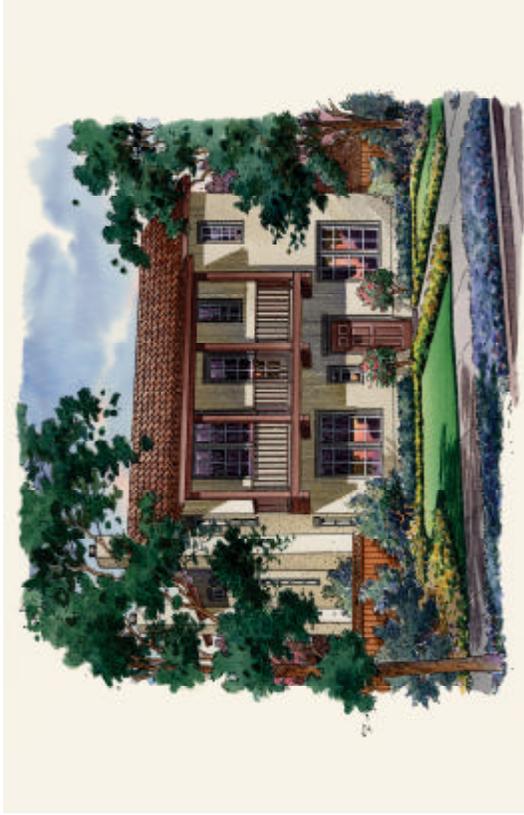
In accordance with the California Environmental Quality Act (CEQA) Guidelines, a project impact would be considered significant if the project would:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within view from a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

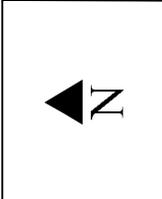
Impacts and Mitigation

Scenic Vista

The project site currently consists of undeveloped rolling grassland used for grazing. The western edge of the project site fronts Highway 1 and is highly visible from the Highway 1 corridor. Views east from Highway 1 include those of the Armstrong Ranch and the Gabilan and Santa Lucia Mountain Ranges in the background. The distant mountain range views are regarded as scenic vistas.



Source: Marina Station Specific Plan, 2006



Two Story Residential Architectural Renditions

Figure 4.1-3



Source: Marina Station Specific Plan, 2006



Single Story Architectural Renditions

Figure
4.1-4

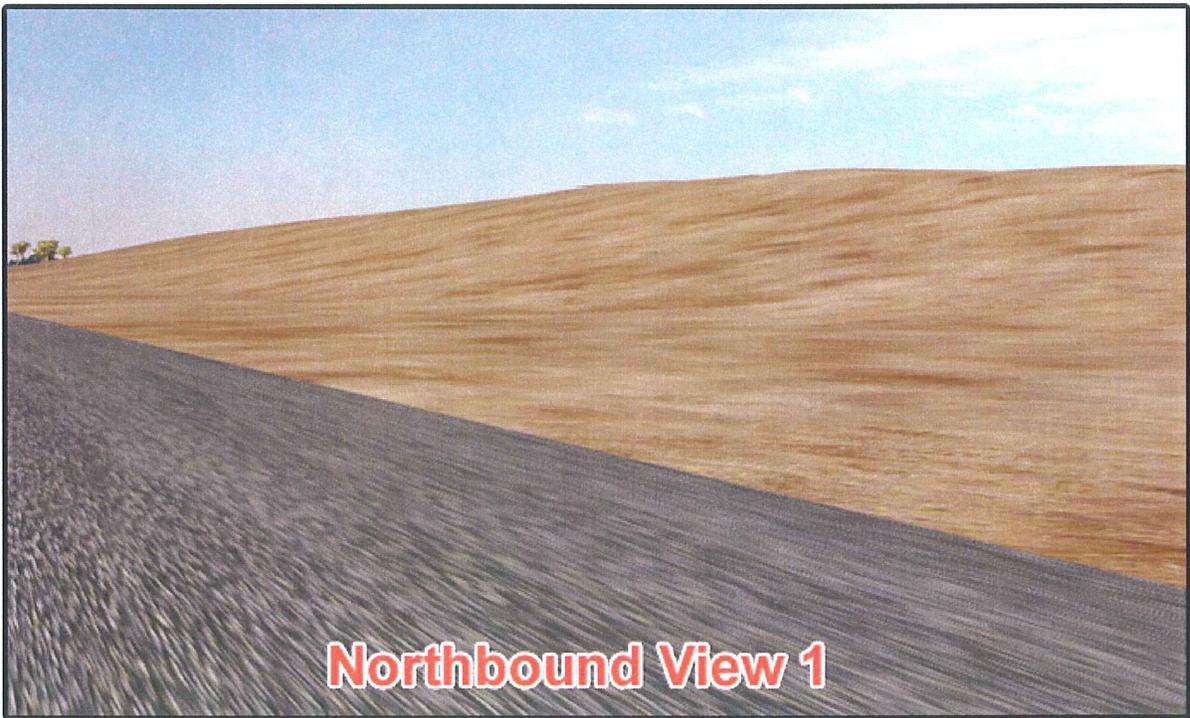


Source: Marina Station Specific Plan, 2006



Figure 4.1-5

Community Design Architectural Renditions



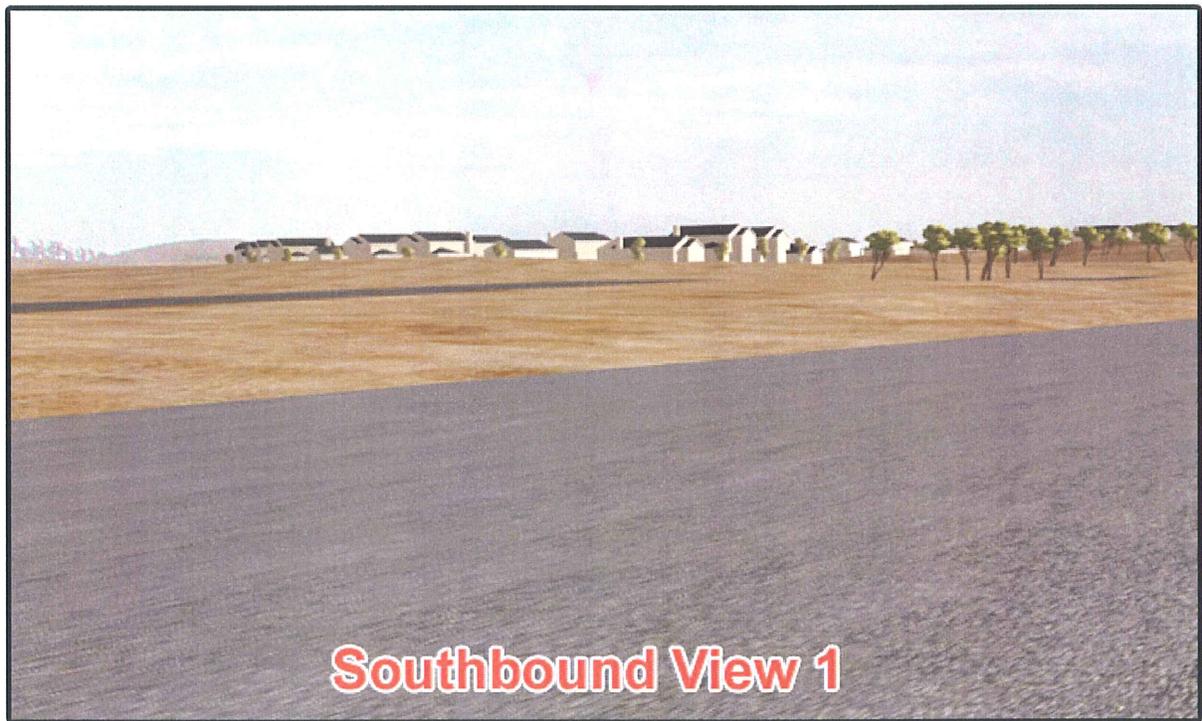
Marina Station Visual Analysis

Figure
4.1-6



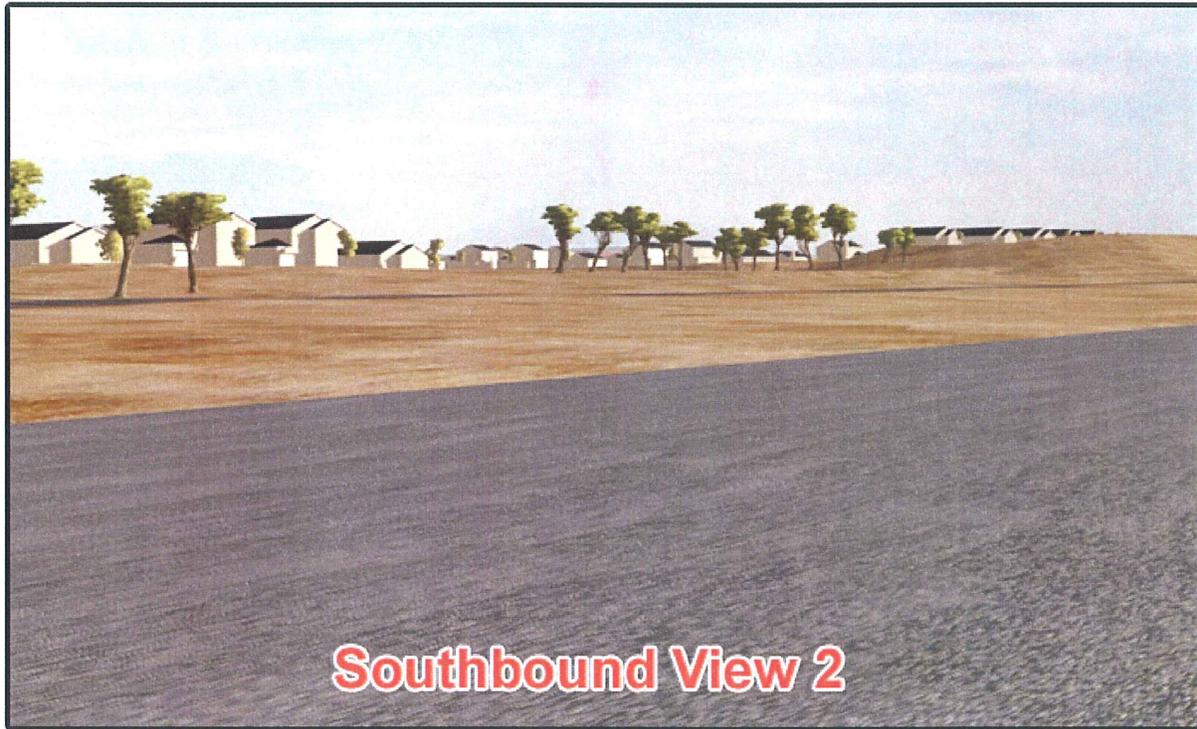
Marina Station Visual Analysis

Figure
4.1-7



Marina Station Visual Analysis

Figure 4.1-8



Marina Station Visual Analysis

Figure 4.1-9



Marina Station Visual Analysis

Figure
4.1-10

Implementation of development identified in the Marina Station Specific Plan would introduce substantial new development, including structures of various heights and densities, which would result in decreased views of open space as seen from Highway 1 (see below for an analysis of impacts to the existing visual character of the project site). The project engineer prepared visual simulations of the proposed project as viewed by travelers on Highway 1 (refer to Figures 4.1-6 to 4.1-10), as described below.

The visual simulations were developed through a series of steps. A three-dimensional mesh or grid of the Marina Station site was created from the project's topographic map. The electronic version of the Marina Station Vesting Tentative Map and associated grading plan were converted to a bitmapped texture, and then projected over the topographic mesh using common reference points. Three-dimensional houses were created electronically (to-scale) to represent the future homes, which are the only structures proposed along Highway 1. Using the Marina Station Vesting Tentative Map as a guide, the three-dimensional houses were placed within each proposed residential lot on the projected site map. The houses were located in a position relative to the proposed building setbacks. Three-dimensional trees were created electronically to scale and added to the site map. In order to create the necessary visual reference points for the area, a series of photographs were taken from known locations, looking at the actual real-world site from Highway 1 in both southbound and northbound directions. These photographs were then inserted into the three-dimensional environment and used as a backdrop for the three-dimensional perspective. An omni-directional light (serving as the sun) was placed into the virtual scene, oriented relative to the time of day to match the lighting of the backdrop pictures. Lastly, the mesh geometry, textures, and images were constructed and rendered using the "3D Studio Max" software package. A virtual "camera" was placed within the modeled environment located at the same relative location where the backdrop photos were taken. The final visual simulations created show a series of still images taken from the predetermined vantage points. The visual simulations were determined to be accurate by the City for purposes of the EIR analysis and were used to help assess the project's visual effects.

The nearest homes proposed on the Marina Station site will be set back approximately 350 to 400 feet from Highway 1. The nearest mixed use/commercial structures are proposed approximately 2,750 feet east of Highway 1. The proposed office/industrial area is located more than 4,700 feet from Highway 1. The visual simulations show that views of the Gabilan and Santa Lucia Mountain Ranges would not be eliminated by new structures, since development is proposed at a substantial distance (350 feet or more) from the highway. However, the increase in development intensity would alter existing views of a portion of the Armstrong Ranch from Highway 1 toward the Gabilan and Santa Lucia Mountain Ranges, resulting in a significant impact to a scenic vista. Specifically, the project would introduce development that would significantly impact views along Highway 1 at "View 3 – Southbound" and "View 4- Northbound," as shown in Figures 4.1-6 and 4.1-10. In addition, distant views of architectural features, such as spires and clock towers up to 75 feet in height, may be visible from Highway 1.¹ The existing Highway 1 road cuts in the area obscure the view from most of the other Highway 1 vantage points.

In addition to Highway 1, Provision 4.126.3 of the City's General Plan calls for preservation of views from Reservation Road and Blanco Road. Views of the project portion of Armstrong Ranch are not available from Reservation Road or Blanco Road due to the presence of intervening terrain, vegetation, and existing development; therefore, the project would not impact any scenic vistas from these roadways.

¹Only architectural features (i.e., unoccupied space) would be allowed on the project site as per the Specific Plan, provided permission is obtained from the Airport Land Use Commission.

Impact **The project would have a substantial adverse effect on a portion of a scenic vista. This represents a significant and unavoidable impact even with implementation of mitigation.**

Mitigation

- 4.1-1 The applicant shall provide landscape screening appropriate to the surrounding area in order to integrate the development with the existing natural landscape. Landscape screening shall be focused within areas of development that are visible from Highway 1. Landscaping plans shall be subject to the approval of the City of Marina.
- 4.1-2 All buildings shall be designed with colors and materials that seek to blend the structures with the surrounding landscape as viewed from Highway 1. Building applications for new structures shall include color and material sample photo sheets and shall be approved by the City of Marina.

Scenic Resources

The project site is not located adjacent to a designated State Scenic Highway. However, the portion of Highway 1 that is adjacent to the project site has been identified as an eligible State Scenic Highway pursuant to the State of California Department of Transportation. This means that the local jurisdiction may prepare and adopt a scenic corridor protection program, and apply to the California Department of Transportation for scenic highway approval. Scenic resources within the project vicinity include the Marina Dunes and Monterey Bay, which are located west of Highway 1.

The project site is located east of Highway 1 and is directly across from the Marina Dunes and Monterey Bay. The site does not contain any known scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within view from a State Scenic Highway. Proposed development is not expected to alter scenic resources and is adequately buffered from Marina Dunes and Monterey Bay by Highway 1. Therefore, implementation of the Marina Station Specific Plan would not substantially damage scenic resources within the vicinity. **As described above, the project would have a less-than-significant impact on scenic resources.**

Visual Character

Development of the proposed project would alter the existing visual character of the site, transforming what is currently 320 acres of undeveloped grazing land into a mixed-use, urban landscape. The project site is located completely within Marina's UGB, where growth, new development, and required community services are planned. The property is currently surrounded by various urban uses (residential, commercial, industrial, etc.) to the south, Highway 1 to the west, grazing land to the north and southeast, and farmland to the northeast. The project site's western edge fronts Highway 1 and is visible by cars traveling on the highway. The site also straddles Del Monte Boulevard and would be visible to those traveling on this roadway. Proposed development would also be visible at existing, adjacent residential areas to the south (e.g., in the neighborhoods north of Lakewood Drive and in the Beach Road and Quebrada Del Mar Road areas), and to the west (e.g., along Michael and Cosky Drives).

The character of the Marina Station development will provide the visual entrance gateway into the City from points north. The siting, scale, and appearance of this development will largely determine the traveler's initial image of the area. The Marina Station Specific Plan has been designed to include open space that will provide a buffer between Highway 1 and proposed new development. Additional open space is proposed as a buffer between surrounding neighboring residential uses and the proposed development (refer to the Land Use Plan on Figure 3-3). Other design measures of the project include

height restrictions, landscape screening, appropriate color and architectural schemes, light and glare reduction and screening measures, and the use of non-reflective building materials.

In order to assess project impacts to the existing visual character of the site, field surveys were conducted and photographs taken of the site from key vantage points. In addition, the project engineer prepared visual simulations of the proposed project as viewed by those traveling on Highway 1. The visual simulations were determined to be accurate by the City for purposes of the EIR analysis and were used to help assess the project's visual effects from the highway. Below is a description of the project's primary development components and uses and their resulting visual effects.

Low and medium density residential development would occur on approximately 179 acres of the project site. The residential development includes a mix of housing types, architectural styles, and lot widths. Building heights in the low and medium density areas would range from one to three stories. Portions of this development would be visible from Highway 1, particularly proposed residential structures along the site's westernmost boundary (refer to Figures 4.1-6 and 4.1-10). Project development could also be visible from adjacent residential areas to the south, particularly east of Del Monte Boulevard.

Commercial/retail mixed use development would occur on approximately 30 acres of the project site, in three areas (refer to Figure 3-3). Building heights in these areas would extend up to four stories. Specific uses included retail, residential (apartments), office, entertainment, and recreation. The mixed-use areas are located a substantial distance from Highway 1 and would not be highly visible from the roadway. However, portions of the commercial and mixed-use development would be visible from existing adjacent residential areas to the south just east of Del Monte Boulevard, and at the north end of De Forest Road.

Industrial and office development would occur on approximately 50 acres within the southern portion of the project site. These areas are proposed nearly a mile from Highway 1 and are unlikely to be noticeable from the roadway. However, the industrial/office development could be visible from existing residential uses adjacent to the site along portions of Michael and Cosky Drives. Measures are proposed for these areas to reduce land use conflicts and visual effects on the surrounding residential communities, which include the construction of landscaped alleys including a landscaped sound wall and the planting of a multi-layer evergreen tree grove. The landscaped alleys will also serve as a buffer between the industrial/office areas and residential areas.

Formal parks are proposed on approximately 20 acres of the project site. These include community parks, neighborhood parks and playfields, as well as picnic and garden areas. Open space (linear parks) would occur on approximately 38 acres of the project site. The linear parks will provide passive recreation within a walking and biking trail system, and offer scenic relief for the community. The linear parks will be located primarily along the perimeter of the project site to help conserve the visual integrity of the area and surrounding landscape.

In summary, the project will permanently alter the existing visual character of the site by causing changes to topography, removing vegetation, and adding new roads, buildings, pavement, and parking areas. These impacts were previously considered in the environmental analysis for the General Plan Update. The project-specific design measures, as well as Mitigation 4.1-1 and 4.1-2 (above), are intended to minimize visual impacts and ensure attractive development. However, the loss of natural open space and introduction of relatively dense urban development will result in an unavoidable impact to the visual character of the site.

Impact **The project will permanently alter the existing visual character of the site by causing changes to topography, removing vegetation, and introducing new roads, buildings, pavement, and parking areas. *Because this change may be considered a substantial degradation of the existing visual character/quality of the site and its surroundings, this represents a significant and unavoidable impact.***

Light and Glare

The project site currently consists of 320 acres of unlit grazing land. In general, the project site is dark. However, various surrounding uses provide a source of light that affect the project area. Highway 1 traffic provides a varying amount of glare and light throughout the day and night. South of the project site are existing residential, commercial, and industrial uses. These are all existing sources of nighttime lighting and glare that are in proximity to the site.

The project would provide a new source of light and glare and would accentuate existing sources due to changes in topography, removing vegetation, and adding roads, buildings, pavement, and parking areas. The proposed project would require night lighting in parking lots and along streets for safety as well as for the traffic in the area. The residential component of the project would also contribute to the increased light and glare in the area. The commercial/retail mixed use component would contribute increased nighttime lighting by providing security/safety lighting for businesses and apartments, as well as associated parking areas. The industrial and office components could include night operations that would require permanent lighting. The Specific Plan contains lighting standards for each of the land uses described above.

Overall, the proposed project would increase the intensity of development within an existing undeveloped area and the amount of artificial light produced on the site. The Highway 1 corridor, surrounding urban uses, and the Monterey Institute for Research in Astronomy would be most affected by this increase in light and glare. The Monterey Institute for Research in Astronomy is a non-profit astronomical observatory located at 8th Street and 2nd Avenue within former Fort Ord and is in proximity to the project area. Artificial lighting within the project site would impact nighttime views by altering the natural landscape and, in sufficient quantity, lighting up the nighttime sky and reducing the visibility of astronomical features. In addition, the additional lighting within the project site, especially unshielded light, could result in spillover light that could impact surrounding land uses.

Impact **The project would create new sources of light that would adversely affect nighttime views in the area. *This would represent a potentially significant impact that can be reduced to a less-than-significant level with implementation of the following mitigation measures.***

Mitigation

4.1-3 All buildings shall be designed so that reflective surfaces are limited and exterior lighting is down-lit and illuminates the intended area only. Building applications for new structures shall include an exterior lighting plan subject to approval of the City of Marina that includes the following requirements: 1) exterior lighting shall be directional; 2) glare from exterior lighting shall be adequately minimized; 3) the source of directional lighting shall not be directly visible; and 4) vegetative screening shall be considered, where appropriate, as a means of reducing development-related light and glare.

- 4.1-4 Ornamental lighting use for streets, parks, public open spaces, trails, bike paths, parking lots, and walkways shall utilize fixtures consisting of metal halide with cut-off luminaires, or similar types of technology, in order to control light and glare. Lighting plans shall be subject to the approval of the City of Marina.
- 4.1-5 Light reduction and screening measures shall be required in order to reduce nighttime ambient light increases in the area. Lighting levels in commercial and industrial areas shall be kept as low as feasible and controlled to minimize operating time. Light sources shall be installed so that there is no light radiation above the horizontal plane (i.e., dark sky). Lighting shall be focused downward to prevent the splay of ambient light to other areas. Lighting plans shall be subject to the approval of the City of Marina.

Cumulative Impacts

The General Plan EIR identified potentially significant and unavoidable cumulative impacts on scenic vistas and visual characteristics of the region. The current General Plan anticipates growth, new development, and required community services up to 2020. As per the current General Plan, no past, present, and probable future projects are proposed within the vicinity of the project (i.e., Highway 1 viewshed north of Marina's City limits). However, the current General Plan does anticipate new development to occur along the Highway 1 corridor adjacent to Marina's City limits (primarily within the former Fort Ord). Therefore, future development along the Highway 1 corridor adjacent to the City, which includes the Marina Station project site and development within the former Fort Ord, would contribute to the cumulative impacts associated with the alteration of scenic vistas and changes in the visual characteristics of the region. The intensity of proposed project development, in connection with other cumulative development in the area, would result in a significant unmitigable cumulative visual impact.

Impact **Implementation of the Marina Station Specific Plan would contribute to the cumulative impacts associated with the alteration of scenic vistas and changes in the visual characteristics of the region. *This would represent a significant and unavoidable cumulative impact.***

4.2 AGRICULTURAL RESOURCES

Introduction

Agricultural resources are afforded protection under various federal and state acts (such as the Williamson Act), programs, and local governance (General Plans, specific and other types of plans, zoning ordinance, etc.). Some of the agencies involved with stewardship of agricultural resources include the U.S. Department of Agriculture (USDA), the Natural Resources Conservation Service (NRCS), and the California Department of Conservation, Division of Land Resource Protection. In California, agricultural land is also given consideration under CEQA. According to Public Resources Code §21060.1, “agricultural land” means prime farmland, farmland of statewide importance, or unique farmland, as defined by the USDA land inventory and monitoring criteria, as modified for California.

The Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data that are used for analyzing impacts on California’s agricultural resources. The FMMP is a non-regulatory program established in 1982 in response to a critical need for assessing the location, quality, and quantity of agricultural lands and conversion of these lands over time. The goal of the FMMP is to provide consistent and impartial data to decision makers for use in assessing present status, reviewing trends, and planning for the future of California’s agricultural land resources. Under the FMMP, agricultural land is rated according to irrigation status and soil quality; the best quality land is called Prime Farmland. The FMMP produces Important Farmland Maps, which are a hybrid of resource quality (soils) and land use information.

Setting

The project site is located near the northern terminus of the Salinas River Valley in the north central portion of the Marina 7.5-minute quadrangle. The site is composed of three separate but contiguous parcels totaling approximately 320 acres. The project area consists of rolling grassland that was historically used for cattle grazing. According to the 2004 Monterey County Important Farmlands Map (see Figure 4.2-1), the project site contains lands classified as Grazing Land. Grazing Land is defined in Government Code §65570(b)(3) as: “...land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock.” The minimum mapping unit for Grazing Land is 40 acres. Grazing Land does not include land previously designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance, or heavily brushed, timbered, excessively steep, or rocky lands which restrict the access and movement of livestock.

The 320-acre project site is located completely within Marina’s Urban Growth Boundary (UGB) and contains a portion of the area within Armstrong Ranch that is within the City’s corporate limits. The UGB is the area within which the City will concentrate growth and new development along with required community services until 2020. This is an area that is immediately contiguous to already developed areas of Marina, and will provide an opportunity to channel future residential growth into a location where sprawl and large-scale loss of prime agricultural land may be avoided. The project site is adjacent to various urban uses (residential, commercial, industrial, etc.) to the south, Highway 1 to the west, grazing land to the north and southeast, and agricultural land mapped as Farmland of Statewide Importance to the northeast. A 1,250-acre band of land along the southwest side of the Salinas River contains mostly prime agricultural soils currently in agricultural production; however, this land is not adjacent to the project site and is well outside Marina’s UGB. These unincorporated lands are designated as Agricultural Reserve in order to support long-term agricultural uses.

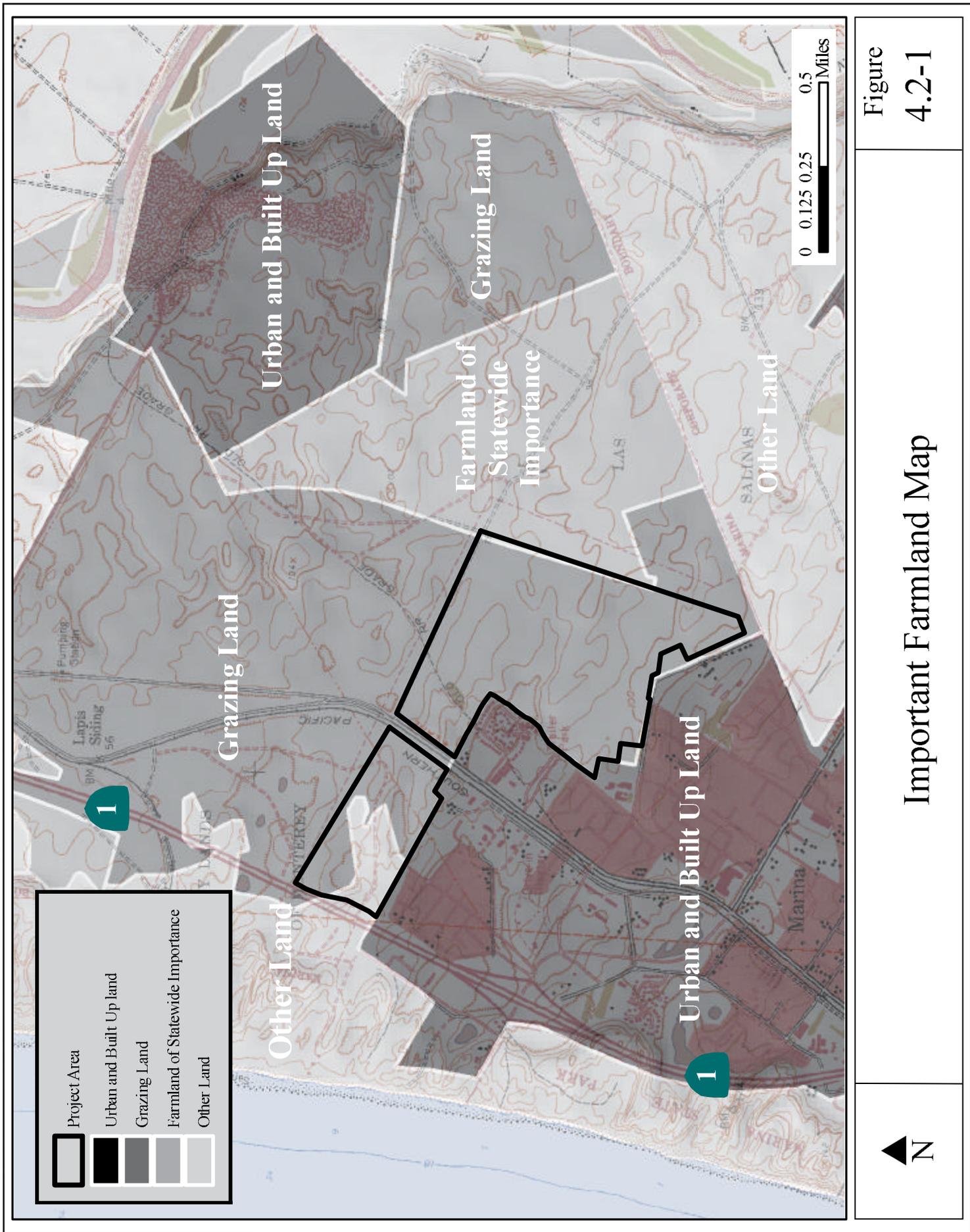


Figure
4.2-1

Important Farmland Map

Marina General Plan. The City of Marina General Plan contains provisions for the protection of agricultural resources. The General Plan contains the following provision related to development on the project site and the preservation of agricultural land. (Note: the project proposes an amendment to this provision as shown in underline and strikeout.)

4.75. Consistent with the long-term policies of the City of Marina and Monterey County, and recognizing the future need for housing as a result of the presence of the MBEST Center, the CSUMB campus, and other land uses designated in the Fort Ord Reuse Plan which will also generate employment, a major portion of the incorporated Armstrong Ranch (i.e., the area within the City and UGB boundaries) is designated for residential, as well as commercial, industrial and community-serving uses, ~~development, a purpose~~ for which the area is ideally suited. This is an area which is immediately contiguous to already-built-up areas of Marina, and urban services are readily available without requiring expensive extensions. The site thus offers the Monterey region an opportunity to channel future urban residential growth into a location where sprawl and large-scale loss of prime agricultural land may be avoided.

Environmental Impact Report on the Marina General Plan. The General Plan EIR evaluated potential impacts to agricultural resources associated with the adoption and implementation of the Marina General Plan, including future development within the Marina Station project site. According to the General Plan EIR, the development of the larger Armstrong Ranch property would result in significant unavoidable impacts to Farmland of Statewide Importance. However, this conclusion applied to the portion of the larger Armstrong Ranch property located outside the UGB and project boundaries. The project site contains grazing land only. The project would have a less-than-significant impact on agricultural resources, as described below.

Marina Station Specific Plan. Section 5.8 of the Marina Station Specific Plan identifies policies and implementation measures to ensure adequate conservation of agricultural resources in the plan area. Open Space (OS) Policy 3-3 states “protect agricultural resources adjacent to the northern and eastern boundaries of the Plan area.” Implementation measures are as follows:

- The master developer and/or individual project developers of property located along the northern and eastern boundaries shall buffer residential uses from land designated for agricultural use located north and east of the Plan area. One or more of the following options may be used to create a buffer between the agricultural parcel property line and habitable structures within the Plan area:
 - a. Public or private road right-of-ways;
 - b. Landscaped islands and planting areas; or
 - c. Recreational trail corridors.

Thresholds of Significance

In accordance with CEQA Guidelines, a project impact would be considered significant if the project would:

- convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- conflict with existing zoning for agricultural use, or a Williamson Act contract; or
- involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.

Impacts and Mitigation

Conversion of Farmland

The entire 320-acre site is designated Grazing Land on the Important Farmlands Map. Grazing Land is not afforded the same protection under CEQA as Farmland, even though Grazing Land is considered an agricultural use. There are no significant agricultural resources present on the project site since the land is currently used for grazing.

Directly surrounding the project site are urban uses to the south, State Highway 1 to the west, grazing land to the north and southeast, and farmland of statewide importance to the east. Limited grading will occur just outside the northern and eastern project boundaries. However, these activities will be temporary in nature, and the disturbed land outside of the project boundaries will be restored back to its current condition after grading. Therefore, grading activities outside the eastern project boundaries and within land designated as farmland of statewide importance will be temporary and will not permanently convert farmland to a non-agricultural use. **This would represent a less-than-significant impact.**

Conflict with Existing Zoning for Agricultural Use or Williamson Act Contract

The project site is completely within Marina's Urban Growth Boundary and is currently zoned for a variety of land uses. The site does not contain zoning for agricultural use. No Williamson Act land occurs within or adjacent to the project site. **The project would not conflict with an existing zoning for agricultural use or affect lands under Williamson Act contract.**

Conversion of Farmland Due to Changes in Existing Environment

The project includes changes in the locations of land uses compared to the current General Plan. Accordingly, this EIR examines whether the proposed Specific Plan land uses would be compatible with nearby agricultural operations.

The most important factor in the decline of agricultural acreage in Monterey County has been the rapid spread of urban development. In the North Monterey County area, significant development pressure has resulted in the conversion of agricultural lands to urban uses. According to a study by the California Department of Conservation, conversions of farmland to urban uses adversely affect the efficiency of remaining farming operations in the area. For example, agricultural production decreases as a result of increased air pollution, livestock predation by pets, crop diseases resulting from inadequate care of off-farm ornamental plants, restriction on pesticide use and burning, and requirements to set aside buffer zones. Production costs increase because of rising land costs, water scarcity, theft and vandalism of farm equipment, crop pilferage, road congestion, and personal injury liability associated with farm trespass. Additionally, the conversion of agricultural land to urban uses can cause increases in land use compatibility problems and nuisance complaints from urban uses sited adjacent to agricultural uses. Urban residents, on the other hand, are impacted by noise, odors, slow moving farm equipment on local roads, and pesticide or herbicide spray drift.

Buffer zones between farmland and urban residential areas have proven effective at solving these conflicts. Buffers come in many forms: light industrial development, setbacks, greenbelts, or physical buffers such as walls, fences or special landscaping. Even roads or waterways provide separation between conflicting uses.

The project is located in an open space and agricultural area. Grazing lands extend north and southeast of the site. None of these grazing uses would be incompatible with the proposed urban uses. To the east, the project is proposed adjacent to existing agricultural uses, identified on the Important Farmlands Map as Farmland of Statewide Importance. This land is currently fallow or used for cattle grazing. The location of proposed urban uses adjacent to existing (and potential future) agricultural operations to the east could raise land use compatibility issues and nuisance complaints. As described above, proposed residential uses may be affected by equipment noise, odors (e.g., from fertilizers), and chemical spray drift.

In order to minimize these potential land use conflicts, the project has been designed with a buffer zone between the residential and agricultural uses. This buffer zone consists of a combination of open space, roadway, and industrial uses. The proposed project has also been designed to be consistent with the General Plan provisions governing development within the incorporated Armstrong Ranch.

Due to the project site being located completely within Marina's UGB and surrounded by primarily urban uses and grazing land, and assuming continued implementation and incorporation of the above General Plan provisions and proposed buffer zone, impacts to remaining farmland and agricultural operations within the North Monterey County area will remain at a less-than-significant level. **This represents a less-than-significant impact.**

Cumulative Impacts

Future development of the project site as proposed by the Marina Station Specific Plan would not result in significant impacts to agricultural lands, and would not contribute to significant cumulative impacts to agricultural resources in the area. The remainder of Armstrong Ranch, north of the project site, is outside the Urban Growth Boundary and cannot be developed (with narrow exceptions that are unlikely to occur) until at least 2020. Loss of agricultural potential on this property is speculative and not included as part of this cumulative analysis. **The project would have a less-than-significant cumulative impact on agricultural resources.**

4.3 AIR QUALITY

Introduction

This section evaluates the potential air quality effects associated with construction and operation of the proposed Marina Station Specific Plan project. It is based on an air quality analysis prepared for the project by Denise Duffy & Associates (DD&A) and MSW Consulting (as updated through February 2007). Calculations used for the air quality analysis are provided in Appendix C of this EIR.¹

The proposed project is located in the North Central Coast Air Basin (NCCAB), which includes Monterey, Santa Cruz, and San Benito counties. Although the NCCAB is in attainment of all federal air quality standards, it is designated as nonattainment with respect to the more stringent state PM₁₀ standard and is likely to be designated as nonattainment with respect to the state's new eight-hour ozone standard. Plans to attain these standards already accommodate the future growth projections available at the time these plans were prepared. Any development project capable of generating air pollutant emissions exceeding regionally-established criteria is considered significant for purposes of CEQA analysis, whether or not such emissions have been accounted for in regional air planning. Furthermore, any project that would directly cause or substantially contribute to a localized violation of an air quality standard would generate substantial air pollution impacts. The same is true for a project that generates a substantial increase in health risks from toxic air contaminants, or introduces future occupants to a site exposed to substantial health risks associated with such contaminants.

In response to the Notice of Preparation (NOP) for this EIR, the Monterey Bay Unified Air Pollution Control District (MBUAPCD) made recommendations for the scope of work for the EIR's air quality analysis. The City has followed those recommendations.

Setting

Climate and Topography

Ambient air quality is commonly determined by climatological conditions, the area's topography, and the quantity and type of pollutants released. The proposed project is located in the NCCAB, which covers an area of 5,159 square miles along the central California coast. The northwest sector of the NCCAB is dominated by the Santa Cruz Mountains. The Diablo Range marks the northeastern boundary. The Santa Clara Valley extends into the northeastern tip of the basin. Further south, the Santa Clara Valley becomes the San Benito Valley, which runs northwest-southeast, with the Gabilan Range as its western boundary. To the west of the Gabilan Range is the Salinas Valley, which extends from Salinas at the northwest end to south of King City. The coastal Santa Lucia Range defines the western side of the valley.

A semi-permanent high pressure cell in the eastern Pacific is the basic controlling factor in the climate of the NCCAB. In the summer, the high pressure cell is dominant and causes persistent west and northwest winds over the entire California coast. Air descends in the Pacific High, forming a stable temperature inversion of hot air over a cool coastal layer of air. The onshore air currents pass over cool ocean waters to bring fog and relatively cool air into the coastal valleys. The warmer air aloft acts as a lid to inhibit vertical air movement. The generally northwest-southeast orientation of mountainous ridges tends to restrict and channel the summer onshore air currents. Surface heating in the interior portion of the Salinas and San Benito Valleys creates a weak low pressure that intensifies the onshore air flow during the

¹ The originally proposed Specific Plan included 1,504 rather than 1,360 residential units. The traffic study for the EIR was conducted prior to the unit reduction; therefore, the EIR overstates the traffic and traffic-based air quality impacts of the residential component of the final proposed Specific Plan by approximately 10%.

afternoon and evening. In the fall, the surface winds become weak, and the marine layer grows shallow, dissipating altogether on some days. The air flow is occasionally reversed in a weak offshore movement, and the relatively stationary air mass is held in place by the Pacific High pressure cell, which allows pollutants to build up over a period of a few days. It is most often during this season that the north or east winds develop to transport pollutants from either the San Francisco Bay Area or the Central Valley into the NCCAB.

During the winter, the Pacific High migrates southward and has less influence on the NCCAB. Air frequently flows in a southeasterly direction out of the Salinas and San Benito Valleys, especially during night and morning hours. The general absence of deep, persistent inversions and the occasional storm systems usually result in good air quality for the basin as a whole in winter and early spring.

The City of Marina is located at the southern edge of the Monterey Bay on a coastal plain. The entire Monterey Peninsula is generally well ventilated by persistent sea breezes. Year-round marine airflow allows Marina to maintain good air quality.

Air Pollutants of Primary Concern

The state and federal Clean Air Acts mandate the control and reduction of certain air pollutants. Under these Acts, the U.S. Environmental Protection Agency and the California Air Resources Board (CARB) have established ambient air quality standards for certain "criteria" pollutants. The primary criteria pollutants of concern in the NCCAB are carbon monoxide (CO), ozone (O₃), nitrogen oxides (NO_x), particulate matter less than 10 microns in diameter (PM₁₀), and particulate matter less than 2.5 microns in diameter (PM_{2.5}). Table 4.3-1 identifies the characteristics, health effects and typical sources of these pollutants.

Criteria Air Pollutants

Ozone. Ozone is a colorless gas with a pungent odor. As shown in Table 4.3-1, ozone causes respiratory function impairment. Most ozone in the atmosphere is formed as a result of the interaction of ultraviolet light, reactive organic gases (ROG), and oxides of nitrogen (NO_x). ROG (the organic compound fraction relevant to ozone formation, and sufficiently equivalent for the purposes of this analysis to volatile organic compounds, or VOC) is composed of nonmethane hydrocarbons (with some specific exclusions), and NO_x is made of different chemical combinations of nitrogen and oxygen, mainly NO and NO₂. A highly reactive molecule, ozone readily combines with many different components of the atmosphere. Consequently, high levels of ozone tend to exist only while high ROG and NO_x levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels rapidly decline. Because these reactions occur on a regional scale, ozone is considered a regional pollutant.

Carbon Monoxide (CO). CO is an odorless, colorless, gas. CO causes a number of health problems including fatigue, headache, confusion, and dizziness (see Table 4.3-1). The incomplete combustion of petroleum fuels in on-road vehicles is a major cause of CO. CO is also produced during the winter from wood stoves and fireplaces. CO tends to dissipate rapidly into the atmosphere; consequently, violations of the state CO standard are generally limited to major intersections during peak hour traffic conditions.

Suspended Particulate Matter. Suspended particulate matter (airborne dust) consists of particles small enough to remain suspended in the air for long periods. Fine particulate matter includes particles small enough to be inhaled, pass through the respiratory system, and lodge in the lungs, with resultant health effects. Particulate matter can include materials such as sulfates and nitrates which are particularly damaging to the lungs. Health effects studies resulted in revision of the Total Suspended Particulate (TSP) standard in 1987 to focus on particulates that are small enough to be considered "inhalable", i.e., 10

microns or less in size (PM₁₀). In July of 1997, a further revision of the federal standard added criteria for PM_{2.5}, reflecting recent studies that suggested that particulates less than 2.5 microns in diameter are of particular concern.

Pollutant		Health Effects	Examples Of Sources
Category	Description		
Criteria Air Pollutants ^b	Particulate Matter (inhalable: less than 10 microns in diameter, e.g., PM ₁₀ , PM _{2.5})	Increased Respiratory Disease Lung Damage Premature Death	Cars and Trucks Especially Diesels, Fireplaces, Woodstoves, Windblown Dust from Roadways, Agriculture and Construction
	Ozone (O ₃)	Breathing Difficulties Lung Damage	Formed by chemical reactions of air pollutants in the presence of sunlight. Common sources: motor vehicles, industries, and consumer products
	Carbon Monoxide (CO)	Chest Pain in Heart Patients Headaches, Nausea Reduced Mental Alertness Death at Very High Levels	Any source that burns fuel such as cars, trucks, construction and farming equipment and residential heaters and stoves
	Nitrogen Dioxide (NO ₂)	Lung Damage	See Carbon Monoxide Sources
Hazardous Air Pollutants: Diesel Particulate Matter (DPM) ^{e,f} / Acrolein ^g		<i>Acute Effects:</i> Effects on the lung, such as upper respiratory tract irritation and congestion. Acute inhalation exposure to high levels may result in death. <i>Chronic Effects (Non-cancer):</i> General respiratory congestion and eye, nose, and throat irritation. Greater incidence of cough, phlegm, and bronchitis. Also skin irritation. <i>Carcinogen</i> (per ARB).	Can be formed from the breakdown of certain pollutants found in outdoor air, from burning tobacco, or from burning gasoline. Exposure can occur near automobiles or oil or coal power plants.

^a The corresponding term for “Hazardous Air Pollutants” applied by the ARB is “Toxic Air Contaminants”.

^c U.S. EPA, Hazard Summary: Asbestos, April 1992 (revised January 2000). (<http://www.epa.gov/ttn/atw/hlthef/asbestos.html>)

^d U.S. EPA, Hazard Summary: Lead Compounds, April 1992 (revised January 2000). (<http://www.epa.gov/ttn/atw/hlthef/lead.html>)

^e ARB, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000. (<http://www.arb.ca.gov/diesel/documents/rpFinal.pdf>).

^f ARB, Office of Environmental Health Hazard Assessment (OEHHA), “Initial Statement of Reasons for Rulemaking: Staff Report - Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant”, June 1998. (<http://www.arb.ca.gov/toxics/dieseltac/staffrpt.pdf>)

^g U.S. EPA, Hazard Summary: Acrolein, April 1992 (revised January 2000). (<http://www.epa.gov/ttn/atw/hlthef/lead.html>)

Hazardous Air Pollutants / Toxic Air Contaminants

Hazardous air pollutants (HAPs), typically referred to at the state level as toxic air contaminants (TACs), are those pollutants known or suspected to cause cancer or other serious health effects, or adverse environmental effects. The federal government is working with state, local, and tribal governments to reduce air toxics releases of such pollutants to the environment. Examples of TACs include benzene, which is found in gasoline; perchlorethylene, which is emitted from some dry cleaning facilities; and methylene chloride, which is used as a solvent and paint stripper by a number of industries. Examples of other listed air toxics include dioxin, asbestos, toluene, and metals such as cadmium, mercury, chromium, and lead compounds.

For this analysis, the TACs of primary concern are compounds in the exhaust of diesel-fueled engines (both particulate matter and acrolein). The potential health effects of TACs relevant to this analysis are summarized in Table 4.3-1.

During the last few years, particular attention has been devoted at the state level to particulate matter from diesel engine exhaust. It is of concern because, in addition to its being recognized over the past couple of decades as a potential source of both cancer and non-cancer health effects, it is nearly ubiquitous at some concentration level throughout developed areas. Diesel particulate emissions are discussed in the context of state regulatory activities later in this section.

Diesel particulate matter (DPM) is generated by on-road vehicles such as trucks and buses, which in 2000 accounted for approximately 27% of DPM emissions in California. Emissions are also generated by off-road mobile sources, which include agricultural equipment, construction equipment, industrial equipment, railroads and marine vehicles, among others.

Regulatory Context

Federal

Criteria Air Pollutants. The Federal Clean Air Act (CAA) of 1970, as amended, establishes air quality standards for several pollutants. These pollutants are termed "criteria" pollutants because the U.S. Environmental Protection Agency (U.S. EPA) has established specific concentration threshold criteria for them based upon health effects. These federal air quality standards (NAAQS) are divided into primary standards and secondary standards. Primary standards are designed to protect the public health, and secondary standards are intended to protect the public welfare from effects such as visibility reduction, soiling, nuisance, and other forms of damage. Current federal standards are presented in Table 4.3-2. Regions of the country are classified with respect to their attainment, or nonattainment, of these standards.

As of December 2006, the NCCAB is designated as attainment with respect to the eight-hour ozone standard. The County (and the remainder of the NCCAB) is designated as attainment with respect to the CO standard. The NCCAB is also designated as attainment with respect to both the PM₁₀ and PM_{2.5} standards.

Hazardous Air Pollutants (HAPs). One means by which the U.S. EPA addresses HAP exposure is through the National Emission Standards for Hazardous Air Pollutants (NESHAPS).² Based upon project characteristics and APCD analysis guidelines, the HAP most relevant to this study is acrolein. There are currently no NESHAPS specifically addressing acrolein.

State

The California Air Resources Board (CARB) coordinates and oversees both state and federal air pollution control programs in California. As part of this responsibility, CARB monitors existing air quality, establishes state air quality standards, and limits allowable emissions from vehicular sources. Regulatory authority within established air basins is provided by Air Pollution Control and Management Districts, which control stationary-source and most categories of area-source emissions and develop regional air quality plans. The project is located within the jurisdiction of the Monterey Bay Unified Air Pollution Control District.

² The NESHAPS are promulgated under Title 40 of the Code of Federal Regulations (CFR), Parts 61 & 63.

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary	Secondary
Ozone	1-Hour 8-Hour	0.09 ppm (180 $\mu\text{g}/\text{m}^3$) 0.07 ppm (137 $\mu\text{g}/\text{m}^3$)	-- 0.08 ppm (157 $\mu\text{g}/\text{m}^3$)	Same as Primary
Carbon Monoxide	8-Hour 1-Hour	9.0 ppm (10,000 $\mu\text{g}/\text{m}^3$) 20 ppm (23,000 $\mu\text{g}/\text{m}^3$)	9.0 ppm (10,000 $\mu\text{g}/\text{m}^3$) 35.0 ppm (40,000 $\mu\text{g}/\text{m}^3$)	None
Nitrogen Dioxide	Annual 1-Hour	-- 0.25 ppm (470 $\mu\text{g}/\text{m}^3$)	0.053 ppm (100 $\mu\text{g}/\text{m}^3$) --	Same as Primary
Sulfur Dioxide	Annual 24-Hour 3-Hour 1-Hour	-- 0.04 ppm (105 $\mu\text{g}/\text{m}^3$) -- 0.25 ppm (655 $\mu\text{g}/\text{m}^3$)	0.03 ppm (80 $\mu\text{g}/\text{m}^3$) 0.14 ppm (365 $\mu\text{g}/\text{m}^3$) -- --	-- -- 0.5 ppm (1,300 $\mu\text{g}/\text{m}^3$) --
PM ₁₀	Annual 24-Hour	20 $\mu\text{g}/\text{m}^3$ 50 $\mu\text{g}/\text{m}^3$	50 $\mu\text{g}/\text{m}^3$ (see note 1) 150 $\mu\text{g}/\text{m}^3$	Same as Primary
PM _{2.5}	Annual 24-Hour	12 $\mu\text{g}/\text{m}^3$ no separate state standard	15 $\mu\text{g}/\text{m}^3$ (see note 2) 65 $\mu\text{g}/\text{m}^3$	Same as Primary
Lead	Calendar quarter 30-day	-- 1.5 $\mu\text{g}/\text{m}^3$	1.5 $\mu\text{g}/\text{m}^3$ --	Same as Primary
Sulfates	24-Hour	25 $\mu\text{g}/\text{m}^3$	None	None
Hydrogen Sulfide	1-Hour	0.03 ppm (42 $\mu\text{g}/\text{m}^3$)	None-	None
Vinyl Chloride	24-Hour	0.01 ppm (26 $\mu\text{g}/\text{m}^3$)	None	None
Visibility Reducing Particles	8-hour	in sufficient amounts to reduce prevailing visibility to < 10 miles when relative humidity is < 70%	None	None

ppm = parts per million
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter
 Source: CARB, 11/29/05

Criteria Air Pollutants. California has established its own set of ambient air quality standards that are generally more stringent than the corresponding federal standards. The California Clean Air Act, effective January 1, 1989, provides a planning framework for attaining the state standards. Nonattainment areas in the state were required to prepare plans for attaining these standards. Attainment plans are required to demonstrate a five percent per year reduction in the emissions of nonattainment pollutants or their precursors, unless all feasible measures are being employed.

On May 17, 2006, CARB's new eight-hour average ozone standard became effective, supplementing the existing one-hour ozone standard. As a result of the addition of the eight-hour ozone standard and associated eight-hour ozone monitoring data, CARB staff has proposed changing the NCCAB's designation with respect to ozone from nonattainment-transitional to nonattainment. The County (and the remainder of the NCCAB) is designated as attainment with respect to the state CO standard. The NCCAB is designated as nonattainment with respect to the PM₁₀ state standard and attainment with respect to the PM_{2.5} state standard.

Toxic Air Contaminants (TACs). The state regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act institutes a formal procedure for designating substances as TACs. This includes research, public participation, and scientific peer review before CARB designates a substance as a TAC. CARB adopts an Airborne Toxics Control Measure for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below the threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology to minimize emissions. For source categories under the regulatory jurisdiction of the individual air districts (as previously described), those air districts adopt and enforce the control measure locally.

Within California, the Office of Environmental Health Hazard Assessment (OEHHA) works with CARB to address health risk issues associated with TACs. The OEHHA establishes Reference Exposure Levels (RELs) as indicators of potential adverse health effects. An REL is a concentration level of a TAC at or below which no adverse health effects are anticipated. The OEHHA has published health *Risk Assessment Guidelines* for the Air Toxics Hotspots program. Within California, those guidelines are commonly referenced in the adoption of general health risk policies, assessment guidelines and thresholds at the regional level. OEHHA representatives have indicated that a comprehensive update to these guidelines is currently in the late stages of internal development, and is expected to include more specific guidance on addressing cancer risk in the context of relatively short-term exposures. OEHHA staff hopes to release the draft update and have the public review phase completed sometime in 2007.

In August 1998 CARB listed “Particulate Matter Emissions from Diesel-Fueled Vehicles” as a TAC. In 2000, CARB developed a Risk Reduction Plan (RRP) to address this source of TACs, and is currently in the process of implementing this Plan. The RRP estimated cancer risk levels from DPM emissions associated with various source categories, including freeways, stationary engines, distribution (trucking) centers, truck stops and locations with concentrations of school bus idling. The RRP contains the following three components:

- 1) New regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce diesel PM emissions by about 90 percent overall from 2000 levels;
- 2) New retrofit requirements for existing on-road, off-road, and stationary diesel-fueled engines and vehicles where determined to be technically feasible and cost-effective; and
- 3) New Phase 2 diesel fuel regulations to reduce the sulfur content levels of diesel fuel to no more than 15 ppm to provide the quality of diesel fuel needed by the advanced diesel PM emission controls.

According to the RRP, “The projected emission benefits associated with the full implementation of this plan, including proposed federal measures, are reductions in diesel PM emissions and associated cancer risks [relative to a year 2000 baseline] of 75 percent by 2010 and 85 percent by 2020.” Since adoption of the RRP, CARB has conducted regulatory activities to implement all three plan components. Examples include the “Diesel Particulate Matter Control Measure for On-road Heavy-duty Diesel-fueled Residential and Commercial Solid Waste Collection Vehicles” and Airborne Toxic Control Measures for stationary compression ignition engines; portable engines rated at 50 horsepower and greater; in-use diesel-fueled transport refrigeration units (TRU) and TRU generator sets, and facilities where TRUs operate; and diesel-fueled commercial motor vehicle idling.

In 2005, CARB published their *Air Quality and Land Use Handbook: A Community Health Perspective* (referred to hereafter as “Air Quality and Land Use Handbook”). This document includes various siting recommendations for proposed sensitive land uses relative to localized air pollution sources. Some of its recommendations are driven by exposure to TACs in general and diesel particulate matter (DPM) in particular. The *Air Quality and Land Use Handbook* recommends avoiding the siting of “...new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day...” This recommendation is driven largely by the contribution of DPM to the overall air pollution impact from such transportation sources.

Regional

The MBUAPCD regulates air quality in the NCCAB, and is responsible for attainment planning related to criteria air pollutants, and for district rule development and enforcement. It also reviews air quality analyses prepared for CEQA assessments, and has published the *CEQA Air Quality Guidelines* document for use in evaluation of air quality impacts.

Criteria Air Pollutants. In accordance with the California Clean Air Act, the MBUAPCD has developed the 2004 Air Quality Management Plan (AQMP). The 2004 AQMP proposes adoption of control measures for the following sources: solvent cleaning operations, spray booths (misc. coatings and cleaning solvents), degreasing operations, adhesives and sealants, natural gas-fired fan-type central furnaces and residential water heaters. The 2004 AQMP acknowledges that, even with implementation of its recommendations, “...some areas of the Basin may still not achieve the standard.” It attributes ongoing violations of the one-hour state ozone standard, in part, to “...variable meteorological conditions occurring from year to year, transport of air pollution from the San Francisco Bay Area, and locally generated emissions.” MBUAPCD rules relevant to the emissions of ozone precursors (specifically, ROG) from sources related to the proposed project include Rule 425 (Use of Cutback Asphalt) and Rule 426 (Architectural Coatings).

There have been no recorded violations of the federal or state CO standard at MBUAPCD monitoring stations. In connection with proposed land development projects, the MBUAPCD addresses potential CO exposure issues primarily through guidance on how and under what conditions local ambient CO “hot-spot” analysis should be performed in the context of air quality assessments for documents prepared pursuant to the CEQA.

MBUAPCD planning related to attainment of the state’s PM₁₀ standard was addressed in the *1998 Report on Attainment of the California Particulate Matter Standards in the Monterey Bay Region* (which updated corresponding 1995 and 1996 reports), and, more recently, in the *2005 Report on the Attainment of the California Particulate Matter Standards in the Monterey Bay Region (Senate Bill 656 Implementation Plan)*. The latter plan describes the greater vulnerability of coastal locations within the NCCAB to PM₁₀ standard violations, due largely to the contribution from sea salt. It focuses primarily on controlling particulate sources related fugitive dust and smoke related to combustion, but also addresses NO_x- and ROG-related particulate formation. Consistent with the requirements of SB 656, and with the difficulty in estimating future ambient concentrations of particulate matter substantially influenced by fugitive dust sources (even disregarding unusual burn events), this plan concentrates on identification of and implementation scheduling for available PM emission control measures. Predicted adoption dates for the recommended measures varied from June 2006 to June 2007. Implementation of these measures is currently underway. For instance, the MBUAPCD is currently working on a Cement Manufacturing rule per SB 656 Measure D-5b, best practices and speed limit policies addressed (in non-regulatory fashion) in connection Measures D-1 and D-2, the ARB has approved the MBUAPCD’s application of the U.S. EPA’s Exceptional Events Protocol in the context of Measure D-4, the MBUAPCD is preparing updates to both their AQMP (per Measure D-6a) and CEQA Air Quality Guidelines (per Measure D-6c) for

planned publication in the Summer of 2007, and they have a school-bus-oriented mitigation grant program that integrates Moyer Program (AB 923) funds and Department Motor Vehicles Renewal Fees.

MBUAPCD Rule 402 (Nuisances) does not specifically address suspended particulate matter, but is perhaps most likely to be applied in the context of human-initiated activities that release particulate matter (e.g., fugitive dust) into the air.

Toxic Air Contaminants. MBUAPCD Rule 1000 (Permit Guidelines and Requirements for Sources Emitting Toxic Air Contaminants) addresses exposure issues for TACs in general. It applies to stationary sources for which the state has not adopted an Air Toxics Control Measure (ATCM). It considers new and modified TAC source review and risk assessment requirements. The MBUAPCD's CEQA Air Quality Guidelines provide the following guidance regarding evaluating the potential significance of project-related TAC impacts:

“Construction...Equipment or processes not subject to Rule 1000 that emit noncarcinogenic TACs could result in significant impacts if emissions would exceed the threshold that is based on the best available data [i.e., acute (1-hour) REL, chronic (annual) REL, PEL/420]... In addition, temporary emissions of a carcinogenic TAC that can result in a cancer risk greater than one incident per 100,000 population are considered significant.

Likewise, a project which would be located adjacent to a source of TACs unregulated by Rule 1000 may also result in significant impacts to air quality and human health and require modeling. Common sources of TACs include diesel fueled internal combustion engines...”

The MBUAPCD assumes that diesel particulate matter is the key element of diesel exhaust with respect to cancer risk. Pending development and release of enhanced guidance from the OEHHA on cancer risk for relatively short-duration exposures, MBUAPCD staff has adopted the conservative approach to such exposures included in the OEHHA's current *Risk Exposure Guidelines*. According to the MBUAPCD, “Acrolein appears to drive the acute hazard index more significantly than any other acutely toxic substance in diesel exhaust, such that the other substances are not significant...” Therefore, the MBUAPCD relies on acrolein as the basis for hazard index calculations related to exposure to diesel exhaust. Table 4.3-3 compares various thresholds established for and health effects associated with acrolein exposure. Note that the acute (one-hour) REL promulgated by the OEHHA and applied by the MBUAPCD as a significance criterion appears to be a conservatively low value relative to the underlying study data and relative to standards and criteria associated with occupational exposure and with higher degrees of health impact.

Local

Subsection A (Air Pollution) of the City of Marina's Municipal Code Section 17.30.040 (Performance Standards) specifies a process whereby the City intends to ensure compliance of proposed industrial “...land uses that may be objectionable by reason of the production or emission of odor, smoke, dust or any other air contaminants...” with applicable MBUAPCD regulations, solicit additional MBUAPCD input and (as appropriate) apply its own additional project-specific air-pollution-related conditions “...as part of any application for any entitlement granted by the city.”

Information Source	Referencing Agency	Reference Concentration		Context		Health Effects	
		ug/m ³	ppb ^a	General	Specific	Description	Based On
OEHHA	OEHHA, MBUAPCD	0.19	0.08	REL	Acute (1-hour)	Eye irritation	Conservative adjustment of study data extrapolation to reflect uncertainty
OEHHA		11.5	5	Extrapolation of study results	1 hour	Eye irritation	Extrapolation of study results
Darley et al., 1960	OEHHA	138	60	Laboratory exposure	5 minutes	Eye irritation	Study observation
ACGIH ^b	U.S. OSHA	250	100	Permissible Exposure Limit (PEL) ^c	8-hour TWA ^d	[Not specified in applicable regulations] ^e	
IARC: Fassett, 1962	OEHHA	2,300	1,000	Acute toxicity	5 minutes	Tearing and irritation of the eyes, nose, and throat	Study observation

^a Typically based on indicated ug/m³ concentration and an air temperature of 25° C, or (in the case of the OSHA regulations) reported as the primary concentration measure, with the corresponding ug/m³ value being estimated.

^b American Conference of Governmental Industrial Hygienists.

^c 29 CFR 1926.55 App A. (This would be applicable to construction workers, for example.)

^d Total weight average.

^e Reference ACGIH document is *Threshold Limit Values of Airborne Contaminants for 1970*.

SOURCES: MSW, 2006 and as indicated above.

Existing Ambient Air Quality

When considering potential air pollution impacts from a proposed development project, project-related air pollutant sources are often categorized as either “direct” or “indirect”. Direct sources are those directly associated with the proposed project site (e.g., fireplaces located within proposed residential housing). Indirect-source emissions include those resulting from mobile source activity such as motor vehicle trips generated by the project. Regional air pollutant sources comprise a wide variety of stationary, area-wide, mobile and natural sources.

Sustained sources of air pollution in the project vicinity include motor vehicle traffic, especially along Highway 1 and Del Monte Avenue. The only nearby major stationary sources of air pollution identified through a review of CARB’s Community Health Air Pollution Information System or Facility Search Engine was the Monterey Regional Water Pollution Control Agency’s Regional Treatment Plant & Tertiary Facilities located approximately 3,000 feet from the closest approach of the project site boundary.

A program of prescribed burning has been initiated within the boundaries of the former Fort Ord, generally south of the project site ranging in distance from about one to eight miles. There are plans to continue performing such burns into the future. At this point, such burns have only been performed under the auspices of the U.S. Army for purposes of clearing vegetation in advance of removing potential undetonated ordnance and explosives. The first such burn (and only such burn initiated to date) was performed in October 2003 west of the center of the former Fort Ord and about five miles south of the project site. Several air pollutant monitoring stations were arrayed around the targeted burn area, though none were as far north as the proposed project site. During the initial burn (“active ignition”) day and the subsequent (“smolder”) day, PM₁₀ concentrations measured at all or nearly all of the monitoring stations exceeded the applicable state standard. The published information that was reviewed did not provide sufficient evidence to determine whether or not the applicable state standard was exceeded in the project vicinity. Concentrations of selected TACs were also monitored, but no substantial increases to background concentrations of those compounds were measured during the burn. In February 2005, the U.S. Department of Health and Human Services published a Health Consultation relating to the prescribed burns at Ranges 43-48. Its general conclusion was that smoke from that burn does not create an “apparent public health hazard.”

Sensitive Receptors

Sensitive receptors or populations are more susceptible to the effects of air pollution than is the general population. Sensitive receptors tend to be represented largely within the following land uses: residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, and convalescent and retirement homes.

The receptor exposure areas that should be considered in the analysis of carbon monoxide levels include the following, as set forth in the MBUAPCD CEQA Air Quality Guidelines:

- Sidewalks where general public has access on a continuous basis (1-hour)
- Parking lots where pedestrians have continuous access (1-hour)
- Property lines of hospitals, rest homes, schools, playgrounds, childcare centers, etc. (1-hour and 8-hour)
- Property lines of residences where continuous outdoor exposure is expected (1- and 8-hour)
- Setbacks of residences where continuous exposure is expected (1-hour and 8-hour)

Existing sensitive receivers in the project vicinity include the Olson School and existing residences within the City of Marina that abut the project site along most of its southwest- and northwest-facing boundaries.

Emissions

Criteria Air Pollutants. Table 4.3-4, summarizes the most recent emissions inventories for Monterey County and the NCCAB as a whole. As shown in Table 4.3-4, on-road motor vehicles represent only one of many categories of emissions sources within the County and NCCAB. However, such vehicles account for nearly half of total human-generated CO and NO_x emissions. Both area-wide and mobile sources contribute substantially to emissions of ROG. For PM₁₀, emissions from “miscellaneous processes” are dominant. Construction-related activities also contribute to regional air pollutant emissions. Such activities account for an estimated six percent of County- and Basin-wide PM₁₀ emissions under the “Area-Wide Sources: Miscellaneous Processes” category, a large proportion of the approximately six percent of “Area-Wide Sources: Solvent Evaporation” emissions of ROG attributed to the application of architectural coatings and asphalt paving, and a small proportion of the estimated emissions in the “Mobile Sources: Other Mobile” category.

Table 4.3-4 2005 Estimated Annual Average Emissions of Selected Criteria Air Pollutants for Monterey County (NCCAB Portion) and the Entire NCCAB										
Source Category	Emissions (tons/day) by Pollutant									
	ROG		NO_x		CO		PM₁₀		PM_{2.5}	
	Co.^a	AB^b	Co.	AB	Co.	AB	Co.	AB	Co.	AB
Fuel Combustion	0.4	0.9	12.5	15.5	12.0	13.2	0.9	1.1	0.9	1.1
Waste Disposal	0.8	1.4	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0
Cleaning and Surface Coatings	4.2	9.6	--	--	--	--	--	--	--	--
Petroleum Production and Marketing	2.0	3.1	0.0	0.0	0.0	0.0	--	--	--	--
Industrial Processes	0.4	0.6	0.0	2.5	0.0	8.6	0.9	3.0	0.4	1.1
Total Stationary Sources	7.8	15.6	12.6	18.1	12.2	22.0	1.8	4.1	1.2	2.3
Solvent Evaporation	10.8	16.7	--	--	--	--	--	--	--	--
Miscellaneous Processes	6.5	10.9	3.4	5.5	100.6	157.7	41.3	67.8	16.5	27.0
Total Area-Wide Sources	17.3	27.6	3.4	5.5	100.6	157.7	41.3	67.8	16.5	25.6
On-Road Vehicles	11.3	20.3	26.0	40.9	126.3	208.9	0.8	1.3	0.6	0.9
Other Mobile	5.7	7.9	14.6	20.4	37.9	57.7	1.1	1.5	0.9	1.3
Total Mobile Sources	17.0	28.3	40.7	61.3	164.1	266.6	1.9	2.7	1.5	2.2
Subtotal w/o Natural Sources	42.0	71.5	56.6	84.9	276.9	446.3	45.0	74.7	19.3	31.4
<i>Natural Sources</i>	<i>51.1</i>	<i>73.4</i>	<i>1.4</i>	<i>1.5</i>	<i>40.7</i>	<i>43.5</i>	<i>4.2</i>	<i>4.5</i>	<i>3.6</i>	<i>3.8</i>
^a County ^b Air Basin SOURCE: CARB, "Almanac Emission Projection Data", published in 2006. http://www.arb.ca.gov/ei/maps/basins/abnccmap.htm										

Toxic Air Contaminants. Table 4.3-5 summarizes estimated County-wide emissions of TACs relevant to the project. (No data were available for asbestos from this reference.) While Table 4.3-4 reported emissions estimates in units of tons per day, this table reports such estimates in units of tons per year. Note that "Other Mobile" sources are estimated to account for more than half of County-wide emissions of DPM, while County-wide acrolein and lead emissions are attributed primarily to area-wide sources (which, for the latter, could include demolition-related activities).

Table 4.3-5 2004 Estimated Daily Average Emissions Of Selected Toxic Air Contaminants for Monterey County						
Pollutant	Emissions (tons/year) by Source Category					
	Stationary	Area-wide	On-road Mobile	Other Mobile	Natural	Total
Acrolein	0.15	64.16	6.41	8.12	16.42	95.26
Diesel engine exhaust, particulate matter (DPM)	21.28	--	104.76	187.64	--	313.68
Lead	0.00	2.96	0.01	0.12	--	3.10

SOURCE: ARB, California Toxics Inventory (CTI), 2004. (<http://www.arb.ca.gov/toxics/cti/cti.htm>)

Air Pollutant Concentrations, Standards Violations and Risk Levels

Criteria Air Pollutants. Ambient air pollutant concentrations are affected by the rates and distributions of corresponding air pollutant emissions, as well as by the climactic and topographic influences discussed above. The primary determinant of concentrations of non-reactive pollutants (such as CO and PM₁₀) is proximity to major sources. As previously discussed, ambient CO levels usually closely follow the spatial and temporal distributions of vehicular traffic.

CARB (occasionally with the assistance of private sector partners) and relevant air pollution control districts operate a number of ambient air quality monitoring stations throughout the County and the remainder of the NCCAB. For each of the previous three years, Table 4.3-6 summarizes the number of violations for selected key state air quality standards recorded at each of the applicable monitoring stations. (As previously discussed, the NCCAB is designated as Unclassified/Attainment with respect to the less stringent federal air quality standards for the key criteria air pollutants, and violations of those standards have not recently been an issue within the NCCAB.)

The nearest of these monitoring stations to the Marina Station project site is the Moss Landing station, about eight miles to the north. Among the few violations of the one-hour state ozone standard recorded within the NCCAB over the preceding three years, Table 4.3-6 shows that most were recorded at the Pinnacles National Monument station, an inland monitoring station where topography and meteorology tend to favor the concentration of this regionally-significant, photochemically-generated pollutant. By contrast, the largest number of violations of the state PM₁₀ standard within the NCCAB have been recorded at the Davenport and Moss Landing stations along the coast, where sea salt (and, at Davenport, cement dust from a nearby plant) appears to have an important influence on overall PM₁₀ concentrations.

Toxic Air Contaminants. For TACs, impacts are often evaluated ultimately in terms of cancer risk or (for non-cancer effects) in terms of proportions of applicable risk exposure levels (RELs). At the present time, one can infer from the cancer risk mapping published by the ARB's Emission Inventory Branch that most areas within the City of Marina – including at least most if not all of the designated land use areas within the proposed project site – are exposed to average inhalation cancer risk levels between about 50 and 250 per million. While that is a relatively wide range, it can help put into context the incremental cancer risk thresholds that will be discussed later in this section.

Station	Parameters Measured	Monitored Exceedances of the State 1-Hour Ozone Standard and the State 24-Hour PM ₁₀ Standard							
		2005		2004		2003		3-Yr Total	
		O ₃	PM ₁₀	O ₃	PM ₁₀	O ₃	PM ₁₀	O ₃	PM ₁₀
SL	O ₃ , NO ₂ , NO _x , CO, PM ₁₀ , PM _{2.5} , WS, WD, T	0	0	0	0	0	4	0	4
HL	O ₃ , PM ₁₀ , WS, WD, T	0	0	0	0	0	0	0	0
CV	O ₃ , PM ₁₀ , T	0	0	0	0	0	0	0	0
SC	O ₃ , PM ₁₀ , PM _{2.5} , WS, WD, T	0	0	0	1	0	0	0	1
WT	O ₃ , PM ₁₀ , WS, WD, T	0	0	0	0	0	0	0	0
SV	O ₃ , WS, WD, T	0	NM	0	NM	1	NM	1	NM
DV	O ₃ , NO ₂ , NO _x , SO ₂ , CO, PM ₁₀ , WS, WD, T	0	2	0	7	0	5	0	14
KC	O ₃ , PM ₁₀ , WS, WD, T	0	0	0	0	0	0	0	0
PN	O ₃ , WS, WD, T	2	NM	0	NM	2	NM	4	NM
ML*	PM ₁₀ , WS, WD, T	NM	1	NM	2	NM	7	NM	10
TOT	O ₃ , PM ₁₀	2	3	0	10	3	16	5	29

*Moss Landing Station Closed 7/31/2005

<p>Station Abbreviations: SL – Salinas, 855 E. Laurel Dr. HL – Hollister, 1979 Fairview Rd. CV – Carmel Valley, 34 Ford Rd. SC – Santa Cruz, 2544 Soquel Ave. WT – Watsonville, 444 Airport Blvd. KC – King City, 1001 Industrial Way SV – Scotts Valley, 4859 Scotts Valley Dr. PN – Pinnacles National Monument, 5000 Hwy 146 DV – Davenport, Marine View and Center Ave. ML – Moss Landing, 7539 Sandholt Rd. TOT – Total Station Exceedances</p>	<p>Parameter Abbreviations: O₃ – Ozone PM₁₀ – Particulate Matter smaller than 10 microns PM_{2.5} – Particulate Matter smaller than 2.5 microns NO₂ – Nitrogen Dioxide NO_x – Oxides of Nitrogen NO₂ – Sulfur Dioxide CO – Carbon Monoxide NM – Pollutant Not Monitored WS – Wind Speed WD – Wind Direction T – Temperature</p>
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Source: MBUAPCD, "Ambient Air Quality – Exceedances of Standards," March 15, 2006. (<http://www.mbuapcd.org/index.cfm?Doc=385>).

Relevant Project Characteristics

Construction of the project is anticipated to begin in 2007 and is assumed to be completed no later than 2022. Approximately 2.5 million cubic yards of earthmoving is anticipated to occur on site with no import or export of soil. Assumptions regarding phasing of project construction, type of equipment, and duration of use are provided in Appendix C.

The Marina Station project proposes a mixed-use development. The analysis in Appendix C, which is reflected in this chapter, assumes 1,504 residential units. The proposed Specific Plan was revised after this analysis was conducted, and now calls for 1,360 residential units, with all other uses remaining unchanged. Accordingly, Appendix C and this chapter slightly overstate the air quality impacts of the proposed project. The project would include approximately 60,000 square feet of mixed use retail, approximately 144,000 square feet of office space, and approximately 652,000 square feet of business park/industrial space. No wood-burning fireplaces or wood-burning stoves are included in the proposed project.

The project incorporates many policies that act as mitigation measures consistent with *CEQA Guidelines* recommendations. Such measures include the following Specific Plan Circulation policies:

Circ Policy 1-2: “Traffic should operate at low speeds compatible with pedestrian and bicycle traffic through the use of speed control and traffic calming measures.”

Circ Policy 1-3: “Provide access to transit.” Implementation measures focus on coordination with the Transportation Agency for Monterey County (TAMC) on-site transit improvements.

Circ Policy 1-5: “Encourage pedestrian circulation by providing clearly identifiable pedestrian circulation routes that connect neighborhoods, parks, recreation trails and facilities, commercial areas, and transit stops.” Implementation measures include pedestrian route separation, enhanced cross-walks and strategically placed pedestrian seating.

Circ Policy 1-6: “Encourage use of bicycles for internal trips and transit for local trips.” Implementation measures include a framework for bicycle lane/path and bicycle parking/storage requirements at key trip end locations.

Within the Specific Plan’s Open Space, Resource Conservation, and Hazards Element, the following design components are included:

- Utilizing narrow, curvilinear streets which emphasize and protect pedestrians and bicyclists, and traffic calming elements such as roundabouts, which make the circulation experience pleasant, safer and less intrusive to residents and visitors.
- Linking of homes, places to work, greenbelts, a future transit corridor and bicycle connections into three compact neighborhoods promotes walkability.
- Providing shopping, employment and recreational opportunities within a 5-10 minute walk can reduce dependence on the automobile.
- Clustering of retail, service and high density housing uses within easy walking distance of planned Transit facilities.

This Element also includes a “Green Building” section. Some of the building techniques specified in this section would reduce energy consumption that would generally be expected to reduce air pollutant emissions associated with the generation of such energy. Where such emissions occur within the NCCAB (e.g., where it is associated with natural gas combustion at the location of energy consumption) such reductions would provide a benefit within the NCCAB.

Thresholds of Significance

In accordance with CEQA Guidelines, a project impact would be considered significant if the project would:

- conflict with or obstruct implementation of the applicable air quality plan;
- violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

- expose sensitive receptors to substantial pollutant concentrations; or
- create objectionable odors affecting a substantial number of people.

Criteria Pollutants

MBUAPCD has established thresholds of significance for air quality impacts, which the City applies. Based on criteria applied in or adapted from the MBUAPCD *CEQA Air Quality Guidelines*, the project's impacts on criteria air pollution would be significant if the project would:

- 1) during construction, result in direct emissions of more than 82 lb/day of PM₁₀
- 2) during operations:
 - a) generate direct plus indirect emissions of either ROG or NO_x that exceed 137 lb/day
 - b) generate on-site emissions of PM₁₀ exceeding 82 lb/day
 - c) generate direct emissions of CO exceeding 550 lb/day
 - d) cause or substantially contribute to a violation of PM₁₀ standard near any off-site unpaved roads along which project-generated vehicle trips would travel
 - e) cause or substantially contribute to a violation of a CO standard
 - f) be inconsistent with the adopted AQMP

Regarding item 2e, the *CEQA Air Quality Guidelines* indicate that the following traffic effects should be assumed to generate a significant CO impact, unless CO dispersion modeling demonstrates otherwise:

- Intersections or road segments that operate at LOS D or better that would operate at LOS E or F with the project's traffic, or
- Intersections or road segments that operate at LOS E or F where the volume-to-capacity (V/C) ratio would increase 0.05 (five percent) or more with the project's traffic, or
- Intersections that operate at LOS E or F where delay would increase by 10 seconds or more with the project's traffic, or
- Unsignalized intersections which operate at LOS E or F where the reserve capacity would decrease by 50 or more with the project's traffic (based on the turning movement with the worst reserve capacity), or
- Project would generate substantial heavy duty truck traffic or generate substantial traffic along urban street canyons or near a major stationary source of CO.

Toxic Air Contaminants

Sources Subject to Adopted MBUAPCD Regulations. For project-related TAC sources subject to adopted MBUAPCD regulations, this analysis assumes compliance with those regulations, resulting in less-than-significant TAC-related impacts. For sources of TAC emissions in general, the primary applicable MBUAPCD regulation is Rule 1000. In the *CEQA Air Quality Guidelines*, the MBUAPCD indicates that "Construction equipment or processes would not result in significant air quality impacts if they would comply with Rule 1000."

Sources Not Subject to Adopted MBUAPCD Regulations or MBUAPCD Guidelines. For project-related TAC sources subject neither to adopted MBUAPCD regulations nor MBUAPCD guidelines, exposure of sensitive receivers to levels exceeding applicable acute (1-hour) or chronic (annual) reference exposure levels (RELs) or cancer risk greater than one incident per 100,000 population (based on a reference exposure duration which is the lesser of the source duration or 70 years, but in no case less than nine years) would be considered significant. Table 4.3-7 summarizes the RELs potentially relevant to this analysis. Non-cancer risk is expressed in terms of hazard index, which is the ratio of predicted

concentration to corresponding REL. Accordingly, a hazard index above one would represent a significant impact.

Table 4.3-7 Reference Exposure Levels Potentially Relevant To This Analysis		
Pollutant	Non-cancer Risk: Reference Exposure Levels	
	Acute	Chronic
DPM	NA	5
Acrolein	0.19	0.06
SOURCES: Sewell, Mike, Air Quality Engineer, MBUAPCD; Consideration of New District Rule 439 (Building Removals) [Including Staff Report: Proposed New Rules -- Rule 439 (Building Removals): Public Notice], June 16, 2006; MBUAPCD, <i>CEQA Air Quality Guidelines</i> , Appendix A: "Diesel Health Risk Assessment Guidance for Analyzing the Health Risks near: Truck Stops, Warehouse/Distribution Centers, Transit Centers & Train Idling for CEQA Air Quality Analysis Requirements" (October 2003); Office of Environmental Health Hazard Assessment (OEHHA), Acute RELs as of May 2000 (http://www.oehha.ca.gov/air/acute_rels/allAcRELS.html), Chronic RELs as of February 2005 (http://www.oehha.ca.gov/air/chronic_rels/AllChrels.html).		

Exposure of Future Project Occupants to TACs from Nearby Off-site Sources

Where future project occupants would be exposed to TACs from nearby off-site sources, that exposure would be considered significant if the corresponding exposure would result in higher exposure levels than those anticipated at minimum setback distances for the most similar source characteristics described in CARB's *Air Quality and Land Use Handbook*.

Odors

Projects which would emit pollutants associated with objectionable odors in substantial concentrations could result in significant impacts if odors would cause injury, nuisance, or annoyance to a considerable number of persons or would endanger the comfort, health, or safety of the public.

Impacts and Mitigation

Construction Impacts

Criteria Air Pollutants

According to the MBUAPCD's *CEQA Guidelines*, calculation of VOC and NO_x emissions from typical construction equipment is not necessary because the temporary emissions of these ozone precursors have been accommodated in the MBUAPCD AQMP (i.e., in its air quality inventories of regional air pollutants). The air quality analysis for the project, therefore, does not evaluate daily emissions of these pollutants, since it is assumed that the project would not significantly impact regional air quality during construction.

The Marina Station project is anticipated to result in emissions of particulate matter during construction of proposed land uses and grading of approximately 2.5 million cubic yards of cut and 2.5 million cubic yards of fill. Based on the results of the URBEMIS 2002 air quality analysis, which includes a maximum acreage disturbed per day of 32.4 acres, the maximum (unmitigated) PM₁₀ emissions from the project would be 349 lbs/day during the initial mass grading phase, which exceeds the threshold of 82 lbs/day of PM₁₀ established by MBUAPCD (see Appendix C). The assumptions used in the URBEMIS model run represent a portion of total project construction activities that are anticipated to reasonably represent

worst-case construction intensity (and thus provide conservative daily emissions in pounds per day). This analysis does not reflect two important factors relevant to the PM₁₀ impact. First, because the soils at the project site are predominantly sand, excavation and grading can proceed only if the sand is properly moisture conditioned. The presence of water in the sand would substantially reduce PM₁₀ emissions compared to the standard assumptions used in the URBEMIS model. Second, the project site is not upwind from sensitive receptors. Prevailing winds are from the west and the existing nearby sensitive receptors are generally to the south and the east of the project site. This factor suggests, as noted in the MBUAPCD CEQA Air Quality Guidelines, that 82 pounds per day of particulate matter might not cause a significant impact on sensitive receptors.

Without taking the ameliorating factors described above into account, standard mitigation provided below would reduce the impact to a less-than-significant level. As shown in Appendix C, the emissions of PM₁₀ can be reduced to a maximum of 54 lbs/day by implementation of the identified mitigation. The reductions in PM₁₀ emissions resulting from each measure listed in Appendix C are identified in parentheses.

Impact **The project would require substantial grading and earthmoving that, absent standard mitigation, would result in PM₁₀ emissions exceeding the MBUAPCD threshold of 82 lbs/day and could cause or substantially contribute to localized, temporary exceedances of the applicable PM standards at the nearest pre-existing receptor locations. This is a significant impact that can be reduced to a less-than-significant level by implementation of the following mitigation.**

Mitigation

4.3-1 Project construction contractors shall adhere to the following requirements to reduce emissions of particulate matter below MBUACPD thresholds. (Note that the proposed project does not include any off-site hauling of dirt, sand or loose materials, only on-site hauling; dirt hauling mitigation reflects this limitation):

- Water all active construction areas as needed at least three times daily. Frequency should be based on the type of operation, soil, and wind exposure. (50% reduction in emissions assumed for this source category)
- Prohibit all grading activities during periods of high wind (one-hour average speeds of over 15 mph as measured at a height of approximately 10 feet above ground level within areas scheduled for grading).
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days). (30% reduction in emissions assumed for this source category)
- Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations, and hydro-seed area when grading operations are completed and during the months of October 15 through April 15.
- To the extent haul trucks are utilized to move dirt, sand or loose materials, they shall maintain at least 2'0" of freeboard.
- To help minimize off-site soiling nuisance, the construction contractor shall install a drift fence between actively graded and otherwise disturbed ground areas on-site and the nearest off-site residential and school receivers.

- Plant vegetative ground cover in disturbed areas as soon as possible. (15% reduction in emissions assumed for this source category)
- Cover inactive storage piles. (9.5% reduction in emissions assumed for this source category)
- Install wheel washers at the entrance to construction sites for all exiting trucks.
- Sweep streets if visible soil material is carried out from the construction site.
- Reduce speed on unpaved roads to less than 15 miles per hour. (40% reduction in emissions assumed for this source category)
- Shuttle to retail establishments at lunch. (1.3% reduction in emissions assumed for this source category)
- Post a publicly visible sign which specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and take corrective action, if required, within 48 hours. The phone number of the Monterey Bay Unified Air Pollution Control District shall be visible to ensure compliance with Rule 402 - Nuisance.

With implementation of the above measures and restriction of active areas of grading, the project would not result in emissions of PM₁₀ in excess of the MBUAPCD's thresholds, nor would it generate a high risk of causing, or substantially contributing to, localized violations of PM₁₀ and/or PM_{2.5} standard at the nearest receptor locations.

TAC Impacts

Cancer Risk (Diesel PM). As described previously, there are a number of uncertainties in assessing potential cancer risk from construction-related diesel exhaust emissions. Many of these uncertainties are expected to be reduced substantially through regulations of CARB and OEHHA over the next one to two years. This analysis applies a conservative assessment of the likelihood that significance thresholds could be exceeded.

Under worst-case conditions, the predicted increase in diesel particulate levels at the nearest receptor location attributable to emissions during project construction is about 5.8 ug/m³. Under the conservative modeling assumptions applied, the worst-case receptor distance was predicted to be about 3,200 feet from the center of the project area. Consistent with MBUAPCD guidance, the worst-case concentration estimated annual average concentration at that receptor location. Based on the applicable unit risk value and recommended factoring of cancer risk for construction activities of 9/70, the resulting estimated increment to cancer risk is approximately 17.8 per million without mitigation, above the 10 per million significant risk increase threshold.

Acute Risk (Acrolein). Table 4.3-8 summarizes the results of the screening assessment of the acute (one-hour) health risk related to construction-generated acrolein emissions at the worst-case receiver distance. Under the conservative modeling assumptions applied, the worst-case receptor distance was predicted to be about 400 feet. This is the distance at which emissions from the elevated exhaust outlet of representative pieces of construction equipment were predicted to generate the highest near-ground concentrations. As shown in the first four data rows of the table, by applying the conservative dispersion modeling parameters, the predicted risk value is nearly 3½, which would be above the significance threshold of 1.0 without mitigation.

**Table 4.3-8
Estimated Acute Health Risk (Based on Acrolein Emissions) at Worst-Case Receiver Distance**

Analysis Scenario		Assumed Equipment (Within 50m by 50m Modeled Source Grid) Near a Given Receiver During the Worst-case Hour of Exposure						Assumed Effectiveness of Diesel Oxidation Catalyst (if Present)	Fuel Additive Used?	Contribution to Overall Hazard Index (Significance Threshold = 1)*	
General	Specific	Type	No.	Engine Year	Horse-power	Load Factor	Cumulative Hours of Preceding Usage for Identified Equipment				
Unmitigated (APCD-default equipment parameters)		Loader	1	2000	170	0.54	7500	NA	No	1.73	
		Scraper	1	2000	300	0.54	7500	NA	No	1.62	
		Haul Truck	1	MBUAPCD fleet average characteristics per EMFAC 2002					NA	No	0.14
		Total									3.49
Mitigation Variations	1	Loader	1	2000	170	0.54	7500	75%	No	0.43	
		Scraper	1	2000	300	0.54	7500	75%	No	0.41	
		Haul Truck	1	MBUAPCD fleet average characteristics per EMFAC 2002					NA	No	0.14
		Total									0.98
	2	Loader	1	2006	170	0.54	2000		NA	No	0.39
		Scraper	1	2006	300	0.54	3000		NA	No	0.44
		Haul Truck	1	MBUAPCD fleet average characteristics per EMFAC 2002					NA	No	0.14
		Total									0.98

* Assumes that loader and (idling) haul truck remain within smaller area during the representative exposure hour, but that the scraper moves around within a somewhat larger area.

SOURCES: MSW, 2006; David Craft, MBUAPCD, 2006

Impact: Operation of diesel-powered equipment during construction could present a significant cancer and acute health risk to humans from exposure of sensitive receptors to diesel exhaust. *This is a significant impact that can be reduced to a less-than-significant level with implementation of the following mitigation.*

Mitigation

- 4.3-2 Consistent with MBUAPCD guidance, all diesel-powered construction equipment used at the project site shall be 2002 or later model engine, or shall utilize an appropriate biodiesel blend or operate with an oxidation catalyst (or both) such that diesel exhaust emissions would be reduced below the level that would cause chronic adverse (cancer) health effects to sensitive receptors near the site. The selection of a pollution control method shall be performed in consultation with the MBUAPCD.
- 4.3-3 Consistent with MBUAPCD, all diesel-powered construction equipment used at the project site shall be a 2002 or later model engine, or shall utilize an appropriate biodiesel blend or operate with an oxidation catalyst (or both) such that acrolein emissions would be reduced below the level that would cause acute adverse health effects to sensitive receptors near the site. The selection of a pollution control method shall be performed in consultation with the MBUAPCD.

Operational Impacts

Regional Pollutants

Ozone and PM₁₀ are the only regional pollutants of concern to the MBUAPCD, based on the local attainment status. Analysis shows that there are no current violations of the CO standard in the area, nor are any violations expected as a result of the proposed project. An evaluation of localized CO impacts from the project is provided below.

The type of uses proposed by this project would not *directly* emit substantial amounts of regional pollutants of concern, and fossil fuel generators are not proposed as part of the project. This analysis, therefore, focuses on indirect (i.e., mobile source) and area source (e.g., consumer products and architectural coatings) emissions of PM₁₀ and ozone precursors (NO_x and VOCs) from the project. The project proposes industrial uses; however, at this time, specific users are not known and are not anticipated to result in emissions of substantial amounts of regional pollutants of concern (i.e., far less than the MBUAPCD thresholds). Although not currently proposed, the installation and use of a backup power generator, or other stationary source of air pollution, would be subject to the permitting requirements of the MBUAPCD, since these could result in some stationary source emissions. In this case, the applicant would be required to receive a MBUAPCD permit for stationary sources of emissions, which would ensure that impacts related to any air pollutant emissions (including toxic air contaminants, localized pollutants, as well) from these sources remain at a less-than-significant level.

The URBEMIS 2002 (version 8.7) computer model was used to estimate PM₁₀, ROG, and NO_x operational emissions for summer, using worst-case MBUAPCD recommended defaults for buildout of the entire project. Results from the URBEMIS 2002 model run are shown in Table 4.3-9. Complete results including assumptions are included in Appendix C. Based on this analysis, occupancy and operation of all project components would result in a significant impact on regional air quality from ozone, due to exceedance of the MBUAPCD's threshold for VOCs (represented in Appendix C as ROG).

Some of the benefits of the transportation-related measures in the Specific Plan are incorporated into the trip generation estimates used in the indirect source emission calculations that dominate the predicted total emissions for NO_x and contribute substantially to predicted total emissions of ROG/VOC. Even with the features proposed for incorporation into the project, the ROG emissions would exceed MBUAPCD's corresponding ROG/VOC threshold. Furthermore, modeling suggests that implementation of additional available and feasible measures would be insufficient to reduce those emissions to below that threshold. The primary sources of ROG/VOC emissions are architectural coatings and consumer products. These emissions have been and continue to be reduced through actions by MBUAPCD (architectural coatings) and CARB (consumer products). As a result, the area source ROG/VOC emissions levels reported in Table 4.3-9 may be reduced by regulatory action.

Pollutant	Area (lbs/day)	Operational (lbs/day)	Total (lbs/day) Without Project-Included Mitigation	MBUAPCD Threshold of Significance (lbs/day)	Total (lbs/day) With Project- Included Mitigation
PM ₁₀	0	261	261	NA**	240
NO _x	18	99	117	137	109
ROG/VOC	132	96	228***	137	221

*The mitigated emissions were based on project design features proposed by the applicants (i.e., included in the project). See Appendix C for more information.
 **MBUAPCD imposes an 82-lbs/day significance threshold for on-site emissions of PM₁₀, but not for indirect (off-site) emissions of this pollutant. There is no applicable threshold for off-site (operator) emissions.
 ***Both unmitigated and mitigated emissions of ROG during the summer would exceed MBUAPCD thresholds. No other exceedances of MBUAPCD thresholds for regional (criteria) pollutants are anticipated during operation of the project.

Impact: **Project operation would result in indirect vehicular and area source generation of up to 221 lbs/day of ROG/VOC. Therefore, the project may contribute to exceedances of the ambient air quality standards for ozone. These represent significant impacts. Mitigation 4.3-5 includes measures that would reduce project-related emissions of ROG/VOC; however, those measures would not reduce such emissions to a less-than-significant level. Therefore, estimated ROG/VOC emissions and the associated impact on regional ozone represent a significant and unavoidable impact.**

Mitigation

4.3-4 The project shall apply the following MBUAPCD recommended "Facility Improvement" measures to the extent appropriate for the specific land uses proposed:

The project sponsor shall implement the following measures (the estimated reduction in trips from that applicable specific land use, not overall, and vehicle miles traveled, or VMT, is provided in parentheses following the measure³):

³ These quantifications were found in Table 8-5 of the MBUAPCD CEQA Guidelines, which contains more information on the assumptions used to develop the reduction estimates.

- Provide preferential carpool/vanpool parking spaces in light industrial and office uses. (0.5% fewer trips; 0.5% less VMT)
- Provide bicycle storage/parking facilities. (one bike space per 20 vehicle spaces)
- Provide shower/locker facilities in light industrial and office uses. (When combined with measure in previous bullet, 1% fewer trips; 0.5% less VMT)
- Provide onsite child care centers west of Del Monte Blvd. (no fewer trips; 2.0% less VMT)
- Develop park-and-ride lots along the TAMC right-of-way. (10% reduction in trips per space occupied; 89% less VMT per space occupied)

The City shall encourage employers at the project site to implement the following measures:

- Employ a transportation/rideshare coordinator. (2% fewer trips; 2 % less VMT)
- Implement a rideshare program. (1% fewer trips; 1 % less VMT)
- Provide incentives to employees to rideshare or take public transportation. (1% fewer trips; 1 % less VMT)
- Implement compressed work schedules. (2% fewer trips; 2 % less VMT)
- Implement telecommuting program. (1.5% fewer trips; 3 % less VMT)
- Implement a parking surcharge for single occupant vehicles. (2% fewer trips; 1.5% less VMT)
- Provide for shuttle/mini bus service if demand warrants. (2% fewer trips; 2 % less VMT, if demand warrants)

Mitigation measure 4.3-4 has the ability to reduce emissions from the quantities shown in Table 4.3-9 to the following (note, no reduction in PM₁₀ emissions would result): ROG/VOCs as low as 217 lbs/day, and NO_x as low as 105 lbs/day.

Localized Pollutants

The General Plan EIR concluded that development anticipated under the General Plan would generally not be expected to contribute significantly toward any existing air quality violation within the NCCAB, but that MBUAPCD would require specific projects to be evaluated for their potential contribution to air quality violations.

Carbon Monoxide. The General Plan EIR recognized that carbon monoxide “hot spots” could take place at some point during the planning period, that dispersion modeling should be conducted as needed during the environmental review process for individual projects, and that any significant carbon monoxide impact could be mitigated by reducing travel to and from project sites, shifting travel away from peak periods, and/or increasing roadway capacity with traffic flow improvements.

To assess whether localized CO concentrations at congested intersections and along roadways would exceed ambient air quality standards under project conditions, the analysis of traffic levels of service at intersections and on roadways in the traffic study prepared by Higgins Associates were reviewed. The levels of service were compared to MBUAPCD thresholds to identify locations where CO levels may exceed state or federal standards. Table 4.3-10 identifies potential intersections that may require further analysis for CO.

Intersection	Existing LOS		Background + Project LOS		Background + Project LOS with operational improvements*	
	AM	PM	AM	PM	AM	PM
Del Monte Blvd./Marina Greens Dr.	A	A	C	F	B**	B**
SB Highway 1 Ramps/Reservation Rd.	B	A	F	E	B***	B***
Del Monte Blvd./Beach Rd.	B	B	F	F	B**	B**
De Forest Rd./Beach Rd.	A	A	F	F	B**	C**
California Ave./Reservation Rd.	A	A	F	F	B***	B***
Imjin Rd./Reservation Rd.	D	D	F	F	B***	B***
Blanco Rd./Reservation Rd.	B	B	D	F	C	B

*In some cases, two alternatives for operational solutions/mitigation are provided; the LOS included above is the worst-case mitigated LOS.
 **These operational improvements are included in the project mitigation identified in the traffic analysis.
 ***Improvements to mitigate these impacts have been identified in previous traffic studies and are included in the City of Marina's Capital Improvement Program.
 Source: Higgins Associates, December 2006.

With proposed or planned improvements, six of the seven intersections would be improved to an acceptable level of service upon project occupancy. The Blanco Road/Reservation Road intersection--where mitigation cannot be assumed because the intersection is under County, rather than City, jurisdiction--is currently a 3-way signal controlled intersection. Due to lack of current or future sensitive receptors and high dispersion characteristics at this intersection, CO screening was not conducted for this intersection (since no CO standards would be violated). The worst-case CO concentrations from traffic generated by the project at the intersection of California Avenue/Reservation Road were determined based the MBUAPCD's manual screening method using the CALINE-4 computer model. Results show that the worst-case 1-hour and 8-hour CO concentrations at this intersection would be lower than state CO standards, as presented in Table 4.3-11 below. The project would not significantly impact localized air quality, since project traffic would not cause a violation of applicable CO standards near any intersections.

Intersection	1-hour	8-hour
California Ave./Reservation Rd. during PM Peak Hour	10.6 ppm	7.4 ppm
State Carbon Monoxide Standard	20 ppm	9 ppm

* Using cumulative unmitigated traffic scenario.

Particulate Matter. The proposed project is distant enough from anticipated future burn locations near the center of Fort Ord to be expected to avoid substantial adverse smoke-related particulate matter impacts. However, future prescribed burning in the area is not only expected to occur in relation to the U.S. Army's ordnance remediation/removal activities; it is also expected to occur in connection with habitat management on sites such as the Fort Ord Nature Preserve operated by the University of California at Santa Cruz.

Among the Nature Preserve parcels, the North Reserve is immediately southeast of the proposed project. At this time, the timing, location, and extent of burning activities on the north preserve is not known. Given that the North Reserve site is positioned generally downwind of the proposed site and adjacent residential areas within Marina, it is reasonable to expect that such burns can be coordinated to adequately control inhalation exposure within the project site.

TAC Impacts. Any existing or potential future land-use-based sources of TAC impacts would be subject to MBUAPCD regulations requiring maintenance of such impacts at off-site sensitive locations to a level below the MBUAPCD's incremental threshold. The same is true for any potential future sources of TACs within the project site, including future industrial development. However, mobile sources of TACs, whether associated with off-site public roadways or mobile vehicle/equipment within project industrial/warehouse development, are not subject to MBUAPCD regulation. The following discussion focuses on these sources.

Off-site Sources. Traffic along Highway 1 is a potential source of TAC impacts. CARB's screening-based siting guidelines from the *Air Quality and Land Use Handbook* call for avoiding siting of new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.

Highway 1's current annual average daily traffic (ADT) north of Marina is relatively low, about 48,000. This segment of Highway 1 also has a relatively low percentage of medium-heavy and heavy-duty trucks that represent the dominant contributors to highway traffic-related diesel exhaust emissions. The total percentage of trucks reported by Caltrans for this segment, including two-axle, six-wheel box trucks and 3+ axle heavy-duty trucks, is 4.3 percent. On balance, the air pollutant exposure conditions at the project site nearest to Highway 1 appear to be less problematic than the range of exposure circumstances envisioned by CARB in their development of the 500-foot setback recommendation. However, based on current exposure conditions, and to be conservative, the potential for significant TAC-related health impacts to any future long-term project occupants within 500-feet of Highway 1 are considered significant.

Impact: **Operation of the project could result in a potentially significant impacts associated with 1) the exposure of future project occupants nearest to Highway 1 to TAC levels from diesel exhaust, and 2) potential development of industrial uses in the "freight/truck terminals and warehouses" category. *This is a significant impact that can be reduced to a less-than-significant level with implementation of the following mitigation.***

Mitigation

- 4.3-6 Implement both of the following measures to mitigate TAC impacts associated with proximity of project occupants to Highway 1:
- Exclude any dedicated outdoor activity areas, e.g., soccer fields from the portion of the project site, within 500 feet of the near edge of the near (outer northbound) travel lane of Highway 1.

- Prohibit the completion of construction and occupancy of any proposed “Neighborhood Edge” residential development within the aforementioned 500-foot setback area until no earlier than 2015.⁴

Global Warming

The concept of global warming is based on the premise that emissions of anthropogenic (man-made) pollutants absorb infrared radiation in the earth’s atmosphere, thereby increasing the overall average global temperature (U.S. EPA, 1995). Research indicates that this increase in global temperature could have deleterious effects on the environment.

On September 27, 2006, the governor of California signed AB 32, the Global Warming Solutions Act, into legislation. The Act requires that California cap its greenhouse gas emissions at 1990 levels by 2020. This legislation requires CARB to establish a program for statewide greenhouse gas emissions reporting and monitoring/enforcement of that program. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emission reductions. The 1990 and 2020 greenhouse gas emission limits will be established by CARB effective January 1, 2008.

Carbon dioxide, the primary man-made greenhouse gas of concern, would be generated by the project from mobile sources and other energy usage. The proposed Specific Plan incorporates the following measures to reduce motor vehicle and other energy use:

- Providing employment opportunities near housing to minimize off-site commuting.
- Linking a mix of land uses with alternative transportation facilities (e.g., bikeways, sidewalks, and trails).
- Clustering high density housing with residential-serving commercial services.
- Equipping single family homes with solar energy panels, recirculating hot water systems, and high efficiency appliances.

In addition, mitigation is identified in this EIR, including Transportation Demand Measures, to further reduce mobile source emissions.

Neither CEQA nor case law currently identifies thresholds or other direction in measuring or evaluating the effect of individual projects on global warming. As a result, in the absence of applicable methodology and thresholds, the significance of the project’s effect on global warming cannot be quantified.

Cumulative Impacts

No other major construction projects are anticipated in the immediate project vicinity during the time that the Marina Station project would be built. Accordingly, no significant cumulative PM₁₀ or TAC impact from construction is anticipated.

During project operations, the air pollutant emissions resulting from the Marina Station project would contribute to overall increases in regional emissions due to other cumulative development. A

⁴Further information demonstrating the predicted future decreases in area-wide cancer risk levels in the project vicinity over time are presented in Appendix C (see Figure A); delay of occupancy of portions of the project nearest to the highway avoids the exposure of such occupants until such time that diesel exhaust pollutant emission rates and corresponding risk levels have substantially decreased.

determination of consistency with the Air Quality Management Plan is used to define the cumulative impacts of a proposed project on regional air quality.

AMBAG is responsible for determining consistency of the Marina Station project with the Air Quality Management Plan for the Monterey Bay Region (AQMP). The 2004 Regional Population & Employment Forecast is the official population forecast of the AQMP and is the basis for AMBAG's consistency analysis. Consistency of the project with the AQMP was analyzed by comparing the total potential population growth facilitated by the project with the forecasted growth for Monterey County. The letter from AMBAG (Todd Muck, March 2006) included in Appendix C describes the methodology for the consistency analysis and concludes that the project is consistent with the AQMP. Therefore, the Marina Station project would have a less-than-significant cumulative impact on regional air quality.

Regarding localized air quality impacts during project operations, to determine whether cumulative conditions with the project's build out would significantly effect CO levels, the screening procedure of Caltrans' Transportation Project-Level Carbon Monoxide Protocol (CO Protocol, Appendix A: Screening Procedure, Dec. 1997) was used to calculate CO concentrations at one of the most impacted intersections, California Avenue at Reservation Road. As shown in Table 4.3-11 (presented earlier in this section), carbon monoxide concentrations from cumulative traffic would remain below state and federal ambient standards and would not result in a significant cumulative air quality impact. **The project would have a less-than-significant cumulative impact on air quality.**

4.4 BIOLOGICAL RESOURCES

INTRODUCTION

This section provides the results of the *Baseline Study of Wildlife and Plants at 320-acre Portion of Armstrong Ranch* (Baseline Study) conducted by Biotic Resources Group and Dana Bland & Associates (July 2004), and field reconnaissance surveys (April 2005; May 2006) and wetland assessment (March 2006) conducted by Denise Duffy & Associates, Inc. (DD&A). These reports are contained in Appendix D of this EIR.

Based on the data collected from these surveys, this section includes the following: 1) description of the existing biotic resources within the project site; 2) identification of the special-status botanical and wildlife species and sensitive habitats that occur or may occur within the project site; 3) assessment of the impacts to biological resources including potential impacts from construction activities; 4) description of applicable regulations and agency permits that may be required; and 5) identification of avoidance and mitigation measures to reduce impacts in accordance with CEQA.

A letter received from the California Department of Fish and Game (CDFG) in response to the Notice of Preparation for this EIR provided comments on the biological assessment guidelines and provisions of the California Endangered Species Act. The CDFG specifically requested a complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, and locally unique species and sensitive habitats. The CDFG also advised that a California Endangered Species Act permit must be obtained if the project has the potential to result in a take of listed species, either during construction or over the life of the project. These issues have been evaluated in accordance with CEQA and CDFG requirements and are addressed in the following section.

Survey Methodology

Reconnaissance-level field observations of the project site were made in December 2003, and March and April 2004 by a plant ecologist from Biotic Resources Group and wildlife biologist from Dana Bland & Associates. This assessment followed the CDFG's Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (May 8, 2000). The plant ecologist and the wildlife biologist walked the project area on December 12, 2003, March 23, April 22, and April 23, 2004. Focused botanical surveys were conducted in March and April 2004. The plant communities on the site were identified during the field reconnaissance visits based on the classification system developed by the California Department of Fish and Game (CDFG, 2002b) and amended to reflect site conditions. To assess the potential occurrence of special-status species, two electronic databases were accessed to determine recorded occurrences of sensitive plant communities and sensitive species. Information was obtained from the California Native Plant Society's (CNPS) Electronic Inventory (2003) and CDFG's California Natural Diversity Database (CNDDB) (CDFG 2004) for the U.S.G.S. Marina quadrangle and adjacent quadrangles: Salinas, Seaside, Spreckels, Prunedale, San Juan Bautista, Monterey, and Moss Landing. A previous biological report for the project area was also reviewed (entitled *Initial Site Reconnaissance and Continuing Work, Armstrong Ranch Project, Monterey, California*, Zander Associates, 1998). The results of this effort are included in the Baseline Study.

The Baseline Study characterized the major plant communities and identified known and potential sensitive biotic resources within the proposed project area. In spring of 2005, the Natural Resources Division of DD&A reviewed the Baseline Study and conducted a field reconnaissance survey to verify the results of the study; focused botanical surveys within the project area were not repeated.

DD&A obtained current agency status information from the U.S. Fish and Wildlife Service (USFWS) and CDFG (2006) for species that are listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA), and those considered federal species of concern and CDFG California species of special concern. DD&A reviewed recent reports from the CNDDDB (2005) for the Marina quad and all surrounding quads were reviewed for special-status species occurrences prior to conducting the reconnaissance-level survey on April 25, 2005. In addition, the following documents were reviewed as part of the biological analysis:

- MCWD Regional Water Augmentation EIR (2004);
- Marina Area Airport Recycled Water Pipeline EIR (2000);
- City of Marina Draft General Plan and EIR (2000); and
- City of Marina LCP (1989, as amended).

Based on the results of the Baseline Study and DD&A research, a list of special-status plant and wildlife species known or which have the potential to occur within the project site, along with their legal status, habitat requirements, and brief statement of the likelihood to occur was compiled (refer to Appendix D). The list was determined by evaluating the geographic ranges and habitat requirements of species and existing habitat conditions, as well as maps documenting the occurrence and distribution of special-status species.

DD&A also conducted a wetland assessment on March 7, 2006, to determine whether potential jurisdictional wetlands occur within the project site. The results of the wetland assessment are included in Appendix D. On May 11 and 12, 2006, DD&A conducted a focused plant survey and reconnaissance-level wildlife survey to assess the potential biological impacts associated with a proposed additional five acre grading area where surveys had not been previously conducted.

Sensitive Habitats

The project area was surveyed for sensitive habitats. Sensitive habitats include riparian corridors, wetlands, habitats for legally protected species, areas of high biological diversity, areas supporting rare or special-status wildlife habitat, and unusual or regionally restricted habitat types. Habitat types considered sensitive include those listed on the California Natural Diversity Database's working list of high priority and rare natural communities habitats (i.e., those habitats that are Rare or Endangered within the borders of California) (CDFG, 2003), and those that are designated as Critical Habitat in accordance with the federal Endangered Species Act.

Special-Status Species

Special-status species are those plants and animals that are afforded state or federal protection. Specifically, special-status species refers to the following:

- Federally proposed and listed threatened and endangered species or species that are candidates for such listing;
- State-listed threatened and endangered species;
- California Native Plant Society (CNPS) List 1B species with extensive portions (i.e., greater than 10 percent) of their known ranges within the Marina Planning Area; and
- Federal species of concern and/or state species of special concern.

Setting

Biological Communities

Four plant communities were documented within the project site: native grassland, annual grassland, wet meadow, and coastal dune scrub. These communities are depicted in Figure 4.4-1.

Grasslands

Three grassland community types were observed within the 320-acre area of proposed disturbance: native grassland, California annual grassland, and wet meadow. The California annual grassland is the dominant plant community, particularly east of Del Monte Boulevard. Patches of native grassland are more prevalent west of Del Monte Boulevard. The two depressions characterized as wet meadows occur west of Del Monte Boulevard.

California Annual Grassland

This grassland type is characterized by the dominance of annual, non-native grasses. Within the project area, wild oat (*Avena fatua*) and soft chess (*Bromus hordeaceus*) provide most of the plant cover. Associated grass species include rattail fescue (*Vulpia myuros*), foxtail barley (*Hordeum leporinum*), and rigput brome (*Bromus diandrus*). Forbs occurring in the grassland include California poppy (*Eschscholtzia californica*), red maids (*Calandrinia ciliate*), smooth cat's ear (*Hypochaeris glabra*), Lindley's annual (*Lupinus bicolor*), pink owls clover (*Castilleja exserta*), dove's foot geranium (*Geranium molle*), red-stemmed filaree (*Erodium cicutarium*), seaside fiddleneck (*Amsinckia spectabilis*), and California plantain (*Plantago lanceolata*). In some locations (west of Del Monte Boulevard), Monterey spineflower (*Chorizanthe pungens* var. *pungens*), a federally listed species, occurs within the California annual grassland. Approximately 271 acres of annual grassland occur within the project site.

Native Grassland

This plant community type is characterized by the dense growth of native wildflowers. Often referred to as "wildflower fields," these areas occur within sandy soil areas of the project area. Most occurrences of the plant community type are located east of Del Monte Boulevard. The native grassland/wildflower field areas are noticeable in the spring by the dense growth of tidy tips (*Layia platyglossa*). This plant species, along with Lindley's annual lupine and common phacelia (*Phacelia distans*), dominate these areas. Associated species include California poppy, pink owls clover, California sandwort (*Minuartia californica*), smooth cat's ear, soft chess, fiddle dock (*Rumex acetosella*), long-beaked filaree (*Erodium botrys*), hairy California plantain (*Plantago ovata*), and variable-leaved nemophila (*Nemophila heterophylla*). Portions of the native grassland also support colonies of Monterey spineflower. Approximately 21 acres of native grassland occurs within the project site.

Wet Meadow

The project area supports two wet meadow areas, both located west of Del Monte Boulevard. The wet meadows occupy depressions within the grassland where winter rainfall and surface runoff collects. Both wet meadow areas are densely vegetated with Mexican rush (*Juncus mexicanus*), dune sedge (*Carex pansa*), and meadow barley (*Hordeum brachyantherum*). Other plant species within these depressions include salt grass (*Distichlis spicata*), large-flowered sand spurry (*Spergularia macrotheca*), perfoliate peppergrass (*Lepidium perfoliatum*), common rush (*Juncus effuses*), yellow shamrock (*Trifolium dubium*), bur clover (*Medicago polymorpha*), bird's foot trefoil (*Lotus corniculatus*), cut-leaved plantain (*Plantago coronopus*), rabbitsfoot grass (*Polypogon monspeliensis*), and Italian ryegrass (*Lolium multiflorum*). The wet meadow community comprises approximately 2.0 acres within the project site.

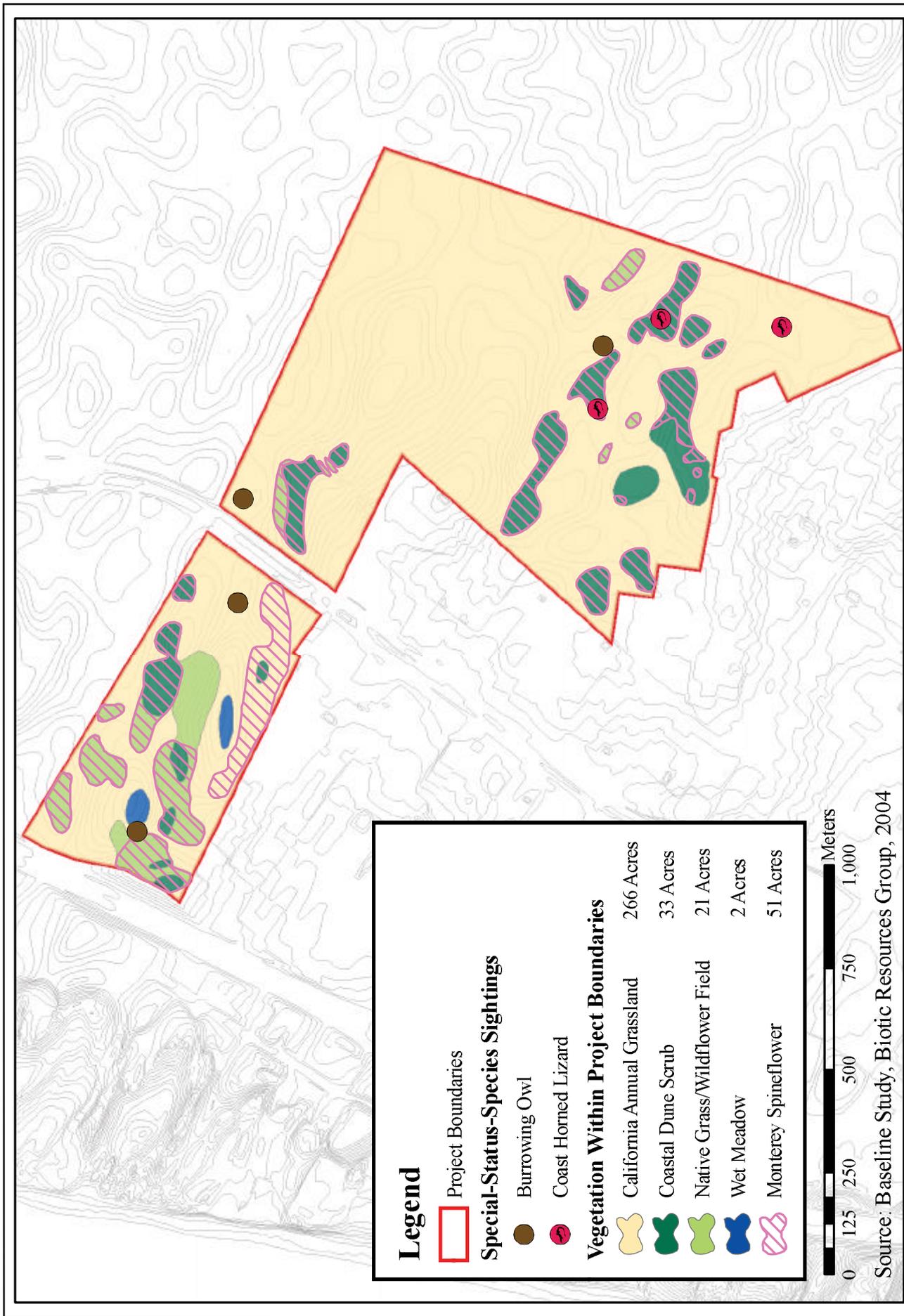


Figure 4.4-1

Vegetative Communities and Special-Status-Species within the Project Site



The wet meadow communities within the project site are not expected to support aquatic invertebrate or vertebrate wildlife species. No surface water ponded in these wet meadows during winter 2003-2004 or 2005-2006 (normal rainfall years). A wetland assessment was conducted by DD&A on March 7, 2006, and it was determined that jurisdictional wetlands are not present within the project site (refer to Appendix D).

Coastal Dune Scrub

The project site supports several stands of coastal dune scrub. This scrub type occurs on inland sand dunes and supports a mosaic of shrub and herbaceous plant cover. The dominant shrub species are mock heather (*Ericameria ericoides*) and silver beach lupine (*Lupinus chamissonis*). Other shrubs that were observed include croton (*Croton californicus*), silver bush lupine (*Lupinus albifrons*), and prostrate deerweed (*Lotus scoparius* var. *prostratus*).

Common herbaceous species that occur between shrubs include phacelia, tidy tips, California beach aster (*Lessingia filaginifolia* var. *californica*), annual lupine (*Lupinus nanus*), woolly lotus (*Lotus heermanii* var. *orbicularis*), California plantain, Monterey spineflower, foxtail barley, red-stemmed filaree, Douglas's sandwort (*Minuartia douglasii*), owl's clover (*Castilleja exserta* var. *latifolia*), and catchfly (*Silene gallica*). Other plant species observed occasionally include blue toad flax (*Linaria canadensis*), cobweb thistle (*Cirsium occidentale*), cream cups (*Platystemon californicus*), wild cucumber (*Marah fabaceus*), sand pygmy (*Crassula tillaea*), sandmat (*Cardionema ramosissimum*), and California acaena (*Acaena pinnatifida* var. *californica*). Approximately 33 acres of coastal dune scrub occur within the project site.

Wildlife

Grasslands

In general, grasslands provide an important foraging resource for a wide variety of wildlife species. The invertebrate fauna of grasslands is diverse and abundant, and many species perform important functions such as pollinating the grasses and wildflowers. The grasses and forbs in the grasslands produce abundant seeds, roots, and leaves, providing food for many wildlife species. Common wildlife species that eat foliage and seeds and were observed during winter and spring surveys or are expected to occur in the grasslands within the project area, include mourning dove (*Zenaidura macroura*), savannah sparrow (*Passerculus sandwichensis*), red-winged blackbird (*Agelaius phoeniceus*), tricolored blackbird (*A. tricolor*), house finch (*Carpodacus mexicanus*), American goldfinch (*Carduelis tristis*), black-tailed jackrabbit (*Lepus californicus*), Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtus californicus*), and California ground squirrel (*Spermophilus beecheyi*). The numerous insects and invertebrates that thrive on grassland plants attract insectivorous vertebrate species such as the western fence lizard (*Sceloporus occidentalis*), long-billed curlew (*Numenius americanus*), Say's phoebe (*Sayornis saya*), California horned lark (*Eremophila alpestris actia*), American robin (*Turdus migratorius*), Brewer's blackbird (*Euphagus cyanocephallus*), and ornate shrew (*Sorex ornatus*).

The openness of the grassland community and abundance of reptiles and small mammals in grasslands make this a favored hunting area for several raptors, including white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), ferruginous hawk (*Buteo regalis*), and American kestrel (*Falco sparverius*). Turkey vultures (*Cathartes aura*) are commonly seen soaring in search of carrion. The burrowing owl (*Athene cunicularia*) was observed wintering on the project site. Larger mammalian predators associated with grasslands such as coyote (*Canis latrans*), badger (*Taxidea taxus*), and the non-native red fox (*Vulpes vulpes*) also likely utilize these grasslands within the project area for foraging on small mammals. Several burrows of suitable size for coyote and fox dens were

observed within the project site. Snakes may lay eggs in grasslands with loose soils, talus, or small mammal burrows. The most common grassland snake is the gopher snake (*Pituophis melanoleucus*).

Coastal Dune Scrub

Coastal dune scrub provides valuable habitat for many wildlife species which may utilize the habitat for foraging or cover. Wildlife species observed in the coastal dune scrub habitat during the winter and spring surveys include the western fence lizard, coast horned lizard (*Phrynosoma coronatum frontale*), western bluebird (*Sialia mexicana*), white-crowned sparrow (*Zonotrichia leucophrys*), golden-crowned sparrow (*Z. atricapilla*), dark-eyed junco (*Junco hyemalis*), and coyote (*Canis latrans*).

Special-Status Species

Special-Status Plants

Based on the literature research, site surveys, botanical surveys, and the CNDDDB reports, one special-status plant species is known to occur within the project site – Monterey spineflower, a federally listed threatened species (refer to Figure 4.4-1). Focused botanical surveys for other potential special-status plant species were conducted; however, no other special-status plant species were observed and none are expected to occur within the project site due to lack of appropriate habitat. Therefore, they are not discussed further in this document.

Monterey spineflower. Monterey spineflower (*Chorizanthe pungens* var. *pungens*) is listed under the federal ESA as a threatened species. This species is also recognized as rare by the CNPS as a List 1B species; however, this species is not currently listed under the California ESA. This species is restricted to the Monterey Bay dune system. According to the CNDDDB and USFWS records, the species occurs from the Monterey Peninsula northward along the coast to southern Santa Cruz County and inland to the Salinas Valley. The CNDDDB lists 21 populations; the largest population occurring on the former Fort Ord lands. Monterey spineflower grows in coastal dunes, coastal scrub, and further inland on sandy soils derived from ancient stabilized dunes. This species tends to occur more often on bare, sandy patches where there is little vegetation cover. Dispersal of seeds is facilitated by the spines that help attach the seeds to passing animals. The preference of these species for sandy substrate allows seedlings to establish in areas that are relatively free from competing species. The blooming period is typically from April through June (USFWS, 1995).

Monterey spineflower was observed within the project site in approximately 21 patches totaling approximately 51 acres, based on surveys in April 2004 and May 11 and 12, 2006. The population within the project site was not previously recorded in the CNDDDB. As the Monterey spineflower is an annual species, its population can vary from year to year, depending on weather conditions (e.g., precipitation and temperature), as well as human and natural disturbances.

Special-Status Wildlife

Based on the literature research, site surveys, botanical surveys, and the CNDDDB reports, 16 special-status wildlife species are known or have the potential to occur within the project site (refer to Appendix D). The remaining species are considered unlikely to occur within or adjacent to the site due to the lack of appropriate habitat (refer to Appendix D). Therefore, those species are not discussed further in this document. Only those special-status species known or with the potential to occur are discussed below.

American badger. The American badger (*Taxidea taxus*) is a California species of special concern. Badgers occupy a diversity of habitats within California. The principal requirements seem to be sufficient food, friable soils, and relatively open, uncultivated grounds. Grasslands, savannas, and mountain

meadows near timberline are preferred. Badgers feed primarily on burrowing rodents, such as gophers, squirrels, mice, and kangaroo rats, as well as some insects and reptiles. Badgers also break open bee hives to eat both the brood and honey.

No badgers were observed during the winter or spring surveys. However, the project site contains suitable habitat for badgers. The CNDDDB reports numerous occurrences within the former Fort Ord south of the project site.

California tiger salamander. The California tiger salamander (*Ambystoma californiense*) is a federally threatened species and a California species of special concern. California tiger salamander breeding and estivation habitat includes vernal pools and seasonal and perennial pools, and surrounding upland areas in grassland and oak savannah plant communities. Some breeding ponds occur in scrub or chaparral habitats. In addition to vernal pools and seasonal ponds, the California tiger salamander also uses small artificial water bodies, such as stockponds, for breeding. The presence of bullfrogs and fish are negatively correlated with salamander populations. Once fall or winter rains begin, adults emerge from the upland sites on rainy nights to feed and migrate to the breeding ponds. After breeding, adults leave the water and return to small mammal burrows, such as those of California ground squirrel or Botta's pocket gopher, in surrounding uplands where they spend the majority of their lives.

The Baseline Study was conducted in 2003, prior to the California tiger salamander's federal listing as threatened (August 2004) and the release of the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* (USFWS and CDFG, October 2003). These guidelines outline survey protocol required to determine the presence or absence of the salamander, and allow the USFWS to concur with the survey results.

The project site does not contain suitable aquatic habitat for the California tiger salamander. However, the project site does contain suitable upland habitat for the salamander (grassland with small mammal burrows). Two vernal pools located north of the property boundary on the west side of Del Monte Boulevard were identified as potential suitable breeding habitat; these pools occur approximately 1,100 feet from the project's north boundary. Therefore, according to the Interim Guidelines and correspondence with the USFWS, it has been determined that California tiger salamanders have the potential to occur within the project site and protocol-level surveys are recommended by the USFWS to determine presence or absence. There is no documentation that the vernal pools have ever been studied previously. As a result, the hydrology and fauna of the pools are unknown, including the inundation period and presence of bullfrogs. Hydrologic data was taken during the fall/winter 2005-2006 rainy season, and protocol-level aquatic dip-net surveys began in March 2006. No California tiger salamanders were observed during the spring 2006 surveys. However, the presence or absence of the California tiger salamander will not be determined until the protocol-level surveys are completed in winter and spring 2007. For the purposes of this analysis, California tiger salamanders are assumed to be present within the project site west of Del Monte Boulevard, until and unless results of the USFWS surveys indicate otherwise. Although the project site east of Del Monte Boulevard contains suitable upland habitat, there are no documented or potential breeding sites within 1.24 miles of the site. Zander Associates prepared a California Tiger Salamander Site Assessment (July 2005) and determined that there are no potential breeding sites on Armstrong Ranch east of Del Monte Boulevard and that Del Monte Boulevard constitutes a dispersal barrier.

Black legless lizard. The black legless lizard (*Anniella pulchra nigra*) is a California species of special concern. It is known to exist on the Monterey Peninsula and the southern part of Monterey Bay. Historically, the range of the black legless lizard extended from the Carmel to the Salinas River. The lizard has experienced a significant reduction of its range due to human developments, and it was proposed for listing as Endangered by the USFWS on August 2, 1995. The USFWS withdrew the

proposal to list the black legless lizard as Endangered because it was found to occur in a much wider variety of habitats than previously thought, and the threats to its survival decreased since the proposed rule was published. The black legless lizard occupies a variety of habitats, from the coastal foredune environment through the rear dune. In some localities, the legless lizard's habitat extends into the coastal grassland and oak woodland plant associations.

Legless lizards spend the majority of their lives in burrows amid the sand or leaf litter at depths between one and four inches, though they can burrow to a depth of eight inches in loose soil. They are most abundant in coastal dune habitats where native vegetation is present. Legless lizards are usually inactive during the hottest part of the day; as the temperature cools, they become active and begin feeding. Their primary food sources are insect larvae, beetles and spiders. The presence of native vegetation is a key habitat requirement of the legless lizards as this serves as a food source for their prey. The dense root structure of exotic iceplant provides poor habitat for legless lizards. Black legless lizards bear live young in the fall between September and November.

Black legless lizards were not observed on the project site during reconnaissance-level surveys. An observation of a legless lizard was described in the Zander 1998 report, but the individual was not identified to species. The CNDDDB reports several occurrences of black legless lizards in dunes west of Highway 1 from Salinas River mouth south to Seaside. The project site contains suitable habitat for this species (coastal dune scrub and grassland habitat with loose, friable sandy soils), and it has the potential to occur within the project site.

Coast horned lizard. The coast horned lizard (*Phrynosoma coronatum frontale*) is a California species of special concern. Horned lizards occur in valley-foothill hardwood, conifer, and riparian habitats, as well as in coastal scrub, pine-cypress, juniper, chaparral, and annual grassland habitats. This species generally inhabits open country, especially sandy areas, washes, flood plains, and wind-blown deposits in a wide variety of habitats. Coast horned lizards rely on camouflage for protection and will often lay motionless when approached. Horned lizards often bask in the early morning on the ground or on elevated objects such as low boulders or rocks. This lizard is active between April and October, with mating occurring during April (Jennings and Hayes 1994). The young hatch in July and August. Predators and extreme heat are avoided by burrowing into loose soil. Periods of inactivity and winter hibernation are spent burrowed into the soil or under surface objects. Little is known about the habitat requirements for breeding and egg-laying of this species. Prey species include ants, beetles, wasps, grasshoppers, flies, and caterpillars.

Coast horned lizards were observed within the project site during the March and April 2004 surveys (Figure 4.4-1). The coastal dune scrub habitat throughout the project site provides suitable habitat for this species.

Burrowing Owl. Burrowing owls (*Athene cunicularia*) are a California species of special concern, and are protected under both federal and state laws and regulation, including the Migratory Bird Treaty Act of 1981 (MBTA) and CDFG Fish and Game Code Section 3503.5. Burrowing owl habitat can be found in annual and perennial grasslands, desert, scrublands, and agricultural and range lands characterized by low-growing vegetation. They inhabit annual or perennial grasslands or areas with less than 30 percent canopy coverage as a resting site during migration, as feeding habitat, and as a breeding ground. The nesting season, as recognized by CDFG, runs from February 1-August 31, and peaks around April 15-July 15 (California Burrowing Owl Consortium 1993). Burrowing owls nest in single pairs, or more often, in small colonies. Burrowing owls use rodent burrows (often California ground squirrel) for roosting and nesting cover. These burrows are lined with excrement, pellets, debris, grass, and feathers (occasionally burrows are unlined). Pipes, culverts, and nest boxes may be substituted for burrows in areas where burrows are not available. Burrowing owls eat mostly insects, but may also eat small

mammals, reptiles, birds, and carrion. This species usually hunts from a perch, hovers, hawks, dives, and hops after prey on the ground.

Focused surveys for wintering burrowing owls were conducted by Dana Bland & Associates during December 2003 – February 2004. Three burrowing owls were observed within the project site between January and March 2004, and one owl was observed in the grasslands adjacent to the project site (Figure 4.4-1). There is documentation that burrowing owls have been observed breeding in the project vicinity and within the greater Armstrong Ranch area. The project site may provide suitable nesting habitat for burrowing owls in addition to wintering habitat.

White-tailed kite. The white-tailed kite (*Elanus leucurus*) is listed as a California fully protected species. In addition, this species is protected under both federal and state laws and regulation, including the MBTA and California Fish and Game Code Section 3503.5. This bird usually nests in trees along riparian areas, and in oak savannah. The male does all the hunting while the female kite incubates the eggs and broods the nestlings. They prefer to nest in trees with adjacent open fields for hunting. They build their large, stick nests atop large, closed-canopy trees such as live oak. The favored prey of the white-tailed kite is voles and mice. Nesting occurs from April through July. In the fall and winter, kites form communal roosts (Roberson and Tenney 1993).

Although none were observed during the surveys, white-tailed kites may occasionally forage in the grassland habitat within the project site, but no nesting habitat is present.

Northern harrier. The northern harrier (*Circus cyaneus*) is a California species of special concern. This bird is an uncommon permanent resident in open grasslands, marshy areas, and edges of estuaries in Monterey County (Roberson and Tenney 1993). Nesting begins in late March with young fledged during June and July. They build nests of sticks and grass on the ground hidden by tall grass or reeds. Harriers hunt a variety of prey, including other birds and small mammals.

Northern harriers were observed foraging over the project site during the winter surveys. They may nest in dense portions of the coastal dune scrub habitat.

Cooper's hawk. The Cooper's hawk (*Accipiter cooperii*) is a California species of special concern. They prefer forested habitats in mountainous regions, but also use riparian woodlands. Cooper's hawks feed primarily on small birds, but also take small mammals, reptiles, and amphibians. Foraging occurs in both dense cover and open habitats. Nests are constructed in a variety of trees, but stands of live oaks may be preferred. The local breeding season probably spans March/April through July (Suddjian 1990). Cooper's hawks are uncommon migrants and winter visitors. Migrant and wintering individuals occur in a variety of habitats, including oak woodland, conifer, and mixed broadleaf forests, grasslands, residential areas, and riparian woodland.

One Cooper's hawk was observed foraging in the grasslands and perching on a fence post in January and February 2004; however, there is no suitable nesting habitat for this species within the project site.

Ferruginous hawk. The ferruginous hawk (*Buteo regalis*) is a California species of special concern for wintering populations. This species is a winter resident of grasslands and agricultural lands along the central California coast, and feeds primarily on small mammals (Zeiner et al. 1990). Ferruginous hawks breed from Oregon into Canada; no nesting records are known from California (ibid).

A maximum of four ferruginous hawks were observed wintering on the project site during winter and spring surveys in 2004. The project site is outside the known breeding range of the species.

Merlin. The merlin (*Falco columbarius*) is a California species of special concern. This bird is a rare to uncommon spring and fall transient and winter visitor, occurring in California between late September to mid-April (Small 1994). They do not nest in California. Wintering individuals occur in a variety of habitats, including riparian, open woodlands, grasslands, agricultural fields, tidal estuaries, marshes, and developed areas. Merlins prey primarily on small birds, but also take small mammals and insects.

One merlin was observed foraging on the project site in the winter 2004 surveys. Merlin may roost overnight in the eucalyptus trees on the edge of the project site along Beach Road near Olson School. The project site is outside the known breeding range for this species.

Loggerhead shrike. The loggerhead shrike (*Lanius ludovicianus*) is a California species of special concern. Common residents of lowlands and foothills, this species prefers open habitats with scattered shrubs, trees, fences, or other lookout posts. Loggerhead shrikes occur only rarely in heavily urbanized areas. They hunt insects, snakes, small birds, and rodents that they often impale on thorns or barbed wire to hold it while they eat. Eggs are laid from April to May in shrubs and trees with dense vegetation for concealment. The breeding season in Monterey County spans from mid April to late June (Roberson and Tenney 1993).

Loggerhead shrike were observed within the project site during the winter 2004 surveys and may nest within the project site.

California horned lark. The California horned lark (*Eremophila alpestris actia*) is a California species of special concern. These larks are common permanent residents of grasslands with short vegetation. They build a shallow cup nest in very short grass or on bare ground, and breeding takes place from mid-March to mid-May.

Flocks of horned lark were observed on the site during the winter 2004 surveys, and horned larks were heard singing during the early spring 2004 surveys. This species may nest within the grassland communities within the project site.

Tricolored blackbird. The tricolored blackbird (*Agelaius tricolor*) is a California species of special concern. They nest in freshwater marshes, stock ponds, and willow thickets. They prefer dense cattails, tules, and rushes where they can build deep cup nests. They breed in large colonies of 50-100+ pairs, from April to mid-May. During fall and winter, tricolored blackbirds are nomadic and may be observed in pastures, grasslands, cattle pens, and marshes throughout the county (Roberson and Tenney 1993).

Flocks of tricolored blackbirds were observed foraging within the project site during the winter 2004 surveys. The site does not contain any suitable nesting habitat for this species.

Short-eared Owl. The short-eared owl (*Asio flammeus*) is a CDFG California species of special concern. The short-eared owl is a bird of open country that is often seen during the day. The short-eared owl will usually nest on dry ground in a depression that is concealed in vegetation; occasionally the nest will be placed in a burrow. The nest is lined with grasses, forbs, sticks, and feathers. Breeding occurs from early March through July with a clutch size of usually five to several eggs. The young fledge at 31-36 days. The short-eared owl was formerly a resident throughout the state, excluding the higher mountains. They are usually found in open areas with few trees such as annual and perennial grasslands, prairies, meadows, dunes, irrigated lands, and saline and fresh emergent marshes. Dense vegetation is required for roosting and resting cover. This includes tall grasses, brush, ditches, and wetlands. Open, treeless areas containing elevated sites for perching are also needed. Voles are the preferred prey for this species, but other small mammals are taken along with marsh birds, insects, reptiles, and amphibians. They can often

be identified from a distance by their habit of hovering. Prey is taken by swooping or pouncing from hunting posts.

The only nesting localities known in the vicinity include the mouth of the Salinas River and possibly Moss Landing. The project site may be utilized for foraging, but the site lacks the habitat required for cover and nesting. None were observed during the field surveys.

Prairie Falcon. The prairie falcon (*Falco mexicanus*) is a CDFG California species of special concern. This falcon is an uncommon permanent resident and migrant that ranges from southeastern deserts northwest along the inner-coast Ranges and Sierra Nevada. Generally distributed from annual grasslands to alpine meadows, but the species is associated primarily with perennial grasslands, savannas, rangeland, some agricultural fields, and desert scrub areas. Prairie falcons mainly prey upon small mammals, some small birds, and reptiles. Prey is taken in the air and on the ground in open areas. Prairie falcons require sheltered cliff ledges for cover. Nests are generally a scrape on the sheltered ledge of a cliff overlooking a large, open area. Nests are sometimes built on old raven or eagle stick nests on cliffs, bluffs, or rocky outcrops. Aerial courtship displays occur near the nest site.

The prairie falcon may utilize the project site for foraging; however, the project site lacks the habitat required for cover and nesting. None were observed during the field surveys.

Long-billed curlew. The long-billed curlew (*Numenius americanus*) is a California species of special concern. It prefers large coastal estuaries, upland herbaceous areas, and cropland for wintering habitats. It is uncommon to locally very common as a winter visitor from early July to early April along the California coast and in the Central and Imperial Valleys, where the largest flocks occur. The long-billed curlew uses its long bill to probe deep into the substrate, or to grab prey from mud surface. Prey includes crabs, ghost shrimp, and mud shrimp, as well as insects, worms, spiders, snails, and small crustaceans. Breeding occurs in northeastern California in Siskiyou, Modoc, and Lassen Counties. Breeding season occurs from mid-April to September.

This species was observed foraging on the project site; however, the project site is outside of the known breeding range.

Sensitive Habitats

The project site was surveyed for sensitive habitats. The project site contains two sensitive habitats: coastal dune scrub (33 acres) and native grassland (21 acres).

Wetlands are defined by the U.S. Army Corps of Engineers as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” A three-parameter test to determine wetland boundaries is conducted to determine the limits of Corps jurisdiction: vegetation, hydric soils, and wetland hydrology. A wetland assessment was conducted by DD&A on March 7, 2006, within the wet meadow communities within the project site (Appendix D). It was determined that these two areas are not potential jurisdictional wetlands, as defined by the ACOE.

Trees

The majority of the project site is devoid of trees, with the exception of some specimens along the project's south boundary. The project will require the removal of six trees, as identified in Table 4.4-1. In addition, construction of the project may require trimming or working within the dripline of trees within the project site. None of these trees appear to meet the City of Marina Municipal Code criteria for a "landmark tree."¹ Removal and relocation of trees as a result of this project will require compliance with the City of Marina Municipal Code (see Regulatory Setting discussion below).

Tree Type	DBH (diameter at breast height)	City of Marina Municipal Code Requirements
Eucalyptus	48"	Permit required
Eucalyptus	30"	Permit required
Coast live oak	29"	Permit required
Coast live oak	18"	Permit required
Coast live oak	36"	Permit required
Coast live oak	60" (multi-trunk) dead specimen	Dead specimens do not fit the definition of a "tree" and a permit would not be required

Regulatory Setting

The following regulatory discussion includes some of the major laws that may be applicable to the proposed project.

Federal Laws and Regulations

Federal Endangered Species Act

Provisions of the federal Endangered Species Act (ESA) of 1973 (16 USC 1532 *et seq.*, as amended) protects federally listed threatened or endangered species and their habitats from unlawful take. Listed species include those for which proposed and final rules have been published in the Federal Register U.S. Fish and Wildlife Service or NOAA Fisheries (formerly known as the National Marine Fisheries Service). The ESA is administered by the USFWS and NOAA Fisheries. In general, NOAA Fisheries is responsible for the protection of ESA-listed marine species and anadromous fish, whereas other listed species are under USFWS jurisdiction.

Federal Candidate species are "taxa for which (USFWS) has on file sufficient information on biological vulnerability and threats to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded." Federal Candidate species are not afforded formal protection, although USFWS encourages other federal agencies to give consideration to Candidate species in environmental planning. In 1996, the USFWS discontinued the Category 3 and 4 classifications for federal Candidate species (USFWS, 1996).

¹To be eligible for consideration as a landmark tree or landmark tree stand, trees or a group of trees must meet the following minimum criteria: 1. prominently visible from public streets, public parking areas, parks or open space, from a minimum distance of 100 feet; 2. indicate at least a 70% chance of surviving more than 10 years and be able to be maintained without excessive threat to the public health, safety and welfare. Landmark trees must also meet at least one of the following additional criteria: 1. possesses special beauty, or horticultural or historic interest; 2. be of such substantial size or prominence that it has significant visibility from city streets, parks or open space; 3. be of such substantial size that it makes a significant contribution to the forested skyline of the city; 4. is a rare or unusual species for this area.

Species either are identified as Candidate species with a listing priority classification, designated as federal “species of concern,” or are no longer given any federal status.

Section 9 of ESA prohibits the take of any fish or wildlife species listed under ESA as endangered. Take, as defined by ESA, is “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” Harm is defined as “any act that kills or injures the species, including significant habitat modification.” In addition, Section 9 prohibits removing, digging up, and maliciously damaging or destroying federally listed plants on sites under federal jurisdiction. Section 9 does not prohibit take of federally listed plants on sites not under federal jurisdiction. If there is the potential for take of a federally listed species, a Section 7 (federal agency) or Section 10 (private land owner) USFWS Incidental Take Permit may be required to authorize the “incidental take” of that species. Federal agency actions include activities that are on federal land, conducted by a federal agency, funded by a federal agency, or authorized by a federal agency (including issuance of federal permits).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 prohibits killing, possessing, or trading migratory birds except in accordance with regulation prescribed by the Secretary of the Interior. Most actions that result in taking or in permanent or temporary possession of a protected species constitute violations of the MBTA. The USFWS is responsible for overseeing compliance with the MBTA.

State Laws and Regulations

California Endangered Species Act

The California Endangered Species Act (CESA) was enacted in 1984. The California Code of Regulations (Title 14, Section 670.5) lists animal species considered endangered or threatened by the state. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. Section 2080 of the Fish and Game Code prohibits "take" of any species that the commission determines to be an endangered species or a threatened species. “Take” is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." It does not include habitat destruction in the definition of take. A Section 2081 Incidental Take Permit from the CDFG is required to “take” any state listed species.

Native Plant Protection Act

The California Native Plant Protection Act (NPPA) of 1977 directed the CDFG to carry out the legislature’s intent to “preserve, protect and enhance rare and endangered plants in the state.” The Act prohibits importing rare and endangered plants into California, taking rare and endangered plants, and selling rare and endangered plants. The CESA and NPPA authorized the California Fish and Game Commission to designate endangered, threatened and rare species and to regulate the taking of these species (§2050-2098, Fish and Game Code). Plants listed as rare under the NPPA are not protected under CESA.

California Fish and Game Code

Raptors (e.g., eagles, hawks, and owls) and their nests are protected under both federal and state laws and regulations. Section 3503 of the CDFG Code prohibits the killing, possession, or destruction of bird eggs or bird nests. Section 3503.5 and 3513 prohibit the killing, possession, or destruction of all nesting birds (including raptors and passerines). Section 3503.5 states that it is “unlawful to take, possess, or destroy the nest or eggs of any such bird except otherwise provided by this code or any regulation adopted

pursuant thereto.” Section 3513 prohibits the take or possession of any migratory nongame birds designated under the federal MBTA. Section 3800 prohibits take of nongame birds.

The classification of Fully Protected was the state's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish (Section 5515), mammals (Section 4700), amphibians and reptiles (Section 5050), and birds (Section 3511). Most Fully Protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

The CDFG also maintains a list of animal “species of special concern,” most of which are species whose breeding populations in California may face extirpation if current population trends continue. Although these species have no legal status, the CDFG recommends considering these species during analysis of proposed project impacts to protect declining populations and avoid the need to list them as endangered in the future.

Other State Conservation Programs

The Natural Heritage Division of the CDFG administers the state Rare Species Program. The CDFG maintains lists of designated endangered, threatened, and rare plant and animal species. Listed species either were designated under the NPPA or designated by the Fish and Game Commission. In addition to recognizing three levels of endangerment, the CDFG can afford interim protection to Candidate species while they are being reviewed by the CDFG Commission.

Under provisions of Section 15380(d) of CEQA, the project lead agency and CDFG, in making a determination of significance, must treat non-listed plant and animal species as equivalent to listed species if such species satisfy the minimum biological criteria for listing. In general, the CDFG considers plant species on List 1 or 2 of the California Native Plant Society’s (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (Tibor 2001) as qualifying for legal protection under this CEQA provision. Species on CNPS List 3 or 4 may, but generally do not, qualify for protection under this provision.

Local Requirements

Marina General Plan. The City of Marina General Plan contains provisions for the protection of areas with significant natural habitat value from being displaced by development. The following provisions address biological resources relevant to the proposed project.

4.113 As used in this General Plan, “sensitive species” refers to the following categories of species and “sensitive habitat” refers to habitat identified as supporting one or more of the following: federally proposed and listed threatened and endangered species; species that are candidates for federal listing as threatened or endangered; state-listed threatened and endangered species; and California Native Plant Society list 1B species with extensive portions (i.e., greater than 10 percent) of their known ranges within the Marina Planning Area.

4.116. Where new development may remove all or a portion of identified sensitive habitat in an area not subject to an approved HMP or HCP, and where no less environmentally damaging alternative can be feasibly implemented, comparable habitat should be restored either on-site or off-site on a two-to-one basis (e.g., two acres of habitat shall be restored for every acre of habitat removed).

Environmental Impact Report on the Marina General Plan. The General Plan EIR evaluated potential biological resource impacts associated with the adoption and implementation of the Marina General Plan, including future development within the Marina Station project site. That program-level EIR focused on general impacts associated with implementation of the General Plan, rather than project-specific impacts associated with individual development projects, such as the Marina Station Specific Plan project. The General Plan EIR identified the following impacts on biological resources: 1) disturbance to special-status species and their habitats, identified as a significant mitigable impact; 2) adverse effects on natural communities from extension of California Avenue, identified as a significant mitigable impact; and 3) adverse effects on wetlands, identified as a significant mitigable impact. As required in the mitigation for the General Plan, site-specific surveys for special-status species and wetlands have been conducted for the proposed project, and mitigation is provided for potentially significant effects, as described in the impacts discussion below.

The General Plan (December 31, 2005) designates approximately 36 acres within the project site as “Habitat Reserve & Other Open Space,” which would be removed as part of the Specific Plan. This area was originally designated as habitat reserve to protect potential vernal pools. However, as noted above, the biological evaluation for the project did not find any vernal pools or other wetlands on the project site.

Marina Station Specific Plan. Section 5.8 of the Marina Specific Plan identifies policies and implementation measures that address open space and resource conservation issues. Open Space (OS) Policy 3-1 states “protect special status species and their habitat within the Plan area in accordance with federal and state regulatory requirements.” The implementation measures are as follows:

- The master developer and/or individual developers shall comply with all the mitigation measures presented in the Environmental Impact Report and Mitigation Monitoring Reporting Plan (MMRP) regarding the protection of special status species and their habitat.

OS Policy 3-2 states “protect sensitive vegetative communities, including native grassland and coastal scrub communities.” The implementation measures are as follows:

- The master developer shall prepare a Biological Mitigation Monitoring Plan integrated with the MMRP to preserve and protect sensitive vegetative communities from degradation, particularly native grassland and coastal scrub. Protective measures should include, but not be limited to, restricting access during construction, restricting development within the natural areas, limiting access upon completion of development, and installing signage.
- Development of parks/open space areas shall provide native vegetation and shall not include species listed on the California Invasive Plant Inventory (Cal-IPC 2006).

City of Marina Municipal Code Chapter 12.04-Tree Removal, Preservation, and Protection. The City of Marina Municipal Code Chapter 12.04 outlines the policies regarding tree removal and relocation. The policies applicable to this project include Section 12.04.030 (Unlawful Action upon Trees) and Section 12.04.060 (Tree Removal Permit). As outlined in Section 12.04.060 (D), if it is determined by the City that adverse effects of tree removal can be mitigated, conditions shall be imposed on the removal, including, but not limited to, one or more of the following: 1) compensation plan, 2) site restoration plan, and 3) tree protection plan and program.

Relevant Project Characteristics

The proposed project consists of approximately 260 acres of mixed-use development, and a total of 58 acres of active and passive recreational areas and open space. This includes 20 acres of formal parks, two

acres for the Olson School expansion, and 38 acres of linear parks. The linear parks consist of open space areas with native landscaping. These areas are open to passive recreation such as walking/jogging, picnicking, and reading. The linear park system proposed in the Specific Plan forms a greenbelt around the Plan area. This area would remain undeveloped. A one-mile recreational trail is located within the western portion of the Plan area within the linear parks. The impact analysis in this section assumes that the entire project site will be graded, including the 5 acres outside of the project boundary (325 acres), and that six trees will be removed.

The project will construct a storm drainage system to convey storm runoff from the property site into an onsite percolation basin. Drainage inlets will be located in proposed streets and alleyways. In park and landscaped areas, flat grate inlets will be installed at low points. The storm drainage mains will be located within the streets, except where they exit the street to discharge into the percolation basin. The percolation basin will generally conform to the existing topography, and is proposed within one of the existing wet meadow depressions on the western portion of the site.

Thresholds of Significance

In accordance with CEQA Guidelines, a project impact would be considered significant if the project would:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service;
- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance;
- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan; or
- impede the use of native wildlife nursery sites or directly harm nesting species protected under the provisions of the Migratory Bird Treaty Act.

Impacts and Mitigation

Impacts to Special-Status Plant Species

Monterey spineflower, a federally threatened species and CNPS list 1B species, has been observed in approximately 21 patches throughout the project site (refer to Figure 4.4-1). As the Monterey spineflower

is an annual species, its population can vary from year to year depending on weather conditions (e.g., rainfall and temperature), as well as human and natural disturbances within the habitat. Based on the April 2004 survey, Monterey spineflower occupies approximately 51 acres of the project site, occurring within the annual grassland, coastal dune scrub, and native grassland communities.² Approximately all of the 51 acres of Monterey spineflower fall within the proposed development area.

Due to the widespread occurrence of this species throughout the site, impacts to Monterey spineflower cannot be avoided. As a result, the proposed project would result in the permanent removal of 51 acres of Monterey spineflower and its habitat on the site. This is considered a significant impact that can be reduced to a less-than-significant impact with implementation of the mitigation identified below.

Impact **The project would require grading, excavation, and other activities that would result in a permanent loss or disturbance of 51 acres of Monterey spineflower, a federally threatened plant species. This is a significant impact that would be reduced to a less-than-significant level with the following mitigation.**

Mitigation

4.4-1 The applicant shall mitigate for the loss of 51 acres of Monterey spineflower through a program of seed and/or soil bank salvage, establishment of a new spineflower restoration area at a 1:1 ratio to the area impacted (either on- or off-site), and managing and monitoring to assure that there will be no net loss of spineflower affected by the project. A Restoration Plan shall be prepared by a qualified biologist outlining the details pertaining to onsite or offsite restoration areas, plant salvage, seeding, and planting specifications, and monitoring program which describes annual monitoring efforts incorporating success criteria and contingency planning if success criteria are not met. The plan shall be completed and approved by the City and USFWS and funding secured prior to the issuance of any grading or building permit for the project and shall not terminate until there has been verification from a qualified biologist and City staff, in consultation with USFWS, that such measures have been successfully implemented. Possible restoration sites include the adjacent Armstrong Ranch, the coastal dune scrub habitat west of Highway 1 within Monterey County Regional Parks land (Marina Dunes Reserve) or private ownership, land south of the project site owned by Monterey Regional Parks District adjacent to Locke Paddon Community Park, or an inland population of Monterey spineflower located along the Salinas River near Soledad. Restoration areas shall be preserved through establishment of a conservation easement.

Impacts to Special-Status Wildlife Species

Based on the Baseline Study and field surveys, the following special-status wildlife species are documented to occur or have the potential to occur within the site: California tiger salamander (federally threatened species), American badger (California species of special concern), black legless lizard (California species of special concern), coast horned lizard (California species of special concern), burrowing owl (California species of special concern), and other special-status avian species (California species of concern and protected under the MBTA and Fish and Game Code).

²The Baseline Study identified 59 acres within the 320-acre study area. However, the project boundaries have been revised since the study was conducted in 2004, and now includes 5.7 additional acres. Additional plant and wildlife surveys in the 5.7-acre area were conducted by DD&A. GIS was used to accurately calculate the acreage of Monterey spineflower, as well as habitat types, identified within the project site.

Special-Status Avian Species

The following special-status avian species are known or have the potential to nest within the project site: northern harrier, California horned lark, loggerhead shrike, short-eared owl, and burrowing owl. In addition, ferruginous hawk and merlin were observed wintering within the project site. Impacts to the ferruginous hawk and merlin are considered less-than-significant due to the presence of additional foraging and wintering habitat adjacent to the project site. Raptors and their nests are protected by both federal and state regulations (MBTA and CDFG Code Sections 30503 and 3503.5), which protect birds of prey and their eggs and nests. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “taking” by CDFG. Any loss of fertile raptor eggs or nesting raptors, or any activities resulting in raptor nest abandonment, will constitute a significant impact. Construction activities such as tree removal or site grading that disturb a nesting raptor on-site or immediately adjacent to the construction site will constitute a significant impact. Per the CDFG Guidelines, impacts to burrowing owls are defined as disturbance or harassment within 160 feet of occupied burrows, destruction of burrows and burrow entrances, and degradation of foraging habitat adjacent to occupied burrows. This is considered a significant impact that can be reduced to a less-than-significant level with implementation of the mitigation identified below.

The following special-status avian species were observed foraging within the project site: Cooper’s hawk, tricolored blackbird, and long-billed curlew. In addition, the white-tailed kite and prairie falcon have the potential to utilize the site for foraging. These special-status avian species have specific nesting habitat requirements (e.g., oak woodland, riparian habitat, and sheltered cliffs) or are known to only nest in certain geographic regions of California outside of the Monterey Bay region (e.g., northeastern California) (refer to Appendix D), which are not present within the project site. Therefore, no suitable nesting habitat for these species occurs within the project site. The project would result in the loss of foraging habitat for these species. Due to the lack of suitable nesting habitat within the project site and regional availability of foraging habitat, impacts to these species are considered less-than-significant.

Impact **The project would require grading, excavation, and other activities that may result in a permanent loss or disturbance of raptors and migratory birds and their habitat. This would represent a potentially significant impact that can be reduced to a less-than-significant level with implementation of the following mitigation measures.**

Mitigation

4.4-2 A qualified biologist shall conduct preconstruction surveys to locate active breeding or wintering burrowing owls no more than 30 days prior to the start of construction. If ground disturbing activities are delayed or suspended for more than 30 days after the preconstruction survey, the site shall be resurveyed. The survey shall conform to the CDFG 1995 Staff Report protocol. If no burrowing owls are found, no further mitigation is required. If burrowing owls are found, impact avoidance and mitigation measures shall be implemented.

a.) Impact Avoidance

Breeding season: If active nests are found, then no ground-disturbing activities will be permitted within 250 feet of an active burrow during the breeding season (February 1 to August 31).

Winter Season: If active burrows are found during winter months (September 1 through January 31), ground disturbing activities can proceed no closer than 160 feet from active burrows.

Avoidance also requires that a minimum of 6.5 acres of foraging habitat be permanently reserved contiguous with occupied burrow site for each pair of breeding burrowing owls (with or without dependent young) or single unpaired resident bird.

b.) If active nests or burrows are found that cannot be avoided, the following mitigation measures would apply:

1. On-Site On-site passive relocation shall be implemented if the above avoidance measures cannot be met. Passive relocation is defined as encouraging owls to move from occupied burrows to alternate natural or artificial burrows that are beyond 160 feet from the impact zone, and that are within or contiguous to a minimum of 6.5 acres of foraging habitat for each pair of relocated owls. The land utilized for relocation shall be acquired and permanently protected at a location acceptable to CDFG. Existing unsuitable burrows shall be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site. Relocation of owls shall only be implemented during the non-breeding season. A time period of at least one or more weeks is necessary to accomplish the passive relocation methods, and allow the owls to move and acclimate to alternative burrows.

- Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFG verified through non-invasive methods that either: 1) the birds have not begun egg-laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.
- On-site habitat shall be preserved in a conservation easement and managed to promote burrowing owl use of the site.
- The applicant shall provide funding for long-term management and monitoring of the protected lands. The monitoring plan shall include success criteria, remedial measures, and an annual report to CDFG.

2. Off-site If the project will reduce suitable habitat on-site below the threshold level of 6.5 acres per relocated pair or single bird, the habitat shall be replaced off-site. Off-site habitat must be suitable burrowing owl habitat, as defined in the Burrowing Owl Survey Protocol³, and the site approved by the CDFG. Land shall be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable habitat. The land shall be funded by the applicant for long-term management and monitoring of the protected lands. The monitoring plan shall include success criteria, remedial measures, and an annual report to CDFG. Off-site mitigation shall use one of the following ratios:

1. Replacement of occupied habitat with occupied habitat: 1.5 times 6.5 (9.75) acres per pair or single bird.
2. Replacement of occupied habitat contiguous to currently occupied habitat: 2 times 6.5 (13.0) acres per pair or single bird.
3. Replacement of occupied habitat with suitable occupied habitat: 3 times 6.5 (19.5) acres per pair or single bird.

Alternatively, credits at an approved mitigation bank may be purchased.

³ In accordance with the Staff Report on Burrowing Owl Mitigation (Dept. of Fish and Game, 10/1995) and Burrowing Owl Survey Protocol and Mitigation Guidelines (The California Burrowing Owl Consortium, 1993).

- 4.4-3 If project activities cannot avoid the nesting season (generally March 1 – August 31), a qualified biologist shall conduct focused preconstruction surveys for nesting birds, including the northern harrier, California horned lark, short-eared owl, and loggerhead shrike, in all areas that may provide suitable nesting habitat that exist in or within 300 feet of the construction area. If active nests are found, a suitable construction buffer shall be established by a qualified biologist until the young of the year have fledged. For activities that occur outside of the nesting season (generally September 1 through February 28), preconstruction surveys are not required.

Reptiles and Amphibians

The project site does not contain suitable aquatic habitat for the California tiger salamander. However, the project site does contain suitable upland habitat for the salamander (grassland with small mammal burrows). Two vernal pools located north of the property boundary on the west side of Del Monte Boulevard were identified as potential suitable breeding habitat; these pools occur approximately 1,100 feet from the project's north boundary. According to the Interim Guidelines and correspondence with the USFWS, it has been determined that California tiger salamanders have the potential to occur within the project site and protocol-level surveys are recommended by the USFWS to determine presence or absence. Protocol-level aquatic dip-net surveys began in March 2006 to determine the presence or absence of this species. No California tiger salamanders were observed during the spring 2006 surveys. However, the presence or absence of the California tiger salamander will not be determined until the protocol-level surveys are completed in winter and spring 2007. For the purposes of this analysis, California tiger salamanders are assumed to be present within the project site (west of Del Monte Boulevard), until and unless results of the USFWS surveys indicate otherwise. Grading and other earthmoving activities as a result of the proposed project could impact California tiger salamanders and their habitat. Impacts to California tiger salamanders are considered a significant impact that can be reduced to a less-than-significant level with implementation of the mitigation measures identified below.

The black legless lizard may occur within the grassland and coastal dune scrub habitats within the project site. The coast horned lizard was observed within the project site; the coastal dune scrub habitat provides suitable habitat for this species. Grading and other earthmoving activities as a result of the proposed project have the potential to impact these two species, which is considered a significant impact that can be mitigated to a less-than-significant level with implementation of the mitigation measures identified below.

Impact **The project would require grading, excavation, and other activities that may result in a permanent loss or disturbance of California tiger salamander, black legless lizard, and coast horned lizard, and their habitat. *This would represent a potentially significant impact that can be reduced to a less-than-significant level with implementation of the following mitigation measures.***

Mitigation

- 4.4-4 The applicant shall retain a qualified permitted biologist to perform protocol-level surveys for California tiger salamander pursuant to the 2003 Interim Guidelines. If California tiger salamanders are not found during the protocol-level surveys, a final report shall be submitted to the USFWS for concurrence on the negative findings. No further mitigation will be required.

If California tiger salamanders are found during the protocol-level surveys, the positive findings shall be included in the report to the USFWS pursuant to the Interim Guidelines. The applicant shall coordinate with the USFWS to determine the appropriate course of action per

the requirements of the federal ESA (e.g., applying for a Section 10 Incidental Take Permit and implementing the permit requirements, including those outlined in a Habitat Conservation Plan, which is required as part of the application). The applicant shall follow the measures below and/or equivalent measures identified during the ESA process.

1. If more than one CTS adult or juvenile is found dead or injured during construction activities in any single calendar year, the project applicant/lead agency must contact the USFWS office immediately so that the Service can review the project activities to determine if additional protective measures are needed. Project activities may continue pending the outcome of the review, provided that the proposed protective measures are fully implemented.
2. Ground disturbing construction activities must not occur at night or during rain.
3. Ground disturbing construction activities must be conducted during the dry season between March 15 and October 15.
4. Prior to ground disturbing activities, any areas with dense concentrations of small mammal burrows must be flagged by a USFWS-approved biologist and avoided as much as possible.
5. A USFWS-approved biologist must conduct a brief training session for all project personnel before any project-related activities begin within the project area. At a minimum, the training must include a description of the CTS, their habitat, regulatory framework, the measures to be implemented during work activities to protect the species, and a review of project boundaries.
6. Prior to commencing excavation in upland areas that could injure or kill individual CTS, a pre-construction survey must be conducted immediately preceding the activity. A USFWS-approved biologist for the project must carefully search all obvious potential hiding places for CTS, such as large downed woody debris or small mammal burrows. Any CTS found within these upland project areas must be captured and relocated into suitable habitat outside of the project area.
7. A USFWS-approved biologist must be on-site during all ground disturbing activities to monitor for the presence of CTS. The USFWS-approved biologist must have the authority to stop construction activities when CTS are encountered or unintended indirect effects to CTS habitat occurs, until appropriate corrective measures are taken. If a CTS is observed within a designated work area and cannot be avoided, all work must stop until the animal leaves the work area or until it is captured and relocated by a USFWS-approved biologist to outside of the work area.
8. Prior to the onset of any construction or habitat enhancement activities, USFWS approved biologists must identify appropriate areas to receive translocated CTS in the project area. These areas must be in proximity to the capture site but outside any area likely to be adversely impacted by construction activities, support suitable vegetation, and be free of exotic predatory species (e.g., bullfrogs, crayfish) to the best of the USFWS-approved biologists' knowledge. Specifically, any accidentally exposed CTS found during project activities must be relocated to another small mammal burrow outside of construction activities.
9. CTS must be captured with bare hands or vinyl gloves only. USFWS-approved biologists must not use soaps, oils, creams, lotions, repellants, or solvents of any sort on their hands before and during periods when they are capturing and relocating this species.
10. The USFWS-approved biologist must limit duration of handling and captivity of CTS to a minimum. While in captivity, individuals of this species must be kept in a cool, moist, aerated environment, such as a bucket containing a damp sponge. Containers used for holding or transporting this species must not contain standing water.
11. If trenches are left open overnight, the trench area must be surrounded by silt fencing, installed in coordination with the USFWS-approved biologist, to ensure that the CTS do

not enter the project area and become trapped in the trench. The bottom six inches of silt fencing must be folded over (facing away from the project area) and weighed down with rebar, rocks, or other suitable material to prevent CTS from squeezing under the silt fence and entering the trench area. Any trenches left open overnight must be inspected by the USFWS-approved biologist within two hours of sunrise each morning to remove any CTS that may have inadvertently entered the trench.

12. The project proponent/lead agency must request written approval of any biologist it wishes to employ to capture, move, and survey for CTS in the project area and to conduct a training session. The request must be in writing and be received by the USFWS at least 15 days prior to the onset of activities.
13. To ensure that diseases are not conveyed between work site by the USFWS-approved biologists, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force must be followed at all times. The USFWS-approved biologist may substitute a bleach solution (0.5 to 1.0 cup of bleach to 1.0 gallon of water) for the ethanol solution. Care must be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat.
14. All staging areas, equipment storage areas, and project boundaries must be defined with fencing.
15. Pets shall be prohibited from the project site.
16. During project activities, all trash that may attract predators to the site shall be properly contained and removed from the work site.

4.4-5 The applicant shall obtain a Memorandum of Understanding (MOU) with CDFG for a qualified biologist to remove and relocate black legless lizards and coast horned lizards from the construction area if encountered during construction activities. The MOU shall include, but is not limited to, the methods of capture and an estimation of the number of individuals expected to be captured and handled, the duration of capture and handling, and a description of the established relocation area. If the relocation is proposed to occur outside of the project site, the City must coordinate and obtain approval from the landowner. Details of this procedure shall be reviewed by CDFG and implemented by a qualified biologist.

4.4-6 The applicant shall retain a qualified biologist to conduct a construction monitoring program for black legless lizards and coast horned lizards, which shall include procedures for capture and release. The biologist shall remain on-site during initial grading activities to salvage and relocate these species that may be uncovered during earthmoving activities. Recovered individuals shall be placed in appropriate habitat outside of the within the project site in accordance with the MOU with CDFG. The biologist shall walk alongside the grading equipment in each new area of disturbance, and shall have the authority to halt construction temporarily if necessary to capture and relocate an individual. Any individual captured in the grading zone shall be relocated as soon as possible to adjacent suitable habitat outside of the area of impact, pursuant to the MOU.

4.4-7 The applicant shall conduct an employee education program for construction crew and City staff prior to construction activities. A biological monitor shall meet with the construction crew at the onset of construction to educate the construction crew on the following: 1) the appropriate access route in and out of the construction area; 2) how biological monitor will examine the area and agree upon a method which will ensure the safety of the monitor during such activities, 3) the special-status species that may be present; 4) the specific mitigation measures that will be incorporated into the construction effort; and 5) the proper procedures if a special-status animal or any other animal is encountered within the project site.

- 4.4-8 A representative shall be appointed by the City who will be the contact source for any employee or contractor who may inadvertently kill or injure a special-status species or find one dead, injured, or trapped. The representative shall be notified immediately to notify USFWS and CDFG. The representative shall be identified during the Employee Education Program and his/her contact information shall be provided to USFWS and CDFG.
- 4.4-9 The applicant shall retain a qualified biologist to monitor all grading, excavation, and other substantial soil disturbance activities on the site.
- 4.4-10 All food-related and other trash shall be disposed of in closed containers and removed from the project area at least once a week during the construction period, or more often if trash is attracting avian or mammalian predators. Construction personnel shall not feed or otherwise attract wildlife to the area. These instructions to the construction crew shall be reiterated during the employee education program (Mitigation Measure 4.4-7) and during update meetings with construction crews. The instructions shall also be posted conspicuously on the site.

Mammals

Although American badgers were not observed within the project site during surveys, the project site contains suitable habitat for this species and the species has been reported on numerous occasions on Fort Ord to the south of the project site. Therefore, construction activities have the potential to impact this species. This is considered a significant impact that can be reduced to a less-than-significant level with implementation of the mitigation measures identified below.

Impact **The project would require grading, excavation, and other activities that may result in a permanent loss or disturbance of American badgers and their habitat. This would represent a potentially significant impact that can be reduced to a less-than-significant level with implementation of the following mitigation measures.**

Mitigation

- 4.4-11 The applicant shall retain a qualified biologist to conduct focused preconstruction surveys no more than two weeks prior to construction for potential American badger dens. If no potential American badger dens are present, no further mitigation is required. If potential dens are observed, the following measures are required to avoid potential significant impacts to the American badger⁴:
- If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent badgers from re-using them during construction.
 - If the qualified biologist determines that potential dens may be active, the entrances of the dens shall be blocked with soil, sticks, and debris for three to five days to discourage the use of these dens prior to project disturbance. The den entrances shall be blocked to an incrementally greater degree over the three to five-day period. After the qualified biologist determines that badgers have stopped using active dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction.

4.4-12 No pets or firearms shall be allowed on the project site during construction.

⁴There is no officially approved survey protocol for this species; however, the identified mitigation is the accepted methodology used by wildlife biologists and the CDFG.

Impacts to Sensitive Habitats

The proposed project would result in temporary and permanent impacts to coastal dune scrub and native grassland communities. These communities are considered sensitive by the CDFG (2003). The proposed project would result in impacts to 33 acres of coastal dune scrub and 21 acres of native grassland. These habitats were identified and mapped in the Baseline Study, following CDFG Guidelines. DD&A analyzed GIS (Geographic Information Systems) data, in shapefile and vector format, to create habitat classification polygons and estimate acreage of each habitat type.

Impact **The proposed project would require grading, excavation, and other activities that may result in a permanent loss or degradation of sensitive habitats. This would represent a potentially significant impact that can be reduced to a less-than-significant level with implementation of the following mitigation measures.**

Mitigation

4.4-13 Prior to grading and construction, a Habitat Restoration and Management Plan shall be prepared by a qualified biologist to revegetate and restore impacted coastal dune scrub and native grassland communities (either on-site or off-site). This plan shall include a list of appropriate species, planting specifications, monitoring procedures, success criteria, and contingency plan if success criteria are not met.

The plan shall require that the sensitive habitat areas impacted by the proposed project be restored and/or preserved at a 2:1 ratio (e.g., two acres of habitat will be restored and/or preserved for every one acre of undeveloped habitat impacted), in accordance with City of Marina General Plan Provision 4.116. A total of 66 acres of coastal dune scrub and 42 acres of native grassland shall be preserved and/or restored. Possible restoration sites include the adjacent Armstrong Ranch, the coastal dune scrub habitat west of Highway 1 within Monterey County Regional Parks land (Marina Dunes Reserve) or private ownership, land south of the project site owned by Monterey Regional Parks District adjacent to Locke Paddon Community Park, or Palo Corona Ranch owned by Monterey Regional Parks District. The use of these areas as restoration and preservation sites will need to be agreed to by property owners. Conservation easements can be preserved through conservation easements on private land. The mitigation area required for Monterey spineflower can be included in the restoration areas. The plan shall also include, but is not limited to, the following:

- a description of the baseline conditions of the habitats within the area of impact, including the presence of any special-status species, their locations, and densities;
- procedures to control non-native species invasion and elimination of existing non-native species within the area of impact;
- provisions for ongoing training of facility maintenance personnel to ensure compliance with the requirements of the plan;
- a detailed description of on-site and off-site restoration areas, salvage of seed and/or soil bank, plant salvage, seeding and planting specifications; and
- a monitoring program that describes annual monitoring efforts which incorporate success criteria and contingency plans if success criteria are not met.

4.4-14 Trees and vegetation not planned for removal shall be protected during construction to the maximum extent feasible. This shall include the use of exclusionary fencing of herbaceous and

shrubby vegetation, such as hay bales, and protective wood barriers for trees. Only certified weed-free straw shall be used to avoid the introduction of non-native, invasive species.

- 4.4-15 Following construction, the disturbed areas that are proposed as linear parks and native landscaping areas shall be restored to pre-project contours to the maximum extent feasible and revegetated using locally-occurring native species and native erosion control seed mix.
- 4.4-16 Protective fencing shall be placed so as to keep construction vehicles and personnel from impacting vegetation adjacent to the project site outside of work limits.
- 4.4-17 Grading, excavating, and other activities that involve substantial soil disturbance shall be planned and carried out in consultation with a qualified hydrologist, engineer, or erosion control specialist, and shall utilize standard erosion control techniques to minimize erosion and sedimentation to native vegetation.
- 4.4-18 No construction equipment shall be serviced or fueled outside of designated staging areas.

Impacts to Wildlife Movement and Nursery Sites

As discussed in the General Plan EIR, new development anticipated under the General Plan would not be expected to significantly interfere with the movement or migration patterns of fish or other wildlife. An increase in the total number of roadways in the project site could be expected to result in an increase in the number of animals killed by vehicular traffic, but this would not be regarded as substantial interference with any established wildlife migration pattern or with wildlife movement through any identified migratory corridor.

Consistency with Local Policies/Ordinances Protecting Biological Resources

The proposed project is consistent with local policies and ordinances intended to provide protection for biological resources. The project will result in the removal of six trees (refer to Table 4.4-1), and may also result in other impacts to trees including trimming or conducting construction activities within the dripline. The project will be required to comply with the tree removal policies outlined in the City of Marina Municipal Code. The City of Marina Municipal Code Chapter 12.04 outlines the policies regarding tree removal and relocation. The policies applicable to this project include Section 12.04.030 (Unlawful Action upon Trees) and Section 12.04.060 (Tree Removal Permit). As outlined in Section 12.04.060 (D), if it is determined by the City that adverse effects of tree removal can be mitigated, conditions shall be imposed on the removal, including, but not limited to, one or more of the following: 1) compensation plan (replacement of trees removed); 2) site restoration plan; and 3) tree protection plan and program. Because the project applicant will be required to comply with and implement the requirements of the City Code, the project is considered consistent with the policies associated with tree removal and protection. Therefore, the impacts associated with tree removal are less-than-significant. The potential wildlife impacts associated with tree removal are addressed above in the discussion of impacts to special-status avian species.

Conflict with the Provisions of an Adopted Habitat Conservation Plan

The project site is not located within the boundaries of an adopted Habitat Conservation Plan.

Cumulative Impacts

There are no future projects anticipated adjacent to the project site. The adjoining portion of Armstrong Ranch is not eligible for development until 2020 (with narrow exceptions not likely to occur).

The project site hosts a number of special-status wildlife species, one threatened plant species, and two sensitive habitats. The property contains native grassland and coastal dune scrub communities and one federally listed plant species (Monterey spineflower), and the site may be visited or occupied by up to 16 special-status wildlife species. With mitigation, all of the project's significant and potentially significant impacts on these resources would be reduced to a less-than-significant level.

The majority of these biological resources are regionally concentrated within the Fort Ord dunes system and former Fort Ord military base. The Fort Ord Reuse Plan EIR and Habitat Management Plan (HMP) for the former Fort Ord mitigate the loss of biological resources on a regional scale through the establishment of habitat reserves and corridors to preserve and manage many of the special-status species and habitats that occur, or have the potential to occur, within the project site, including California tiger salamander, black legless lizard, Monterey spineflower, native grassland, and coastal dune scrub. The preservation of native grassland habitat and coastal dune scrub communities within the former Fort Ord allow for the preservation of other associated special-status species, such as coast horned lizards, raptors, and badgers. In addition, the majority of the coastal dune scrub community in the region from the mouth of the Salinas River to Monterey is within existing or proposed State park land, and therefore protected from future large-scale development. Although the HMP does not mitigate for development impacts that occur outside of the former Fort Ord, the preservation of habitat and special-status species has a cumulative beneficial impact for the region.

Growth and urbanization outside of the former Fort Ord boundaries may impact similar biological resources; however, these projects would be required to provide mitigation for potentially significant impacts consistent with regulatory agency requirements. The proposed project combined with cumulative development could contribute incrementally to the cumulative loss of special-status plant and wildlife species and sensitive habitats. However, with the mitigation required for this project and preservation/management of biological resources at a regional scale at Fort Ord, these cumulative impacts would be less-than-significant.

The remainder of Armstrong Ranch north of the project site is outside the Urban Growth Boundary and with narrow exceptions that are unlikely to occur, cannot be developed until at least 2020. Loss of potential biological resources on this property is speculative and not included as part of this cumulative analysis. **The project would result in less-than-significant cumulative impacts on biological resources.**

4.5 CULTURAL RESOURCES

Introduction

The following discussion is based on a Preliminary Cultural Resources Reconnaissance prepared for the project by Archaeological Consulting (January 2006). A Cultural Resources Evaluation was prepared by Laura Jones, Ph.D. (January 2007) to evaluate the historical significance of a former railroad grade. City staff have reviewed the reports, found them to be prepared pursuant to acceptable protocol, and concurs with the conclusions. These reports are on file with the City of Marina.

Setting

Site History

The project site lies within the City of Marina, north of the former Fort Ord military base. This area may include archaeological resources from the prehistoric period (ranging from around 8000 B.C. to 1770 A.D.), and historic resources dating from 1770 to 1897 or later. The project area is located within the ethnographic territory of the Costanoan linguistic group. This group of Native Americans were hunter-gatherers, with semi-sedentary habitation. Occupation sites are most often found near streams or springs, and gathering/processing areas are frequently found on the coast or in other areas containing resources utilized by a group.

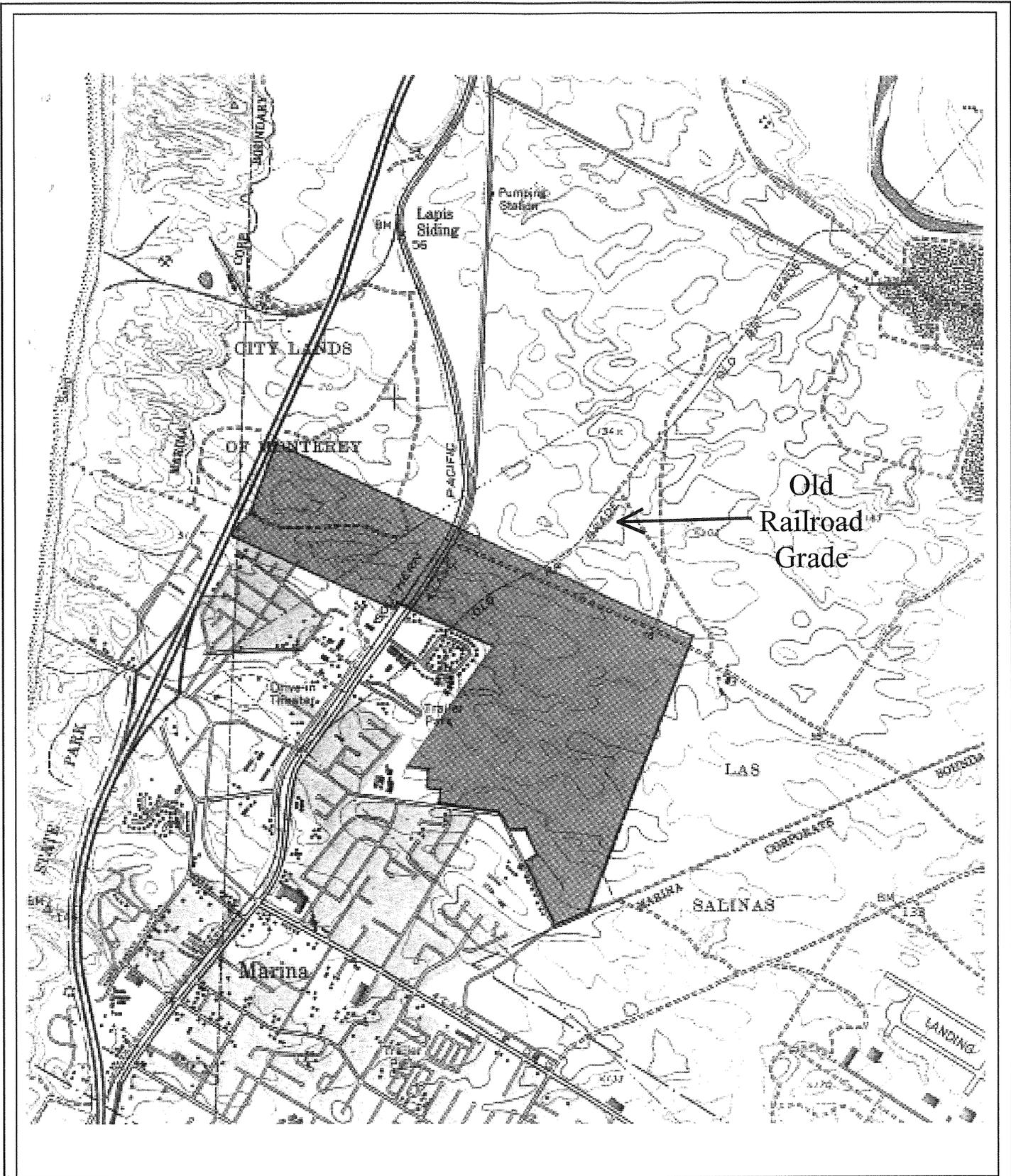
Since the early 1900s, the property has been used for agricultural purposes, including pasture and dry land farming. The site is currently used for cattle grazing, and consists of open fields and few structures besides fences, watering troughs, etc.

Cultural Resources Investigation

A search of the files at the Northwest Regional Information Center (NWIC) at Sonoma State University, and review of existing files was conducted by Archaeological Consulting to identify any recorded historic or prehistoric sites in the project area. A portion of one recorded cultural resource was identified on the project site. This resource is referred to as the “old railroad grade” (CA-MNT-2080H), and is a remnant of the Monterey and Salinas Valley Railroad, the first narrow gauge railroad to operate in California.

The California Inventory of Historical Resources, California Historical Landmarks, and the National Register of Historic Places were reviewed to identify historic resources in the project area, and no resources were found. Several historic maps were also examined for evidence of structures or other historic resources on the project site. The only resource that was discovered was the old railroad grade, identified on the 1947 USGS map (Monterey Quad). In addition, a search of the Sacred Lands file of the Native American Heritage Commission did not find any record of Native American cultural resources in the project area.

A field survey of the project site was conducted in early December 2005 by Archaeological Consulting. The survey consisted of a general surface reconnaissance of all visible areas; transects were walked at regular intervals over the entire project site. The field survey found remnants of the old railroad grade. All that remains of the grade is a linear landscape feature consisting of depressions in the soil where the rails were laid and a cut through a sand dune. No rails, ties, or spikes were identified. Figure 4.5-1 illustrates the location of the old railroad grade in relation to the project site. Photographs showing the railroad grade on the project site are presented in Figure 4.5-2.



Location of Old Railroad Grade

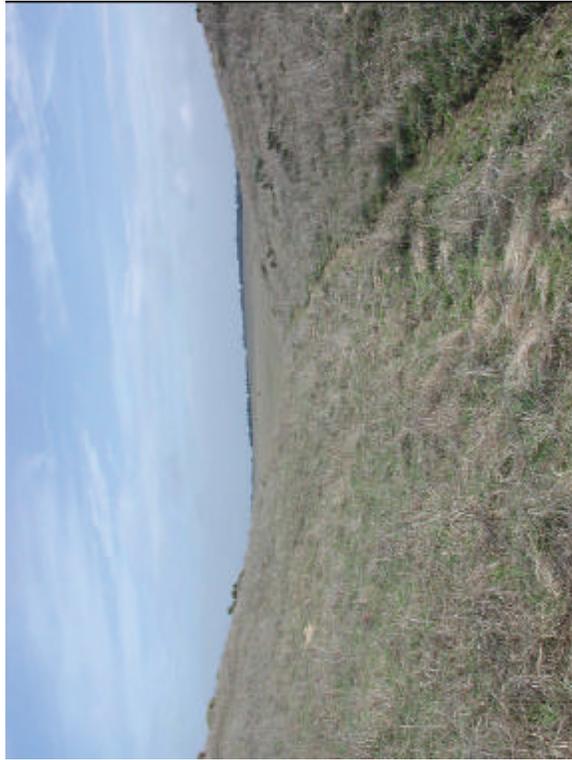
Figure 4.5-1



Historic railroad grade crossing ranch road.



Historic railroad grade cut through dunes.



Within railroad grade cut; view to the north.



Within railroad grade cut; view to the south.



Photographs of Old Railroad Grade

Figure
4.5-2

None of the materials associated with prehistoric cultural resources were identified during the field survey of the project site.

Local Regulations

Marina General Plan. The City of Marina General Plan contains provisions for the protection of cultural resources. The following provision specifically calls for archaeological review of project sites in sensitive areas.

4.126.1. All archaeological resources which may be present in the Marina Planning Area shall be protected and preserved. To this end, development proposed in areas of high archaeological sensitivity, i.e., the terraces and benches along the Salinas River, the peripheries of vernal ponds, and coastal beaches, shall be required to undertake a reconnaissance by a qualified archaeologist, and, where artifacts are identified, to protect and preserve such resources.

Marina Station Specific Plan. Section 5.8 of the Marina Station Specific Plan identifies policies and implementation measures to protect historical, cultural, and archeological resources. Open Space (OS) Policy 3-5 states “protect significant historical, cultural, and archaeological resources that may be accidentally uncovered during construction activities.” Implementation measures to support this policy are as follows:

- The master developer and/or individual developers shall comply with the mitigation presented in the Specific Plan EIR MMRP regarding historical, archaeological, and cultural resources.

Environmental Impact Report on the Marina General Plan. The General Plan EIR evaluated potential impacts to cultural resources associated with the adoption and implementation of the Marina General Plan, including future development within the Marina Station project site. This program-level EIR focused on general impacts associated with implementation of the General Plan, rather than project-specific impacts associated with individual development projects, such as the Marina Station Specific Plan. The General Plan EIR did not identify any historic resources on the project site. According to the General Plan EIR, the following impacts are expected as a result of future development within the Marina Station project site: 1) construction-related disturbance of archaeological resources, identified as a significant, mitigable impact; and 2) possible disturbance of human remains, identified as a significant, mitigable impact.

Thresholds of Significance

In accordance with CEQA Guidelines, a project impact would be considered significant if the project would:

- cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5;
- cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5;
- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- disturb any human remains, including those interred outside of formal cemeteries.

Impacts and Mitigation

Historical Resources

The alignment of the old railroad grade, a recorded cultural resource (CA-MNT-2080H), was identified on the project site. No other historic features or materials were noted during the field survey. A historic evaluation of the railroad was prepared by Laura Jones, Ph.D., to determine the significance of this resource. The evaluation used the criteria for listing on the California and National Registers, as well as criteria set forth in Section 15064.5 of the CEQA Guidelines. These criteria are as follows:

California Register of Historical Places

In order for a resource to be eligible for the California Register, it must be significant at the local, state or national level, under one or more of the four criteria of significance listed below. These are essentially the same as National Register criteria with more emphasis on California history.

1. The resource is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history and cultural heritage of California or the United States.
2. The resource is associated with the lives of persons important to the nation or to California's past.
3. The resource embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.
4. The resource has the potential to yield information important to the prehistory or history of the local area, state or the nation (this applies primarily to archaeological sites).

National Register of Historic Places

Specific criteria are used to evaluate a historic property's eligibility for the National Register. To meet the National Register standards, a resource must satisfy at least one of the below criteria, be associated with an important historic context, and retain the historic integrity of features that conveys its significance.

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. That are associated with the lives of persons significant in our pasts; or
- C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinctions; or
- D. That have yielded, or may be likely to yield, information important in prehistory or history.

Local Register

In addition to the above criteria, under CEQA Section 15064.5 a significant historic resource may include those resources identified in a local register or survey, or identified by the lead agency as significant based on substantial evidence. This could be “any object, building, structure, site, area, place, record or manuscript which a lead agency determines, based on substantial evidence in light of the whole record, to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California.”

Summary of Evaluation

The results of the historical evaluation indicate that the railroad grade is not significant, based on the above criteria. The old railroad grade has not been listed or determined eligible for listing for either the California Register of Historical Resources or the National Register of Historic Places. The old railroad grade does not merit listing based on criterion 1 of the California and criterion A of the National Registers, respectively, for the following reasons: 1) the Monterey and Salinas Valley Railroad operated for only a short time (from approx. 1874-1879), 2) all that remains of the railroad on the project site are topographical depressions with no artifacts, and 3) there are a large number of better preserved properties associated with the development of large-scale agriculture and expansion of rail networks in California.

The old railroad grade was closely associated with the life of a Carlisle Abbott, a businessman associated with the growth and development of the agricultural industry in Monterey County. However, the property lacks sufficient physical presence to convey this association. Therefore, the old railroad grade does not merit listing based on criterion 2 of the California and criterion B of the National Registers. Similarly, the old railroad grade is not well-preserved enough to warrant listing based on its type or method of construction, based on criterion 3 and C of the California and National Registers. In addition, the grade does not have the potential to yield information important in history, based on criterion 4 and D of the California and National Registers (L. Jones, 2007).

The old railroad grade is not included in any local register(s) of historical resources. The historical resource evaluation for the old railroad grade concludes that the resource “has little integrity,” “is characterized solely by topography,” and “all artifactual and structural remains are absent.” The resource is not considered by the lead agency to be historically significant, since it does not meet the requirements for listing on the California Register of Historical Resources or any other criteria.

Based on the above discussion, the proposed project would not cause a significant impact to the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines. Although no significant impact would occur, the project applicant has conducted photographic mapping of the old railroad grade that will be furnished to the City. The project also proposes to provide a commemorative plaque with historic information regarding the Monterey and Salinas Valley Railroad in one of the project’s parks. **The project would have a less-than-significant impact on historical resources.**

Archaeological Resources

None of the materials associated with prehistoric cultural resources in the area (dark midden soil, marine shell fragments, bones or bone fragments, broken or fire-altered rocks, flaked or ground stone, etc.) were noted during the field survey. Dry sandy soil was consistent throughout the project site.

No evidence of cultural resources was found on or adjacent to the project site. Construction of the project could, however, potentially uncover buried archaeological resources or human remains during excavation and clearing activities. This represents a potentially significant impact.

Impact: Construction of the project may result in the discovery and disturbance of unknown archaeological resources and/or human remains. *This represents a potentially significant impact that can be reduced to a less-than-significant level with implementation of the following mitigation measures.*

Mitigation

- 4.5-1 The applicant shall monitor the construction site. If archaeological resources or human remains are accidentally discovered during construction, work shall be halted within 165 feet (50 meters) of the find until a qualified professional archaeologist can evaluate it.
- 4.5-2 If buried human remains are encountered during construction, work in that area must halt and the archaeologist and the coroner immediately notified. If the remains are determined to be Native American, then the NAHC must be notified within 24 hours as required by Public Resources Code 5097. The NAHC will notify designated Most Likely Descendants who will provide recommendations for the treatment of the remains within 24 hours. The NAHC will mediate any disputes regarding treatment of remains.

Paleontological Resources

No unique paleontological resources have been identified within the Marina area (Marina Draft General Plan EIR, May 2000). No paleontological resources are anticipated in the project area; therefore, project development would not result in direct or indirect impacts on any unique paleontological resources. **The project would have a less-than-significant impact on paleontological resources.**

Cumulative Impacts

The project could significantly impact archaeological resources by disturbing buried resources. Mitigation is identified for the project to reduce impacts to cultural resources to a less-than-significant level. The project would not contribute to significant cumulative impacts to cultural resources. In addition, the incorporation of appropriate management measures to avoid existing resources, protect resources, and/or document resources by cumulative development in the area, as required by the City and CEQA, would minimize impacts to cultural resources. **The project would have less-than-significant cumulative impacts on cultural resources.**

4.6 GEOLOGY, SOILS, AND MINERAL RESOURCES

Introduction

This section describes the geologic and seismic setting for the project and evaluates its potential to cause geologic impacts such as erosion during construction or to be subjected to geologic hazards such as earthquakes. This section also addresses the project's impact on access to mineral resources.

This section is based on existing information, as well as the results of a preliminary geotechnical analysis prepared for the project by Landset Engineers, Inc. (December 31, 2003). According to this analysis, a total of 30 exploratory borings were drilled on the site. The exploratory borings were drilled to depths ranging from 15.0 to 51.5 feet below the ground surface. Seven bulk soil samples were collected at depth intervals ranging from zero to five feet below the ground surface. Soils encountered in each exploratory boring were visually classified in the field and a continuous log was recorded. Laboratory tests were performed on the collected soil samples to determine physical and engineering characteristics. These tests included moisture-density determinations, compaction curve, and grains size distribution (gradation) analysis. The tests performed were selected on the basis of the probable project design requirements as correlated to the site subsurface profile. The preliminary geotechnical analysis is included as Appendix E of this Draft EIR.

Setting

Overview

Geologic structure in central California is primarily the result of tectonic events that occurred over the past 30 million years. It is widely believed that the numerous faults in this area are related to movement along the boundary between the Pacific and North American tectonic plates. The relative motion between these two tectonic plates is taken up largely along the northwestward-trending San Andreas Fault system, which defines the regional boundary between the two plates. Changes in sea level and tectonic uplift resulted in a complicated depositional environment that produced the complex geology of the Monterey Bay region.

The Quaternary and Holocene age sediments exposed on-shore in the region are relatively young, poorly cemented sands deposited along river channels and in sand dunes. Groundwater is present within all of these deposits at relatively shallow depths below the existing ground surface, particularly near the ocean. Dune sands cover the area from the City of Monterey to the Salinas River, and extend as far as five miles inland. In the Marina area, the dune sands overlie fluvial deposits that constitute the major water-bearing units of the Salinas Basin. Based on borings performed in the area, Holocene-age dune sand is found to a depth of about 50 feet, underlain by a 45-foot section of younger, late Pleistocene alluvium. Interbedded sand, clay, and gravel deposits encountered in these borings are interpreted to be older alluvium associated with past meanders of the Salinas River.

The project site is located near the northern terminus of the Salinas River Valley in the north central portion of the Marina 7.5-minute quadrangle. The site is composed of three separate but contiguous parcels totaling approximately 320 acres. The site consists of an undulating northwest-southeast trending older stabilized dune and drift sand field that often forms small closed drainage basins. Site drainage is directed towards the northwest. However, storm runoff rarely occurs due to rapid infiltration of precipitation into the sandy sediments.

Topography

The project site is characterized by gentle, rolling slopes ranging from about 5:1 to 10:1 (horizontal to vertical). Locally steeper slopes up to 2:1 exist in the northwestern panhandle area. The overall site slopes in a northwesterly direction towards the Pacific Ocean. Overall topographic relief is about 95 feet, with elevations ranging from about 105 feet above sea level at the southeast property corner, to nine feet above sea level in two closed basin areas in the northwest panhandle.

Soils

Subsurface constituents were fairly uniform to the depths explored in each of the 30 exploratory borings. The project site soils consist of silty sand and fine grained poorly graded sand. Rare, thin clay layers were noted to occur at various depths and were associated with the phreatic ground water interface. Consistencies for the upper five feet of soil were variable, ranging from very loose to medium dense. Medium dense to dense consistencies were typically encountered below depths of 10 feet. Groundwater was encountered in exploratory borings at depths ranging from 6.5 to 45.0 feet below the ground surface. Based on the conditions encountered in the exploratory borings, the depth to groundwater is at or near sea level.

Events and Processes

Erosion. As described above, the Marina area is characterized by extensive sand dunes, that are composed entirely of unconsolidated, uncemented, cohesionless, generally well-sorted, highly erodible sand. The project site soils are composed of older dune sand that lacks binding fines making them extremely erodible.

Collapse Potential. Isolated and discontinuous loose and dry sands were encountered at various depths across the site. These sands are weak and potentially compressible.

Lateral Spreading. Lateral spreading is a failure within weaker soil material that causes the soil mass to move towards a free face or down a gentle slope. Since surficial soils situated above the older dune deposits will likely be removed and compacted as a part of earthwork operations, the potential for lateral spreading is considered low.

Liquefaction. Liquefaction is the transformation of soil from a solid to a liquid state as a consequence of increased pore-water pressures, usually in response to strong ground shaking, such as those generated during a seismic event. The potential for liquefaction to affect the majority of the site, where the depth to groundwater is deeper than 25 feet, is low due to the following natural conditions: the site is typically underlain by medium dense Pleistocene age sediments, the depth to groundwater is at or near sea level elevation, and the site peak ground acceleration (with a 10% probability of being exceeded in 50 years) is greater than 0.3g. However, there are three isolated areas on the site where the depth to groundwater is less than 25 feet that have been classified with a moderate potential for liquefaction (refer to Appendix E).

Soil Expansion. Expansive soils shrink and swell as a result of moisture changes. This can cause heaving and cracking of slabs-on-grade, pavements, and structures on shallow foundations. The site soils are classified as silty sand and poorly graded sand, and are considered to be non-plastic. Review of the Soil Survey of Monterey County shows the site to be underlain by Baywood and Oceano Series Soils. These soil types are non-plastic, confirming the field and laboratory observations. According to the preliminary geotechnical analysis, the risk of soil expansion on foundations and interior or exterior concrete slabs-on-grade is low.

Seismicity. The project site is located within a generally active seismic area. The potential of earthquake damage from ground shaking is moderate to high in the project vicinity. The site is located in Seismic Hazard Zone 4 (as defined by the 1997 Uniform Building Code), which indicates that the area is near a great fault, and which is considered for structural design purposes to be subject to ground shaking severity of 0.5 g. Most earthquakes in the area are linked to the San Andreas Fault (Pajaro Segment), located approximately 17 miles to the northeast, and the Rinconada Fault, located approximately 0.3 miles to the northeast. Because of its closer proximity to the site, the Rinconada Fault is considered capable of generating stronger motions at the site than the San Andreas Fault, despite the greater activity of the latter.

Mineral Resources

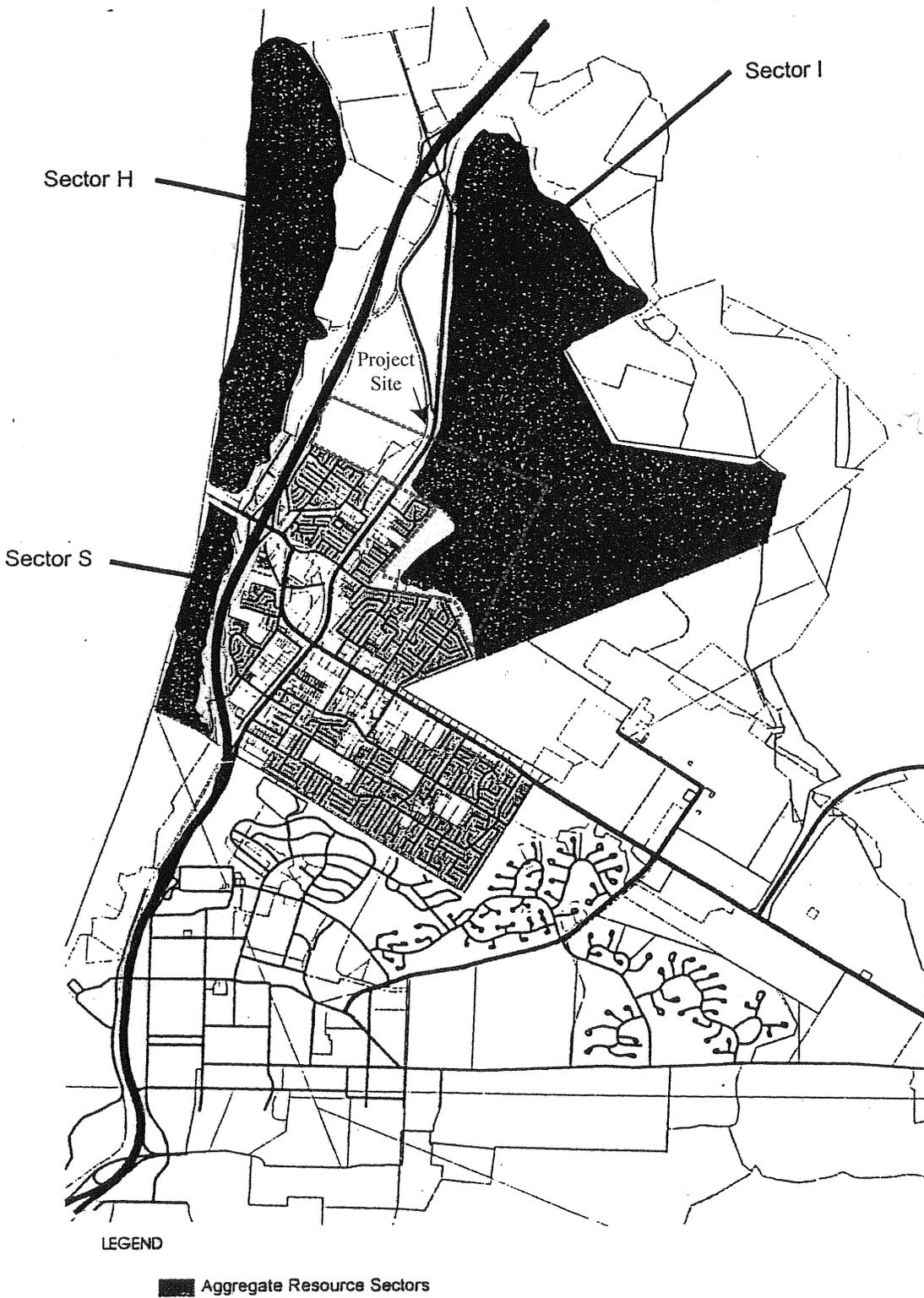
Portions of Marina are underlain by the Quaternary Beach and Dune sand formation. Most undeveloped lands supporting these sand deposits are classified as mineral resource areas for construction aggregate. Aggregate resource areas are based on Mineral Resource Zone (MRZ) maps developed by the California Department of Conservation Division of Mines and Geology, in accordance with the Surface Mining and Reclamation Act (SMARA) of 1975. SMARA mandated that aggregate resources throughout the state be mapped so that local governments could make land use decisions that consider the presence of aggregate resources and preserve access to these resources. The deposits in Marina are identified as regionally significant sources of construction aggregate (sand, gravel, and stone) in Article 2, Section 3550.12 of SMARA. Three MRZ-2 sectors have been designated within the City of Marina, as shown in Figure 4.6-1. A large portion of the project site is located in MRZ-2 zone, Sector I. Sector I is identified in SMARA as “a large sand dune area located on the northern edge of the City of Marina in Monterey County.”

The State Geologist classifies mineral lands on the basis of geologic factors. Existing land-use, by statute, is not considered. MRZ-2 identifies areas where adequate information indicates that significant mineral deposits are present, or there is a high likelihood of their presence. The Department of Conservation, California Geological Survey has estimated that consumption of aggregate in the Monterey Bay region through 2056 will reach 383 million tons. The Division also estimated that the Armstrong Ranch area consisting of approximately 2,000 acres (see Figure 4.6-1) could provide an estimated 208 million tons of construction sand. Approximately 230 acres of the project site is classified as MRZ-2. Utilization of this area for mining operations would be limited due to the presence of residential development (as well as schools) along the southern boundary and active agricultural lands to the east. The Division recognizes the limitations of expanding sand mining operations in the Marina area, including protection of sensitive habitat, provision of coastal plan policies, and maintenance of scenic views.

Local Requirements

Marina General Plan. The City of Marina General Plan contains provisions for the protection of residents from geologic and soil hazards, as well as for the preservation of significant mineral resources. Please refer to Table 4.9-2 of the Land Use and Planning section of this EIR for a detailed analysis of the project’s consistency with relevant geologic and mineral resource provisions of the Marina General Plan.

Environmental Impact Report on the Marina General Plan. The General Plan EIR evaluated potential geology, soils, and mineral resources impacts associated with the adoption and implementation of the Marina General Plan, including future development within the Marina Station project site. This program-level EIR focused on general impacts associated with implementation of the General Plan, rather than project-specific impacts associated with individual development projects, such as the Marina Station Specific Plan project.



Mineral Resources Map

Figure
4.6-1

According to the General Plan EIR, the following geology, soils, and mineral resources impacts were identified: 1) seismic ground shaking, identified as a significant unmitigable impact; 2) seismically-induced ground failure, identified as a significant mitigable impact; 3) soil erosion due to wind and water, identified as a significant mitigable impact; 4) sedimentation of streams and rivers, identified as a significant mitigable impact; and 5) loss of access to mineral resources, identified as a significant unmitigable impact.

Marina Station Specific Plan. Section 5.8 of the Marina Station Specific Plan identifies policies and implementation measures to ensure adequate protection of residents from geologic and soil hazards in the Plan area. Open Space (OS) Policy 4-2 states “Design of future development to mitigate for geologic and soils related hazards.” Implementation measures identified to support this policy are as follows:

- The master developer and individual project developers shall conduct design level geotechnical analyses for individual projects. All recommendations of the analyses shall be incorporated into improvement plans for all infrastructure, and all residential, office, industrial, and commercial development projects.
- The master developer and all individual project developers shall construct all improvements consistent with the latest edition of the California State Building Code.

Relevant Project Characteristics

The proposed project consists of the phased construction of a mixed-used development with associated roadway and utility infrastructure improvements. Site grading will disturb roughly 315 acres of the 320-acre project site, and will consist of conventional cut/fill construction methods. Grading will involve the movement of approximately 2.5 million cubic yards (CY) of cut and 2.5 million CY of fill.

Thresholds of Significance

In accordance with CEQA Guidelines, a project impact would be considered significant if the project would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault,
 - Strong seismic ground shaking,
 - Seismic-related ground failure, including liquefaction,
 - Landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Impacts and Mitigation

Seismic Hazards

During the life of the project, proposed development would be subject to seismic hazards such as ground accelerations, ground shaking, and liquefaction. The risk of seismic-induced landslides is considered low since the project site is relatively flat and any hilly topography will be graded level with the surrounding flat terrain. Existing building code regulations for seismic loads may not eliminate the potential for damage to structures resulting from nearby major earthquakes. Consequently, the requirements of the existing building codes should be reviewed during site design in order to identify any needed upgrades and provide the appropriate level of protection to new improvements.

Impact **The project would be exposed to potential adverse effects from strong seismic ground shaking that may result in damage to proposed structures. *This would represent a potentially significant impact that can be reduced to a less-than-significant level with implementation of the following mitigation measures.***

Mitigation

- 4.6-1 To minimize the potential effects from strong seismic ground shaking on project components, a detailed geotechnical analysis shall be performed by a registered professional engineer with geotechnical expertise, and all recommendations incorporated into final design plans, subject to review and approval by the City Public Works Director. The engineer shall develop plans based upon and in response to the observations and recommendations made in the geotechnical analysis.

Grading and Soil Erosion

The project will require extensive grading on the site to facilitate construction of proposed uses. Proposed grading would occur throughout most of the site, and would involve approximately 2.5 million cubic yards (CY) of cut and 2.5 million CY of fill. Limited grading will occur just outside the northern and eastern project boundaries. However, these activities will be temporary in nature, and the disturbed land outside of the project boundaries will be restored back to its natural condition upon completion of grading and construction. All grading is proposed to balance upon completion of the project. The project site soils are composed of older dune sand that is extremely erodible. Site preparation and construction activities would disturb soil and increase its susceptibility to erosion. Removal of soils by wind or water can undermine buildings, roads, and other developments, as well as contribute siltation of local streams or water bodies. Erosion impacts can result from both short-term construction activities and long-term project conditions where vegetative cover is not re-established following development.

Impact **Construction of the project could result in substantial soil erosion or loss of topsoil. *This is a potentially significant impact that can be reduced to a less-than-significant level with implementation of the following mitigation measures.***

Mitigation

- 4.6-2 In order to reduce wind and water erosion on the project site, an erosion control plan and Storm Water Pollution Prevention Plan shall be prepared for the site preparation, construction, and post-construction periods. The erosion control plan shall incorporate best management practices consistent with the requirements of the National Pollution Discharge Elimination System (NPDES). The following measures shall be implemented, where appropriate, to control erosion: 1) keep construction machinery off of established vegetation as much as possible, especially the vegetation on the upwind side of the construction site; 2) establish specific access routes at the planning phase of the project, and limits of grading prior to development, which should be strictly observed; 3) utilize mechanical measures (i.e., walls from sand bags and/or wooden slat or fabric fences) to reduce sand movement; 4) immediate revegetation (plus the use of temporary stabilizing sprays), to keep sand movement to a minimum; and 5) for larger-scale construction, fabric or wooden slat fences should be placed around the construction location to reduce sand movement.
- 4.6-3 Areas disturbed by grading shall be stabilized with adequate landscaping vegetative cover. A re-vegetation and landscaping plan shall be prepared by a landscape architect with experience in working with the type of soils that are characteristic of the site, subject to approval by the City.

Landslides and Lateral Spreading

According to the preliminary geotechnical analysis prepared for the project, there is no indication of past slope instability at the project site. In addition, the project site is relatively flat and any hilly topography will be graded to reduce slopes on the site, thereby reducing the risk of landslides and lateral spreading. The project will not result in on- or off-site landslides or induce lateral spreading. There will be no impact from landslides and lateral spreading and no mitigation measures are necessary.

Subsidence, Liquefaction, and Collapse

There is a risk of subsidence, liquefaction, and collapse at the project site due to soils being composed entirely of unconsolidated, cohesionless, generally well-sorted, highly erodible sand. Isolated and discontinuous loose and dry sands were encountered at various depths across the site. These sands are weak and potentially compressible. According to the preliminary geotechnical analysis, the potential for liquefaction to affect the majority of the site is low. However, three isolated areas on the site have been classified as having a moderate potential for liquefaction susceptibility. As the surficial soils that will be supporting the foundations and structural fill are loose to very loose, remedial grading and subexcavation is necessary to improve the soils for foundation and structural fill support.

Impact ***The project could result in localized subsidence, liquefaction, and collapse. This would represent a potentially significant impact that can be reduced to a less-than-significant level with implementation of the following mitigation measures.***

Mitigation

- 4.6-4 In order to reduce the risk of localized subsidence, liquefaction, and collapse, and allow for adequate foundation and structural fill support, grading plans shall be consistent with a detailed geotechnical analysis to be reviewed and approved by the City. The geotechnical analysis shall include recommendations that the top one to four feet of native soil be removed and recompacted, and foundations be designed to resist differential movements ranging from one to two inches.

Expansive Soil

According to the preliminary geotechnical analysis prepared for the project, the site soils are classified as non-plastic. These soils are considered to be non-expansive as defined by the Uniform Building Code. The project will not be located on expansive soil that would result in substantial risks to life or property. **There will be no impact from expansive soils and no mitigation measures are necessary.**

Mineral Resources

Development of the project would eliminate access to existing mineral resources located on the east side of the site, east of Del Monte Boulevard. It is estimated that the 50-year demand for aggregate in the Monterey area is approximately 383 million tons, and that the entire Armstrong Ranch, comprising approximately 2,000 acres, contains 208 million tons of sand, an ingredient of aggregate (Sector I). The City's 2000 General Plan, which called for development of Armstrong Ranch, recognized that the ultimate loss of 208 million tons of sand constitutes a significant impact. However, there are 347 million tons of permitted aggregate resources in the Monterey Bay Region, meaning that 91% of the 50-year demand would be met with currently permitted aggregate resources. None of the Armstrong Ranch property is included in the permitted aggregate resources calculation.

The Final EIR for the General Plan stated:

“Although it would be possible to conceive of a pattern of development within the Marina Planning Area which would avoid the development of those portions where mineral resources have been identified, this would be in conflict with the goals and policies of the Draft [2002] General Plan. Future development of the Armstrong Ranch and the Lonestar property, as proposed under the Draft General Plan, would be necessary to meet Specific Goal D on page 1-6 of the Draft General Plan (“A balance of jobs and housing that provides the greatest possible opportunity both to live and work in Marina.”), Specific Goal I on page 1-7 of the Draft General Plan (“A diversified and strong economic base that will permit the delivery of high-quality public services to city residents and businesses.”) and Specific Goal J on page 1-7 of the Draft General Plan (“A community responsive to the housing and transportation needs of Monterey County.”). For these reasons, under the Draft General Plan it would not be feasible to avoid the development of those portions of the Marina Planning Area where mineral resources have been identified, and this would represent a potentially significant UNAVOIDABLE environmental impact associated with the implementation of the Draft General Plan.”

The current version of the General Plan places most of the Armstrong Ranch area outside the City's Urban Growth Boundary. It also indicates that mining would not be permitted within 1,000 feet of sensitive receptors, and sensitive receptors adjoin the Marina Station site on two sides. Therefore, the portion of the Armstrong Ranch area that would be lost to mineral extraction due to the proposed project (230 acres less the acreage already lost to the 1,000-foot setback) is relatively small. Nevertheless, the currently available mineral resources acreage on the project site is a locally-important mineral resource recovery area, so this is considered a potentially significant impact.

Impact **The project would eliminate access to and the availability of a known mineral resource on the Armstrong Ranch property. No feasible measures are available to mitigate the permanent loss of access to these mineral resources. This is a significant unavoidable impact.**

Cumulative Impacts

Future development of the project site as proposed by the Marina Station Specific Plan would not significantly contribute to the cumulative impacts associated with the increase in exposure to seismic hazards. Since all development within the City of Marina would be subject to Uniform Building Code standards, including requirements for site-specific engineering design, on-site inspections, and testing, the cumulative impact from seismic hazards would be considered less-than-significant. The project would impact a known mineral resource recovery area. However, there are no other existing or probable future projects that will eliminate access to or the availability of this mineral resource site; therefore, the cumulative impact to mineral resources is considered less-than-significant.

4.7 HAZARDS AND HAZARDOUS MATERIALS

Introduction

This section assesses the potential public health and safety impacts of the project. Flooding, seismic/geologic, and public service hazards, such as fire and emergency response, are discussed in the Hydrology and Water Quality, Geology and Soils, and Public Services Sections, respectively.

A letter was received from the California Department of Toxic Substances (DTSC) during circulation of the Notice of Preparation for this EIR, calling for the identification and remediation of any hazardous materials contamination on the project site. The following section evaluates the potential for contamination on the site and presents mitigation in accordance with the DTSC letter.

Setting

The generation, storage and handling of hazardous materials and wastes are regulated by various federal, state, and local laws and regulations aimed at the protection of public health and the environment. A summary of regulations follows.

Hazardous Materials Regulatory Framework

Federal. The U.S. Environmental Protection Agency (EPA) is responsible for enforcing regulations at the federal level pertaining to hazardous materials and wastes. The primary federal hazardous materials and wastes laws are contained in the Resources Conservation and Recovery Act (RCRA) of 1976 and in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980. CERCLA, more commonly known as Superfund, established the National Priorities List for identifying and obtaining funding for remediation of severely contaminated sites. Federal regulations pertaining to hazardous materials and wastes are contained in the Code of Federal Regulations (40 CFR). The regulations contain specific guidelines for determining whether a waste is hazardous, based on either the source of generation or the characteristics of the waste.

Transportation of hazardous materials by truck and rail is regulated by the U.S. Department of Transportation (DOT). DOT regulations establish criteria for safe handling procedures. Federal safety standards are also included in the California Administrative Code.

State. The EPA has delegated much of its regulatory authority to individual states whenever adequate state regulatory programs exist. The Department of Toxic Substance Control Division of CAL EPA is the agency empowered to enforce federal hazardous materials and waste regulations in California, in conjunction with the EPA.

California hazardous materials and waste laws incorporate federal standards, but in many respects are stricter. For example, the California Hazardous Waste Control Law, the state equivalent of RCRA, contains a much broader definition of hazardous materials and waste. State hazardous materials and waste laws are contained in the California Code of Regulations, Titles 22 and 26. Regulations implementing the California Hazardous Waste Control Law list hazardous chemicals; establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management of hazardous wastes; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

Under RCRA, a facility is classified as a generator of hazardous waste if it generates and stores hazardous waste onsite for less than 90 days; such a facility is required to obtain an EPA generator's identification number from the EPA or the California Department of Toxic Substances Control (DTSC). If hazardous waste is stored on site for longer than 90 days, the facility is classified as a Transfer, Storage, or Disposal Facility and is required to obtain a RCRA Part B Storage Permit, which can take as long as two years to obtain. Transportation and disposal of hazardous materials are also regulated; hazardous waste must be characterized to determine methods of disposal and site disposal (i.e., class of landfill).

Under both RCRA and the California Hazardous Waste Control Law, hazardous waste manifests must be retained by the generator for a minimum of three years. A hazardous waste manifest lists a description of the waste, its intended destination, and regulatory information about the waste. A copy of each manifest must be filed with DTSC. The generator must match copies of hazardous waste manifests with receipts from the treatment/disposal/recycling facility to confirm that the wastes were properly handled.

Monterey County. The Monterey County Environmental Health Division requires that a Business Response Plan and Inventory be prepared for facilities that generate hazardous waste or handle hazardous materials, in order to plan and prepare for possible chemical releases or emergencies. A Business Response Plan is required for businesses that generate any amount of hazardous waste or that use hazardous materials in or following amounts: 1) 55 gallons or greater for liquids, 2) 500 pounds or greater for solids, and 3) 200 cubic feet or greater for compressed gases. A Business Response Plan must include specific information on hazardous materials handled (inventory and chemical description), emergency contacts, notification procedures, evacuation plans, training procedures and a site map.

City of Marina General Plan. The City of Marina General Plan contains provisions for the protection of residents from hazards and hazardous materials. The following provisions of the General Plan address hazards relevant to the proposed project. Please refer to Table 4.9-2 of the Land Use and Planning section of this EIR for a detailed analysis of the project's consistency with the relevant portions of the Marina General Plan.

4.103.2. The City shall require discretionary review and approval of all commercial and industrial uses which will generate more than 27 gallons of hazardous wastes monthly (the limitation imposed by Monterey Regional Waste Management District for non-household hazardous wastes). City approval of these uses shall be contingent upon preparation and approval by the County Health Department of a hazardous-waste-disposal plan for these uses prepared in accordance with the requirements of the Monterey County Health Department.

4.103.3. All uses involving the handling of significant amounts of hazardous materials shall be subject to discretionary approval. Hazardous-materials management and -disposal plans shall be prepared in accordance with the requirements of the Monterey County Health Department for all such projects prior to the granting of any entitlements by the City.

Environmental Impact Report on the Marina General Plan. The General Plan EIR evaluated potential hazardous materials impacts associated with the adoption and implementation of the Marina General Plan, including future development within the Marina Station project site. This program-level EIR focused on general impacts associated with implementation of the General Plan, rather than project-specific impacts associated with individual development projects, such as the Marina Station Specific Plan. According to the General Plan EIR, no hazardous materials impacts were identified for the Marina Station area. Only impacts from unexploded ordnance on Fort Ord were identified for the hazardous materials assessment.

Phase I and II Assessments

A Phase I Environmental Site Assessment was prepared for the project property by LandSet Engineers, Inc. (December 2003). The purpose of this assessment was to determine the potential for hazardous materials contamination on the site. This assessment included the following: 1) a records search of all environmental agency databases and files, 2) a site reconnaissance, 3) interviews with key site personnel and regulatory officials, and 4) conclusions and recommendations. A Phase II Assessment, consisting of sampling and testing of onsite soils, was also completed by LandSet Engineers following the Phase I Assessment (December 2003) to determine the presence of pesticide residuals.

The property was previously used for agricultural purposes, including pasture and dry land farming, since the early 1900s. The site is currently used for cattle grazing, and is surrounded by cattle grazing property to the north, residential property and some light industrial uses to the south, and agricultural land to the east (including fallow and grazing land).

Database Search. A database search was conducted to identify recorded hazardous materials incidents in the project area. The search included recorded incidents on the National Priorities List (NPL), the Superfund Comprehensive Environmental Response Compensation and Liability Information System List (CERCLIS), the EPA's emergency response notification system list (ERNS), RCRA, and other federal and state agency databases.

The project site was not identified on any database lists. Nearby former Fort Ord was identified on several lists, including the National Priorities List (NPL) and "Superfund" Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) list. The nearest incident to the project site is located in a former fire drill training area, referred to as Operable Unit 1 (OU-1). This site is located northwest of the Marina Airport and southeast of the project property. A detailed description of this site is provided later in this section.

An additional site was identified in the database search near the project site. Girotti and Co., located at the intersection of Beach Road and DeForest Road, was associated with a historic underground storage tank. No other sites, listed or unlisted, were determined to be a threat to the project site, based on the results of the Phase I Assessment.

Site Survey & Interviews. A site reconnaissance was performed by a representative of LandSet. In addition, an interview was conducted with the current property owner, Mr. Jack Armstrong. No evidence of hazardous materials storage, use, or disposal was observed on the project site (e.g., storage tanks, transformers, dumping). The site is essentially vacant. It was reported that the site was used for crop production in the 1930s-1960s. No use of pesticides was reported; however, organochlorine pesticides, such as DDT, would have been available in the 1950s-1970s and could have been used on the site.

Phase II Assessment. Soil samples were collected from the site by LandSet and analyzed for the presence of organochlorine pesticides. A total of eight shallow soil samples were collected at uniformly-spaced locations throughout the site to evaluate conditions on the entire property. The samples were analyzed for pesticides and heavy metals using EPA accepted methods. Results of the analysis indicated that the soil samples did not contain detectable concentrations of pesticides in the soil. In addition, the concentrations of heavy metals were well below the California Human Screening Levels for residential uses, established by the state Environmental Protection Agency.

OU-1 Plume

Operable Unit 1 (OU-1), located southeast of the project site, was formerly part of the Army's Fritzsche Airfield Fire Drill Area used by the Fort Ord fire department. Activities associated with the drill area resulted in the release of contaminants into the soil and groundwater. In 1986, approximately 4,000 cubic yards of contaminated soil were excavated and removed from the site and replaced with clean fill. In 1988, a small-scale groundwater extraction and treatment system was installed near the source area.

Contaminants in the groundwater consist of ten different volatile organic compounds (VOCs). Quarterly groundwater monitoring sampling and analysis have been completed since 1986 to delineate the OU-1 plume. Groundwater monitoring data compiled since 1998 indicates that only benzene, 1,2-dichloroethane, and trichloroethylene (TCE) exceed their aquifer cleanup levels (ACLs). TCE has historically exhibited the highest concentrations and greatest distribution, and is therefore used to define the extent of the groundwater plume at OU-1.

Groundwater contaminants at OU-1 have only been detected in the A-Aquifer. This aquifer is the uppermost water bearing unit in the area and consists of permeable, fine- to medium-grain dune sands that extend from the surface to a depth of about 80 to 125 feet below ground surface. The depth to water in this aquifer ranges from 55 to 100 feet. Groundwater flow is to the northwest. The A-Aquifer is underlain by a series of impermeable silts and clays that comprise the Salinas Valley Aquiclude. In the OU-1 area, this aquiclude appears to be an effective barrier that prevents downward migration of contaminants from the A-Aquifer into the underlying aquifers. Drinking water is obtained from the 400- and 900-foot aquifers. Neither aquifer is impacted or affected by contamination from OU-1 (Eisen, U.S. Army Corps of Engineers, pers.comm. November 2006).

Groundwater is monitored at 43 wells on a quarterly basis. The majority of wells show decreasing TCE concentrations as the plume has migrated away from the fire drill source area. However, the wells located in downgradient parts of OU-1 exhibit increasing concentrations in a northwesterly direction. In 2000 the Army identified that contamination had migrated past the groundwater extraction wells. The Army conducted additional site characterization work to define the downgradient extent of the plume. In 2005 the Army's contractor reported that groundwater contamination had migrated northwest and crossed the original property boundary into the adjoining Armstrong Ranch property. The Army installed seven monitoring wells in 2006 to define the downgradient extent of the contamination. The original (1988) groundwater extraction and treatment system consists of granular activated carbon treatment system and two extraction wells. The Army has installed a second groundwater extraction and treatment system using granular activated carbon located on the former Fort Ord near the fence line that defines the boundary with Armstrong Ranch. This system is designed to prevent further groundwater contamination and capture some of the off-site contaminated water.

Two additional wells were later installed to monitor the new groundwater extraction and treatment operations. The locations of these wells are presented in Figure 4.7-1. As shown on this map, four of the monitoring wells are located on the Marina Station site. Results of the most recent monitoring (March, May, and September of 2006) showed that only two wells detected TCE. Monitoring results for well MW-OU-75A identified a maximum concentration of 26 micrograms per liter (ug/L) of TCE, and MW-OU-78A (located on the Marina Station site) had a maximum concentration of 3.2 ug/L of TCE. The Army will continue to monitor and evaluate the groundwater through monitoring, extraction, and treatment wells.

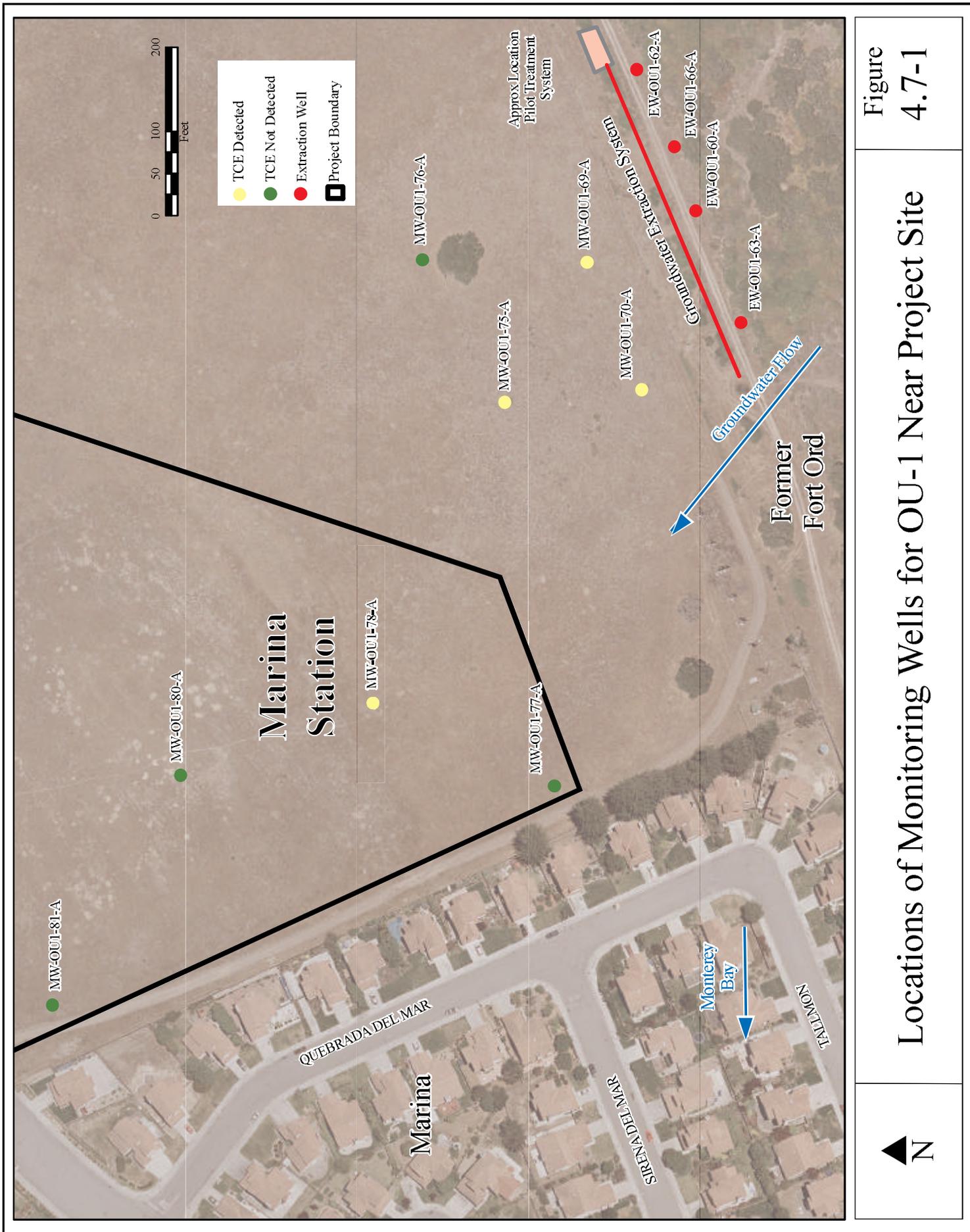


Figure 4.7-1

Locations of Monitoring Wells for OU-1 Near Project Site



Marina Municipal Airport

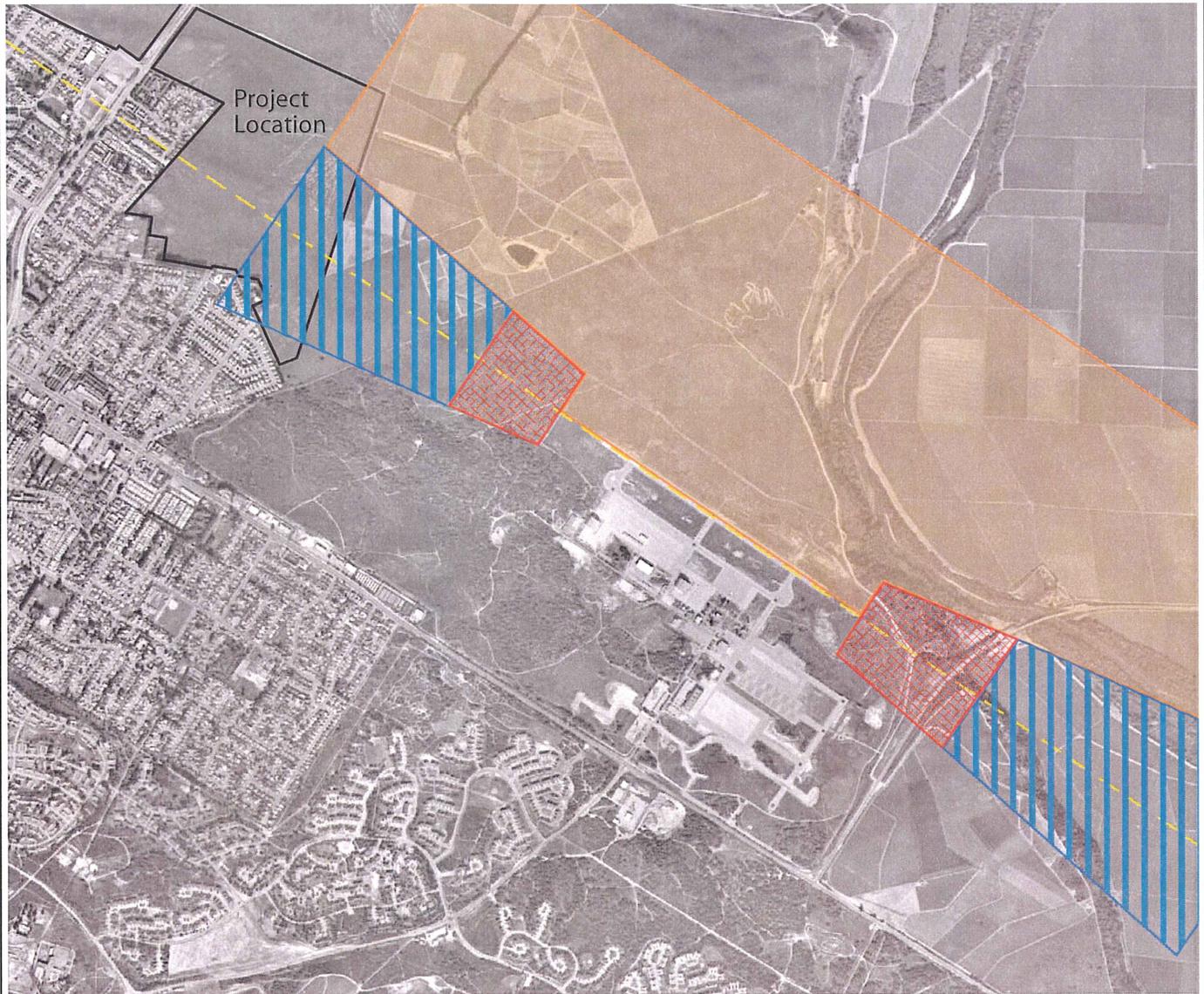
The Marina Municipal Airport is located approximately 4,200 feet (0.8 miles) southeast of the project site. The Marina Municipal Airport Comprehensive Land Use Plan (ACLUP) contains standards and policies including allowable land uses and development within the airport and in designated approach and traffic pattern zones.

1996 ACLUP. The ACLUP currently in effect (1996 ACLUP) was adopted by the Monterey County Airport Land Use Commission (ALUC) in November 1996. This adopted plan assumed a runway extension to 5,240 feet in length; however, the proposed runway expansion has not been approved by the City or the Federal Aviation Administration (FAA). Based on standards in effect at the time, the 1996 ACLUP identifies four safety zones in the airport area: 1) the runway protection zone, 2) the approach protection zone, 3) the traffic pattern zone, and 4) the overflight protection zone.¹ These zones are presented in Figure 4.7-2. Specific land use policies are developed for each of these zones. Based on the 1996 ACLUP, portions of the east side of the project site are located within the approach protection zone and traffic pattern zone (refer to Figure 4.7-2). The ACLUP limits uses in the airport approach zone to industrial or other non-residential uses of limited density. Uses allowed in the traffic pattern zone are commercial, industrial, and low density residential.

2006 Draft ACLUP. In 2002, the Caltrans Division of Aeronautics issued the “California Airport Land Use Planning Handbook” (2002 Handbook), which updated airport safety zone dimensions and regulations. In 2005, AMBAG updated aviation forecasts for Marina Airport and other airports in the region. The City of Marina retained an airport consultant in early 2006 to assist with an update of the Marina Airport Comprehensive Land Use Plan, since the 1996 ACLUP had become obsolete in terms of forecasts, noise modeling software, and statewide adopted safety zone methodology. The updated plan is necessary for the City and ALUC to evaluate land uses, safety, and development in the Marina Airport environs in accordance with currently adopted standards. The update is also needed to meet Public Resources Code Section 21096, which requires the City to use the Handbook as a technical resource in conducting environmental review of proposed projects in connection with airport-related noise and safety compatibility issues.

The updated Draft Marina Municipal Airport Comprehensive Land Use Plan was completed in the spring of 2006 (2006 ACLUP). This proposed 2006 ACLUP reflects the current state of airport planning guidance and regulation as it applies to the Marina Airport, and is expected to be adopted by the ALUC in substantially its current form in 2007. It is the City’s intention to use the updated 2006 ACLUP information as guidance for the review of new development in the airport safety zones and located within the Marina City limits and Sphere of Influence. To comply with the safety compatibility zones for general aviation airports established by the Caltrans Division of Aeronautics, the 2006 ACLUP modifies and increases the airport area safety zones to six: 1) the runway protection zone, 2) the inner approach/departure zone, 3) the inner turning zone, 4) the outer approach/departure zone, 5) the sideline zone, and 6) the traffic pattern zone (refer to Figure 4.7-3). Locations and dimensions for the safety zones have been established for short (less than 4,000 feet), medium (4,000-5,999 feet), and large (over 6,000 feet) runways. The plan for a medium length, single-sided traffic pattern, which corresponds to the plan for Marina Airport, is provided in the 2006 ACLUP (refer to Figure 4.7-3). These safety zones are based on the future runway length identified in the 1996 ACLUP (5,240 feet), as well as the most recent airport standards and aviation forecasts.

¹ The overflight protection zone encompasses all land in the Airport Planning Area.



-  Runway Protection Zone
-  Approach Protection Zone
-  Traffic Pattern Zone
-  Runway Centerline

0 2500 feet

Overflight Protection Zone encompasses all land within the Airport Planning Area.

Source: EMC Planning Group Inc., 2005



1996 ACLUP Marina Airport Safety Zones

Figure
4.7-2

Revised Safety Compatibility Policies. The location and dimensions of the six airport safety zones in the 2006 ACLUP (shown in Figure 4.7-3), as well as land use compatibility policies, are based on guidance provided in the 2002 Handbook. The primary method of limiting risk to persons on the ground is to limit the number of persons allowed in a given area and control type of use. For this reason, each zone is assigned allowable and prohibited uses and maximum allowable densities. The density limits shown in the table, however, may be adjusted pursuant to 2006 ACLUP policy 2.2.6 which, in relevant part, states:

In order to preserve as much open space as possible in the environs of the Marina Airport, the following design criteria shall be applied to all new development projects: Development should be clustered, and contiguous landscaped and parking areas should be provided. The population and housing unit densities for individual projects in the traffic pattern and outer approach/departure zones, as required by policy 2.2.3, may be increased if it can be demonstrated that such an increase results in the provision of substantial open space. In no case shall the density increase be more than 25% above the normally allowable density. If a density increase is allowed in the outer approach/departure zone, the open space provided must be located along the extended airport runway centerline. Before allowing such an increase the local jurisdiction shall refer the proposal to the ALUC for review and recommendations.

The 2006 ACLUP specifies the maximum allowable density in each zone as well as the allowable and prohibited land uses. Residential uses are not permitted in the runway protection zone (Zone 1) and the inner approach/departure zone (Zone 2); they are allowed at very limited densities in the inner turning zone (Zone 3) and the outer approach/departure zone (Zone 4); and residential uses are allowed in the traffic pattern zone (Zone 6). Hospitals, schools, daycare centers, and other uses whose occupants have limited mobility are not permitted in any of the first five safety zones and should be avoided in the traffic pattern zone (Zone 6).

Marina Airport is currently surrounded by open space and/or agricultural land (refer to Figure 4.9-1), which makes for a high degree of safety compatibility. The runway protection zone (Zone 1) at the west end of the planned extended runway is owned by the City of Marina and is entirely on airport property as land designated for habitat protection, and is, therefore, protected from development. The inner approach/departure zone (Zone 2) to the west overlies current agricultural land that is part of the Armstrong Ranch, but outside the Marina Station project site. The western inner turning zone (Zone 3) is partially on airport property designated for future non-aviation revenue-producing uses and partially on current agricultural property. The western outer approach/departure zone (Zone 4) is almost entirely within the central portion of the Marina Station proposed development. The sideline zone (Zone 5) is entirely on airport property, and future uses of this area of land will be limited. The western edge of the elliptically-shaped traffic pattern zone (Zone 6) covers the entire eastern and southern portions of the project site (refer to Figure 4.7-3.) Thus, under the 2006 ACLUP, portions of two safety zones (Zones 4 and 6) overlie the Marina Station project.

Safety Zone 4, the outer approach/departure zone, is characterized as a “moderate risk” zone with frequent overflight by aircraft engaged in climbing and descending patterns. The maximum allowable residential density in this zone is one dwelling unit per five gross acres; the maximum allowable nonresidential density is 50 persons per gross acre. The normally allowable uses are open space, agriculture, habitat protection, industrial, other non-residential uses with limited density, and very low density residential uses. Most residential daycare, school, hospital, nursing home, and shopping center uses are prohibited. Conditions for this safety zone also call for development to be kept “far from [the] runway centerline” and to cluster for open space and provision of avigation easements.



- 1 Runway Protection Zone
- 2 Inner Safety Zone
- 3 Inner Turning Zone
- 4 Outer Safety Zone
- 5 Sideline Safety Zone
- 6 Traffic Pattern Zone
- Runway Centerline

0 2500 feet

Sources: EMC Planning Group Inc. 2006, Orthophotos 1999, Monterey County Planning and Building Inspection Department 1996, Monterey County GIS Team 2003, Monterey County Airport Land Use Commission 1996.



2006 Draft ACLUP Marina Airport Safety Zones

Figure
4.7-3

Safety Zone 6, the traffic pattern zone, is characterized as a “lower risk zone” with frequent overflights by aircraft at 1,000 feet above ground level. The maximum allowable residential density in this zone is whatever is permitted by local zoning; the maximum allowable nonresidential density is 150 persons per gross acre. The normally allowable uses are nonresidential and residential uses. Schools, daycare facilities, hospitals, nursing homes, stadiums, and high densities are prohibited. Conditions for this safety zone call for clustered development for open space, and provision of avigation easements.

Flight Hazards. Flight hazards consist of structures, activities, and uses occurring on the ground that may cause hazards to aircraft in flight. FAA Regulations, Part 77 (Objects Affecting Navigable Airspace), describes a series of “Imaginary Surfaces” which set standards for the maximum height of objects around airports and require that the FAA be notified of any proposed construction that exceeds those standards. Policies in the 2006 ACLUP prevent the construction of new structures that intrude into the FAR Part 77 surfaces. While all structures are prohibited in the runway protection zone (Zone 1), any proposal for a structure over 35 feet in the outer approach/departure (Zone 4) and turning (Zone 3) zones and over 45 feet in the traffic pattern zone (Zone 6), must be submitted to the ALUC for review. As noted above, the eastern and southeastern portions of the Marina Station project fall within outer approach/departure (Zone 4) and the traffic pattern (Zone 6) zones. The 2006 ACLUP² illustrates the FAR Part 77 surfaces for the Marina Airport.

Overflight Impacts and Notification Policies. The Marina Municipal Airport Master Plan, prepared in 1993, identifies a traffic pattern that is exclusively on the north side of the airport. This restriction should eliminate most overflight impacts to the developed portions of the City. Land to the north of the airport is primarily used as agricultural or grazing land, although it does include portions of Armstrong Ranch and the proposed Marina Station project site. Policies in the 2006 ACLUP require that buyers of new developments be notified of potential aircraft impacts. Local jurisdictions must establish a method of notifying buyers of new developments within the airport planning area of potential airport impacts. The notification may take the form of avigation easements, deed noticing, or real estate disclosures. A copy of the method(s) to be used for such notification shall be forwarded to the ALUC. Local jurisdictions are encouraged to provide for the same type of notice required for existing uses (2006 ACLUP policies 2.4.2 and 2.4.3).

Open Space Guidelines. Potential aircraft accidents can often be avoided if large areas of open space are preserved around airports in order to allow for emergency landings. Open space can generally be defined as an area measuring at least 75 by 300 feet that is free of obstructions such as trees, power lines, and fences. As noted above, the Marina Station project site is located within two airport safety zones, the outer approach/departure zone (Zone 4) and the traffic pattern zone (Zone 6). The 2002 Handbook recommends that the outer approach/departure safety zone (Zone 4) maintain approximately 15% to 20% open land within the overall zone, again with emphasis on areas along the extended runway centerline; and that the traffic pattern safety zone (Zone 6) maintain approximately 10% usable open land or an open area approximately every ¼ to ½ mile. Open land areas need to meet minimum size criteria to be of value. Therefore, the above guidelines are practical when applied with respect to land use patterns proposed in general plans, specific plans, or large developments (generally 20 acres or more), but not to individual smaller parcels (refer to 2006 ACLUP policy 2.4.2).

Flight Tracks. The Marina Airport has two runways, whose traffic patterns are located north of the airport. While this limits safety impacts south of the airport, where the more developed areas of Fort Ord and the City of Marina are located, these patterns partially overlie the Marina Station project site. Due to prevailing winds, Runway 29 will be the active runway for the great majority of operations (refer to Figure 4.7-3). A 45-degree departure track from Runway 29 is called for in the 1993 Airport Master Plan,

²Draft 2006 ACLUP Figure 4-3, p. 18.

and the 45-degree track does over-flies portions of the Marina Station project area.³ The safety zones illustrated in Figure 4.7-3 are applicable to the western end of the airport runway. Because the eastern end of the runway has a precision approach, the safety zones are longer and extend to 10,000 feet beyond the runway end.

Figure 4.7-3 shows the location of the Specific Plan area in relation to the airport. The land use plan was designed so that the extended runway centerline and the outer approach/departure safety zone extend over the industrial and office portion of the Plan area only. Based on the 2002 Caltrans standards, if the runway is extended to 5,240 feet, approximately 60 acres of the Specific Plan area will be within the airport's Zone 4 - outer approach/departure safety zone. In addition, if the runway is extended, the Windy Hill Park neighborhood and the Soccer Park neighborhood will also be located within Zone 6 - traffic pattern zone. The Marina Station Specific Plan will restrict development within these two zones to levels consistent with applicable standards and policies regarding aviation safety.

City of Marina General Plan. The City of Marina General Plan contains provisions for development within Armstrong Ranch with regards to aviation hazards. Please refer to Table 4.9-1 of the Land Use section for a detailed analysis of the project's consistency with the relevant provisions of the Marina General Plan. The project proposes the following amendment to reflect the current status of the ACLUP (new text underlined):

2.80. An area of approximately ~~20~~ 38 acres, located both within the Marina Municipal Airport Approach Protection Zone (as updated to reflect 2002 Caltrans Division of Aeronautics standards) and municipal boundaries, is designated for industrial and commercial-service use. Use of this area, which is part of the Armstrong Ranch property, is limited by the provisions of the Marina Municipal Airport Comprehensive Land Use Plan. This plan specifies that uses within the Approach Protection Zone be limited to uses of limited density. The plan's safety-compatibility policies further specify that the maximum allowable density for non-residential uses be 50 people per acre. Outdoor commercial recreation uses such as miniature golf courses, driving ranges, and water parks would also be permissible.

City of Marina Zoning Code. All permitted industrial uses in the Specific Plan would be subject to the provisions of Chapter 17.30 of the Marina Zoning Code regulating uses with an industrial district. These regulations require that all industrial uses comply with the performance standards set forth in Section 17.30.040 of the Zoning Code. These standards include the following provisions designed to minimize the risk of hazards:

- Radioactivity or Electric Disturbances. No activities shall be permitted which emit radioactivity at any point which is dangerous to human beings. Devices which radiate radio-frequency energy shall be so operated as not to cause interference with any activity carried on beyond the boundary line of the property upon which the device is located.
- Fire and Explosion Hazard. All activities involving and all storage of, flammable and explosive materials shall be provided with adequate safety devices against the hazard of fire and explosion, and adequate firefighting and fire suppression equipment and devices standard in the industry. Burning of waste materials in open fire is prohibited. The relevant provisions of federal, state and local laws and regulations shall also apply. Where questions arise due to differences in regulations, standards or requirements, the most stringent regulation, standard or requirement shall prevail.

³Draft 2006 ACLUP, p. 9.

- **Liquid or Solid Waste.** Compliance shall be maintained with all applicable laws and regulations concerning the discharge, disposal or storage of wastewater, liquid or solid wastes, including federal, state and local laws and regulations. This shall include, but not limited to, obtaining a wastewater discharge permit from the Marina County water district. Where questions arise due differences in regulations, standards or requirements, the most stringent regulation, standard or requirement shall prevail.
- **Toxic or Corrosive Materials.** All activities involving, and all storage of, toxic or corrosive materials shall be provided with adequate safety devises against the hazard of spillage or leakage in to the environment, particularly the groundwater supply. Compliance shall be maintained with the relevant provisions of federal, state and local laws and regulations. Where questions arise due differences in regulations, standards or requirements, the most stringent regulation, standard or requirement shall prevail.

Marina Station Specific Plan. Section 5.7 of the Marina Station Specific Plan identifies policies and implementation measures to ensure aviation safety in the Plan area. Open Space (OS) Policy 4-1 states “protect residents within the Plan area from hazards associated with air traffic.” Implementation measures are as follows:

- The City of Marina is in the process of updating the Airport Land Use Plan for the Marina Municipal Airport to reflect the 2002 standards.
- Development within the Specific Plan area that is located within the Airport Safety Zones identified on Figure 5-1 shall be limited to the land uses identified by the California Airport Land Use Planning Handbook, January 2002 edition (Tables 9B and 9C) for each specific safety zone.

Relevant Project Characteristics

The project proposes residential, commercial, office, and industrial uses on the site. Substantial grading will be required to develop the site with proposed uses and associated infrastructure. No significant quantities of hazardous materials are expected to be used for the proposed residential, commercial, and office uses. Industrial uses may or may not require the use of substantial quantities of hazardous materials. In addition, the project would introduce development near the Marina Municipal Airport and the existing OU-1 Plume.

Thresholds of Significance

In accordance with CEQA Guidelines, a project impact would be considered significant if the project would:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within on-quarter mile of an existing or proposed school;

- be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and create a significant hazard to the public or the environment;
- for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area; and
- for a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.

Impacts and Mitigation

The issues of emergency response and wildland fire are addressed in **4.12 Public Services** of this EIR.

Effects of OU-1 Plume

Results of the Phase I and II Assessments did not reveal any evidence of hazardous materials contamination on the project site. However, groundwater contamination from OU-1 has migrated onto the project site. Wells were installed by the Army to delineate the extent of the plume and contaminant concentrations. Four of these wells are located on the Marina Station project site (refer to Figure 4.7-1). Sampling results from one well on the site, MW-OU-78A, found concentrations of TCE at 3.2 ug/L. In addition, a well near the boundary of the site, MW-OU-75, identified a maximum TCE concentration of 26 ug/L.

The aquifer cleanup level (ACL) for TCE in the OU-1 plume is 5.0 ug/L, as set forth in the Army's Record of Decision for OU-1 (July 1995), which identified appropriate cleanup levels and remedial actions for the plume. TCE levels near the project site (i.e., at MW-OU-75) are above the ACL. TCE concentrations in the well on the project site (MW-OU 78A) are below the ACL. A groundwater extraction and treatment system has recently been installed on the former Fort Ord along the Armstrong Ranch boundary. This system is designed to prevent further groundwater contamination offsite. The Army will continue to monitor and evaluate the groundwater at these wells and apply any additional remediation measures as needed.

Contamination on the Marina Station project site is limited to the OU-1 groundwater plume and currently appears to be at concentrations below those requiring cleanup. The Army has installed a treatment system at the Armstrong Ranch boundary designed to prevent any further contamination of groundwater beneath the project site. The plume would not be affected by grading for the project. However, elevated levels of VOCs in groundwater beneath the site could present a potential health hazard if vapors were to reach the ground level and be trapped within habitable structures.

Impact **The project proposes residential uses in an area near OU-1, which contains VOCs. Release of the contaminants through vapor intrusion could pose a health risk to future residents on the site. *This is a significant impact that will be reduced to a less-than-significant impact with the following mitigation.***

Mitigation

- 4.7-1 Prior to construction on the Marina Station site, the applicant shall coordinate with the Army to assure that TCE concentrations beneath the project site do not exceed the ACL, and that appropriate remedial measures are implemented, including those identified in the OU-1 Record of Decision (1995).⁴

Hazardous Materials Use

The project proposes industrial uses near existing and proposed residential uses (refer to Figure 3-3). Industrial uses could expose residents to potential safety hazards associated with the accidental release of hazardous materials. Industrial uses will be separated from existing residential uses (i.e., in the Michael and Cosky Drives area) by a proposed 200 foot buffer. However, the site plan shows proposed medium density residential uses adjacent to the industrial uses. Although the type of industrial uses that will occupy the site are not known at this time, facilities that use, store, and/or transport hazardous materials could potentially impact the nearby residential uses, as well as the environment, in the event of accidental exposure or release. This potential is minimized by implementation of federal, state, and local requirements regulating the use, storage, and transportation of hazardous materials, as described above in the setting section.

The project site is within 0.25 miles of two schools: Olson Elementary School and Olson Preschool, both located on Beach Road at Melanie Road. Although unlikely, it is possible that future industrial facilities on the project site could handle hazardous materials, substances, or waste. The potential public safety impacts from hazardous materials use would be less-than-significant with implementation of all regulatory requirements. **The project would have a less-than-significant impact associated with hazardous materials use.**

Airport Hazards

The project site is located about 0.8 miles from the Marina Municipal Airport. The City of Marina is currently updating the ACLUP to reflect the 2002 Caltrans Division of Aeronautics standards. The updated document is planned for adoption in 2007.

Figure 4.7-3 shows the location of the Specific Plan area in relation to the existing airport. Portions of the Specific Plan area are within Zone 4 (Outer Approach/Departure Zone) and Zone 6 (Traffic Pattern Zone) of the updated ACLUP. The land use plan was designed so that the extended runway centerline and the Outer Approach/Departure Safety Zone extend over the industrial and office portion of the Plan area only. Based on the 2002 Caltrans standards, if the runway is extended to 5,240 feet, approximately 60 acres of the Specific Plan area will be within the airport's Zone 4 - Outer Approach/Departure Zone. In addition, if the runway is extended, the Windy Hill Park neighborhood and the Soccer Park neighborhood will also be located within Zone 6 - Traffic Pattern Zone. The Marina Station Specific Plan will restrict development within these two zones to levels consistent with applicable aviation safety standards and policies. The project must be submitted to the ALUC for a determination of consistency with the policies of the ALUC Land Use Plan. **The project would be consistent with the 2006 ACLUP and would result in less-than-significant impacts associated with airport hazards.**

⁴ For additional details refer to www.fortordcleanup.com/docreview/ar_pdfs/AR-OU1-362

Cumulative Impacts

The project, together with other cumulative industrial development in the project area, could increase the use of hazardous materials. This could increase the occurrence of hazardous materials releases, resulting in potential health and safety risks. However, hazardous materials incidents, which usually involve inadvertent releases or accidental spills, are typically site-specific and occur on an isolated basis. Associated health and safety impacts are likewise normally limited to the persons using or working in the vicinity of the materials or to others in the immediate vicinity. Thus, the contribution of the project to risks from hazardous materials would not be cumulatively considerable. Any potential for such impacts would be minimized by implementation of federal, state, and local requirements regulating the use, storage, and transportation of hazardous materials.

Existing contamination on the former Fort Ord property has created a toxic groundwater plume (OU-1) that could be migrating offsite. Implementation of monitoring remedial measures by the Army, as identified in the OU-1 Record of Decision (1995), will assure that contamination from the groundwater plume is reduced to acceptable levels.

All new cumulative development near the Marina Airport will be required to be consistent with applicable standards and policies (i.e., 2002 Caltrans Division of Aeronautics requirements). All new projects within the Airport referral area must be submitted to the ALUC for a determination of consistency with the policies of the ALUC Land Use Plan. This will assure that hazards to/from airport operations from cumulative development will be reduced to a less-than-significant level. **Based on the above discussion, the cumulative impacts associated with hazards and hazardous materials would be less-than-significant.**

4.8 HYDROLOGY AND WATER QUALITY

Introduction

This section evaluates the potential impacts of the project to hydrology and water quality, based on existing information and data provided in the Engineer's Report for the project (RJA, 2006, 2007). A letter was received from a member of the public during circulation of the Notice of Preparation for this EIR, generally calling for analysis of the proposed drainage system and flooding. The following section evaluates these items in accordance with the CEQA Guidelines.

Setting

Surface Water Resources

The project site is located on the Armstrong Ranch property at the north end of Marina. The site consists of ancient sand dunes and is characterized by gentle, rolling slopes with some steeper slopes in the northwestern panhandle area. The overall site slopes in a northwesterly direction towards the Pacific Ocean. Site elevations range from 105 feet to about nine feet above sea level. The lower areas of the site form two closed basin areas in the northwest panhandle.

The Salinas River is located about one mile to the east, and the Pacific Ocean is about a half mile to the west. The site surface is covered with grass and brush. There are no major drainages on the project site. A portion of the project site along the north boundary, east of Del Monte Boulevard, is identified as a 100-year flood hazard area on the Federal Emergency Management Agency's Flood Insurance Rate Map (Panel 060727-0005B, February 1993). The area is located in "Zone A - no base elevations determined."

The project site does not currently contain any engineered drainage facilities. All existing storm water runoff percolates onsite within the closed basins, and there is no evidence of water leaving the site (RJA, January 2006).

Groundwater Resources

The project site is underlain by the Salinas Valley Groundwater Basin. This groundwater basin extends below the Salinas Valley, from San Ardo to the Monterey coast. The basin is divided into five hydrologically-linked subareas: Pressure, East Side, Forebay, Arroyo Seco, and Upper Valley. The project site is located within the Pressure Subarea of the Salinas Valley Groundwater Basin. Studies have identified three aquifer systems within the subarea. These aquifer systems consist of horizontally continuous deposits of sand and gravel that exist at various depths below the ground surface, and are designated as the 180-foot, the 400-foot, and the deep aquifer systems. The 180-foot and 400-foot aquifers occur at the average depth where water-bearing sand and gravel deposits are encountered (i.e., 180 and 400 feet, respectively). The deep aquifer consists of an aggregation of all sand and gravel deposits that exist below the 400-foot aquifer (at depths believed to range from 600 feet to over 2,000 feet).

The analysis of groundwater resources in this section is based upon a number of sources including the Marina Coast Water District's Urban Water Management Plan, December 2005 ("2005 UWMP"); the June 2001 Environmental Impact Report and Environmental Impact Statement for the Salinas Valley Water Project (http://www.mcwra.co.monterey.ca.us/SVWP/DEIR_EIS_2001/index.htm); information developed by the MCWD and contained in the MCWD'S 2004 Regional Urban Water Augmentation Project EIR; the Groundwater Inventory and Status Report prepared for MCWD (DDA; Martin Feeney 2004) ("Feeney 2004"); and the MCWD's 2006 Water Supply Assessment and Written Verification of

Supply (WSA) prepared for this Project pursuant to Water Code sections 10910 et seq. Pursuant to Section 15150 of the CEQA Guidelines, the information and analysis in these reports is incorporated by reference in this EIR.

The deep aquifer system consists of two geologic formations – the Paso Robles and the underlying Purisma Formations. These formations are aerially extensive, stretching throughout the Salinas Basin and to the north and south. The lowermost unit extends to the north outcropping in Soquel and to the south where it grades into the Santa Margarita Formation, an important aquifer in the Seaside Basin. The deep aquifer is believed to begin at depths of approximately 600 feet below sea level and extend to depths of 2,000 or more feet in some locations. Non-water bearing Monterey Shale that constitutes the bottom of the Salinas Groundwater Basin underlies the deep aquifer system.

The deep aquifer is not used as significantly as the 180-foot and 400-foot aquifers. The MCWD is the only current significant user of the deep aquifer system. MCWD utilizes three wells that extract water solely from the deep aquifer to supply the City of Marina (Central Marina) distribution system, which will supply the Project. The wells serving the MCWD's Ord Community service area (the former Fort Ord) do not extract water from the deep aquifer.

The Salinas Valley Groundwater Basin is experiencing overdraft, with seawater intrusion of about 9,000 acre-feet per year (AFY) at its coastal margins affecting portions of the 180-foot and 400-foot aquifer systems. There is no evidence of seawater intrusion in the deep aquifer, nor is there evidence that such intrusion will likely occur (2005 UWMP). Detailed information regarding the background and history of the condition of the Salinas Valley Groundwater Basin, including the cause and extent of overdraft and seawater intrusion, current and future water needs and trends, and efficacy of alternative mitigation measures is contained in the EIR/EIS for the Salinas Valley Water Project (described more fully in **Section 4.14, Utilities and Service Systems**).

Any new wells in or increased extraction from the 180-foot and 400-foot aquifers will continue to exacerbate seawater intrusion. There have been no detailed studies or modeling concerning impacts on seawater intrusion rates specifically from increased pumping by the MCWD from the 180-foot and 400-foot aquifers. The extent of the MCWD's pumping represents a very small fraction of the total pumping from the Pressure Subarea. However, recent modeling of the deep aquifer by the MCWD suggests that increased extractions from this aquifer system may increase the rate of seawater intrusion into the 180-foot and 400-foot aquifers, although the nature and extent of connectivity is not well understood according to the MCWD Deep Aquifer Study, Water Resources and Information Management Engineering, Inc. (WRIME, Inc., 2003). Among other issues, the Deep Aquifer Study analyzed the increasing flow rate of landward movement of seawater into the freshwater aquifers (groundwater flow across the coast). It found that as pumping in the deep aquifers increased, the landward flow of groundwater increased. Therefore, it is possible that increased pumping in the deep aquifer may contribute to decreasing the active life of the existing Ord Community wells due to the approaching seawater intrusion front. MCWD operates a monitoring well installed between Monterey Bay and MCWD's production wells, which is intended to identify any future seawater intrusion that might subsequently affect MCWD's wells, which are located further inland. Detection of seawater in the monitoring well would provide advance notice to MCWD to install or reinstate one or more back-up wells further inland, where MCWRA data indicate ample recharge is available, to replace any potential future loss of production capacity. (Feeney, 2004; UWMP, 2005).

To address the issue of seawater intrusion, the Monterey County Water Resources Agency (MCWRA), in cooperation with the Monterey Regional Water Pollution Control Agency, has two water recycling projects (collectively referred to as the Monterey County Recycled Water Projects), which include a water recycling facility and a reclaimed water distribution system. MCWRA is also implementing a program to

address overdraft and seawater intrusion in the basin known as the Salinas Valley Water Project (SVWP). The SVWP includes re-operation of the Nacimiento and San Antonio reservoirs and the capture and diversion of water via a seasonal surface diversion structure to provide water for agriculture in lieu of groundwater pumping. A later phase of the SVWP involves supplying surface water to coastal urban water agencies to further reduce pumping in the coastal areas. These programs are discussed in further detail in **Section 4.14, Utilities and Service Systems**.

MCWD accounts for less than 1% of the pumping from the Salinas Valley Groundwater Basin and a small fraction of the pumping from the Pressure Subarea. It is continuing to actively cooperate with the MCWRA and MRWCPA in efforts to address overdraft and seawater intrusion issues and is participating in benefit zones that help fund the above programs. The MCWD and the Fort Ord Reuse Authority have also approved the Regional Urban Water Augmentation Project, which is intended to provide an additional 3,000 AFY of water supplies, primarily for use within the former Fort Ord. The MCWD has also committed, in various agreements, to limit its pumping from the Salinas Valley Groundwater Basin until the Marina area basin mitigation plans have been implemented, as described below.

Both the Army (as former owner of the Fort Ord lands) and MCWD have agreements with MCWRA, which allow MCWD to participate in and benefit from MCWRA's regional basin management planning process. Pursuant to a 1993 agreement under which the Fort Ord lands and MCWD's Central Marina service area were annexed into MCWRA Zones 2 and 2A (the "1993 Annexation Agreement"), groundwater extraction for the Ford Ord service area is presently limited to 6,600 AFY (5,200 AFY from the 180-foot and 400-foot aquifers and up to 1,400 AF from the deep aquifer). This total is approximately equal to the historic demand from Army uses at Fort Ord. This 6,600 AFY groundwater supply is allocated by FORA among its member jurisdictions, which, in turn, sub-allocate their portions among their individual projects.

Additionally, a 1996 agreement between MCWD, MCWRA, MCWPA and several property owners (the "1996 Annexation Agreement"), which approved annexation of the Armstrong Ranch and RMC Lonestar Property to MCRWA's Zones 2 and 2A, provides for a maximum withdrawal by MCWD of 3,020 AFY from the basin, limited to uses in the City of Marina outside the Ord service area. Under the 1996 Annexation Agreement, the groundwater allocation for Armstrong Ranch is 920 AFY, and the allocation for the RMC Lonestar Property (for which there is no current plan for development, and which could not be developed until after 2020 under the UGB Initiative) is 500 AFY, which corresponds to current estimated use on the property. These allocations are in addition to the 3,020 AFY allocation for the uses within the current boundaries of the Central Marina service area. Under the 1996 Annexation Agreement, MCWD was also granted a right to receive reclaimed water from the SVRP, although no more than 300 acre-feet could be obtained during the months of April through September. During the remainder of the year, MCWD is entitled to take its full entitlement to reclaimed water as stipulated in previous agreements. Specifically, MCWD has the right to obtain tertiary treated wastewater for reuse from the MRWPCA in quantities equal to the volume of MCWD wastewater treated by the MRWPCA.

The MCWD's most recent (2005) UWMP projected water demands for 20 years, and assumed development of the Marina Station project site in evaluating demand on MCWD's water supplies. The projected 2025 water demand within the Central Marina service area (exclusive of Armstrong Ranch and the RMC Lonestar Property) is 2,632 AFY, which is within the 3,020 AFY allocation for this area. Projected 2025 demand for the Armstrong Ranch is 680 AFY, which is within its 920 AFY allocation. Year 2025 demand within the RMC Lonestar Property is projected to match its allocated supply. The 2005 UWMP found that sufficient supplies are available to meet the expected demands of the Project.

The SVWP is projected ultimately to halt seawater intrusion in the Pressure Subarea of the Salinas Valley Groundwater Basin based on a 1995 pumping baseline. (UWMP at p. 2-20; SVWP EIR/EIS, § 5.3.2, p. 2-129). However, given the lack of full understanding of the relationship between the Salinas Basin as a whole, and the Pressure Subarea in the vicinity of the former Fort Ord, it is uncertain whether this outcome will be achieved at currently expected levels of pumping increases in the coastal margins of the Pressure Subarea. MCWRA has also acknowledged that the SVWP, as currently constituted, may not halt intrusion in the long run and that additional surface water deliveries into the coastal region through a third phase of the project might be needed. MCWRA intends to monitor the effects of the implementation of the SVWP and pursue additional remedies as needed if seawater intrusion is not arrested. The MCWD intends to participate in this monitoring and evaluation process to assure SVWP modifications are made as necessary to assure that its own water supplies are protected from seawater intrusion.

Investigations of the deep aquifer, from which the MCWD will pump to supply the Project, to date have demonstrated that it receives limited recharge and shows no evidence of seawater intrusion. Its connectivity to the ocean is unknown. Therefore, the potential for the deep aquifer to be directly or indirectly impacted by seawater intrusion in the future is unknown. However, because of the possibility of seawater intrusion, pumping from the deep aquifer cannot be considered a permanent solution. The monitoring well installed between Monterey Bay and MCWD's production wells will provide the MCWD advance notice of any future seawater intrusion that might subsequently affect MCWD's production wells, and allow it to install or reinstate one or more back-up wells further inland to replace any potential future loss of production capacity. Implementation of regional efforts by the MCWRA and others to slow seawater intrusion has demonstrated positive results north of the MCWD area, but the cumulative effects of these present and future efforts to halt seawater intrusion will not be known for several years. The MCWD may continue to rely on groundwater as its primary source of supply in accordance with the 1993 and 1996 Annexation Agreements without adversely affecting the basin or MCWRA's basin management including, if necessary, relocating production wells further inland where MCWRA studies have shown that more than adequate recharge is available. (UWMP 2005; Feeney 2004)

Federal Regulations

Clean Water Act

The federal Clean Water Act is codified in 33 USC 1251-1376, and includes the following sections relevant to this project.

Sections 303 and 304. These sections provide water quality standards, criteria, and guidelines, including the requirements under the National Pollutant Discharge Elimination System (see below).

Section 401/404. Any federal permit that includes an activity that may result in a discharge to waters of the U.S. would be subject to the provisions of Section 401. The Corps administers a permit program for any discharges of dredged or fill material into waters of the U.S. under Section 404. The project would not require a federal permit or affect any waters of the U.S.

State Regulations

Porter-Cologne Water Quality Act/ California Regional Water Quality Control Board (RWQCB)

The basis for the water quality regulation in California is the Porter-Cologne Water Quality Control Act (California Water Code, Section 13000 et seq.). This Act requires a "Report of Waste Discharge" for any discharge (liquid, solid, or otherwise) to land or surface waters that may impair a beneficial use of the

state's surface or groundwater. Based on the reports, the local RWQCB issues waste discharge requirements to minimize the effect of the discharges.

The Porter-Cologne Act delegates authority to the State Water Resources Control Board to establish regional water quality control boards. The Central Coast Regional Water Quality Control Board (RWQCB) has authority to use planning, permitting, and enforcement to protect beneficial uses of water resources on the Monterey Peninsula. The RWQCB uses its adopted Water Quality Control Plan for the Central Coast Region, referred to as the Basin Plan (1994), to implement policies and provisions for water quality management in the region. The Basin Plan identifies beneficial uses of major surface waters and their tributaries, in addition to water quality objectives and implementation plans to protect these beneficial uses.

The 1987 Amendments to the Federal Clean Water Act require that storm water discharges to waters of the U.S. be regulated under National Pollution Discharge Elimination System (NPDES). The State Board has taken the permitting option of issuing a statewide General Permit, and issued the draft General Permit in July 2002. The Central Coast RWQCB oversees the statewide General Permit regarding management of storm water runoff from construction sites over one acre in size. Provisions of the Statewide Permit indicate that discharges of material other than storm water into waters of the U.S. are prohibited; that storm water discharges shall not cause or threaten to cause pollution, contamination, or nuisance; and that storm water discharges not contain hazardous substances. The Statewide Permit also requires implementation of Best Management Practices (BMPs) to achieve compliance with water quality standards. A BMP is defined as any program, technology, process, siting criteria, operating method, measure or device that controls, prevents, removes or reduces discharge of pollutants into bodies of water.

California Fish and Game Code

The California Fish and Game Code (Sections 1600-1607) authorizes the Department of Fish and Game to enter into streambed alteration agreements with applicants to develop mitigation measures for projects that would obstruct the flow or alter the bed, channel, or bank of a river or stream in which there are fish or wildlife resources, including intermittent and ephemeral streams. The project will not directly affect any streams or other water resources.

Local Requirements

Marina General Plan. The City of Marina General Plan contains provisions to protect water resources. Please refer to Table 4.9-2 of the Land Use and Planning section of this EIR for a detailed analysis of the project's consistency with the relevant provisions of the Marina General Plan.

Environmental Impact Report on the Marina General Plan. The General Plan EIR evaluated potential hydrology and water quality impacts associated with the adoption and implementation of the Marina General Plan, including future development within the Marina Station project site. That program-level EIR focused on general impacts associated with implementation of the General Plan, rather than project-specific impacts associated with individual development projects, such as the Marina Station Specific Plan. According to the General Plan EIR, the following impacts are expected as a result of future development within the Marina Station project site: 1) construction-related water quality impacts, identified as a significant mitigable impact; 2) substantial increase in runoff and modification to drainage patterns, identified as a significant mitigable impact; and 3) increased exposure to flood hazards, identified as a significant mitigable impact.

Marina Station Specific Plan. Section 4.2 Marina Station Specific Plan identifies policies and implementation measures to ensure adequate storm drainage infrastructure in the plan area. Public Facilities (PF) Policy 1-5 states “construct a storm water collection and disposal system that efficiently ensures separation of existing natural storm drainage from storm water generated within the Plan area.” The following implementation measures are identified to support this policy, as follows:

- The master developer prepared a detailed master storm drainage plan as a part of this specific plan that identifies backbone collection and retention infrastructure needed to serve development within the Plan area. Any improvement plans shall incorporate use of structural and institutional best management practices for storm water quality management and to prevent soil erosion. The improvement plans shall be subject to review and approval by the appropriate City staff.
- Individual project developers shall install storm drainage collection improvements within the boundaries of their individual projects and which tie into the backbone storm drainage infrastructure system. Storm water collection system improvement plans for individual projects shall be subject to review and approval of the appropriate City staff prior to city approval of any commercial, office or industrial project.

PF Policy 1-6 states “utilize best management practices to minimize surface water quality degradation from discharge of storm drainage.” Implementation measures to support this policy are as follows:

- The master developer shall prepare and submit a storm water pollution prevention program application to the Central Coast Regional Water Quality Control Board and the appropriate City department to secure a NPDES General Construction Permit for the entire project site. Each individual project developer shall incorporate the structural and institutional best management practices identified in the storm water management plan in improvement plans for their respective projects. The appropriate City staff must review these plans to ensure inclusion of the practices prior to approval of a building permit for that phase. The City should monitor implementation of the measures.

Relevant Project Characteristics

The project includes the grading of up to 2.5 million cubic yards of cut and 2.5 million cubic yards of fill to develop the project site with homes, commercial uses, and industrial facilities. The project includes a drainage system to contain all storm water runoff onsite. A small portion of the site is located within an area mapped currently by FEMA as a potential flood hazard area.

Thresholds of Significance

In accordance with CEQA Guidelines, a project impact would be considered significant if the project would:

- violate any water quality standards or waste discharge requirements;
- substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);

- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- otherwise substantially degrade water quality;
- place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- place within a 100-year flood hazard area structures which would impede or redirect flood flows; or
- expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

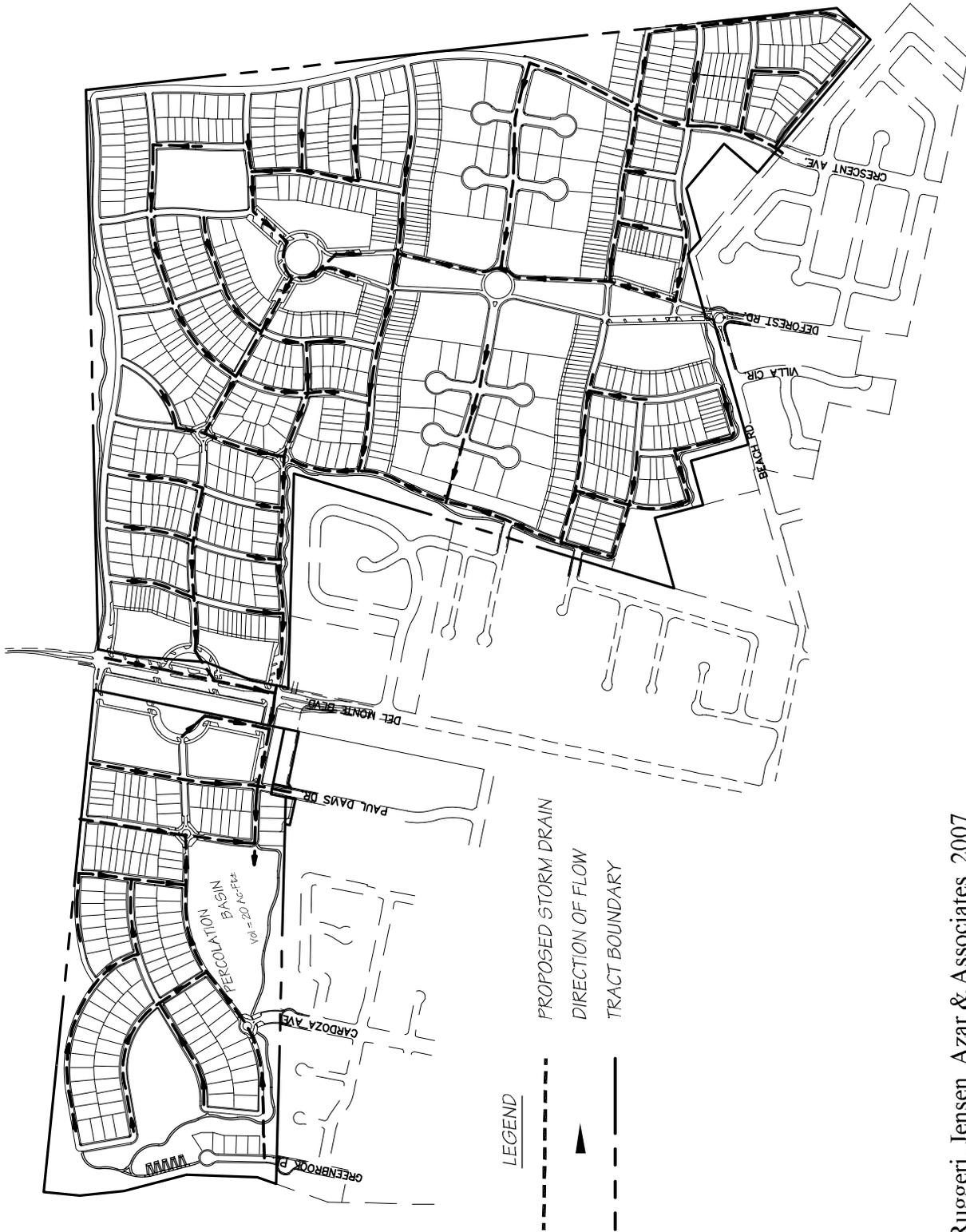
Impacts and Mitigation

Surface Drainage /Flooding

The existing project site does not contain any engineered drainage facilities. All existing storm water runoff appears to percolate onsite within the closed basins, and there is no evidence of water leaving the site.

The City of Marina requires that the runoff from the 10-year, 24-hour storm be retained for onsite percolation. The project will construct a storm drainage system to convey storm runoff from the property site into an onsite percolation basin. Drainage inlets will be located in proposed streets and alleyways. In park and landscaped areas, flat grate inlets will be installed at low points. The storm drainage mains will be located within the streets, except where they exit the street to discharge into the percolation basin. The percolation basin will generally conform to the existing topography, and be located at an existing depression on the western portion of the site. Refer to Figure 4.8-1 for an illustration of the proposed storm drainage system.

Due to site topography and soil conditions, no storm runoff is currently discharged from the site. Paving and development for the proposed project will substantially increase impervious surfaces on the site and increase runoff flows. Peak runoff flow from the site under post-development conditions is estimated at approximately 120 cubic feet per second (cfs). The proposed percolation basin has been designed to percolate one foot of runoff per hour, with a total capacity of 20 acre-feet. The basin has been designed with a safety margin, and it is unlikely that the 20 acre-foot capacity will be fully utilized. Percolation tests will be completed prior to final design to assure that soils can accommodate the necessary amount of infiltration, as per the City of Marina requirements. Drainage calculations for the drainage basin are provided in Appendix F of this EIR. Based on these calculations, all runoff will be contained onsite, resulting in a less-than-significant impact on drainage. In addition, all storm water flows will be contained onsite and will not increase flooding potential off site.



Source: Ruggeri, Jensen, Azar & Associates, 2007



Drainage Plan

Figure
4.8-1

The project site is located within a flood hazard area, as established by the Federal Emergency Management Agency. The project applicant has submitted a Conditional Letter of Map Area Revision (CLOMAR) to FEMA to remove the area of 100-year floodplain from the site. A hydraulic study was prepared to demonstrate that the mapped area does not meet the criteria for flood plain or flood hazard zone. FEMA has reviewed the CLOMAR and indicated that they will be changing the flood zone from A to X, which will remove any flood hazards (and associated building requirements and flood insurance) from the site. **The project would result in less-than-significant impacts associated with drainage and flooding.**

Groundwater

The project does not propose any wells on the site. Water supply and service will be provided by MCWD. Based on the MCWD's Urban Water Management Plan and the Water Supply Assessment prepared for the project (December 2005), the Marina Station development will not negatively impact water supplies, or otherwise deplete groundwater supplies or interfere with groundwater recharge. To meet existing and future demands for potable water from allocated groundwater provided by agreements with the MCWRA, including the 1996 Annexation Agreement, the MCWD may need to relocate wells further inland if seawater intrusion is detected in its monitoring well. Based on information available to the MCWD and the MCWRA, this would allow the MCWD to continue to meet its current demands and those under the 1993 and 1996 Annexation Agreements without adversely affecting the basin or MCWRA's basin management.

The proposed percolation basin could contribute to groundwater recharge in the project area; though it is not anticipated to increase recharge beyond existing rates, since the site is currently undeveloped. Refer to Section 4.14 Utilities and Service Systems. **The project would result in less-than-significant impacts associated with groundwater supplies.**

Water Quality

The project site is located on soils comprised of older dune sand that is highly erodible. Site preparation and construction activities would disturb soil and could increase siltation of local streams and water bodies. Construction activities could also result in the release of pollutants such as oil, grease, and heavy metals from equipment.

Surface runoff from the proposed development could generate urban pollutants affecting water quality such as oil, grease, and trace metals from vehicles using parking areas and roadways. In addition, fertilizers, pesticides, and herbicides released from parks and other landscaped areas could impact water quality.

The project would utilize Best Management Practices (BMPs) to minimize the release of water pollutants into surface drainages and groundwater. BMPs for the project may include use of silt fencing, sediment traps, and other measures during construction, as well as long-term facilities including surface and subsurface filtration systems. The proposed percolation basin will be designed to retain runoff flows and includes a forebay to allow the settling out of solids. The basin is located on sandy soils and will filter and remove heavy metals and other pollutants from storm water before it enters the groundwater. Proper maintenance of the percolation basin will include regular cleaning of the facility to assure that it operates efficiently.

The project would be required to conform to the measures set forth in the Specific Plan, as well as the NPDES permit. The project would also be required to pay fees to the City to fund maintenance costs for onsite BMPs.

Impact **Construction and operation of the project could impact water quality. This is a significant impact that would be reduced to a less-than-significant level with the following mitigation.**

Mitigation

- 4.8-1 Prudent construction practices, including implementation of all relevant BMPs in the project's Storm Water Pollution Prevention Plan prepared in compliance with NPDES requirements and the project's Construction Storm Water Permit, shall be employed at all times.
- 4.8-2 Prior to issuance of a grading permit, an erosion control plan shall be prepared for the site preparation, construction, and post-construction periods, subject to review and approval by the City's Public Works Department.
- 4.8-3 The project shall be designed to meet the BMP standards for operational phase storm water runoff and to maintain the onsite BMPs. The project shall implement BMPs to manage water quality by providing onsite runoff treatment in line with the onsite infiltration system.
- 4.8-4 The percolation basin shall be properly maintained and cleaned, at least twice annually.

Cumulative Impacts

Cumulative development on undisturbed land within the watershed could increase the amount of impervious surfaces, thereby increasing runoff rates in the area. Future development of the project site as proposed by the Marina Station Specific Plan would include storm drain facilities in accordance with all local and state regulations, and would not result in significant impacts to hydrology or flooding conditions. The project, therefore, would not contribute to cumulative hydrological impacts.

Cumulative development and increases in localized runoff could introduce urban pollutants into the drainage system and receiving water bodies, impacting water quality. The project proposes BMPs, as well as a retention pond, to allow infiltration and remove heavy metals and other pollutants from storm water before it enters the groundwater. The onsite drainage system and BMP measures would avoid offsite, cumulative water quality impacts. **The project would have a less-than-significant cumulative impact on hydrology and water quality.**

4.9 LAND USE AND PLANNING

Introduction

The following section analyzes the project's consistency with applicable land use plans including the Marina General Plan and other relevant planning documents.

Letters were received from the general public during circulation of the Notice of Preparation for this EIR, calling for a thorough analysis of the land use impacts resulting from the project. The predominant issue of concern involved land use compatibility between existing residential neighborhoods and the proposed industrial uses. The following section evaluates the potential for land use impacts and presents mitigation in accordance with CEQA Guidelines.

Setting

The project site is located near the northern terminus of the Salinas River Valley in the north central portion of the Marina 7.5-minute quadrangle. The site is composed of three separate but contiguous parcels totaling approximately 320 acres. The project area consists of rolling grassland that is currently used for cattle grazing. The project site is located completely within Marina's UGB and contains undeveloped portions of Armstrong Ranch.

Surrounding the project site are undeveloped grazing lands to the north and southeast, and farmland to the northeast. The project site is currently surrounded by various urban uses (residential, commercial, industrial, etc.) to the south and is bisected by Del Monte Boulevard. The project site's western edge fronts Highway 1. Figure 4.9-1 shows the project site and surrounding land uses.

Local Requirements

City of Marina General Plan. There are two major purposes of the Marina General Plan. The first is to guide daily and long-term planning and development decisions by the City in a manner consistent with stated City goals. The second is to provide clear documentation of the City's goals and commitments for private developers, homeowners, businesses, investors, and public entities that may want to pursue development activities within the Marina planning area.

The planning area encompassed by the Marina General Plan includes the existing incorporated City and lands within the City's Sphere of Influence. The existing land use designations within the proposed project site include Habitat Reserve and Other Open Space, Parks and Recreation, Agriculture, Golf Course, Single Family Residential, Office/Research, Light Industrial/Service Commercial, and Public Facilities.

The proposed project site is part of the Armstrong Ranch. The City of Marina General Plan objectives for the incorporated portion of Armstrong Ranch, as described in Provision 4.76, are as follows:

- *Emergence of a demographically and economically balanced community.*
- *Development of a land use and circulation pattern that supports cost-effective, frequent transit service.*
- *Creation of a development pattern and community form which enables and promotes walking and biking for most local trip purposes.*
- *Creation of a positive identity and sense of place which contribute to the identity and image of the entire City.*

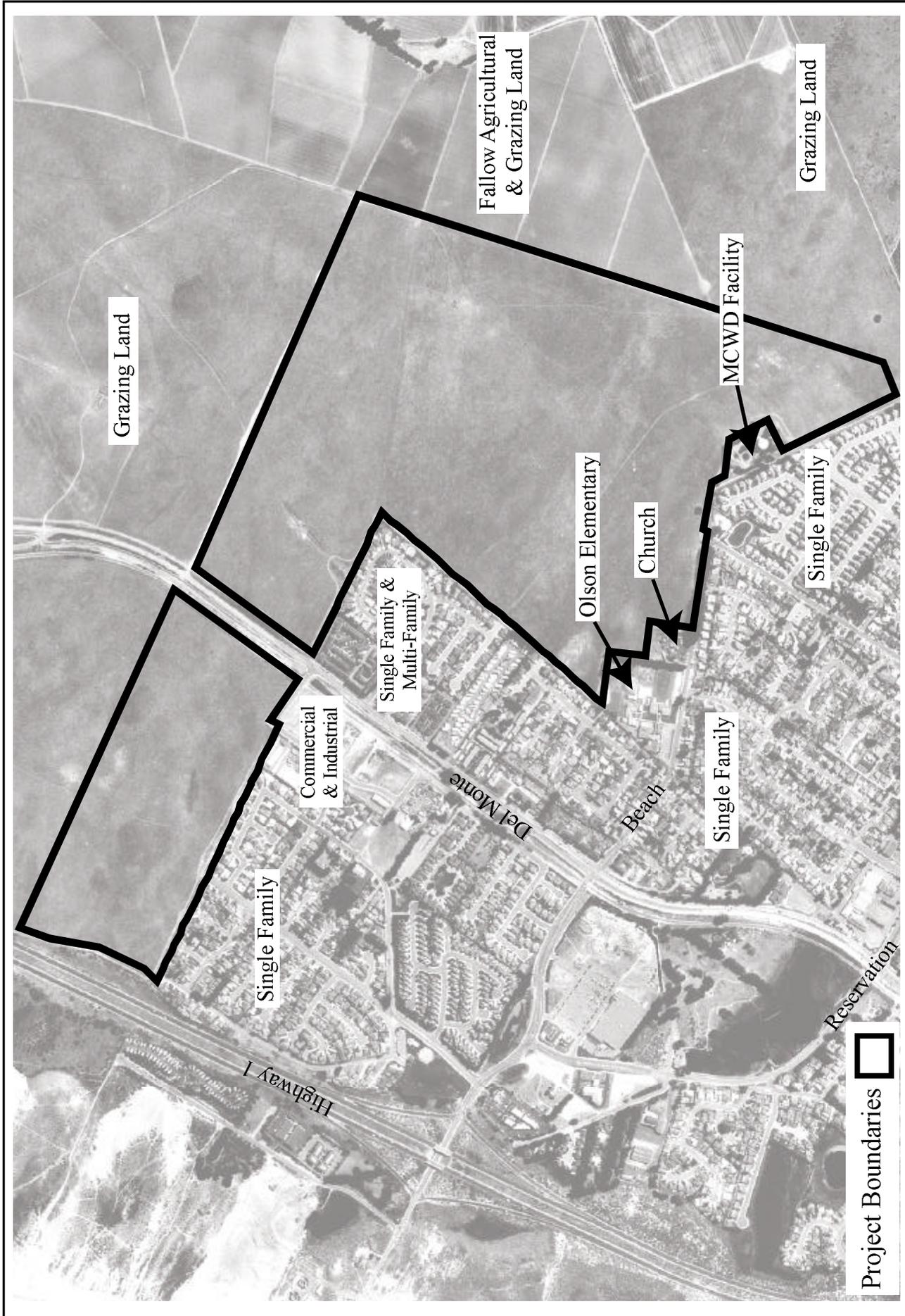


Figure
4.9-1

Project Site and Surrounding Land Uses



Project Boundaries 

- *Protection of open space having significant natural resource value and maintenance of a clear differentiation between the City and surrounding countryside.*

The Land Use Consistency Table presented in Table 4.9-2 of this EIR provides an analysis of the project's consistency with the applicable land use provisions of the City of Marina's General Plan.

Environmental Impact Report on the Marina General Plan. The General Plan EIR evaluated potential land use and planning impacts associated with the adoption and implementation of the Marina General Plan, including future development within the Marina Station project site. This program-level EIR focused on general impacts associated with implementation of the General Plan, rather than project-specific impacts associated with individual development projects, such as the Marina Station Specific Plan project. According to the General Plan EIR, the following relevant land use and planning impacts were identified: 1) conflicts with Greater Monterey Peninsula Area Plan resulting from development outside the City's municipal boundary but within the City's Sphere of Influence; and 2) conflicts with Monterey County Zoning Provisions resulting from development outside the City's municipal boundary but within the City's Sphere of Influence. All of these impacts were found to be significant, but mitigable. The Marina Station project site is proposed within the City's municipal boundary and UGB and, therefore, avoids these land use conflicts. According to the Marina General Plan, most of the project area is considered suitable for residential, commercial, industrial, and community-serving uses such as school and parks, after allowances have been made for natural resource protection, public safety, and open space requirements.

City of Marina Zoning Code. The current zoning for the project site is T-B-5, which is a transitional Zoning District with a minimum of 2.5 acres per unit. Because only low density single-family residential development is permitted in this district, rezoning would be required to enable higher density residential development. The project includes a rezoning of the entire project site to Specific Plan. Program 1-A of the City of Marina Housing Element requires that a minimum of 10 acres of the project area be rezoned for multi-family housing development, at a minimum density of 20 units per acre, as part of the entitlement approvals for this project. The project complies with this requirement.

Uses that are either permitted or conditionally permitted under the Specific Plan are also made subject, under the Plan's regulatory standards, to the provisions of Chapter 17.30 of the Marina Zoning Code, including the regulation of uses with an industrial (M) district. The Specific Plan restricts the types of industrial uses permitted on the site, prohibits certain uses, and makes others subject to a conditional use permit. These regulations provide that, within a completely enclosed building, certain specified uses (such as manufacturing of clothing, electronic equipment, and handicraft products, printing and lithography shops, light industrial and manufacturing uses, and other uses of a similar nature) are permitted provided they do not produce any of the noise, vibration, odor, smoke, dust, air emissions, glare, or other "deleterious or undesirable impacts" specified in Section 17.30.040 of the Zoning Code. Uses that are permitted under the Specific Plan, but that are located partially or completely outside of an enclosed building or do not meet the foregoing standards, must obtain a conditional use permit pursuant to the provisions of the Zoning Code. All industrial uses will also be subject to the performance standards set forth in Section 17.30.040 of the Zoning Code. These standards include the following:

- **Air Pollution.** All uses that may produce or emit odors, smoke, dust or any other air contaminants that may be deemed objectionable must submit estimates of the maximum quantities and types of each air contaminant. This information will be referred to the MBUAPCD for a report on whether the proposed construction, expansion, and operation of the facilities would result in an emission of harmful quantities of air contaminants, and recommendations and required limits on emission of air contaminants. The industrial user must also prove to the satisfaction of the Planning Commission or

City Council, by plant example, plans, specification, new equipment and technical advances, that the applicant's particular use will not be detrimental to surrounding property or to any portion of the City. Conditions will also be attached to any entitlement under which use of the property shall not violate any of the regulations of the MBUAPCD or exceed emissions determined by the Planning Commission or City Council to be applicable except under nonrecurring and unusual circumstances.

- **Fire and Explosion Hazard.** All activities involving, and all storage of, flammable and explosive materials, must be provided with adequate safety devices against the hazard of fire and explosion, and adequate firefighting and fire suppression equipment and devices standard in the industry.
- **Vibration.** No vibration will be permitted that would cause a noticeable tremor at the lot line.
- **Glare.** No direct or reflected glare so as to be visible from any boundary line of the property will be permitted. Sky-reflected glare from buildings or portions thereof must be controlled so as not to inconvenience or annoy persons or interfere with the use and enjoyment of property in the surrounding areas.
- **Liquid or Solid Waste.** Compliance must be maintained with all applicable laws and regulations concerning the discharge, disposal or storage of wastewater, liquid or solid wastes, including federal, state and local laws and regulations.
- **Toxic or Corrosive Materials.** Any activities involving, and all storage of, toxic or corrosive materials must be provided with adequate safety devices against the hazard of spillage or leakage into the environment.
- **Noise.** At the lot or property line, the noise generated by any use or operation (other than transportation facilities or temporary construction work) may not exceed noise thresholds specified in Table 17.30.040 of the Zoning Code for a cumulative period of more than thirty minutes in any hour. Noise measurements to determine compliance with these specifications must be performed using a sound level meter which meeting specified American National Standards Institute requirements sound level metering.
- **Applicable Laws.** All air pollutants, toxic or corrosive materials, liquid or solid wastes, flammable or explosive materials stored, used, or generated, or hazards inherent in, the industrial use are subject to compliance with all relevant federal, state and local laws and regulations. Where any conflict exists between such laws and regulations, the most stringent will apply.

City of Marina Housing Element. The City of Marina Housing Element is one of seven General Plan Elements mandated by California State Law. Housing element law, enacted in 1969, mandates that local governments adequately plan to meet the existing and projected housing needs of all economic segments of the community. The law acknowledges that, in order for the private market to adequately address housing needs and demand, local governments must adopt land use plans and regulatory systems that provide opportunities for, and do not unduly constrain, housing development. The programs presented in the Housing Element must reflect the commitment of the locality to address a range of housing needs, including those for affordable housing. The Housing Element is intended to provide citizens and public officials with an understanding of the housing needs in the community and set forth an integrated set of policies and programs to attain goals. The City of Marina Housing Element is consistent with California Government Code Section 65581.

According to the City of Marina Housing Element, the types of housing that should be provided include the following: single-family detached homes, townhouses and multi-family at established proportions,

based upon a minimum of 100 acres designated for residential uses. The Housing Element describes a mix of housing that is reflective of the intent of the General Plan that a substantial portion of the residential acreage on Armstrong Ranch be developed at moderately higher density in a village-type setting. Table 4.9-1 below (from the Housing Element) shows one possible mix of housing types that would meet the General Plan objectives, although the Housing Element notes that a specific plan or development application for Armstrong Ranch may propose housing types/acreages and/or densities that vary from those indicated in the table.

Table 4.9-1 Residential Potential for Incorporated Armstrong Ranch (Marina Station)				
Proposed Zone District	Proposed Housing Type*	Residential Acreage (Acres)	Average Density (Units/Acre)	Potential Number of Units
C-1 (or Village Center) and C-R (or Neighborhood Center)	Mixed Use Residential	~3-5	20+	~ 60 – 100 -
R-4 or Village Homes	Multi-family Residential	10	20 (minimum density)	200+
Village Homes	Village Homes** Single-family Townhomes & Duplexes	85	8	~700
R-1	Single-Family Residential	60	5	~300
TOTAL		155±	8	1,300
*Table may not necessarily mirror the project, but is reflective of the intent of the General Plan. **Village Homes include a mix of standard and small-lot single-family dwellings, townhouses, and apartments, with an approximate mix of 70 percent single-family residential, and 30 percent duplexes, townhouses and/or, multi-family housing. Source: City of Marina Housing Element				

City of Marina Jobs/Housing Balance. The jobs/housing ratio represents the total number of jobs to residential units in a city or region. This number helps to identify the ability of the community to provide a balance of adequate employment and housing for its current and projected population. A lower jobs/housing ratio indicates fewer jobs for residents, and a high number indicates more jobs than housing. A jobs/housing ratio of between 1 and 1.5 is generally considered balanced. Achieving a jobs/housing balance requires controlling the location, intensity, and nature of jobs and housing. Evaluation of the existing and future jobs/housing balance considers employment potential (existing and projected), housing demand, new housing production, and available transportation systems (particularly alternative transportation).

As of 2001, a total of 4,407 jobs were recorded in the City of Marina. The current job to housing ratio within the City of Marina is about 0.6 jobs per home, which requires many existing residents to commute out of the City to their jobs (Economic and Planning Systems, Inc., 2003). Planned development within the City, which includes the project, is expected to increase the number of housing units by 3,901 over the next 10-15 years. The City's goal is to encourage new employment opportunities that keep pace with new residential development.

The Land Use Element of the City's General Plan (Provision 2.31) calls for phasing construction of residential development. This provision is intended to help maintain a jobs-housing balance and contribute to the overall fiscal health of the City.

Marina Municipal Airport Comprehensive Land Use Plan. Section 65302.3 of the Government Code requires that general plans and specific plans must be consistent with airport land use plans. Airport land use plans identify safety and noise considerations for areas surrounding the airfield and appropriate mitigation measures. At present, no vacant residential sites exist within the largely built-out area of the City in areas identified as aviation safety and/or noise impact zones. However, a portion of the project site is located within the Airport Approach and Traffic Pattern Zone of the current plan, where residential uses are restricted, as discussed further below.

The Marina Municipal Airport is located approximately 4,200 feet (0.8 miles) southeast of the project site. The Marina Municipal Airport Comprehensive Land Use Plan (ACLUP) contains standards and policies including allowable land uses and development within the airport and in designated approach zones. The ACLUP currently in effect was adopted by the Monterey County Airport Land Use Commission (ALUC) in November 1996. This adopted plan assumed a runway extension to 5,240 feet in length; however, the proposed runway expansion has not been approved by the City or the Federal Aviation Administration (FAA). Based upon standards in effect at the time, the 1996 ACLUP identified four safety zones in the airport area: 1) the runway protection zone, 2) the approach protection zone, 3) the traffic pattern zone, and 4) the overflight protection zone. Specific land use policies are developed for each of these zones. Under the 1996 ACLUP, portions of the east side of the project site are located within the approach protection zone and traffic pattern zone (refer to Figure 4.7-2). The 1996 ACLUP limited uses in the airport approach zone to industrial or other non-residential uses of limited density. Uses allowed in the traffic pattern zone are commercial, industrial, and low density residential.

In 2002, the California Department of Transportation Division of Aeronautics released an update of its *California Airport Land Use Planning Handbook*, which updated airport safety zones and dimensions based on new criteria. In 2005, AMBAG revised aviation forecasts for the Marina Airport and other airports in the region. The City of Marina then updated its 1996 ACLUP to incorporate the new standards and data, which are now reflected in its April 2006 Draft Marina Municipal Airport Comprehensive Land Use Plan (2006 ACLUP). The proposed 2006 ACLUP reflects the current state of airport planning guidance and regulation as it applies to the Marina Airport, and it is expected to be adopted by the ALUC in 2007. It is the City's intention to use the updated 2006 ACLUP information as guidance for the review of new development in the airport safety zones located within the Marina City limits and its General Plan.

To comply with the safety compatibility zones for general aviation airports established by the Caltrans Division of Aeronautics, the 2006 ACLUP modifies and increases the airport area safety zones to six: 1) the runway protection zone, 2) the inner approach/departure zone, 3) the inner turning zone, 4) the outer approach/departure zone, 5) the sideline zone, and 6) the traffic pattern zone (refer to Figure 4.7-3). Locations and dimensions for the safety zones have been established for short (less than 4,000 feet), medium (4,000-5,999 feet), and large (over 6,000 feet) runways. The plan for a medium length single-sided traffic pattern, which corresponds to the plan for Marina Airport, is provided in the 2006 ACLUP. These safety zones are based on the future runway length identified in the 1996 ACLUP (5,240 feet), as well as the most recent airport standards and aviation forecasts.

The 2006 ACLUP specifies the maximum allowable density in each of the six safety zones as well as the allowable and prohibited land uses. Residential uses are not permitted in the runway protection zone (1) and the inner approach/departure zone (2); they are allowed at very limited densities in the inner turning zone (3) and the outer approach/departure zone (4); and residential uses are allowed in the traffic pattern zone (6). Hospitals, schools, daycare centers, and other uses whose occupants have limited mobility are not permitted in any of the first five safety zones and should be avoided in the traffic pattern zone (6).

Marina Airport is currently surrounded by open space and/or agricultural land (refer to Figure 4.9-1), which makes for a high degree of safety compatibility. The runway protection zone (1) at the west end of

the planned extended runway is owned by the City of Marina and is entirely on airport property as land designated for habitat protection, and is, therefore, protected from development. The inner approach/departure zone (2) to the west overlies current agricultural land that is part of the Armstrong Ranch, but outside the Marina Station project site. The western inner turning zone (3) is partially on airport property designated for future non-aviation revenue-producing uses and partially on current agricultural property. The outer approach/departure zone (4) is almost entirely within the central portion of the Marina Station proposed development. The sideline zone (5) is entirely on airport property, and future uses of this area of land will be limited. The western edge of the elliptically-shaped traffic pattern zone (6) covers the entire eastern and southern portions of the project site (refer to Figure 4.7-3). Thus, under the 2006 ACLUP, safety zones (4) and (6) directly impact the Marina Station project.

Safety Zone 4, the outer approach/departure zone, is characterized as a “moderate risk” zone with frequent overflight by aircraft engaged in climbing and descending patterns. The maximum allowable residential density in this zone is one unit per five gross acres; the maximum allowable nonresidential density is 50 persons per gross acre. The normally allowable uses here are open space, agriculture, habitat protection, industrial, other non-residential uses with limited density, and very low density residential uses. Most residential daycare, school, hospital, nursing home, and shopping center uses are prohibited.

Safety Zone 6, the traffic pattern zone, is characterized as a “lower risk zone” with frequent overflight by aircraft at 1,000 feet above ground level. The maximum allowable residential density is whatever is permitted by local zoning; the maximum allowable nonresidential density is 150 persons per gross acre. The normally allowable uses are nonresidential and residential uses. Schools, daycare facilities, hospitals, nursing homes, and stadiums and height densities are prohibited.

Marina Station Specific Plan. According to California Government Code Section 65451, cities and counties are required to prepare a general plan which describes what the city or county (and its residents) desire for their community, both now and in the future. General plans are required to address land use, circulation, housing, conservation, open space, noise, and safety. Specific plans provide comprehensive guidelines for a more defined and localized area within a jurisdiction’s boundaries. They offer more specific information and guidance than what is available in a general plan. The Marina Station Specific Plan has been prepared consistent with the specific plan content and requirements identified in California Government Code Section 65451.

Section 2.2 of the Marina Station Specific Plan identifies policies and implementation measures to ensure adequate and compatible land uses within the Plan area. LU Policy 1-1 states “designate land to provide a mix of residential uses and product types, commercial uses that support residential development, office and industrial uses, and recreation and open space amenities to meet the needs of residents.” Implementation measures are as follows:

- The City should amend the Zoning Ordinance to rezone the property “SP” within the Specific Plan area with the land use designations illustrated in Figure 2.1, Land Use Plan.
- The master developer and/or the individual developer(s) shall implement projects consistent with the land use designations shown in the Land Use Plan and with the policies and implementation measures contained in the Specific Plan. Modifications to the land uses or zoning standards identified in the Specific Plan shall be subject to review and approval by the City.
- The master developer shall submit a tentative map that illustrates the development of the Specific Plan area shown in Figure 2-1, Land Use Plan, consistent with the design and zoning standards described in Section 6.0 and Section 7.0 respectively.

- The low density and medium density residential uses as well as residential uses within the commercial mixed-use areas offer opportunities to provide competitively priced housing. The master developer and/or the individual project developer shall provide a range of housing products on large to small lots along with condominium apartments to reduce dwelling unit costs to buyers and renters.

LU Policy 1-2 states “provide service, retail, and professional office uses within the Neighborhood Center, commercial/apartment mixed-use area. The intent of the mixed-use development is to create activity centers for the Specific Plan area residents and workforce with emphasis on pedestrian oriented uses.” Implementation measures are as follows:

- Applications for development of the Neighborhood Center areas shall be consistent with the design goals, policies and standards in Section 6.0, Design Standards and the zoning standards in Section 7.0, Zoning. Each application shall be subject to review and approval by the appropriate City staff.

LU Policy 1-3 states “provide office and industrial uses within the Office and Industrial district. The intent of the Office and Industrial district is to improve the jobs/housing balance and create job-generating uses in proximity to housing to reduce the need for travel outside the Plan area.” Implementation measures are as follows:

- Applications for the Office and Industrial components of the Specific Plan shall be consistent with the design goals, policies and standards identified in Section 6.0 and the zoning standards identified in Section 7.0. Each application shall be subject to review and approval by the appropriate City staff.
- The applications for development of the Office and Industrial area shall identify site design measures needed to minimize potential visual, noise, glare, vibration, circulation, aesthetics and other conflicts with adjacent residential uses.

The Specific Plan also contains provisions intended to minimize conflicts between the proposed industrial development and the existing and future residential neighborhoods. The Specific Plan requirements and design standards include construction of an eight-foot sound wall around the perimeter of the industrial/office area, with a landscaping buffer on either side of the wall. In addition, a solid multi-layer evergreen tree grove is proposed between the existing neighborhood to the west and the planned industrial/office area. Where the industrial and office uses abut the residential areas to the north and south, the evergreen tree grove will be planted continuously between the alley paving and the building setback line. These trees will be planted close enough together to create a solid screen to block the view of any portion of the office and industrial buildings and/or uses from the view from adjacent homes. Prior to issuance of a building permit within this zone, a licensed landscape architect shall design this screen and irrigation system and certify it is properly installed and maintained.

Relevant Project Characteristics

The project is located on an undeveloped approximately 320-acre portion of the larger 2,000-acre Armstrong Ranch property. The project site lies entirely within the City’s corporate limits. The Armstrong Ranch area consists of rolling grassland that historically was used for cattle grazing.

The project site is within the City’s municipal boundary and is generally suitable for residential, commercial, industrial, and other community services. According to the City of Marina General Plan, future residential development would be consistent with the long-term provisions of the City of Marina and Monterey County. The project site is contiguous to existing development in Marina.

According to the Marina General Plan, Armstrong Ranch could accommodate the 1,360 dwelling units that are proposed for this project. A minimum of approximately 1,000 units (100 acres) of housing will be permitted on the Armstrong Ranch lands in accordance with the locational requirements shown in the Land Use Element.

Land Use

The proposed project site would be designated as Neighborhood Edge (Low Density Residential), Neighborhood General (Low and Medium Density Residential), Neighborhood Center (Mixed Use – Residential/Retail/Office/Entertainment), Office and Industrial, and Parks and Open Space. As contained in the Project Description section of this document, Figure 3-3, presents the locations of proposed land uses. Table 3-1 identifies proposed land uses, acreage, and data regarding dwelling units, population, square footage and jobs.

Thresholds of Significance

In accordance with CEQA Guidelines, a project impact would be considered significant if the project would:

- physically divide an established community;
- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- conflict with any applicable habitat conservation plan or natural community conservation plan.

Impacts and Mitigation

Physically Divide an Established Community

No established residential or business communities exist within the project site. The issue of division or disruption of the physical arrangement of an established community typically involves actions that would create physical barriers that would substantially separate portions of a built community, such as construction of a new freeway through an established neighborhood. Construction of the proposed project would not divide or disrupt the physical arrangement of an established community, since there are no established residential neighborhoods or business districts located within the project site and the project is not located between any established communities. **There will be no impact and no mitigation measures are necessary.**

Conflict with Any Applicable Land Use Plan, Policy, or Regulation

The project would result in potential land use impacts associated with increased traffic, air pollution emissions, noise, and visual changes. These impacts are addressed within their respective sections of this EIR. The following section addresses the conformance of the project with applicable land use policies and regulations.

Relevant land use documents, including the City of Marina General Plan, Zoning Code, Housing Element, and the Marina Municipal Airport Plan, were reviewed to address project consistency. As required by California state law, a specific plan must be consistent with the general plan. The Marina Station Specific Plan proposes low density, medium density, commercial mixed-use, office, industrial,

parcs, and open space development. The following discussion examines the proposed project's consistency with these documents and its conformance with land use plans, policies, or regulations.

Consistency with City of Marina General Plan

The project includes an amendment to the General Plan Land Use Map for the properties within the Plan area, as well as General Plan text amendments in order to maintain consistency between the project and the General Plan. The Marina Station Specific Plan has been prepared consistent with the General Plan, as amended. Table 4.9-2 provides an analysis of the project's consistency with specific City of Marina land use provisions.

Consistency with City of Marina Zoning Code

The Specific Plan will be the primary body of standards considered by the City in the review and approval of development within the area it covers. The current zoning for the entire Plan area is Transitional District. The project includes an amendment to the existing zoning map under which the site would be zoned "SP" (Specific Plan District). The SP zoning is intended to supplement the existing Zoning Code. However, where the SP zoning conflicts with other city zoning standards, the Specific Plan will supersede the existing standards with new zoning standards in order to implement the proposed land use designations. The standards and requirements of the Specific Plan replace conflicting sections of the Zoning Code, including but not limited to, the following:

- Zoning districts, allowable land uses, and permit requirements for allowable land uses (i.e., permitted or conditional uses), including Zoning Ordinance Chapters 17.14 through 17.18, 17.20, 17.22, 17.24, and 17.30, except that Section 17.30.040 shall apply to industrial land uses.
- Site planning, building design, and development standards for the land uses and architectural types allowed by the Specific Plan.

Consistency with City of Marina Housing Element

The Marina Station Specific Plan will be consistent with the City of Marina Housing Element. The Specific Plan provides for a mix of housing types, densities, and lot sizes that are consistent with the ratios described in the Housing Element for the incorporated portion of Armstrong Ranch. The Specific Plan will also provide a balance of jobs and housing that is consistent with the Housing Element, as described below.

As per the Specific Plan, the Marina Station project would provide inclusionary housing. A separate affordable housing program would be negotiated between the City and the master developer, specifying in detail an affordable housing plan that meets the provisions of the City's Inclusionary Housing Program. The percentage income levels and mix for very low, low, and moderate income housing to meet the City's requirements shall be set forth in the affordable housing program. The rents and prices of the affordable units, will be based on the U.S. Department of Housing & Urban Development (HUD) published average median household income for Monterey County. Various elements of the affordable housing program may be contracted out by the developers within the Specific Plan area to third parties for construction, sale, and future management of the affordable housing units and implementation of the affordable housing plan. The project would be consistent with the City's inclusionary housing policies.

Consistency with City of Marina Jobs/Housing Balance Goals

Evaluation of the existing and future jobs/housing balance considers employment potential (existing and projected), housing demand, new housing production, and available transportation systems. New residential development will be phased so that the number of new units constructed annually is consistent with the jobs-housing balance provision of the City's General Plan.

The project would generate an estimated 2,044 jobs from proposed industrial, commercial, and office components. The housing component of the Specific Plan includes the development of about 1,360 units. This equates to a jobs/housing ratio of approximately 1.5 new jobs for each new home within the Specific Plan area. This represents more than double the existing city-wide ratio of 0.6. The City of Marina anticipates the City's overall jobs/housing ratio to be 1.3 upon buildout of the General Plan, which includes the Marina Station site. To meet the City's goal, buildout of the job generating component of the Specific Plan will be completed prior to buildout of the residential component, market conditions allowing.

Consistency with Existing and Proposed Marina Municipal Airport Plan

The City of Marina is currently updating the ACLUP to reflect the 2002 Caltrans Division of Aeronautics standards. The updated document is planned for adoption in 2007. Portions of the Specific Plan area are within Zone 4 (Outer Approach/Departure Zone) and Zone 6 (Traffic Pattern Zone) of the updated ACLUP. The land use plan was designed so that the extended runway centerline and the Outer Approach/Departure Safety Zone extend over the industrial and office portion of the Plan area only. Based on the 2002 Caltrans standards, if the runway is extended to 5,240 feet, approximately 62 acres of the Specific Plan area will be within the airport's Zone 4 - Outer Approach / Departure Safety Zone. In addition, if the runway is extended, the Windy Hill Park neighborhood and the Soccer Park neighborhood will also be located within Zone 6 - Traffic Pattern Zone. The Marina Station Specific Plan will restrict development within these two zones to levels consistent with applicable aircraft safety standards and policies. A more in-depth analysis is contained in Section 4.7 Hazards and Hazardous Materials of this EIR.

The Marina Station Specific Plan is substantially consistent with all relevant plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect. Any plan and policy inconsistencies will be temporary and resolved upon adoption and approval of the Specific Plan. **The project would have a less-than-significant impact associated with land use plan and policy consistency.**

Conflict With Any Applicable Habitat or Natural Community Conservation Plan

There are no habitat or natural community conservation plans that apply to the project site. Therefore, the project will not conflict with any applicable Habitat or Natural Community Conservation Plans. An expanded discussion of this issue is provided in Section 4.4, Biological Resources. **The project would not adversely impact any habitat or natural community conservation plans.**

Cumulative Impacts

Future development of the project site as proposed by the Marina Station Specific Plan would not significantly contribute to cumulative impacts associated with land use and planning. Land use effects would be localized and would not combine with similar effects in other locations. Further, there is no cumulative context to assess land use consistency and compatibility issues unless there is an environmental impact, whereby these impacts are discussed in the appropriate environmental discussion sections in this EIR. **The project would have a less-than-significant impact cumulative impact on land use.**

Table 4.9-2 Project Consistency with Relevant City of Marina General Plan Land Use Provisions		
Number	Provision Summary	Consistency
GENERAL PLAN		
Community Land Use – Primary Provisions		
2.4.1	The City shall provide a land supply within (i.e., south of) its Urban Growth Boundary sufficient in size and appropriately located to accommodate a fair share of the future population and employment growth within Monterey County.	The proposed project would provide for a mix of uses to meet the needs of residents. The project would include 1,360 dwelling units, adding 3,794 persons and 2,044 new jobs. This equates to a jobs to housing ratio of 1.5 new jobs for each new home. This would enable the City to accommodate its fair share of the future population and employment growth within Monterey County. The project is consistent with this provision.
2.4.8	Construction of a broad range of housing types shall be permitted and promoted in order to provide greater housing choice and diversity.	The Specific Plan identifies a range of housing types. The project is consistent with this provision.
2.4.10	Where feasible, the community shall be demarcated from adjacent communities by permanent open space.	The project site plan shows linear park and native landscaping along the perimeter of the project area. The project is consistent with this provision.
2.4.11	Sufficient land shall be set aside to meet the outdoor recreation needs of existing and future residents.	The project includes 58 acres of parks and open space. The project is consistent with this provision.
2.4.12	Land appropriate for community development shall be allocated and phased in a manner that enhances local employment and economic opportunities and provides the City with a strong economic and fiscal base.	The project proposes a mix of uses including commercial and industrial uses to support residential development and provide jobs and economic growth. Market conditions allowing, buildout of the job-generating component of the Specific Plan will be completed in the first two phases, and before the buildout of the residential component. The project is consistent with this provision.
2.4.13	The City will provide adequate urban services, including water, only to areas within its designated UGB. The costs of providing the public facilities and services shall be borne by new development unless the City chooses to help assume such costs in order to obtain identified community-wide benefits.	The project is located within the UGB. The project will pay impact fees to fund facilities needed to support development within the project area. In addition, the project will pay capital costs and certain on-going public and utility services and maintenance costs for improvements and services. The project is consistent with this provision.
Community Land Use - Open Space		
2.7	The open space system in the Marina Planning Area shall be implemented by designating the following categories of open space: 1. <i>Habitat Reserves and Other Open Space</i> for the protection of important habitat areas, scenic areas, and other areas of natural open space. 2. <i>Agriculture Reserve</i> for the long- term protection of prime and other productive agricultural lands outside of the City's Urban Growth Boundary. 3. <i>Parks and Recreation</i> for the provision of local, regional and state parklands and recreational facilities. 4. <i>Golf</i> for the provision of privately or publicly owned golf facilities. 5. <i>UGB Open Space</i> . A parks and open space category	The project includes 58 acres of parks and open space. This includes linear parks which will contain a network of trails that will be accessible to new residents as well as existing residents in adjacent communities. The linear parks will also include large portions of undisturbed open space. The current General Plan designates approximately 36 acres within the project site as <i>Habitat Reserve & Other Open Space</i> to protect potential vernal pools. However, the biological evaluation for the project did not find any vernal pools on the site and this designation has been eliminated as part of the Specific Plan. The project is consistent with this provision.

Table 4.9-2 Project Consistency with Relevant City of Marina General Plan Land Use Provisions		
Number	Provision Summary	Consistency
	consistent with and intended to carry out the Urban Growth Boundary Initiative.	
2.8	Wherever possible, public open space in the form of natural undeveloped lands and/or developed parklands shall be incorporated into all major subdivisions and development, including residential, commercial, and institutional (educational and civic) projects. Wherever feasible, major open space areas shall be linked to each other through the provision of wildlife habitat corridors and/or recreational trails.	The project includes 58 acres of parks and open space. This includes linear parks which will contain a network of trails that will be accessible to new residents as well as existing residents in adjacent communities. The linear parks will also include large portions of undisturbed open space. The project is consistent with this provision.
<i>Community Land Use – Habitat and other Open Space</i>		
2.10(4)	<i>Wetlands.</i> An area of 80 acres on the Armstrong Ranch property between Del Monte Boulevard and Highway One is designated as Habitat Reserve due to the presence of vernal ponds. Additional small areas where vernal ponds occur may exist elsewhere on the Armstrong property. Prior to approval of development plans for this property, biological field surveys shall be conducted to determine if additional vernal ponds exist. If such surveys document the existence of such ponds, development plans must provide either for the preservation or replacement of this habitat.	Biological field studies have determined that vernal pools do not exist within the portion of the Armstrong Ranch that is part of this proposed project (refer to Appendix D) The project is consistent with this provision.
Table 2.1	Table 2.1, Summary of General Plan-Designated Open Space. The table currently reflects the Incorporated Portion of Armstrong Ranch, with the following open space designations: Agricultural Reserve – 0; Habitat Reserve and Other Open Space – 35; Parks and Recreation – 80; UGB Opens Space 0; Golf Course 5, for a Total of 120 acres.	The proposed project has 20 acres dedicated as parks and 38 acres dedicated as open space. This reflects a total of 58 acres of open space. Table 2.1 reflects a higher number of acres as open space. The project includes an amendment to Table 2.1 to reflect the 58 acres of open space. The proposed project will result in 3,794 residents within the 320-acre project. The provision of 20 acres of parks (58 acres total of open space) for these residents more than meets the City’s standard of 5.3 acres of parkland for every 1,000 residents. The project is consistent with the City’s provisions regarding the ratio of parkland versus population, and if Table 2.1 is revised as requested, the project would be consistent with this provision.
<i>Community Land Use – Open Space – Parks and Recreation</i>		
2.13	At present the City of Marina has a total of 96.7 acres devoted to local and community-serving park and recreation use, including the sports center, teen center, equestrian center, and school playfields. The present ratio of City park and recreation land to population, excluding former Fort Ord sites, is 5.3 acres per 1,000 residents. This ratio is consistent with the current City standard of 5.3 acres of improved parkland for every 1,000 residents. <i>This General Plan reserves an additional 477 acres for parks and recreation purposes in former Fort Ord alone, along with neighborhood and sub-neighborhood parks provided</i>	This project will add 20 acres of formal parkland to the City’s inventory and will contain 58 acres of parks and open space. The project is consistent with provision of furnishing 5.3 acres of parkland per every 1,000 residents. The last two sentences of the quoted language (shown in italics) relate to calculations that were made as of the time frame that the text was added, and are not part of the provision itself. As stated above, if the proposed project is approved, Table 2.1 would be amended to reflect the revised acreage for the incorporated portion of Armstrong Ranch. The project approvals include a clean-up amendment to delete the italicized language in order to avoid confusion. The proposed project is consistent with this provision.

Table 4.9-2 Project Consistency with Relevant City of Marina General Plan Land Use Provisions		
Number	Provision Summary	Consistency
	<i>by individual developments, not including sports fields for new schools, while about 182 acres have been designated for parks and recreation uses on Armstrong Ranch. If the unimproved former Fort Ord sites are included, the present ratio increases to 19.5 acres per 1,000 residents. (Italics added)</i>	
2.16.1	New development on the Armstrong Ranch property shall provide for park and recreation needs in accordance with the minimum standards shown in Table 2.2 of the City of Marina General Plan. All playgrounds, neighborhood and sub-neighborhood parks, and recreation trails shall be fully improved by the developer. Responsibility for the improvement of play fields and community parks shall be determined in conjunction with the preparation of a specific plan for the Armstrong Ranch lands and the establishment of any associated development agreements.	The project includes 58 acres of parks and open space. The project would be consistent with Table 2.2 by providing neighborhood and/or local parks with appropriate facilities within each neighborhood. The project approvals will include a development agreement that will outline the responsibility for making the necessary improvements to the parks. The project is consistent with this provision.
2.16.2	New development on presently undeveloped lands within and adjacent to the Urban Growth Boundary shall provide a linear park (greenbelt) or other open space buffer between the new development and existing, adjoining residential neighborhoods. <i>(from UGB Initiative Section 2)</i>	The project site plan shows linear park and native landscaping along the majority of the perimeter of the project area. The project is consistent with this provision.
2.18	New parks and playgrounds shall be provided in conjunction with new residential development in accordance with the standards of Table 2.2. The required outdoor park and recreation area shown in Table 2.2 by type may be combined with other required outdoor recreation areas provided; (a) the service area criteria are met; and (b) the design of park and active-recreation areas provides, where necessary, sufficient separation between areas so as to simultaneously accommodate different age groups or potentially incompatible activities. To meet the recreation trail standard, a trail shall link the area served to an existing or planned trail so as to eventually create an integrated citywide trail system.	The project includes 58 acres of parks and open space. The project would be consistent with Table 2.2 by providing neighborhood and/or local parks with appropriate facilities within each neighborhood. In addition, the project includes trails that will be linked to an integrated citywide trail system. The project is consistent with this provision.
Figure 2.2	Figure 2.2 Land Use Plan	This figure shows the current General Plan designations on the project site. As part of the General Plan amendments presented with the project, those designations are to be modified. If the requested update of Figure 2.2 is approved in conjunction with the project, the project would be consistent with the revised figure.
<i>Community Land Use – Housing and Neighborhoods – Housing Provisions</i>		
2.31	It is the City of Marina’s intent to promote construction of new housing that is environmentally and socially responsible and that adheres to the following policies:	The project proposes a mix of uses including commercial and industrial uses to support residential development and provide jobs and economic growth. The project is consistent with this provision.

**Table 4.9-2
Project Consistency with Relevant City of Marina General Plan Land Use Provisions**

Number	Provision Summary	Consistency
2.31.1	In order to promote the social and fiscal well-being of the community, new housing shall be phased and shall provide for the needs of all economic groups, particularly with respect to matching the needs of the City's current and future workforce. In addition, the development of new and substantially rehabilitated homes, other than age-restricted housing, on Armstrong Ranch and the former Fort Ord shall be linked with the creation of new jobs pursuant to a development agreement or similar mechanism stipulating requirements to help attain a citywide jobs-housing balance.	The low density and medium density residential uses as well as residential uses within the commercial mixed-use areas offer opportunities to provide competitively priced housing. The master developer and/or the individual project developer will provide a range of housing products on smaller lots and/or attached products to reduce dwelling unit prices. The project would provide 1,360 dwelling units and 2,044 new jobs, which would occur in eight phases over the course of 10 to 20 years. Market conditions permitting, buildout of the job generating component of the Specific Plan will be completed in the first two phases, and before the buildout of the residential component. The project is consistent with this provision.
2.31.2	To ensure that housing continues to be available to households of lower income in Marina, affordable housing shall be provided pursuant to the inclusionary housing requirement of the Housing Element of this plan.	The project includes an inclusionary housing component that is consistent with the City's inclusionary housing ordinance. The project is consistent with this provision.
2.31.4	New housing shall accommodate a broad range of life-styles, including those associated with the presence of CSUMB and the MBEST Center, with people wishing to combine living and work space, and with retired residents who will make up an increasing proportion of the region's population in the future.	The project will provide a range of housing types to accommodate a variety of lifestyles. The project is consistent with this provision.
2.31.6	New housing shall be constructed at densities and in patterns which conserve land, reduce reliance on the private automobile and result in walkable, attractive neighborhoods.	Proposed activity centers for the residents and workforce would emphasize pedestrian oriented uses. The office and industrial district would create employment-generating uses in proximity to housing to reduce the need for travel outside the Plan area. The project is consistent with this provision.
2.31.9	Amenities such as common open space, pedestrian paths and bikeways, and well-landscaped streets shall be incorporated into the design of new housing areas so as to ensure the long-term desirability and stability of these areas as well as contribute to the needs of the larger community. Single-family and Village Home dwellings may be clustered and designed to provide for additional common open space.	The project consists of 38 acres of open space and 20 acres of parkland, as well as pedestrian and bike facilities integrated throughout the site plan and around the site's perimeter. The project is consistent with this provision.
2.31.10	New housing shall be built to development and construction standards that conserve water and energy.	All new development would be constructed with water conserving fixtures consistent with City standards. Design and construction will include the following energy and water saving techniques: re-circulation hot water systems, high efficiency clothes washers and dishwashers, dual plumbing, formaldehyde-free insulation, raised heel trusses, and option solar panels. The project is consistent with this provision.
2.32	The General Plan's land use policies allow for approximately 6,500 new or rehabilitated housing units. It is estimated that at least 95 percent of the housing to be added to the City over the next two to three decades will be accommodated in two areas: (1) Armstrong Ranch lands in the northern incorporated portion of	The project would provide 1,360 dwelling units within the incorporated portion of Armstrong Ranch. The project is consistent with this provision.

**Table 4.9-2
Project Consistency with Relevant City of Marina General Plan Land Use Provisions**

Number	Provision Summary	Consistency
	the Marina Planning Area; and (2) the portion of former Fort Ord within the City's municipal boundaries and Sphere of Influence. Housing allowances and requirements for these two areas are specified below. ...	
<i>Community Land Use – Housing and Neighborhoods – Housing Potential</i>		
2.33.5	<p>A total of approximately 1,300 units of housing are permitted on the incorporated portions of Armstrong Ranch lands in accordance with the locational requirements shown in the Land Use Element Map (Figure 2.2). Four types of housing shall be provided as described below and indicated by Table 4-2 of the Housing Element:</p> <ol style="list-style-type: none"> 1. Standard single-family detached houses at a density of 5 units per gross acre. Portions of the Armstrong Ranch lands immediately adjoining existing neighborhoods shall be developed with housing of similar density. Housing within the lands so designed — adjoining the Cardoza and Crescent Avenue areas — shall not exceed 5 units per gross acre. 2. Village homes, consisting of a mix of single-family detached and attached houses, townhouses, and multi-family housing. The mix of housing types within the 'Village Homes' area may vary from that in Table 4-2 of the Housing Element, except that the number of single-family homes shall be considered the allowable maximum for this housing type. Townhouse development outlined in Table 4-2 and mentioned in Section 2.35.4 shall be encouraged to provide for the housing needs of young adults and seniors. Village homes are to be organized into a village type of setting capable of supporting both local and regional transit, with residents being within walking distance of local shops, schools, and park and recreation facilities. The overall gross density of the area designated for Village Homes shall not exceed 8 units per gross acre, nor be less than 7.5 units per gross acre. 3. Townhouses and multi-family housing constructed within designated multiple-use areas. 4. Age-restricted housing shall be composed of a mix of housing types. 5. New residential development on Armstrong Ranch should be cumulatively phased so that the number of new units allowed to be constructed is consistent with the jobs-housing balance policy of Section 2.31. (2005- 82) 	<p>The proposed project is somewhat different than what is described in 2.33.5. The proposed project has 60 units more than the referenced 1,300. The project does not include “village homes.” The proposed project would create three village areas rather than one. The proposed project includes an amendment to 2.33.5 in order to maintain consistency between the Specific Plan and General Plan. The project generally has either “Neighborhood Edge” or “Neighborhood General” designations on the portion of the project adjacent to existing single family homes. The only location where this does not occur is at the project boundary at DeForest Road and Beach Road, where one row of approximately four homes exists on the south side of Beach Road west of DeForest Road and east of Villa Circle. At that location, the “Neighborhood Center” area is near the southern boundary of the project site. However, the homes on the south side of Beach Road would be separated from the Neighborhood Center by the Beach Road right-of-way, a row of existing mature trees, and a linear park, and the closest Neighborhood Center building would be over 100 feet from the north side of Beach Road. These factors satisfy the purpose of 2.33.5(1). Therefore, with the adoption of the proposed amendment to 2.33.5(1) proposed as part of the project, the project is consistent with this provision.</p>

Table 4.9-2 Project Consistency with Relevant City of Marina General Plan Land Use Provisions		
Number	Provision Summary	Consistency
<i>Community Land Use – Commercial – Retail and Personal Services</i>		
2.39	A "strip" form of commercial development shall be avoided, and future retail, personal-service, and business-service uses shall be concentrated to infill the Del Monte Boulevard and Reservation Road areas and create more pedestrian-oriented complexes. Wherever possible, commercial development outside of these areas shall be planned more to complement rather than directly compete with commercial activity in the Del Monte Boulevard and Reservation Road areas. Marina's core retail area is defined as those areas designated for "Commercial Retail/Personal Services" uses along the east side of Del Monte Boulevard from Carmel Avenue to Reservation Road, and along the section of Reservation Road between Del Monte Boulevard and De Forest Road, to include the parcel at the southeast corner of De Forest and Reservation Roads as well as the similarly-sized parcel immediately adjoining to the east.	The commercial mixed use development would create activity centers for residents and the workforce that would emphasize pedestrian-oriented uses. The project is consistent with this provision.
<i>Community Land Use – Commercial – Office/Research and Development</i>		
2.69	A more limited area of approximately 15 acres designated for office and research-and-development use is located on Armstrong Ranch lands at the northern edge of the existing built-up edge of the City. This area consists of an approximately 250-foot-deep band of land along the west side of the extension of Paul Davis Drive and serves as a buffer between the industrial-designated land along the east side of the roadway and housing to the west.	Currently, the General Plan designates approximately 15 acres of Armstrong Ranch located on the west side of Paul Davis Drive for office and research/development. The proposed Specific Plan designates that general area as Neighborhood Center, and is thus not consistent with the existing land use designation. The Specific Plan provides for 12 acres of office space in the southeast portion of the project. The project includes this amendment to the General Plan Land Use Map for the properties within the Plan area as well as General Plan text amendments, in order to maintain consistency between the Specific Plan and General Plan. The project is consistent with this provision.
2.70	This location offers advantages of good regional vehicular access, potential for regional commuter-rail service, and proximity to planned retail and visitor-serving uses. The area's potential is further enhanced by its high visibility from both Highway One and Del Monte Boulevard, and by its position at the northern gateway to the City. Due to this visibility and special location, however, high standards of site, landscape and architectural design shall be required to protect and enhance the scenic quality of Highway One and the City's northern gateway.	The portion of the project area located immediately east of Highway One would consist of linear park, native landscaping, and low density residential. Final design must be in compliance with the City's Design Standards. The project is consistent with this provision.
<i>Community Land Use – Industrial and Commercial Services</i>		
2.78	Future development of lands owned by the City and successors in interest at and surrounding the airport shall be governed by standards and guidelines set forth in the City of Marina Municipal Airport & Business Park Guide for Development and Marina Municipal Airport Comprehensive Land Use Plan.	The project, as designed, would be consistent with the draft Airport Comprehensive Land Use Plan. The project is consistent with this provision.

**Table 4.9-2
Project Consistency with Relevant City of Marina General Plan Land Use Provisions**

Number	Provision Summary	Consistency
	Lands under the jurisdiction of the University of California shall be governed by the standards and guidelines of the University of California Monterey Bay Educational, Science and Technology Center Master Plan, except as it may be modified herein by this General Plan and, for that portion which falls within the airport planning area, the policies and standards of the Airport Comprehensive Land Use Plan, except that development intensity up to an FAR of 0.5 may be allowed and building heights of up to fifty-six (56) feet may be allowed, provided that visual simulations shall be prepared by project applicants for any buildings proposed over 35 feet high.	
2.80	An area of approximately 20 acres, located both within the Marina Municipal Airport Approach Protection Zone and municipal boundaries, is designated for industrial and commercial-service use. Use of this area, which is part of the Armstrong Ranch property, is limited by the provisions of the Marina Municipal Airport Comprehensive Land Use Plan. This plan specifies that uses within the Approach Protection Zone be limited to industrial uses or other nonresidential uses of limited density. The plan's safety-compatibility policies further specify that the maximum allowable density for non-residential uses be 50 people per acre. Outdoor commercial recreation uses such as miniature golf courses, driving ranges, and water parks would also be permissible.	The proposed project includes a general plan amendment that would increase the number of acres for the industrial area from 20 to 38. In addition, the amendment clarifies that the ACLUP has been updated in draft form to reflect the 2002 Caltrans Division of Aeronautics standards, though the update has not been formally adopted. The reader is directed to Section 4.7 of the EIR for further discussion of the ACLUP status. As explained therein, the project would not be consistent with the 1996 ACLUP. The proposed project specifies that uses within the approach protection zone be limited to industrial uses with limited population density. The industrial development would create 1,303 jobs on 38 acres of land, an employment intensity of 34 employees per net acre. This is consistent with the 2006 Draft ACLUP. With the adoption of the General Plan amendment proposed as part of the project, the project is consistent with this provision.
2.81	Based on the limitations of the Airport Comprehensive Land Use Plan, use of the site shall be limited to low-employment-intensity industrial uses, warehousing and storage, and commercial-service uses such as building construction services which involve enclosed and open storage of materials and limited occupied building space. Development intensity shall not exceed an FAR of 0.4 nor have projected employment intensity greater than 50 employees or occupants per net acre.	The industrial development would create 1,303 jobs on 38 acres of land, an employment intensity of 34 employees per net acre. The project is consistent with this provision.
2.92	Based on the above policies and enrollment projections, a projected need exists for three additional K-5 school sites, one additional middle school site, and a high school site. The General Plan provides for four additional K-5 school sites, a middle school site, and a high school site - the locations of which are shown in Figure 2.2. Two of the elementary school sites are located in former Fort Ord. <i>Two of the elementary school sites are located in former Fort Ord. The remaining two elementary</i>	Two acres of the project site would be reserved for the school expansion site. The master developer and MPUSD will be completing an agreement for the Olson Elementary School expansion prior to issuance of a final map. No additional school sites have been requested by the MPUSD from Marina Station. The project proposes an amendment to 2.92 to delete the last two sentences (shown in italics) of the provision since they are no longer the current desire of MPUSD. A similar amendment is proposed for a parallel provision in the Program and Implementation portion of the General Plan (5.15). These amendments would allow consistency between the Specific

**Table 4.9-2
Project Consistency with Relevant City of Marina General Plan Land Use Provisions**

Number	Provision Summary	Consistency
	<i>school sites and the middle school site are located on Armstrong Ranch lands designated for community development purposes.</i> (Italics added)	Plan and General Plan. With the adoption of the proposed amendment, the project would be consistent with this provision.
2.94	In terms of the middle school, two alternative sites are offered in the General Plan both on the Armstrong Ranch: one adjoining the existing Olson Elementary School, the other at the intersection of Del Monte Boulevard and Golf Boulevard. The latter site is adjacent to a site designated for an elementary school and neighborhood park. First priority is given to the site at the intersection of Del Monte Boulevard and Golf Boulevard, while the site adjoining Olson School is ranked second.	The proposed project includes a General Plan amendment to delete this provision in its entirety as it is no longer reflective of the needs and desires of the MPUSD. The project proposes to dedicate approximately two acres of open space/parkland to future expansion of Olson Elementary School, which will be part of a development agreement. No additional school sites have been requested by the MPUSD from Marina Station. If the applicant's request for the elimination of this provision is approved, the project would be consistent with the provision.
2.95	This plan recognizes that flexibility is needed in siting the proposed middle school and elementary schools on the Armstrong Ranch property due to aviation safety concerns and that, therefore, the designated sites may be subject to future adjustment. <i>In the event that the elementary school site just east of the Del Monte Boulevard middle school site is deemed unsuitable, a potential alternative site would be immediately west of the designated park site (between Del Monte Blvd. and the park site in part of the area now designated as an alternative middle school site.</i> (Italics added).	Approximately two acres of open space/parkland is dedicated to future expansion of Olson Elementary School, which will possibly be part of a development agreement. No additional school sites have been requested by the MPUSD from Marina Station. The proposed project includes an amendment to this provision to eliminate the last sentence, as it is no longer reflective of the needs or desires of MPUSD or the applicant. With this deletion, the project would be consistent with this provision.
Community Infrastructure – Transportation – Protected Neighborhoods		
3.7	The network of roadways to accommodate the movement of private and commercial vehicles is shown in the Transportation Policy Map (Figure 3.1). Roads shall be designed in accordance with policies and programs listed below, and, to the extent feasible, roadway system improvements shall be implemented concurrent with major development as allowed by this plan. Forecasted 2020 traffic volumes for major or critical road segments and recommended roadway standards for accommodating projected travel demands are set forth in Table 3.1. See the Community Development and Design Element (Chapter 4) for further policies governing design of designated routes.	The project includes a detailed circulation plan that addresses the needs of the City with regards to circulation to and within the Plan area and also discourages cut-through traffic. Del Monte Boulevard, Golf Drive, and Crescent Avenue will serve through traffic and will be limited to two lanes (one lane in each direction). The project is consistent with this provision.
Community Infrastructure – Transportation – Streets and Highways		
3.9	Roads serving major inter- and intra-city vehicular movement are shown in Figure 3.1. A peak period Level of Service (LOS) "D" shall be maintained for all highway segments and major roads within the Marina Planning Area, except where existing roads and highways are operating a lower LOS standard at the time of	The DEIR implements this provision. The traffic analysis for the EIR uses the LOS D standard as the threshold of significance for all highway segments and major roads within the City's Planning Area. As outlined in Chapter 4.13, mitigation is identified for all project level significant impacts of the project. The project is consistent with this provision.

**Table 4.9-2
Project Consistency with Relevant City of Marina General Plan Land Use Provisions**

Number	Provision Summary	Consistency
	plan adoption, the existing LOS will be maintained or improved.	
3.13	The following existing streets and extensions thereof as shown in Figure 3.1 shall function as collector streets: (1) Cardoza Avenue and its northward extension into Armstrong Ranch; (2) Carmel Avenue and its extension to former Fort Ord; (3) Reindollar Avenue; (4) Salinas Road; (5) DeForest Road and Beach Road east of Del Monte Boulevard; (6) Crescent Avenue; (7) Paul Davis Drive and its northerly extension; (8) Vista Del Camino from Peninsula Drive to Reservation Road; (9) Lake Drive and Palm Avenue west of Del Monte Boulevard; (10) Seacrest Avenue; (11) Sunset Avenue; (12) Abrams Drive; and (13) California Avenue from Reindollar Avenue to Golf Boulevard.	The project includes the extensions of Cardoza Avenue, De Forest Road, Crescent Avenue, and Paul Davis Drive to function as collector streets. These extensions will provide links between the Specific Plan area and the City. The project is consistent with this provision.
3.15	All residential collectors shall be limited to two travel lanes, one lane in each direction. Provisions shall be made for bicycle lanes, either within or adjacent to the roadway, and, where possible, for bus turn-outs along designated bus routes. Table 3.1.B shows the current and future status of designated residential collectors. Within residential areas and major retail areas low travel speeds shall be maintained on collectors. Where necessary, excessive travel speeds shall be avoided by use of traffic-calming devices such as speed bumps, narrowing of the street at intersections, stops sign, and roundabouts. Cardoza Avenue and its extension into Armstrong Ranch shall be designed to discourage its use as a bypass of Reservation Road for trips using the Highway One/Reservation Road interchange.	Proposed roadways on the project site will conform to all City standards. Cardoza Avenue is designed generally to discourage its use as a bypass of Reservation Road for trips to and from the Highway 1/Reservation Road interchange. The project is consistent with this provision.
<i>Community Infrastructure – Water Supply – Water Resource Management</i>		
3.54	All infrastructure required for adequate water supply shall be in place prior to or concurrent with new development. The cost for providing water to new development shall be paid by impact fees set at a rate sufficient to cover the annual debt service of the new water supply system. This provision may be especially critical in areas of former Fort Ord, where water-distribution and storage facilities are in need of repair.	The master developer shall prepare a detailed master water supply plan that identifies backbone water supply and treatment infrastructure needed to serve new development within the Plan area. Individual project developers shall install water supply system improvements within the boundaries of their individual projects that tie into the backbone infrastructure system. As a part of the final map improvement plans, the City shall grant easements for the MCWD to maintain water supply and wastewater collection mains to be located in dedicated City collector roads. The plan must be reviewed and approved by the MCWD prior to issuance of a grading permit for any project within the project site. The project is consistent with this provision.
<i>Community Infrastructure –Stormwater Facilities</i>		
3.57	To avoid problems related to storm water drainage, the measures outlined in the General Plan shall be taken.	All storm water runoff generated within the Plan area will be conveyed through a storm drain system to a percolation pond located in the western portion of the Plan area. The Specific Plan includes a storm water drainage master plan.

Table 4.9-2 Project Consistency with Relevant City of Marina General Plan Land Use Provisions		
Number	Provision Summary	Consistency
		The system will consist primarily of storm water inlets with underground piping systems in residential streets, alleys and parking areas. The percolation pond is an existing feature of the Plan area's topography, which currently accepts runoff from its natural tributary drainage basin. The project is consistent with this provision.
<i>Community Design & Development – City Form and Appearance - Travel Corridors and Gateways</i>		
4.14	Future improvements along the City's major travel corridors shall be designed to build upon the positive attributes of these travel corridors so as to enhance the image of the City and make the use of these corridors more pleasurable for both motorists and adjoining residents and businesses.	The project will include a master street tree planting and landscaping plan for all streets within the project area, including major travel corridors. The project is consistent with this provision.
<i>Community Design & Development – City Form and Appearance – Neighborhoods and Districts</i>		
4.19	Within the already built-up areas, existing distinctions should be retained and reinforced. Within new development or redevelopment areas, the following three design techniques should be applied: 1. The boundaries of the neighborhood or district should be clearly defined by open space buffers or roadways. 2. Major identifying features such as park, plaza, or school sites should be provided. 3. Each area should have its own distinct street pattern, and a consistent and evident landscape scheme should be applied to its streets and associated fronting properties.	The project incorporates neotraditional design that includes linear parks and native landscaping along most of the perimeter of the project site, formal parkland and a civic plaza, and a distinct street pattern. The project is consistent with this provision.
<i>Community Design & Development – Travel Routes - Arterial Streets</i>		
4.27.1	The pavement widths of local residential streets should only be as wide as necessary to accommodate the residences along the immediate street frontage and should provide for parking on both sides. Road widths of 34 feet are appropriate for local residential streets and should allow vehicles and bicycles to share the roadway without the need for a designated bikeway and allow for parking on both sides. In order to primarily facilitate the turning of fire apparatus, parking shall not be allowed within 20 feet of an intersection. In order to discourage parking at intersections, improve street appearance, and to improve pedestrian safety at intersections, street pavement width should be reduced to 22 feet within about 20 feet of the intersections.	The applicant is proposing local residential street widths of 32 feet, two feet narrower than the width set forth in 4.27.1. The purpose of the narrower width is to implement neo-traditional design elements. In order to eliminate this inconsistency, the applicant has proposed an amendment to 4.27.1 to drop the standard to 32 feet. With the adoption of the proposed amendment, the project would be consistent with this provision.
4.34	The entire length of this corridor is designated as a four-lane arterial. Existing and planned land uses along this corridor, however, vary substantially and require more segment-	The Specific Plan was designed to limit the number of intersections with Del Monte Boulevard. However, the applicant does not propose to treat Del Monte Boulevard as a "limited access roadway" and therefore has requested that the italicized text be deleted.

**Table 4.9-2
Project Consistency with Relevant City of Marina General Plan Land Use Provisions**

Number	Provision Summary	Consistency
	<p>specific design specifications. The following policies address these more localized requirements.</p> <ol style="list-style-type: none"> 1. <i>The portion of Del Monte Boulevard passing through the Armstrong Ranch shall be designed as a limited-access route, with the number of intersecting streets limited. Intersections include the extension of California Avenue, Golf Boulevard and an intersection approximately midway between Golf Boulevard and the main retail commercial street on Armstrong Ranch. (See Figure 4.7.)</i> 2. The two-block section adjoining the proposed train station plaza and retail area shall be designed to permit safe and easy pedestrian crossing of the boulevard. (See Figure 4.8.) 3. A landscaped median, similar to that existing along Del Monte Boulevard south of Reservation Road, should be installed from Reservation Road north to Golf Boulevard. (Italics added) 	<p>The access would be controlled by the Specific Plan. If the language is deleted as requested, then the project is consistent with the remaining portion of the provision. If the language is not deleted, Del Monte Boulevard will need to be treated as a limited access route. In either event, the project is consistent with this provision.</p>
<i>Community Design & Development – Neighborhoods and Districts – Armstrong Ranch</i>		
4.75	<p>Consistent with the long-term policies of the City of Marina and Monterey County, and recognizing the future need for housing as a result of the presence of the MBEST Center, the CSUMB campus, and other land uses designated in the Fort Ord Reuse Plan which will also generate employment, a major portion of the incorporated Armstrong Ranch (i.e., the area within the City and UGB boundaries) is designated for residential development, a purpose for which the area is ideally suited. This is an area which is immediately contiguous to already-built-up areas of Marina, and urban services are readily available without requiring expensive extensions. The site thus offers the Monterey region an opportunity to channel future residential growth into a location where sprawl and large-scale loss of prime agricultural land may be avoided.</p>	<p>The project proposes the development of urban mixed uses, including approximately 1,360 dwelling units on 209 of the 320 acres on Armstrong Ranch. The development will be located wholly within the UGB boundaries, where services are available to serve the site. The project is consistent with this provision.</p>
4.77.1	<p>Development of all or any portion of the Armstrong Ranch designated for community development purposes shall only be permitted upon preparation of a specific plan, required environmental review, and, where applicable in compliance with the UGB Initiative, annexation of that portion of the ranch proposed for development and not presently within the City limits. The specific plan shall comply with the requirements of California Law (Government Code 65450 et. seq.). In addition,</p>	<p>The Marina Station Specific Plan has been completed in accordance with California Law (Government Code 65450 et. seq.). The project is consistent with this provision.</p>

**Table 4.9-2
Project Consistency with Relevant City of Marina General Plan Land Use Provisions**

Number	Provision Summary	Consistency
	the plan shall include a development phasing program indicating the sequence in which site improvements and construction will occur and the overall mix and ratio of uses.	
4.77.3	The specific plan shall ensure that the development of residential and commercial uses shall be staged so as to ensure that overall ranch development strengthens the City's fiscal status. Residential development shall be conditioned upon the creation of new jobs and the insurance that an adequate proportion of new housing will be available to persons employed within the City of Marina and to households of low-and moderate-income in accordance with the provisions of Section 5.9 of this plan and any implementing ordinances. Additionally, each successive phase of residential development shall be further conditioned upon the construction and leasing of commercial development on Armstrong Ranch or elsewhere in Marina that can generate tax revenue adequate to pay for the cost of ongoing public services (e.g., fire and police protection, parks and recreation services, schools) needed to support new housing. Accordingly, an independent fiscal analysis shall be prepared for the successive phases of residential development that summarizes the capital, operation, and maintenance costs associated with providing required public services, including public transit, and which project estimated tax revenues from new commercial development, as well as from the new proposed housing. Where estimated tax revenues prove insufficient to cover costs, other funding mechanisms should be explored. The Monterey-Salinas Transit District should be consulted during the preparation and review of such analyses.	The low density and medium density residential uses as well as residential uses within the commercial mixed-use areas of the project offer opportunities to provide competitively priced housing. The master developer and/or the individual project developer would provide a range of housing products on smaller lots and/or attached products to reduce dwelling unit prices. The project would provide 1,360 dwelling units and 2,044 new jobs. Financing and capital improvement programs would include impact fees and capital costs based on a financing analysis. Market conditions permitting, buildout of the job-generating component of the Specific Plan will be completed in the first two phases, and before the buildout of the residential component. The project is consistent with this provision.
4.78.1	Open space shall be conserved by avoiding extensive low-density development.	Low density residential utilizes 47 acres, or 15% of the 320 acre project site. Park and open space would utilize 58 acres, or 18% of the project site. The project is consistent with this provision.
4.78.5	The density of development shall make provision of frequent, cost-effective transit service, thereby preventing traffic congestion, reducing air emissions, and conserving energy.	Development density and the configuration of the proposed residential areas around neighborhood centers will facilitate provision of cost-effective transit service. Proposed circulation routes connect neighborhoods, parks, recreation trails, commercial areas, and transit stops. The project is consistent with this provision.
4.79	To promote the City's objective of creating a demographically and economically balanced community, a wide range of housing options shall be provided, the cost and mix of which shall be approximately proportional to the housing needs of existing and future employed persons within the City. Housing shall be	The project's residential component offers a variety of housing types that include large single-family villas, small cottages, row houses, lane homes, and apartments as a part of the Neighborhood Centers. The diversity in housing will offer a wide range of new homes to accommodate a diverse price range, age groups and lifestyles. As per the Specific Plan, the Marina Station project would provide inclusionary housing. A

**Table 4.9-2
Project Consistency with Relevant City of Marina General Plan Land Use Provisions**

Number	Provision Summary	Consistency
	balanced with commercial uses, providing for retail and services and for office, research, commercial-service and industrial uses. To achieve this end, the permitted residential and non-residential-development shall adhere to the following policies and conditions.	separate affordable housing program would be negotiated between the City and the master developer, specifying in detail an affordable housing plan that meets the provisions of the City’s Inclusionary Housing Program. The project includes mixed-use Neighborhood Centers that promote connectivity of commercial, cultural, recreational, and residential uses. Parks, commercial, and cultural centers are intertwined in the Neighborhood Centers with residential uses typically located on the second or third floors above the retail and offices. The project is consistent with this provision.
8.84.1	An integrated network of pedestrian routes consisting of walkways on well-landscaped streets and off-road walking and biking paths shall link residential areas, commercially developed areas of the Ranch, and adjoining neighborhoods and commercial and retail areas.	The project proposes amendments to the General Plan Land Use Map for the properties within the Plan area, as well as General Plan text amendments in order to maintain consistency between the Specific Plan and General Plan. The project is consistent with this provision.
4.84.5	<i>At such time that passenger rail service is reintroduced to the Monterey Peninsula, a station, shall be provided in the northern portion of Marina. Accordingly, the Armstrong Ranch Specific Plan shall provide for a passenger rail station and adjacent public plaza fronting onto Del Monte Boulevard.</i> The station should be designed to serve multiple-trip purposes. Such purposes should include commuting by rail to jobs within the Armstrong Ranch area or elsewhere in Marina with connecting local bus service; access to Armstrong Ranch areas and nearby coastal destinations for recreational visitors, and out-commuting to jobs in other areas of the Monterey Peninsula by Armstrong Ranch residents using rail rather than automobile. (Italics added)	The applicant is proposing to amend the italicized language of this provision to refer to light rail and interurban bus service and to state that the Specific Plan includes construction of an “old time” train station within the Civic Plaza area of the Specific Plan, adjacent to the TAMC right-of-way, and will construct bus shelters along the bus route in each of the neighborhood centers. The project is consistent with this provision in its current form, or as proposed to be amended.
4.85	The Armstrong Ranch shall be designed and developed so that it serves as a well-recognized and desirable location in the Monterey Peninsula, enhancing both its and the City’s economic character and image. In addition to the special neighborhood features outlined above, the following major components shall be incorporated into the design of the area.	The Specific Plan includes numerous special neighborhood features that will make the area distinct. The proposed Marina Station and the open space areas are consistent with the required components. The project is consistent with this provision.
4.87	The major travel routes through Armstrong Ranch lands - Del Monte Boulevard, Golf Boulevard, and DeForest and/or Crescent Avenues - shall be designed with a parkway appearance that will establish an attractive, understandable, and memorable image for the entire City.	The project incorporates native landscaping, open space, and parks throughout the project area. Access to the project area via Del Monte Boulevard, De Forest Road, and Crescent Avenues will be designed to have a parkway appearance and will include landscaping that enhances the visual quality of the area. The project is consistent with this provision.
Community Design & Development – Public Health & Safety- Seismic and Geologic Hazards		
4.102(2)	The following additional safeguards shall be provided: 2. Require that new development be sited and designed to conform to site topography and to minimize grading wherever possible. Recommendations to developers as to how to mitigate	The proposed project includes 2.5 million cubic yards of cut and 2.5 million cubic yards of fill in the grading of the site. The applicant has indicated that that it is not reasonably possible to design the proposed project so as to conform with the existing topography of the site and still meet the project objectives for the following reasons: The applicant

**Table 4.9-2
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Number	Provision Summary	Consistency
	geologic or seismic hazards should include mention of the need to avoid massive grading or excavation or structures that might require substantial alteration of natural landforms.	indicates the Marina Station plan has been sited and designed to conform to the existing topography and minimize grading to the extent possible while still meeting the General Plan policies related to the Armstrong Ranch with regard to land use and density, including 1) reducing the number of vehicle trips and promoting safe and convenient pedestrian travel routes that will encourage residents to walk to local destinations, 2) integrating the new neighborhoods with existing neighborhoods, and 3) achieving housing densities that will promote affordability. The applicant has also indicated that the proposed grading of the site will also help facilitate a site plan that can fulfill ADA requirements, eliminate the need for unnecessary infrastructure costs related to pump stations for gravity utilities, and reduce the need for steep streets making transit service more efficient while reducing air pollution and conserving energy. The geotechnical study for this project (Appendix E) assumes conventional cut-and-fill site grading and raises no concerns about any resulting geologic or seismic hazards. It concludes that the site is suitable, from a soil engineering standpoint, for the proposed development provided the recommendations of the report are carried out. If the City finds that it is not possible to maintain the existing topography on the site, while fulfilling other General Plan goals and policies, and that no additional geologic or seismic hazards will result from the proposed grading, the project would be consistent with this provision. If the City does not make this finding, the level of grading would need to be reduced or 4.102(2) would need to be amended in order for the project to be consistent. Under either scenario, the project would be required to be consistent with this provision.
Community Design & Development – Aviation Hazards		
4.107	The maximum allowable exterior noise exposure, as measured in Ldn (dBA), (or CNEL for the Airport CLUP noise standards) shall not exceed the “acceptable use” standards shown in Table 4.1 of this plan, or, where applicable, the “permitted use” standards of Table 4-1 of the Airport CLUP. In the Airport Planning Area, the noise standards of Table 4-1 of the Airport CLUP shall apply where such standards are more stringent than those of this plan. Where existing or projected exterior noise levels exceed the acceptable limit, construction shall be conditionally permitted only when appropriate mitigation measures are employed, including measures to attenuate exterior noise levels where development of schools, parks and playgrounds is proposed, and, within the Airport Planning Area, as conditionally allowed by Table 4-1 of the Airport CLUP.	The Specific Plan area will not be subject to excessive aircraft noise since it is outside the future 60 CNEL noise contour for the airport. Mitigation would be required wherever uses would be subject to noise exceeding acceptable noise standards in the General Plan. The project is consistent with this provision.
4.111	New and modified stationary noise sources adjoining or in close proximity to residential and other noise-sensitive uses shall adhere to the standards in Table 4.2 of the General Plan.	New stationary noise sources in close proximity to residential and other noise-sensitive areas are not permitted unless they adhere to the standards in Table 4.2 of the General Plan. The project is consistent with this provision.

**Table 4.9-2
Project Consistency with Relevant City of Marina General Plan Land Use Provisions**

Number	Provision Summary	Consistency
<i>Community Design & Development – Environmental Protection and Conservation – Biological Resources</i>		
4.114.1	With the exceptions of areas where an approved Habitat Management Program (HMP) or Habitat Conservation Program (HCP) allows development without restrictions, and for structures erected to maintain, restore or enhance sensitive habitat and species, require discretionary approval for all new structural and road development proposed within sensitive habitat areas or on sites supporting sensitive species and habitat.	The project site supports sensitive habitats and special-status species. Discretionary approval is required for this project. Implementation of the mitigation measures within this EIR will minimize impacts to biological resources and are part of the approval process. The project is consistent with this provision.
4.116	Where new development may remove all or a portion of identified sensitive habitat in a n area not subject to an approved HMP or HCP, and where no less environmentally damaging alternative can be feasibly implemented, comparable habitat should be restored either on-site or off-site on a two-to-one basis (e.g., two acres of habitat shall be restored for every acre of habitat removed).	The project site contains two sensitive habitats- native grassland and coastal dune scrub. Mitigation measures in the Biological Resources section of this EIR are identified to protect sensitive biotic resources, consistent with this provision. The project is consistent with this provision.
4.119	As part of any application package for development proposed on undeveloped lands in former Fort Ord or on the Armstrong Ranch, seasonally timed surveys for known or suspected sensitive or unique species and habitats shall be undertaken by a qualified biologist approved by the City Community Development Director (except in those areas where such species have already been addressed by approved habitat conservation/management plans or similar plans or agreements). This information shall be provided as part of a preliminary site and development review, and, for development on former Fort Ord, should be submitted to CRMP for review and recommendations. Where such species are found to occur, mitigation plans (or Habitat Management Plans) shall be prepared in coordination with the USFWS and DFG unless approved habitat management plans are already in place.	Appropriately timed, focused surveys were conducted by qualified biologists for the project site, and mitigation identified in accordance with regulatory agency requirements. The results are reported within this EIR. The project is consistent with this provision.
4.121	In those areas where the potential for vernal pools exists, a site survey shall be conducted by a qualified biologist. Any development or grading of a site found to have one or more vernal pools shall provide a wetland buffer of sufficient width and size, as determined by a qualified biologist, between the vernal pond habitat, including associated wetland vegetation, and the proposed or existing development to both protect those species most sensitive to development disturbances and complement the habitat value of the wetland resource. Structures	The wetland assessment prepared for the project site by qualified biologists as part of this EIR concluded that wetlands are not present within the site. The project is consistent with this provision.

**Table 4.9-2
Project Consistency with Relevant City of Marina General Plan Land Use Provisions**

Number	Provision Summary	Consistency
	<p>allowed within the wetland buffer shall be limited to those required for providing public access and nature observation. Grading within identified vernal ponds shall be limited to that necessary for habitat restoration, enhancement and protection or as may otherwise be recommended by a qualified biologist. No soil disturbance shall occur during the rainy season within the designated vernal pond and buffer area. Grading within the drainage area of vernal ponds but outside the designated wetland buffer may be allowed in accordance with the provisions of an approved erosion control and landscape plan pursuant to Policy 4.125.1 of this plan with appropriate measures employed as needed to protect the wetland habitat.</p>	
4.122	<p>The City shall require that lighting of streets and other public areas in proximity to areas of natural open space be shielded and as unobtrusive as possible so as to direct light away from habitat reserve areas and other areas of natural open space. The same requirements shall follow for outdoor lighting on private development sites adjacent to such lands.</p>	<p>The project will design all street lighting to minimize glare and casting of light to locations not intended for illumination. Individual building applications will be reviewed by the City to ensure that exterior lighting will be downcast with minimal wattage to reduce offsite glare. The project is consistent with this provision.</p>
<p><i>Community Design & Development – Environmental Protection and Conservation – Soil and Mineral Resources</i></p>		
4.124.1	<p>The City shall continue to require erosion-control and landscape plans for all new subdivisions or major projects on sites with potentially high erosion potential. Such plans should be prepared by a licensed civil engineer or other appropriately certified professional and approved by the City Public Works Director prior to issuance of a grading permit. All erosion control plans shall incorporate Best Management Practices to protect water quality and minimize water quality impacts and shall include a schedule for the completion of erosion and sediment-control structures, which ensures that all such erosion-control structures are in place by mid-October of the year that construction begins. Site monitoring by the applicant's erosion-control specialist should be undertaken, and a follow-up report should be prepared that documents the progress and/or completion of required erosion-control measures both during and after construction is completed.</p>	<p>Design level erosion control plans and geotechnical analyses are required for individual projects and all recommendations would be incorporated into plans. The project is consistent with this provision.</p>
4.124.3	<p>The City shall encourage continued agricultural production on lands within the City's existing and proposed Sphere of Influence as an interim use until such time that annexation and development is approved consistent with this plan.</p>	<p>The project would protect agricultural resources adjacent to the northern and eastern boundaries of the project area by keeping development within the UGB boundary. The project is consistent with this provision.</p>

Table 4.9-2 Project Consistency with Relevant City of Marina General Plan Land Use Provisions		
Number	Provision Summary	Consistency
<i>Community Design & Development – Environmental Protection and Conservation – Scenic and Cultural Resources</i>		
4.126.1	All archaeological resources which may be present in the Marina Planning Area shall be protected and preserved. To this end, development proposed in areas of high archaeological sensitivity, i.e., the terraces and benches along the Salinas River, the peripheries of vernal ponds, and coastal beaches, shall be required to undertake a reconnaissance by a qualified archaeologist, and, where artifacts are identified, to protect and preserve such resources.	The site is not an area of high archaeological sensitivity. Any significant historical, cultural, or archaeological resources that are accidentally uncovered during construction activities would be protected as required by mitigation identified in this EIR. The project is consistent with this provision.
4.126.3	The visual character and scenic resources of the Marina Planning Area shall be protected for the enjoyment of current and future generations. Ocean views from Highway One shall be maintained to the greatest possible extent; new development proposed for the Armstrong Ranch should maintain an adequate setback from Highway One; landscape screening and restoration shall be provided as appropriate; new development should be sited and designed to retain scenic views of inland hills; and architectural review of projects shall continue to be required to ensure that building design and siting, materials, and landscaping are visually compatible with the surrounding areas.	Site design measures identified in the Specific Plan would be implemented to minimize potential visual, noise, glare, circulation, and other potential conflicts. The project is consistent with this provision.
4.126.4	The environmental review for the Armstrong Ranch specific plan shall provide for adequately detailed visual simulations of how proposed development will look when viewed from Highway One. The specific plan for Armstrong Ranch shall give special attention to minimizing visual impacts and ensuring attractive development. In addition to adequate setbacks from the highway, building and site design measures that shall be employed include, but are not limited to, height restrictions, landscape screening, appropriate color and architectural schemes, and the use of non-reflective building materials.	This EIR provides the environmental review for the project. The project engineer prepared visual simulations of the project for use in this EIR. This document analyzed project impacts to visual resources and aesthetics. Measures are included in the Specific Plan to reduce the visual effects of development, including landscaping, architectural features, open space/parks, and buffer areas. The project is consistent with this provision.
<i>Program and Implementation – Development Regulations – Park Dedication and In-Lieu Fee Ordinance</i>		
5.8	The City's existing park dedication ordinance should be revised so as to conform to the policies and standards contained in the General Plan. It is essential that the revised ordinance address the distinct differences in conditions between the Armstrong Ranch and the South Marina area and, in particular, the improvement needs of park and recreation sites in South Marina. In the latter area, since the	The master developer shall design, finance, and construct the major parks and open space areas within the project area consistent with City standards. The project is consistent with this provision.

**Table 4.9-2
Project Consistency with Relevant City of Marina General Plan Land Use Provisions**

Number	Provision Summary	Consistency
	majority of needed park and recreation sites have already been obtained by the City as part of the Fort Ord conveyance process, the primary function of the ordinance will be to acquire sufficient funds to improve the sites.	
<i>Program and Implementation - Planning Programs - Specific Plans</i>		
5.11	Specific plans shall be prepared for three major areas: 1) Armstrong Ranch; 2) North University Village; and 3) West University Village. As discussed above, such plans can serve as an alternative to zoning. Given the uniqueness of each of these areas, the use of specific plans as a primary regulatory tool will be especially advantageous because specific plans permit the use of development requirements that are more location-specific than general municipal zoning. The degree of specificity or generality of the requirements can also vary in a manner not possible with zoning, thereby allowing either greater flexibility or more specific guidance.	The Marina Station Specific Plan has been prepared for this project, in accordance with local and state requirements. The project is consistent with this provision.

4.10 NOISE

Introduction

This section assesses the potential noise impacts from project operations (long-term) and construction equipment (short-term) on existing sensitive receptors, as well as the potential noise effects that would be experienced by noise-sensitive receptors at the proposed development itself. The following discussion is based on a noise analysis prepared for the project by Illingworth & Rodkin, Inc. (February 2007).¹ This report is contained in Appendix G of this EIR.

Setting

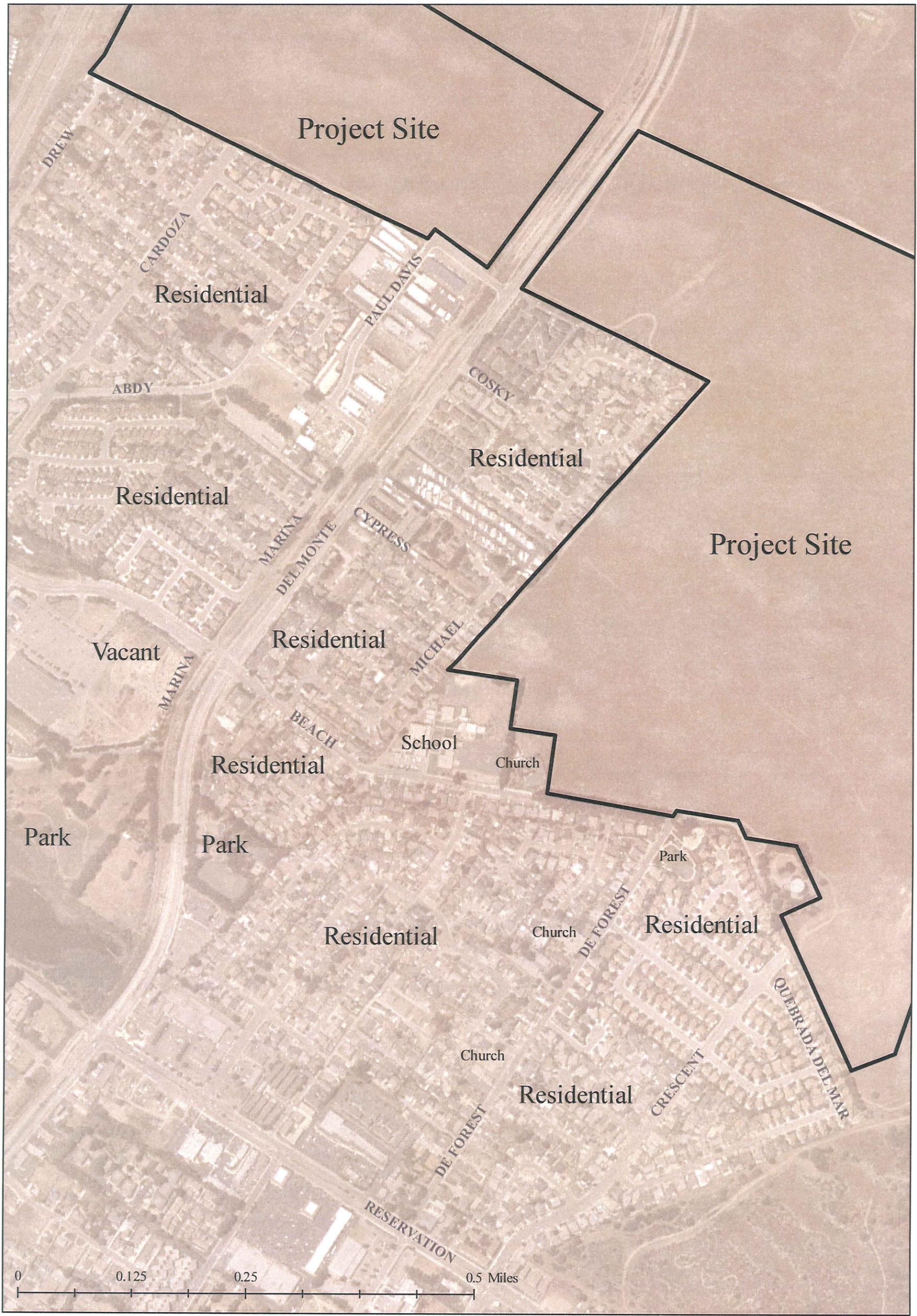
Noise is defined as unwanted or objectionable sound. State and local regulations and ordinances define objectionable noise levels and identify land use compatibility standards. Sound is comprised of three variables: magnitude, frequency, and duration. The magnitude of variations in air pressure associated with sound waves results in the quality commonly referred to as "loudness." Variations in loudness are measured on the decibel (dB) scale. The dB scale is logarithmic; noise at zero decibels is barely audible, while noise at 120-140 decibels is painful and may cause hearing damage. The second characteristic of sound is frequency. The human ear responds to sounds whose frequencies are in the range from 20 hertz (HZ) to 20,000 HZ. Within the audible range, subjective response to noise varies. People generally find higher pitched sound to be more annoying than lower pitched sounds. Noise is typically characterized using the A-weighted sound level or dBA. This scale gives greater weight to the frequencies to which the human ear is most sensitive. The third characteristic of noise is duration. Annoyance due to noise is often associated with how long noise persists.

For evaluating noise over extended periods, the "Day-Night Noise Level" scale (L_{dn}) and the "Community Noise Equivalent Level" (CNEL) are used to express the average sound level (L_{eq}) during a 24-hour period. The L_{eq} can be thought of as the steady sound level that, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period. These measures of noise account for greater sensitivity of noise receptors at night by adding five decibels to sound levels during evening hours (7:00 p.m. to 10:00 p.m.) and 10 decibels to noise during nighttime hours (10:00 p.m. to 7:00 a.m.) noise levels.

Sensitive Noise Receptors

The City of Marina General Plan contains guidelines for determining noise/land use compatibility. Based on these guidelines, sensitive noise receptors are identified as residential uses, transient lodging (hotels/motels), schools, libraries, churches, hospitals, and nursing homes. Parks are also considered moderately sensitive to noise. Sensitive receptors in the project area include existing residences surrounding the project site, and the Olson Elementary and Pre-school located near the intersection of Beach and DeForest. Local parks and churches are also considered sensitive receptors. A map showing the sensitive receptors in the project area is provided in Figure 4.10-1.

¹ The originally proposed Specific Plan included 1,504 rather than 1,360 residential units. The traffic study for the EIR was conducted prior to the unit reduction; therefore, the EIR overstates the traffic and traffic-based noise impacts of the residential component of the final proposed Specific Plan by approximately 10%.



Location of Sensitive Noise Receptors

Figure 4.10-1

Regulatory Framework

The State of California and the City of Marina have regulations, plans and policies to limit noise exposure at existing and proposed noise sensitive uses. These are established in the following documents: 1) the California Building Code, 2) the City of Marina Community Design and Development Element of the General Plan, and 3) the City of Marina Municipal Code, as described below.

California Building Code. The California Building Code regulates environmental noise intrusion into new multi-family housing. Interior noise levels attributable to exterior sources cannot exceed 45 L_{dn} . Residential structures proposed where exterior noise levels exceed 60 L_{dn} shall require an acoustical analysis demonstrating that the proposed design will maintain interior noise levels at or below 45 L_{dn} .

City of Marina General Plan. The City of Marina has established provisions in the Community Design and Development Element of the General Plan to guide the development of new land uses with respect to noise exposure. The following are applicable to the proposed project.

4.106. The land use policies contained in the Community Land Use Element are designed to avoid conflicts between noise-sensitive uses (in particular residences and schools) and major noise sources. Land designated for such noise-sensitive purposes has been limited to locations that are unlikely to be exposed to excessive noise. At such time that future development of residences, schools, and parks is proposed, more site-specific noise analysis shall be conducted for parcels that are in close proximity to major roadways or that lie in areas affected by aircraft-generated noise. If specific uses are found to be affected by noise levels greater than the standards set forth in Table 4.1 of this plan or within the Airport Planning Area of the Airport Comprehensive Land Use Plan (CLUP), mitigation measures identified in the following sections shall be required.

4.107. The maximum allowable exterior noise exposure, as measured in L_{dn} (dBA) (or CNEL for the Airport CLUP noise standards) shall not exceed the “acceptable use” standards shown in Table 4.1 of this plan, or, where applicable, the “permitted use” standards of Table 4.1 of the Airport CLUP. In the Airport Planning Area, the noise standards of Table 4.1 of the Airport CLUP shall apply where such standards are more stringent than those of this plan. Where existing or projected exterior noise levels exceed the acceptable limit, construction shall be conditionally permitted only when appropriate mitigation measures are employed, including measures to attenuate exterior noise levels where development of schools, parks and playgrounds is proposed, and, within the Airport Planning Area, as conditionally allowed by Table 4.1 of the CLUP.

4.108. These measures must reduce interior noise to the maximum allowable limits shown in Table 4.1 and, within the Airport Planning Area, to CNEL 45 dB for all uses which are conditionally permitted as indicated by Table 4.1 of the Airport CLUP. In such instances, the developer of a new building shall provide the City with proof from a professional acoustical consultant that exterior noise levels have been mitigated such that building occupants will not be subject to interior noise levels greater than those in Table 4.1, and within the Airport Planning Area, in Table 4.1 of the CLUP. Except in the Airport Planning Area, if the City finds the project to be in the public interest, the City may approve a project where the exterior noise level exceeds the conditionally acceptable level. Such approval shall be contingent upon a detailed analysis by a qualified acoustical engineer showing that specific measures included in the project will reduce interior noise to the maximum interior levels shown in Table 4.1.

4.109. The construction of new or the improvement of existing arterials and collectors as identified in this plan shall require discretionary approval. A cumulative noise impact analysis shall be undertaken prior to approval of all new major new roads or improvements of existing arterials and collectors that would result in significant increases in traffic volumes. If projected cumulative traffic increases in traffic volumes

would result in a substantial increase in ambient noise levels that would adversely affect existing noise-sensitive uses or subject future receptors to exterior noise levels in excess of the “acceptable” exterior noise standards of Table 4.1, appropriate noise abatement measures shall be identified and implemented, including increased setbacks for any new sensitive receptors, appropriate architectural design and construction techniques, and the use of landscaped earth berms.

4.110. Site-planning measures such as sound walls along roadways shall be the mitigation measure of last resort to avoid the adverse visual impacts of such structures. Where they are necessary, sound walls shall include landscaped earth berms at their bases to minimize visible wall height. Sound wall designs shall also incorporate provisions for screening landscaping and for coverage of walls by plant materials. Sound walls shall be built of attractive, durable materials.

4.111. New and modified stationary noise sources adjoining or in close proximity to residential and other noise-sensitive uses shall adhere to the standards in Table 4.2 of this plan.

Table 4.10-1			
Allowable Noise Standards Measured in L_{dn} (dBA)			
from Table 4.1 of the Marina General Plan			
Land Use Category	Maximum Exterior		Maximum Interior
	Acceptable	Conditionally Acceptable	
Residential	60	70	45
Live/Work	65	75	50
Hotel/Motel	65	75	50
Office	67	77	55
Other Commercial	70	80	60
Industrial/Agriculture	70	80	60
Schools, Libraries, Theaters, Churches, Nursing Homes	60	70	45
Parks and Playfields	65	70	NA
Golf Courses, Riding Stables, Cemeteries	70	75	NA

*It is preferred that the interior noise standards be attained with open windows. However, where the interior noise standard is attainable only with closed windows and doors, mechanical ventilation shall be required.

Table 4.10-2		
Noise Standards for Stationary Noise Sources		
from Table 4.2 of the Marina General Plan		
Duration	Maximum Allowable Noise	
	Day (7 AM to 10 PM)	Night (10 PM to 7 AM)
Hourly L_{eq} in dB ^{1,2}	50	45
Maximum Level in dB ^{1,2}	70	65
Maximum Impulsive Noise in dB ^{1,3}	65	60

¹As determined at the property line of the receiver. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures.

²Sound level measurement shall be made with slow meter response.

³Sound level measurements shall be made with fast meter response.

City of Marina Municipal Code. The City of Marina has also established noise regulations in Chapters 9.24, 15.04, and 17.30 of the Municipal Code. Chapter 9.24 addresses general noise regulations and prohibits excessive or loud noises that result in a public nuisance. Chapter 15.04 limits construction activities to the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday, and 10:00 a.m. to 7:00 p.m. on Sundays or holidays including New Year’s Day, July 4th, Thanksgiving, and Christmas (standard time).

During daylight savings time, the hours of construction may be extended one hour to 8:00 p.m. During the hours of construction, no construction, tools, or equipment shall produce noise in excess of 60 decibels for more than 15 minutes at any receiving property line.² Section 15.04 only applies to construction adjacent to residential or transient occupancy uses.

Chapter 17.30 also establishes the following specific noise performance standards that apply to proposed industrial uses (17.30.040(H)):

H. Noise.

1. *At the lot or property line, the noise generated by any use or operation (other than transportation facilities or temporary construction work) shall not exceed:*
 - a. *The noise standard for that land use as specified in Table 17.30.040 for a cumulative period of more than thirty minutes in any hour;*
 - b. *The noise standard plus five decibels for a cumulative period of more than five minutes in any hour;*
 - c. *The noise standard plus ten decibels for a cumulative period of more than five minutes in any hour;*
 - d. *The noise standard plus fifteen decibels for a cumulative period of more than one minute in any hour;*
 - e. *The noise standard plus twenty decibels or the maximum measured ambient level, for any period of time.*
2. *The noise measurements shall be performed using a sound level meter which meets or exceeds the requirements for type S2A meters in American National Standards Institute specifications for sound level meters, S1.4-1971, or the most recent revision thereof.*
3. *If the measured ambient level differs from that permissible within any of the first four noise limit categories above, the allowable noise exposure standard shall be adjusted in five-decibel increments in each category as appropriate to encompass or reflect said ambient noise level.*
4. *In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.*
5. *If possible, the ambient noise level shall be measured at the same location along the property line with the alleged offending noise source inoperative. If for any reason the alleged offending noise source cannot be shut down, the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance such that the noise from the source is at least ten decibels below the ambient in order that only the ambient level be measured.*

²Specifically, Municipal Code Section 15.04.055 requires that when construction occurs adjacent to residential or hotel/motel uses (collectively “residential use”), that construction activities producing greater than 60 decibels at the receiving residential use property line be limited to 15 minutes of each hour. Given the nature of large scale construction, City staff believe that this requirement is not practical and would unreasonably lengthen construction periods. The City’s Development Services staff is in the process of preparing an amendment to this section to clarify that for projects involving large scale construction that are examined in an EIR, projects may be exempted from the 15 minute time period, provided that the project has adopted all feasible mitigation measures to reduce construction noise impacts and the City Council has adopted a statement of overriding considerations with regard to noise impacts.

6. In the event the alleged offensive noise contains a steady, audible tone such as whine, screech or hum, or is a repetitive noise such as hammering or riveting, or contains music or speech conveying information content, the standard limits set forth in Table 17.30.040 shall be reduced by five decibels.

*Table 17.30.040
EXTERIOR NOISE LIMITS
Levels Not to Be Exceeded More Than
Thirty Minutes in Any Hour*

<i>Receiving Land Use Category</i>	<i>Time Period</i>	<i>Noise Level (dB)</i>
<i>One- and two-family residential</i>	<i>10 p.m.-7 a.m.</i>	<i>45</i>
	<i>7 a.m.-10 p.m.</i>	<i>55</i>
<i>Multiple-dwelling residential</i>	<i>10 p.m.-7 a.m.</i>	<i>50</i>
	<i>7 a.m.-10 p.m.</i>	<i>55</i>
<i>Limited commercial, some multiple dwellings</i>	<i>10 p.m.-7 a.m.</i>	<i>55</i>
	<i>7 a.m.-10 p.m.</i>	<i>60</i>
<i>Commercial</i>	<i>10 p.m.-7 a.m.</i>	<i>60</i>
	<i>7 a.m.-10 p.m.</i>	<i>65</i>
<i>Light industrial</i>	<i>anytime</i>	<i>70</i>
<i>Heavy industrial</i>	<i>anytime</i>	<i>75</i>

Environmental Impact Report on the Marina General Plan. The General Plan EIR evaluated potential noise impacts associated with the adoption and implementation of the Marina General Plan, including future development within the Marina Station project site. According to the General Plan EIR, the following noise impacts were identified: 1) increased noise from elevated traffic volumes and construction of new roadways, identified as a significant but mitigable impact with site-specific noise studies and implementation of noise abatement measures; and 2) construction noise impacts, identified as a significant mitigable impact with standard construction abatement measures. The General Plan EIR also identified the exposure of planned residential uses on Armstrong Ranch to noise from new industrial uses as significant. Mitigation called for adoption of a Stationary Noise Source Policy, which the City has since adopted. The following analysis evaluates potential noise impacts from the project consistent with the General Plan EIR mitigation.

Existing Noise Environment

Noise measurements were conducted at the project site and in surrounding areas from November 13-15, 2005 as part of the noise analysis to document the existing noise environment in the project vicinity. The primary noise sources affecting the project area include local and distant vehicular traffic, intermittent aircraft operations at the Marina Municipal Airport, and existing commercial, park, and school uses. Three long-term noise measurements and nine short-term noise measurements were made at sites representative of existing and proposed sensitive receptors. The noise measurement locations are shown on Figure 4.10-2, and the results of the short-term noise measurements are summarized in Table 4.10-3.

The first long-term noise measurement (LT-1) was located at the north end of Drew Court near existing single-family residential uses. The purpose of this measurement was to quantify ambient noise levels at existing residential receivers that could potentially be affected by increased vehicular traffic from the project, and to provide the hourly distribution of noise levels from Highway 1. The noise environment at

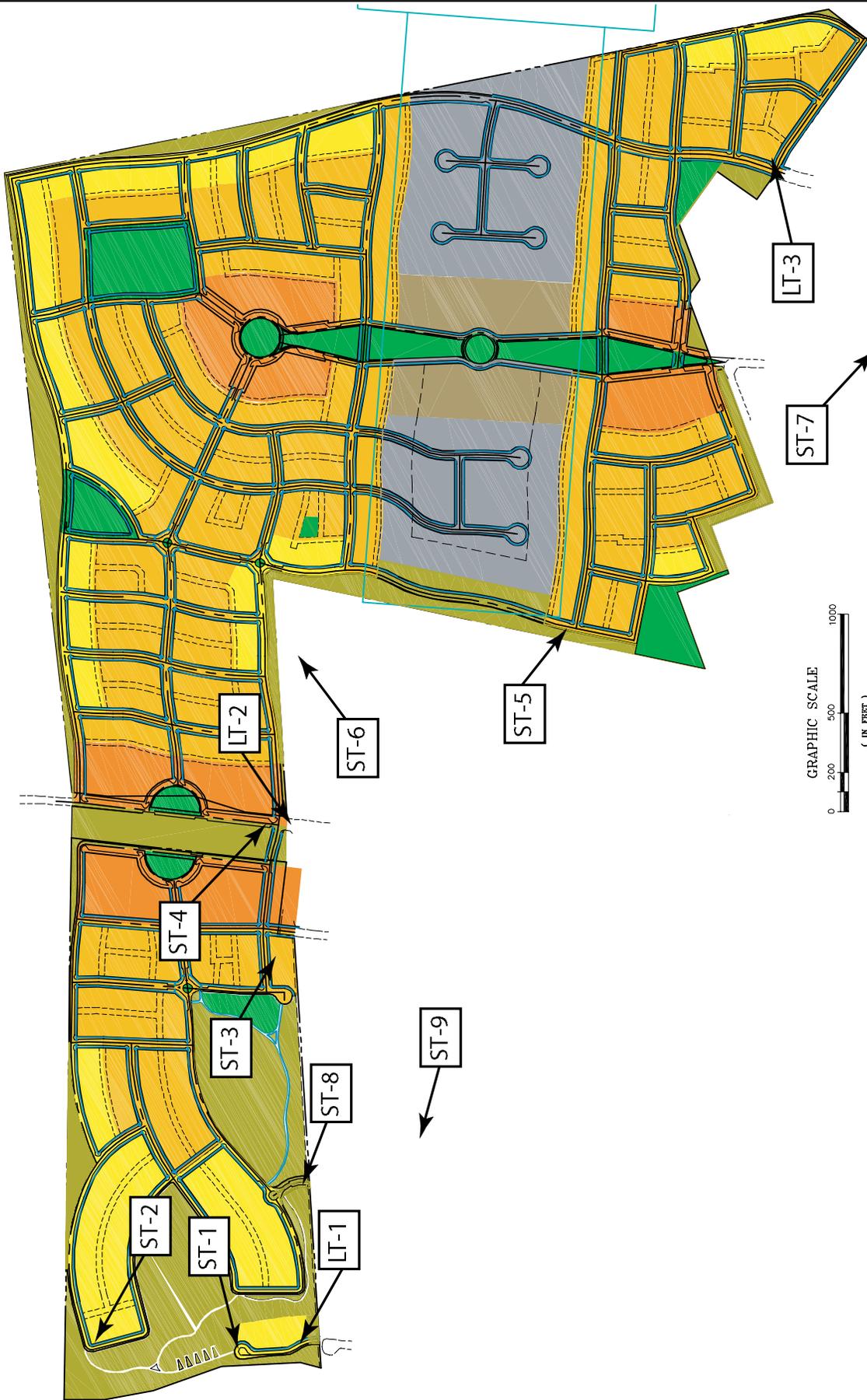
this location was dominated by vehicular traffic on Highway 1. The calculated L_{dn} noise level (day-night average) at LT-1 ranged from 65 to 67 dBA.

A second long-term measurement (LT-2) was made 50 feet from the center of Del Monte Boulevard at the Marina City limit. The purpose of this noise measurement was to quantify ambient noise levels generated by traffic along Del Monte Boulevard, at a location representative of existing and proposed residential uses. The measured L_{dn} noise level was approximately 69 dBA.

The third long-term measurement (LT-3) was made near the end of Crescent Avenue at the southernmost portion of the project site. The purpose of this noise measurement was to quantify noise levels generated by distant traffic, as well as aircraft and other operations at the Marina Municipal Airport. Hourly average noise levels at Site LT-3 were lower than other locations, as this area is not exposed to through traffic. The L_{dn} noise level at LT-3 was approximately 55 dBA.

Short-term noise measurements were made at nine additional locations throughout the project area (ST-1 to ST-9). These noise measurements were sited to quantify ambient noise levels at locations representative of existing and proposed noise-sensitive receptors. The L_{dn} is estimated by correlating the short-term measurement to a corresponding time period at the applicable long-term locations (refer to Table 4.10-3).

Noise Measurement Location	Time	L_{max}	$L_{(1)}$	$L_{(10)}$	$L_{(50)}$	$L_{(90)}$	L_{eq}	L_{dn}
ST-1: ~ 100 ft. east of the Highway 1 right-of-way line at setback of proposed residential receivers.	12:40	60	58	56	54	52	54	61
	12:50	61	58	57	55	53	55	
	13:00	60	58	56	54	53	55	
ST-2: ~ 140 ft. east of the Highway 1 right-of-way line at setback of proposed residential receivers.	12:40	67	67	63	59	55	60	67
	12:50	68	67	64	59	55	60	
ST-3: ~ 90 ft. north of commercial uses along Paul Davis Drive.	13:30	62	61	55	50	49	52	54-57
	13:40	54	53	50	49	48	49	
	13:50	56	53	50	48	47	49	
ST-4: ~ 50 ft. west of centerline of Del Monte Road.	13:50	75	72	66	55	50	62	61
ST-5: ~ End of Sellis Court adjacent to project site.	14:30	59	52	50	48	46	48	<55
ST-6: ~ Front of 252 Cosky Drive	14:50	60	56	47	43	41	46	<55
ST-7: ~ Northeast corner of De Forest Road and Oak Circle ~50 ft. from the center of De Forest Road.	15:20	80	70	63	52	48	60	58-60
ST-8: ~ End of Cardoza Avenue adjacent to project site.	15:40	63	59	55	53	52	54	58
ST-9: ~ Northwest corner of Cardoza Avenue and Brookside Place ~ 50 ft. from the center of Cardoza Avenue.	15:40	79	70	60	53	50	59	58-60
Note: L_{dn} approximated by correlating to corresponding period at long-term site.								



Source: Illingworth & Rodkin, Inc., 2007



Noise Measurement Locations

Figure 4.10-2

Relevant Project Characteristics

The project proposes a large mixed-use development in an area that is currently vacant, with the exception of grazing activities. Proposed residential, commercial, office, and industrial uses will increase the traffic generated to the site, as well as activity levels. Sensitive noise receptors in the project area include existing residences, schools, parks, and churches.

Thresholds of Significance

In accordance with CEQA Guidelines, a project impact would be considered significant if the project would:

- expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- expose persons to or generation of excessive groundborne vibration or groundborne noise levels;
- result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels; or
- for a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

The following criteria were used to evaluate the significance of noise impacts associated with the proposed project.

Noise and Land Use Compatibility. A noise impact would occur where noise-sensitive land uses are proposed in exterior noise environments exceeding 60 dBA L_{dn} . A noise impact would also be identified if the project creates noise levels in excess of the General Plan noise standards or the noise level limits established in the City's Municipal Code

Vibration Compatibility. A noise/vibration impact would be identified where noise-sensitive land uses are exposed to excessive vibration levels. Although there are no local standards that control the allowable vibration in a new residential development, Caltrans has developed vibration impact assessment criteria to address vibration associated with transit projects. The Federal Transit Administration has proposed vibration impact criteria, based on maximum overall levels for a single event. The criterion for "infrequent" vibration events is 80 VdB.

Substantial Increase in Noise Levels. A noise impact would be identified where the project results in a noise level increase of 3 dBA L_{dn} or more in noise environments of 60 L_{dn} or greater or 5 dBA L_{dn} in noise environments where noise levels would remain below 60 dBA L_{dn} . These thresholds represent the point at which the change in noise levels become perceptible within the respective various noise environments.

Construction Noise. Since noise generated by construction would be short-term and vary considerably day-to-day, construction noise is evaluated somewhat differently than operational noise. When construction activities are predicted to cause prolonged interference with normal activities at noise-sensitive receiver locations, generate noise levels in excess of 60 dBA L_{eq} , and exceed ambient noise levels by five dBA or more, the impact is considered significant. Prolonged interference is defined as a substantial noise level increase that occurs for one or more years.

Impacts and Mitigation

Noise and Land Use Compatibility

The noise assessment evaluated the future noise environment in the Marina Station project area based on existing measurements and future traffic volumes. Future traffic volumes used for the noise analysis were obtained from the traffic analysis for the project prepared by Higgins Associates (December 2006). The noise environment on portions of the Marina Station project site would exceed the City's noise level goal for exterior noise (60 dBA L_{dn}) as a result of the project's proximity to existing transportation noise sources in the site vicinity (e.g., Highway 1 and Del Monte Boulevard). Future roadways constructed within the project site would also generate noise levels that would exceed 60 L_{dn} . As described in the setting above, exterior noise levels between 60 and 70 dBA L_{dn} are "conditionally acceptable," meaning that these noise levels are acceptable if mitigation deemed appropriate by the City is employed.

This noise assessment also examined the potential for the project's proposed commercial, industrial, and active park uses to generate noise levels in excess of General Plan or Municipal Code noise standards.

Exterior Noise Levels – Vehicular Traffic

The project proposes residential uses in close proximity to Highway 1. Lots 1-5, as designated on the proposed Vesting Tentative Map, are proposed north of Drew Court on a bluff that is somewhat shielded from Highway 1 traffic noise by existing terrain. Future noise levels at lots 1-5 were calculated in the noise analysis to be 62 dBA L_{dn} at the first floor, and approximately 68 dBA L_{dn} at the second floor. The rear yards of lots 1-5 would be shielded from Highway 1 by the proposed units. Exterior noise levels are calculated to be less than 60 dBA L_{dn} at these rear yard areas (assuming shielding is provided). Residential units proposed on lots 6-9 would be exposed to exterior noise levels of approximately 68 dBA L_{dn} at the westernmost façades of these buildings. Future noise levels are calculated to be less than 60 dBA L_{dn} in the rear yards of these units as a result of the attenuation provided by the proposed row of housing. Similarly shielded rear yards proposed farther from Highway 1 (lots 10-144) would also be less than 60 dBA L_{dn} . Additional noise barriers would not be required to shield the rear yards of proposed single family residential units between Highway 1 and Del Monte Boulevard.

De Forest Road and Crescent Avenue would provide access to the project site from the south. Residential units proposed within 100 feet of the centerline of De Forest Road would be exposed to exterior noise levels of 60 dBA L_{dn} or more. Similarly, exterior noise levels within 80 feet of the centerline of Crescent Avenue would exceed 60 dBA L_{dn} . Where residential outdoor use areas are located adjacent to these roadways and are not shielded by structures, additional noise barriers would be required. Solid six-foot noise barriers would be required to shield private rear yard areas of lots 556, 557, 638, and 639, which adjoin De Forest Road, and lots 531, 663, 664, 771, 772, 777, and 794, which adjoin Crescent Avenue.

Proposed roadways within the project site near existing residential areas would generate noise affecting adjacent neighborhoods. The relocated Marina Greens Drive, proposed as an east-west street just north of the existing Marina Greens Drive, would generate exterior noise levels exceeding 60 dBA L_{dn} within 65 to 80 feet of the roadway center. The proposed roadway that extends north-south along the west boundary

of the southeast portion of the project site would generate exterior noise levels exceeding 60 dBA L_{dn} within 65 feet of the roadway center north of Marina Greens Drive. Adjacent to Cosky Drive and Michael Drive, this north-south roadway would generate noise levels of about 59 dBA L_{dn} at a distance of 50 feet from the roadway center.

The rear yard area of lot 145 would adjoin the proposed extension of Marina Greens Drive. A solid six-foot noise barrier would be required to shield this rear yard if the rear yard is not be shielded by the residential unit and garage. The remaining residential land uses along these roadways would have private outdoor use areas that are shielded from traffic noise by the residential units themselves or would be located at a sufficient distance from the roadway that exterior noise levels in private use areas would be 60 dBA L_{dn} or less.

Neighborhood Centers that include multi-family residential uses are proposed west and east of Del Monte Boulevard. The residential common outdoor use areas for these multi-family uses would be located as near as approximately 100 feet east of the roadway center and 280 feet west of the roadway center. Del Monte Boulevard is anticipated to generate noise levels exceeding 60 dBA L_{dn} within approximately 160 feet of the roadway center. Any unshielded exterior use areas proposed within 160 feet of the roadway centerline could be subject to exterior noise levels greater than 60 dBA L_{dn} . The exterior use areas would be largely shielded from Del Monte Boulevard by the mixed-use structures between that street and the exterior use areas. A significant impact could, however, occur at the residential common outdoor area east of Del Monte Boulevard. Appropriate noise barriers could mitigate this impact, as described below.

Exterior Noise Levels –Industrial Uses

The Marina Station site plan shows office and industrial uses in the southeast portion of the project site. These land uses would be bordered by existing single-family uses to the west and proposed residential uses to the north and south. Allowable industrial uses are identified in Appendix B of this EIR, and include some potentially noisy industrial uses such as manufacturing and contractor's yards. Noise sources at industrial sites could include truck movement, loading docks, outdoor mechanical equipment, use of public address systems, and operations (depending on the user). Noise sources such as loading docks would be expected to generate noise levels of about 50 to 60 dBA L_{eq} at 150 feet, depending on the number of trucks accessing the loading dock and frequency of other extraneous noise sources associated with receiving areas (e.g., forklifts and other equipment).³ Any industrial use that would include outdoor operations or potentially cause excessive noise would require a conditional use permit and further noise review per the Specific Plan and Section 17.30.040 of the City's Zoning Ordinance.

The Marina Station Specific Plan indicates that an eight-foot noise barrier would be constructed around the perimeter of the industrial uses abutting all residential uses and noise levels will be required to comply with City standards. As described above, Chapter 17.30 of the City's Zoning Code prescribes detailed standards and requirements for noise emanating from industrial land uses. Compliance with these requirements, as well as the General Plan's stationary noise source standards, would avoid any significant noise impacts from the industrial uses at the Marina Station site.

Exterior Noise Levels - Commercial Uses

Commercial uses are proposed within the three Neighborhood Center (NC) zones on the project site; the NC zones allow the development of commercial retail, residential, office, and entertainment uses in one location. Noise sources at these commercial uses could include loading docks, outdoor mechanical

³ The L_{eq} is the average A-weighted noise level during a stated period of time. It is used here, rather than the L_{dn} , since the noise from the sources described are intermittent and the operational times are not yet known.

equipment (e.g., heating and cooling equipment, etc.), and parking lots. Restaurants, bars, and other entertainment-oriented uses could also generate noise from music and patrons.

Noise associated with the use of parking lots could include vehicular circulation, loud engines, car alarms, squealing tires, door slams, and human voices. The maximum sound (L_{max}) of a passing car at 15 mph typically ranges from 43 dBA to 53 dBA at 150 feet. The noise generated during an engine start is similar. Door slams create lower noise levels. Hourly average noise levels resulting from all of these noise-generating activities in a busy parking lot could range from 35 dBA to 45 dBA L_{eq} at a distance of 150 feet from the parking area.

Heating, ventilation, and cooling equipment could generate noise levels in the range of 50 dBA to 70 dBA L_{eq} at 150 feet depending on the number, type, and size of the proposed equipment. Trash compactors typically generate maximum noise levels of 40 to 50 dBA at 150 feet, depending on the power rating and enclosure characteristics.

Noise levels exceeding City standards for stationary noise sources could occur at receivers within and around the Neighborhood Center zones, depending on the ultimate commercial uses on the project site, if the noise generated by such uses is not regulated or adequately mitigated. This is based on the noise standards for stationary noise sources contained in Table 4.2 of the General Plan (refer to Table 4.10-2 above). This represents a potentially significant impact.

Exterior Noise Levels – Public Parks

A series of neighborhood parks are proposed throughout the Marina Station project site. The proposed locations of the active and passive parks would be in areas where the future noise environment is less than 60 dBA L_{dn} . The park proposed nearest to Highway 1 would be subject to the highest noise levels. This park would be located in a basin that is partially shielded by terrain and residential land uses. Exterior noise levels at this park are calculated to be less than 60 dBA L_{dn} . Noise levels at the remaining public parks proposed by the project would also be less than 60 dBA L_{dn} . The City of Marina considers parks and playfields compatible in noise environments of 65 dBA L_{dn} or less.

Neighborhood parks can also be sources of community noise. Parks proposed by the project could contain one or more of the following amenities that are often part of neighborhood parks: playfields, tot lot/playground, open turf area, picnic tables with barbeques, and trails. Noise generated by a particular park is a function of the amenities provided, groups that use the facilities, and the timing and duration of use.

Noise from passive parks is not anticipated to cause any adverse noise impacts upon either existing or future noise sensitive receptors in the area. Active parks could, however, be a potentially significant source of community noise. At this time, information is not available on the users (e.g., little league, adult leagues, sports clubs), and the type and times of activities. Maximum noise levels from active parks could exceed 50 dBA L_{eq} (or 70 dBA L_{max}) at residential land uses adjoining these parks. Noise generated by the active parks could exceed City standards, resulting in a significant impact. For normal active park events such as soccer games, baseball games, and dog parks, average noise levels of about 55 to 60 dBA L_{eq} could be expected at a distance of 150 feet from the center of activities. Noise generated by such active parks could exceed City standards, thereby requiring site-specific analysis, as identified in the mitigation below.

Interior Noise Levels

Interior noise levels within the proposed multi-family residential units must remain at or below 45 dBA L_{dn} in accordance with state law and General Plan requirements. In residential units of standard construction, interior noise levels are approximately 15 decibels lower than exterior noise levels with the windows partially open. Where exterior noise levels exceed 60 dBA L_{dn} , a noise report must be submitted with the building plans identifying the noise attenuation features in the project design to maintain interior noise levels at or below 45 dBA L_{dn} .

Typically, standard construction with forced air ventilation, which allows the occupant to control noise by closing the windows, provides approximately 20 to 25 dBA of noise reduction in interior spaces. This method of reducing interior noise levels is normally used in noise environments ranging from 60 to 65 dBA L_{dn} . Where noise levels exceed 65 dBA L_{dn} , forced air ventilation systems as well as sound-rated construction methods are normally required. The exact specifications of window and wall systems cannot be developed until building elevations and floor plans are available. Such methods or materials may include a combination of smaller window and door sizes as a percentage of the total building façade facing the noise source, sound-rated windows and doors, and sound-rated exterior wall assemblies.

Impact **Residential uses developed on portions of the project site would be exposed to exterior noise levels greater than 60 dBA L_{dn} , which exceeds the “acceptable” noise and land use compatibility standards presented in the City’s General Plan. In addition, interior noise levels are expected to exceed 45 dBA L_{dn} on portions of the project site exposed to exterior noise levels greater than 60 dBA L_{dn} without the incorporation of noise insulation features. *This is a significant impact that can be reduced to a less-than-significant level with the mitigation below.***

Mitigation

- 4.10-1 Prior to the issuance of building permits, prepare project-level acoustical analyses for proposed residential units where proposed residential exterior use areas are located in noise environments exceeding 60 dBA L_{dn} , or where residential uses interface active parks, commercial uses, or industrial uses, and implement recommendations to assure that exterior noise levels at residential land be maintained in accordance with the standards in the City’s General Plan and Municipal Code.
- 4.10-2 Prior to City development of active parks on the site, prepare project-level acoustical analyses for each park and implement recommendations to assure that exterior noise levels at nearby sensitive receptors are maintained in accordance with the standards in the City’s General Plan and Municipal Code.
- 4.10-3 Construct solid six-foot noise barriers to interrupt the transmission path between the roadway and private outdoor use areas of lots adjoining De Forest Avenue, Crescent Avenue, and Marina Greens Drive. The noise barriers shall generally be located between the residential unit and detached garage. Solid six-foot noise barriers shall be provided to shield private rear yard areas of lots 556, 557, 638, and 639, which adjoin De Forest Road, lots 531, 663, 664, 771, 772, 777, and 794, which adjoin Crescent Avenue, and lot 145, adjacent to Marina Greens Drive.

Noise barriers shall be constructed such that they are solid over the surface and at the base, with no cracks or gaps. The minimum surface weight of the proposed noise barrier materials shall be 3 lbs./ft.² Suitable construction materials include masonry block, concrete, and minimum one-inch

thick wood boards. A six-foot noise barrier is expected to provide at least 5 dBA of sound attenuation.

- 4.10-4 Prior to issuance of building permits for the Neighborhood Center structures east of Del Monte Boulevard, prepare an acoustical analysis to determine whether the eastern residential outdoor common area would experience average noise levels exceeding 60 dBA L_{dn} . If the analysis shows that the 60 dBA L_{dn} level would be exceeded, implement sound barriers as deemed appropriate by the City, in accordance with the City's General Plan.
- 4.10-5 Limit parking lot cleaning activities in commercial and industrial areas to daytime and evening hours (7 a.m. to 10 p.m.).
- 4.10-6 Locate trash compactors in commercial and industrial areas away from adjacent residential receivers or shielded with noise barriers.
- 4.10-7 Limit loading dock hours of operation to daytime and evening hours (7 a.m. to 10 p.m.).
- 4.10-8 The California Building Code and City of Marina require project-specific acoustical analyses to achieve interior noise levels of 45 L_{dn} on portions of the project site exposed to exterior noise levels greater than 60 dBA L_{dn} . Building sound insulation requirements must include the provision of forced-air mechanical ventilation in noise environments exceeding 60 dBA L_{dn} , so that windows can be closed at the occupant's discretion. Special building construction techniques (e.g., sound-rated windows and building facade treatments) may be required where exterior noise levels exceed 65 dBA L_{dn} . These treatments include, but are not limited to sound rated windows and doors, sound rated exterior wall assemblies, acoustical caulking, prior to issuance of building permits for such residential units. The specific determination of what treatments are necessary shall be conducted on a unit-by-unit basis during project design. Results of the analysis, including the description of the necessary noise control treatments, shall be submitted to the City for final approval. Feasible construction techniques such as these would adequately reduce interior noise levels to 45 dBA L_{dn} or lower.

Groundborne Vibration

The only potential significant sources of groundborne vibration at the project site are the railroad tracks located just west of Del Monte Avenue. Roadway noise is not a source of significant groundborne vibration at the project site. Signs clearly state that the existing railroad tracks are no longer in service. With the development of the project, vibration-sensitive residential structures would be constructed within approximately 150 to 200 feet from these tracks. If at some point in the future the railroad tracks became active again, the distance separating the proposed sensitive uses from the railroad would normally be sufficient to yield vibration levels that would be compatible with the proposed residential land uses.

Project-Generated Traffic Noise

Noise levels along some roadway segments would noticeably increase over existing conditions with the implementation of the project, and would affect various land uses differently. The project area contains a variety of land uses with varying sensitivities to noise. Residential land uses would be most affected by noise generated by additional traffic. Office, commercial, and industrial uses are not typically affected by traffic noise increases along the local roadway network.

A noise impact would occur at noise-sensitive land uses where the project would result in a noise level increase of 3 dBA L_{dn} or more in noise environments of 60 dBA L_{dn} or greater, or a 5 dBA L_{dn} or more in noise environments where noise levels would remain below 60 dBA L_{dn} .

Traffic volume information provided by Higgins Associates was reviewed at study area intersections in and around the Marina Station project site as part of the noise analysis. The existing, existing + project, background, and background + project traffic volumes were evaluated, and the relative change in traffic noise along identified roadway segments calculated as part of the noise assessment. Roadway segments experiencing a traffic noise level increase of less than 3 dBA L_{dn} were excluded from further analysis, because the noise level increase would not be noticeable. Table 4.10-4 shows the roadway links that were calculated to experience a substantial noise increase (3 dBA or more) as a result of the project. The noise level along these roadways would exceed 60 dBA L_{dn} , so a 3 dBA L_{dn} increase is considered substantial. The development of the project would increase traffic noise levels substantially at noise-sensitive residential receivers along identified roadway segments of Beach Road, Crescent Avenue, De Forest Road, and Del Monte Boulevard. Substantial noise level increases along affected roadway segments would range from 3 dBA to 5 dBA L_{dn} .

Roadway	Segment	Noise Level Increase (in dBA L_{dn})
Beach Road	Del Monte Blvd. to Michael Dr.	3
Beach Road	Michael Dr. to De Forest Rd.	4
Crescent Avenue	Reservation Rd. to Quebrada Del Mar Rd.	4
De Forest Road	Reservation Rd. to Beach Rd.	5
Del Monte Boulevard	Reservation Rd. to Beach Rd.	4
Del Monte Boulevard	Beach Rd. to Cosky Dr.	5
Del Monte Boulevard	Cosky Dr. to Project Entrance	5

Table 4.10-5 presents noise contour information for area roadways that would have a substantial noise level increase as a result of the project. Noise levels were calculated at a reference distance of 50 feet from the centerline of the roadway to represent the approximate setback of residential land uses affected by the project. The noise contours do not account for additional attenuation provided by existing noise barriers, structures, or topography. As shown in the table, the L_{dn} noise contours would shift farther into established neighborhoods as a result of project-generated traffic.

The project would also construct new roadways where roadways do not currently exist, introducing new noise sources to area. Marina Greens Drive, east of Del Monte Boulevard, would generate exterior noise levels exceeding 60 dBA L_{dn} within 65 feet of the roadway centerline. Exterior noise levels at adjacent residences would substantially increase over existing conditions and would exceed 60 dBA L_{dn} without mitigation. The proposed north-south roadway located adjacent to Cosky Drive and Michael Drive would generate exterior noise levels exceeding 60 dBA L_{dn} within 65 feet of the roadway center. The noise environment at residential receivers to the west would exceed 60 dBA L_{dn} and substantially increase over existing conditions without mitigation.

Where the project would connect to existing subdivisions (i.e., Drew Court, north end of Cardoza Avenue, and north end of Crescent Avenue), new traffic from the project would be introduced, increasing noise levels at adjacent residential uses. The change in noise levels would vary depending on the existing noise environment and the amount of traffic expected to access the project site via these points. In the higher ambient noise environments along Cardoza Avenue (58 dBA L_{dn}) and Drew Court (69 dBA L_{dn}), noise increases from project traffic would range from about 0 to 2 dBA L_{dn} . Daily average noise levels would

not substantially increase at residential land uses in the vicinity of Drew Court or Cardoza Avenue as a result of project-generated traffic.

Affected Roadway Segment	Traffic Scenario	Ldn, dBA at 50 feet	Noise Contour Distance (feet)		
			70 Ldn	65 Ldn	60 Ldn
Beach Road Del Monte Blvd. to Michael Dr.	Existing	59	--	--	40
	Project	62	--	30	80
Beach Road Michael Dr. to De Forest Rd.	Existing	58	--	--	30
	Project	62	--	30	80
Crescent Avenue Reservation Rd. to Quebrada Del Mar Rd.	Existing	58	--	--	30
	Project	62	--	30	80
De Forest Road Reservation Rd. to Beach Rd.	Existing	58	--	--	30
	Project	63	--	30	100
Del Monte Boulevard Reservation Rd. to Beach Rd.	Existing	66	--	60	130
	Project	70	50	110	230
Del Monte Boulevard Beach Rd. to Cosky Dr.	Existing	65	--	50	110
	Project	70	50	110	230
Del Monte Boulevard Cosky Dr. to Project Entrance	Existing	65	--	50	110
	Project	70	50	110	230

Table 4.10-5 shows the roadways where a substantial noise level increase would occur as a result of the project. Residential receivers along Crescent Avenue would be exposed to exterior noise levels approximately four decibels higher than existing conditions from the addition of project traffic. Substantial noise level increases would also be expected at residential receivers along Crescent Avenue north of Quebrada Del Mar Road.

Impact **Traffic volume increases from the project would increase traffic noise along the local roadway network. In some locations, there would be a substantial, permanent increase in noise levels at sensitive receptors. Measures available to reduce the project noise level increases would not likely be feasible in all areas. The impact, therefore, is considered significant and unavoidable.**

Mitigation

4.10-9 The project shall incorporate noise reduction methods where feasible. Possible methods to reduce noise on the project site include the following measures:

- Paving streets with "quieter" pavement types such as Open-Grade Rubberized Asphaltic Concrete. This would reduce noise levels by 2 to 3 dBA depending on the existing pavement type, traffic speed, traffic volumes, and other factors.
- Constructing new or larger noise barriers could reduce noise levels by 5 dBA L_{dn} . Final design of such barriers, including an assessment of their feasibility and reasonableness, should be completed during final design.

- Installing traffic calming measures to slow traffic along Del Monte Boulevard could provide qualitative improvement by smoothing out the rise and fall in noise levels caused by speeding vehicles.
- Providing sound insulation treatments to affected buildings, such as sound-rated windows and doors, could reduce noise levels in interior spaces.

A combination of mitigation measures such as the repaving of area roadways, the replacement or construction of noise barriers, traffic calming, and sound insulation could be implemented to reduce the effects of project generated traffic noise at affected residences along identified segments of Beach Road, Crescent Avenue, De Forest Road, and Del Monte Boulevard.

Case studies have shown that the replacement of dense grade asphalt (standard type) with open-grade or rubberized asphalt can reduce traffic noise levels along residential-type streets by 2 to 3 dBA. A possible noise reduction of 2 dBA would be expected using conservative engineering assumptions. Table 4.10-6 below shows the expected noise level increases from project traffic assuming the replacement of existing pavement with open-grade or rubberized asphalt. Project-generated traffic noise increases could be reduced to a less-than-significant level along Beach Road, Crescent Avenue, and along Del Monte Boulevard between Reservation Road and Beach Road. Additional mitigation would be required along De Forest Road and Del Monte Boulevard north of Beach Road to fully mitigate the noise impacts. In order to provide permanent mitigation, all future repaving would have to consist of “quieter” pavements.

Roadway	Segment	Noise Level Increase After Mitigation (dBA, L_{dn})
Beach Road	Del Monte Blvd. to Michael Dr.	1
Beach Road	Michael Dr. to De Forest Rd.	2
Crescent Avenue	Reservation Rd. to Quebrada Del Mar Rd.	2
De Forest Road	Reservation Rd. to Beach Rd.	3
Del Monte Boulevard	Reservation Rd. to Beach Rd.	2
Del Monte Boulevard	Beach Rd. to Cosky Dr.	3
Del Monte Boulevard	Cosky Dr. to Project Entrance	3

Single-family residential receivers along De Forest Road primarily front the roadway. Noise barriers would not be feasible at these locations due to access requirements. In some situations, for example corner lots where outdoor use areas are located adjacent to the roadway, new or larger noise barriers could be constructed to provide the additional necessary noise attenuation in private outdoor use areas. Increasing the height of an existing barrier typically results in about one dBA of attenuation per one foot of additional barrier height.

Single- and multi-family residential land uses are located along Del Monte Boulevard north of Beach Road. The locations of private and common outdoor use areas varies along the roadway segment, but are generally in areas where noise barriers could be constructed or replaced to provide the additional necessary noise attenuation. The design of such noise barriers would require site-specific analysis. Traffic calming could also be implemented along Del Monte Boulevard to reduce noise levels from the project. Traffic calming measures that regulate speed

improve the noise environment by smoothing out noise levels. Each five mph reduction in average speed provides approximately one dBA of noise reduction on an average basis (L_{eq}/L_{dn}).

Affected residential receivers along De Forest Road and Del Monte Boulevard north of Beach Road could be provided sound insulation treatments if site-specific analysis finds that interior noise levels within the affected residential units would exceed 45 dBA L_{dn} under future project traffic conditions. Treatments to the home could include replacement of existing windows and doors with sound-rated windows and doors, and the provision of a suitable form of forced-air mechanical ventilation to allow the occupants the option of controlling noise by closing windows. The specific treatments for each affected residential unit would need to be identified on a case-by-case basis.

Each of the mitigation measures described above involves other non-acoustical considerations. Engineering issues may dictate continued use of dense grade asphalt. Noise barriers and sound insulation treatments on private property would require agreements with each property owner. For these reasons, it may not be reasonable or feasible to reduce project-generated traffic noise at all affected receivers. The noise impact, therefore, is considered significant and unavoidable.

Construction Noise

Future construction on portions of the site would generate activity that would temporarily increase noise levels at adjacent land uses. Noise impacts resulting from construction depend on the equipment used, timing and duration of activities, and the distance between construction noise sources and noise sensitive receptors. Where noise from construction activities exceeds 60 dBA L_{eq} and exceeds the ambient noise environment by at least 5 dBA at noise-sensitive uses in the project vicinity for a period of more than one construction season, the impact would be considered significant.

Construction activities generate considerable noise, especially during the installation of project infrastructure when heavy equipment is used. Typical hourly average construction generated noise levels are about 81 to 88 dBA at 50 feet from the center of the site during busy construction periods (e.g., earth moving equipment, use of impact tools). Construction-generated noise levels drop off at a rate of about six dBA per doubling of distance between the source and receptor.

Construction of the project would occur over more than one construction season. Construction noise complaints primarily occur 1) when construction activities take place during noise-sensitive times (i.e., early morning, evening, or nighttime hours), 2) when the construction occurs in areas immediately adjoining noise sensitive land uses, and/or 3) when construction periods occur over extended periods.

Construction noise levels are anticipated to exceed 60 dBA L_{eq} and exceed ambient levels by five dBA or more over extended periods of time. It is conceivable that a particular receiver or group of receivers would be subject to construction noise levels in excess of 60 dBA L_{eq} and in excess of the ambient noise level by five dBA for durations exceeding one construction season. Construction of the project would result in a significant temporary noise level increase at some neighboring noise-sensitive properties.

Impact **Noise generated by construction of the project would substantially increase noise levels at existing sensitive receptors in the project vicinity. Although mitigation measures would reduce noise generated by construction, the impact would remain significant and unavoidable as a result of the extended period of time that some adjacent receivers would be exposed to construction noise. *This is a significant, unavoidable impact.***

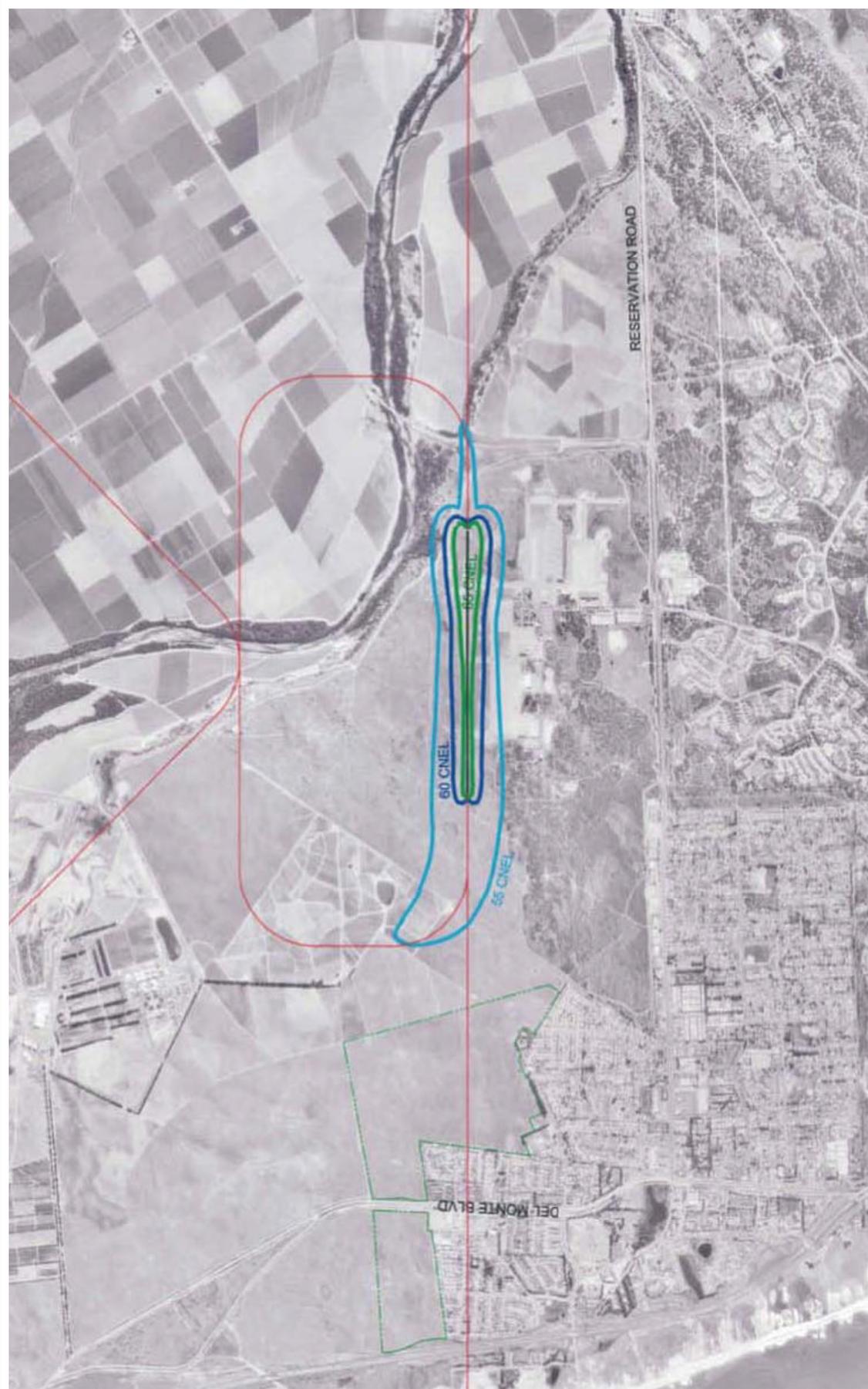
Mitigation

During construction, the contractor shall implement the following measures to minimize construction noise nuisance impacts.

- 4.10-10 Although the City's Noise Ordinance permits noise-generating construction activities from 10:00 a.m. to 7:00 p.m. on Sundays and holidays (including New Year's Day, July 4th, Thanksgiving, and Christmas), noise-generating construction activities shall not be permitted for the project at any time on those days.
- 4.10-11 Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- 4.10-12 Prohibit unnecessary idling of internal combustion engines.
- 4.10-13 Locate stationary noise generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary (8 foot high) noise barriers to screen stationary noise generating equipment when located near adjoining sensitive land uses. Temporary noise barriers could reduce construction noise levels by 5 dBA.
- 4.10-14 Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- 4.10-15 Route all construction traffic to and from the project site via designated truck routes where possible. Prohibit construction related heavy truck traffic in residential areas where feasible.
- 4.10-16 Control noise from construction workers' radios to a point that they are not audible at existing residences bordering the project site.
- 4.10-17 Prepare and submit to the City for approval a detailed construction plan identifying the schedule for major noise-generating construction activities.
- 4.10-18 Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

Aircraft Noise

Future noise contours for the Marina Airport are shown in the Fort Ord Reuse Plan, 2015 Airport Noise Contours, and 1996 ACLUP for Marina Station. The project site is located outside of the future 60 CNEL noise contour projected for operations at the Marina Airport. Early in 2006 the City of Marina retained an airport consultant to assist with an update of the Marina ACLUP, in recognition that the currently adopted 1996 plan is obsolete in terms of forecasts, noise modeling software, and statewide adopted safety zone methodology. Noise modeling was prepared using an early version of the FAA's Integrated Noise Model. The updated noise contours presented in the Draft 2006 ACLUP indicate that the 65 and 60 CNEL noise contours for year 2025 are outside of the Specific Plan area (refer to Figure 4.10-3). **The project would not be significantly adversely impacted by airport noise.**



Source: Wadell Engineering Corporation, 2006

Figure
4.10-3

Draft 2006 ACLUP Noise Contours



Cumulative Impacts

Traffic noise levels along Beach Road, Crescent Avenue, DeForest Road, Del Monte Boulevard, and Reservation Road would increase under cumulative traffic conditions, with noise level increases ranging from 3 dBA to 6 dBA L_{dn} .

Table 4.10-7 below summarizes the noise level increases attributable to the project, and the noise level increases associated with cumulative traffic volumes. Table 4.10-8 presents noise contour information for area roadways that will have a substantial noise level increase under cumulative conditions. Noise levels were calculated at a reference distance of 50 feet from the centerline of the roadway to represent the approximate setback of residential land uses affected by the project. The noise contours do not account for additional attenuation provided by existing noise barriers, structures, or topography.

Table 4.10-7 Cumulative Traffic Noise Level Increases Above Existing Levels			
Roadway	Segment	Noise Level Increase (dBA L_{dn})	
		Project	Cumulative
Beach Road	Reservation Rd. to Del Monte Blvd.	2	6
Beach Road	Del Monte Blvd. to Michael Dr.	3	4
Beach Road	Michael Dr. to De Forest Rd.	4	5
Crescent Avenue	Reservation Rd. to Quebrada Del Mar Rd.	4	5
De Forest Road	Reservation Rd. to Beach Rd.	5	5
Del Monte Boulevard	Reservation Rd. to Beach Rd.	4	6
Del Monte Boulevard	Beach Rd. to Cosky Dr.	5	6
Del Monte Boulevard	Cosky Dr. to Project Entrance	5	6
Reservation Road	Cardoza Ave. to Reservation Rd./Beach	1	3

Table 4.10-8 Noise Contour Distances for Roadways With Substantial Cumulative Noise Level Increases					
Affected Roadway Segment	Traffic Scenario	Ldn, dBA at 50 feet	Noise Contour Distance (feet)		
			70 Ldn	65 Ldn	60 Ldn
Beach Road Reservation Rd. to Del Monte Blvd.	Existing	60	--	--	50
	Project	62	--	30	80
	Cumulative	66	--	60	130
Beach Road Del Monte Blvd. to Michael Dr.	Existing	59	--	--	40
	Project	62	--	30	80
	Cumulative	63	--	30	100
Beach Road Michael Dr. to De Forest Rd.	Existing	58	--	--	30
	Project	62	--	30	80
	Cumulative	63	--	30	100
Crescent Avenue Reservation Rd. to Quebrada Del Mar Rd.	Existing	58	--	--	30
	Project	62	--	30	80
	Cumulative	63	--	30	100
De Forest Road Reservation Rd. to Beach Rd.	Existing	58	--	--	30
	Project	63	--	30	100
	Cumulative	63	--	30	100
Del Monte Boulevard Reservation Rd. to Beach Rd.	Existing	66	--	60	130
	Project	70	50	110	230
	Cumulative	71	60	130	270

Affected Roadway Segment	Traffic Scenario	Ldn, dBA at 50 feet	Noise Contour Distance (feet)		
			70 Ldn	65 Ldn	60 Ldn
Del Monte Boulevard Beach Rd. to Cosky Dr.	Existing	65	--	50	110
	Project	70	50	110	230
	Cumulative	71	60	130	270
Del Monte Boulevard Cosky Dr. to Project Entrance	Existing	65	--	50	110
	Project	70	50	110	230
	Cumulative	71	60	130	270
Reservation Road Cardoza Ave. to Reservation Rd./Beach Rd.	Existing	64	--	40	90
	Project	65	--	50	110
	Cumulative	67	30	80	150

Impact **Cumulative traffic volumes will increase noise levels on the local roadway network. In some locations, the project will significantly contribute to the cumulative noise levels. Measures available to reduce the project noise level increases may not be reasonable or feasible in all areas. *The impact, therefore, is considered significant and unavoidable.***

Mitigation

Refer to the mitigation discussion provided above for Mitigation 4.10-9.

4.11 POPULATION AND HOUSING

Introduction

This section describes the population and housing issues related to the proposed project, including background and documentation to support the growth inducement analysis contained within Section 5 of this EIR. The key sources of information for this analysis include the 2000 Census, the 2004 Association of Monterey Bay Area Governments (AMBAG) Projections, the Marina Jobs/Housing Balance Improvement Strategy Plan (2003), and the City of Marina Housing Element (2004).

Setting

Based on Census 2000 data, Monterey County had a population of approximately 401,762 people. The County's population has grown at an overall rate of 1.2 percent annually since 1990. However, the majority of communities along the Monterey Peninsula have seen decreased population levels during the same time period, as a result of the closure of the Fort Ord military base. Approximately 25% of the county population lives in unincorporated areas, with the remaining 75% residing in the county's 12 cities. Salinas is the largest city, followed by Seaside, Monterey, and Marina.

Table 4.11-1 presents projected population growth along the Monterey Peninsula through 2020, based on the current population and historic trends. These projections suggest that all the cities will experience growth between 2000-2020. The population of the City of Marina is projected to increase by 37% during this time period.

Place of Residence	2000 Census Population	2015 Projected Population	2020 Projected Population
City of Del Rey Oaks	1,650	1,586	1,577
City of Marina	25,101	32,465	34,362
City of Monterey	29,674	28,653	28,481
City of Sand City	243	368	365
City of Seaside	31,786	34,871	34,855
Unincorporated Monterey County	100,252	114,776	124,067
Monterey County Total	401,762	495,961	527,069
Sources: 2000 Population and Household data from the U.S. Census Bureau. "DP-1. Profile of General Demographic Characteristics: 2000." Summary File 1; and population projections from AMBAG, "2004 AMBAG Regional Population and Employment Forecasts."			

Monterey County's total population resides in approximately 121,236 households (Census 2000). The average number of persons per household is 3.14, although this is far from uniform throughout the County. Most of the County's housing stock (occupied or unoccupied dwelling units) is in the northern portion of the County. Table 4.12-1 shows the distribution of housing stock among the cities and the unincorporated parts of the County.

Based on current conditions and trends, growth is projected throughout the county, with no major changes in the geographic distribution of population. The redevelopment of the former Fort Ord is expected to restore population levels within the area to those prior to base closure, with Seaside and Marina seeing significant growth. According to the City of Marina Housing Element, an estimated 95 percent of the housing to be added to the City over the next two to three decades will be in the portion of former Fort

Ord within the City’s municipal boundaries and Sphere of Influence, and within the incorporated portion of Armstrong Ranch.

Jurisdiction	Total Housing Units
Carmel	3,334
Del Rey Oaks	727
Gonzales	1,724
Greenfield	2,726
King City	2,822
Marina	8,537
Monterey	13,382
Pacific Grove	8,032
Salinas	39,659
Sand City	87
Seaside	11,005
Soledad	2,534
Unincorporated	37,139
Total	131,708
Source: U.S. Census, 2000.	

AMBAG assigns each community within its jurisdiction a “fair share” of the regional housing needs, and the communities are required to show how they will meet these needs. Based on the 2002 AMBAG Regional Housing Needs Plan, the total number of new housing units that need to be constructed in Marina between 2000 and 2007, in order to meet Marina’s “fair share” of the regional housing need, is 2,015. This includes very low, low, moderate, and above moderate income households.

The new homes constructed for the project would constitute a substantial portion of the additional housing required to meet the City’s share of the regional housing need. Program 1-A of the Housing Element provides that the City will “re-designate sufficient property in the portion of Armstrong Ranch within City limits to provide for approximately 1,000 – 1,300 units with a mix of housing types and price ranges corresponding to the regional housing allocation needs for Marina.”

Inclusionary Housing. The City of Marina establishes certain requirements for new housing development projects under the Housing Element’s Inclusionary Housing Program. The program includes the provision of a minimum number of residential housing units to be sold and/or rented as affordable to certain income groups. The program stipulates that developments with 20 or more dwelling units shall include at least 20 percent of all units for affordable and below-market-rate housing.

Environmental Impact Report on the Marina General Plan. The General Plan EIR evaluated potential effects on population and housing associated with the adoption and implementation of the Marina General Plan, including future development within the Marina Station project site. This program-level EIR focused on general impacts associated with implementation of the General Plan, rather than project-specific impacts associated with individual development projects, such as the Marina Station Specific Plan project. According to the General Plan EIR, implementation of the General Plan would direct a portion of the anticipated growth in the regional population to areas that were previously not available to support such levels of development, resulting in an unmitigable impact. The project site is located within the Urban Growth Boundary and intended to support housing and population in an area

planned for development. The discussion in the General Plan EIR referred to development of the entire Armstrong Ranch (both within and outside the UGB).

Marina Station Specific Plan. Section 2.2 of the Specific Plan contains policies and implementation measures to assure development of mixed land use patterns within the City. LU Policy 1-1 states “designate land to provide a mix of residential uses and product types, commercial uses that support residential development, office, and industrial uses, and recreation and open space amenities to meet the needs of residents.” Implementation measures are as follows:

- The City should amend the Zoning Ordinance to rezone the property “SP” within the Specific Plan area with the land use designations illustrated in Figure 2.1, Land Use Plan.
- The master developer and/or individual developer(s) shall implement projects consistent with the land use designations in the Land Use Plan, and the policies and implementation measures of the Specific Plan. Modifications to the land uses or zoning standards shall be reviewed by the City and must be in substantial conformance with city goals and criteria.
- The master developer shall submit a tentative map that illustrates the development of the Specific Plan area shown in Figure 2-1, Land Use Plan, consistent with the design and zoning standards described in Section 6.0 and Section 7.0 respectively.
- The low density and medium density Residential uses as well as Residential uses within the Commercial mixed-use areas offer opportunities to provide competitively priced housing. The master developer and/or the individual project developer shall provide a range of housing products on large to small lots along with condominium apartments to reduce dwelling unit costs to buyers and renters.

Section 8.5 and 8.6 of the Specific Plan identifies measures to assure compliance with the City’s inclusionary housing program. Implementation (IMP) Policy 3-1 states “allocate a percentage of total housing within the Plan area, for sale and/or rent, to residents with very low to moderate incomes.” The implementation measure to support this policy is as follows:

- The master developer shall provide housing at the below-market income levels as set forth in the adopted Marina Housing Element.

Relevant Project Characteristics

The mixed use development proposed for this project would protect and enhance the quality of the City’s existing housing stock and allow for future economic growth, which would help maintain a local jobs/housing balance. Implementation of the project includes the development of approximately 1,360 residential units and the creation of 2,044 jobs. Development of the project would occur over a 10 to 20 year period.

Thresholds of Significance

In accordance with CEQA Guidelines, a project impact would be considered significant if the project would:

- displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or

- displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

The only threshold that would apply to the project is the inducement of population growth, since the project would not displace existing housing or people.

Impacts and Mitigation

The Specific Plan area is composed of three separate but contiguous parcels totaling approximately 320 acres. The project area consists of rolling grassland that is currently used for cattle grazing. There are no existing people or housing located on the project site that would require displacement due to project implementation.

The project would not result in any impacts associated with displacement of housing or people.

Population Growth

The project would increase population in the area. Marina's existing population (2000) is 25,101. Based on the City of Marina General Plan Housing Element, the average household size in Marina is 2.79. Using this factor, the 1,360 new units proposed by the project would generate 3,794 people. This additional population represents about 15% of Marina's existing (2000) population. This growth in population would increase demands on existing community facilities, requiring construction of new facilities that could cause significant environmental effects (refer to sections 4.12 Public Services and 4.14 Public Utilities and Service Systems of this EIR for a discussion of infrastructure and facilities). The proposed Specific Plan identifies financing and implementation measures to assure the public services and infrastructure are developed to accommodate the growth in population.

The project also proposes industrial, office, and commercial uses that would have a direct, economic growth-inducing impact by providing new employment. The project would generate an estimated 2,044 jobs at the Marina Station site. Residential development and residential-serving commercial development is included in the Land Use Plan to meet the needs of new employees. In addition, the project site is located within City limits and the UGB, and is designated to accommodate planned growth in the City's General Plan.

The project would provide new infrastructure to the area, including extensions of water and sanitary sewer lines, as well as roadway improvements. Proposed infrastructure would be sized and located to serve planned growth on the project site, and would not provide oversized facilities to serve future growth outside the project boundaries. The roadway improvements would be limited to increases in capacity needed to offset the additional traffic volumes generated by the development.

Based on the above discussion, the project would not displace existing housing or people or result in significant population growth beyond that already planned and allocated for this site under the General Plan.

Inclusionary Housing

As per the Specific Plan, the Marina Station project would provide inclusionary housing. A separate affordable housing program would be negotiated between the City and the master developer, specifying in detail an affordable housing plan that meets the provisions of the City's Inclusionary Housing Program. The percentage income levels and mix for very low, low, and moderate income housing to meet the City's requirements shall be set forth in the affordable housing program. The rents and prices of the affordable

units, will be based on the U.S. Department of Housing & Urban Development (HUD) published average median household income for Monterey County. Various elements of the affordable housing program may be contracted out by the developers within the Specific Plan area to third parties for construction, sale, and future management of the affordable housing units and implementation of the affordable housing plan. The project would be consistent with the City's inclusionary housing policies.

4.12 PUBLIC SERVICES AND RECREATION

Introduction

This section assesses the proposed project's potential impacts on public services and recreation. To obtain information from public service providers, DD&A contacted the City of Marina Public Safety Department to gather information on existing fire and police facilities, staffing for the project area, and current as well as target response times.

Letters were received from the general public during circulation of the Notice of Preparation for this EIR, calling for a thorough analysis of the public services and recreation impacts resulting from the project. The predominant issues of concern involved the provision of emergency services, adequate school space, and lack of open space/parks. The following section evaluates the potential for public services and recreation impacts and presents mitigation in accordance with CEQA Guidelines.

Setting

Police and Fire

City of Marina. The City of Marina Public Safety Department (PSD) provides police, fire protection, and emergency services to all areas within the City limits, including the project site. The PSD operates from the Marina Civic Center on Hillcrest Avenue; the fire station is on Palm Avenue, adjoining the Civic Center. The PSD is currently staffed by 28 public safety officers who are cross-trained as police officers and firefighters. This is equivalent to approximately 1.6 officers per 1,000 residents. At least three public safety officers and two fire personnel are on duty at all times. The fire protection division is also supported by 35 volunteer firefighters. The PSD has an average emergency response time of three to four minutes. The PSD maintains mutual aid agreements with neighboring public safety agencies (Harold Kelly, PSD, personal communication, December 2005).

The fire station has five engines, including one four wheel drive "brush rig" for wildland fires and one aircraft crash truck. Response time varies from three to four minutes within central Marina, but is greater to locations within the former Fort Ord. Two sites within the former Fort Ord boundaries are being considered for a future fire substation site, which would provide service to planned development in that area.

Emergency medical services are provided exclusively by hospitals in neighboring communities. These include Natividad Medical Center and Salinas Valley Memorial Hospital (located in the City of Salinas), and the Community Hospital of the Monterey Peninsula (located in the City of Monterey). Paramedic Ambulance transport is currently provided by Westmed. Westmed has an average response time of eight to 20 minutes throughout their Countywide service area.

Schools

The project lies within the North Monterey County Unified School District (NMCUSD). The NMCUSD consists of four elementary schools, one middle school, one high school, and two alternative education facilities. The middle school and high school are both located in Castroville. The District offers preschool programs and extended day classes and other after-school programs to support student academic achievement. Current student enrollment within the District is approximately 4,500 students.

The closest NMCUSD school to the Specific Plan area is approximately six miles away, in Castroville. However, Olson Elementary School, a Monterey Peninsula Unified School District (MPUSD) school, is located immediately adjacent to the Plan area. An application has been made to transfer the Marina Station property into the MPUSD boundaries. Until this boundary adjustment is completed, the project site will remain outside the MPUSD area. MPUSD and NMCUSD are expected to address this issue in the near future.

The MPUSD consists of 11 elementary schools, four middle schools, and three high schools (including Central Coast Continuation High School) within the cities of Marina, Monterey, Seaside, Del Rey Oaks, and portions of unincorporated Monterey County. The MPUSD had a total enrollment of 10,252 students in the 2004-2005 school year (Charlie Van Meter, MPUSD, personal communication, December 2005).

The MPUSD's current student capacity is 13,157. Capacity is subject to a number of variables including recommended class size, proportion of classroom space to playgrounds, and availability of supporting facilities such as bathrooms, libraries, and multi-purpose rooms. Classroom size can be monitored to a maximum of 30-32 students per classroom; however, this figure does not take into account the librarians, psychologists, counselors, and other staff necessary for a school. Based on the current student capacity and total student enrollment, the schools within the MPUSD are currently under capacity, i.e., there is excess capacity for new students.

Using student generation rates provided by the MPUSD, buildout of the Specific Plan is anticipated to generate approximately 517 school-aged children. Table 4-12.1 (below), Projected Student Generation, presents the number of students expected to be generated by the project.

The City, MPUSD, and several developers, including the master developer, are currently negotiating a memorandum of understanding regarding school mitigation. Approximately two acres of the Plan area will be reserved for future expansion of Olson Elementary School, which may be part of that memorandum of understanding. The reserved two acres are located in the southwestern most corner of the Plan area, adjacent to the existing school. No school sites have been requested by MPUSD from Marina Station project.

The NMCUSD is currently assessing the potential impact of the project on school facilities if the project remains in the NMCUSD, and it is unclear at this point whether students from the project would be accommodated in existing NMCUSD facilities or whether new school facilities would be required. Provision of adequate school facilities is the responsibility of the school district. Potential school sites must be approved by the California Department of Education, and are subject to health and safety requirements contained in state regulations and the policies of the Department of Education. These policies and regulations require a number of factors to be analyzed as part of school site selection, including: 1) proximity to airports; 2) proximity to high-voltage power transmission lines; 3) presence of toxic and hazardous substances; 4) proximity to railroads; 5) proximity to high-pressure natural gas lines, gasoline lines, pressurized sewer lines, or high-pressure water pipelines; and 6) condition of traffic and school bus safety and safe routes to school. A school district must take these factors into account prior to selecting a school site. Because the potential need and potential location of a new school site are both matters within the jurisdiction of the NMCUSD and are currently unknown, the evaluation of the potential environmental effects of the provision of such a site are beyond the scope of this analysis.

The School Facilities Act (SB 50), codified in Education Code § 17620 and Government Code §§ 65995 *et seq.*, prescribes the exclusive methods available to a school district or city for mitigating the impact of development upon school facilities. The Act also limits the ability of school districts or local agencies to deny or condition development on the ground of inadequate school facilities. Education Code § 17620 authorizes school districts to levy "Level 1" fees in a statutorily prescribed amount (adjusted biannually

by the State Allocation Board) against development projects for the purpose of funding school facilities subject to the limitations in Government Code §§ 65995 *et seq.*

Under Government Code § 65995.5, a district is authorized to impose “Level 2” fees of up to fifty percent of the cost of school construction and of site acquisition costs if certain conditions are met. One of the mandatory requirements includes conducting a School Facilities Needs Analysis documenting the need for the fee and verifying that certain statutory conditions have been met. Govt. Code § 65995.5(b)(2).

Once the applicable (Level 1 or Level 2) fee is paid, the impact is deemed mitigated as a matter of law [Government Code Section § 65995(b)]. Therefore, payment of development fees in compliance with statutory requirements is deemed to reduce impacts to school districts below a level of significance.

On January 25, 2006, the State Allocation Board increased the amount of the Level 1 fees from \$2.24 to \$2.63 per assessable square foot of residential construction, and from \$0.36 to \$0.42 per square foot of enclosed and covered space for commercial/industrial development.

Recreation

City of Marina. Marina currently has 96.7 acres devoted to recreational use, resulting in a ratio of 5.3 acres per 1,000 residents. The General Plan reserves an additional 477 acres for parks and recreation within former Fort Ord, which results in a ratio of 19.5 acres per 1,000 residents (Note: parks and recreation sites in former Fort Ord are currently unimproved). In addition, more than 650 acres of State and regional coastal park land are within the Marina Planning Area and 16,000 acres of Bureau of Land Management (BLM) land are in close proximity to Marina. Approximately half of the BLM lands are available for public use. There are three recreational areas within the City of Marina that lie within close proximity to the proposed project. These parks are Gloria Tate Park, Vince Dimaggio Park, and Lake Padden Park.

Marina State Beach. Marina State Beach has been a unit of the State Parks system since 1977. Marina State Beach encompasses 170 acres and serves an estimated 500,000 visitors each year. The function of the California Department of Parks and Recreation at Marina State Beach is to preserve and protect the coastal dunes and provide opportunities for ocean or beach-oriented recreation to the public. The existing facilities at Marina State Beach include full utility hookups, restrooms, and a State Parks office and employee residence. Additionally, but not run by the State Parks office, Western Hang Gliders provides hang gliding, paragliding, and ultralighting equipment and services adjacent to the beach parking lot. The beach is wheelchair accessible, with a boardwalk that winds through the Marina Dunes Natural Preserves.

State Law and Local Requirements

Quimby Act. The Quimby Act (Government Code § 66477), authorizes cities and counties to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. Pursuant to the authority granted by the Quimby Act, the City has enacted Municipal Code Chapter 16.08.090 setting applicable standards requiring park acreage dedication and improvement based on development type and size. The applicable standards, as outlined in the City’s Municipal Code Section 16.08.090 D 1, require park acreage dedication sufficient to provide 3 acres of parkland per 1,000 residents of the development project.

Marina General Plan. The City of Marina General Plan includes provisions for adequate public services and recreation. Please refer to Table 4.9-2 of the Land Use and Planning section of this EIR for a detailed analysis of the project’s consistency with the relevant public services and recreation provisions of the Marina General Plan.

Environmental Impact Report on the Marina General Plan. The General Plan EIR evaluated potential public services and recreation impacts associated with the adoption and implementation of the Marina General Plan, including future development within the Marina Station project site. This program-level EIR focused on general impacts associated with implementation of the General Plan, rather than project-specific impacts associated with individual development projects, such as the Marina Station Specific Plan project. According to the General Plan EIR, the following relevant public services and recreation impacts were identified: 1) physical effects associated with school construction within the Marina planning area; 2) physical effects associated with parks and recreational facilities construction within the Marina planning area; 3) deterioration of existing parks and recreational facilities within the Marina planning area; and 4) physical effects associated with fire/police substation construction within the Marina planning area. All of these impacts were found to be significant, but mitigable.

Marina Station Specific Plan. Section 4.2 of the Marina Station Specific Plan identifies policies and implementation measures to ensure adequate public facilities and services in the Plan area. Public Facilities (PF) Policy 2-1 states “provide support to the applicable school district to expand educational opportunities commensurate with needs generated by build out of the Specific Plan area.” Implementation measures are as follows:

- The master developer shall reserve two acres of land for five years from the date of tentative map approval for MPUSD for the expansion of Olson Elementary School.
- Each individual project applicant shall pay school impact fees to the MPUSD or the NMCUSD, as applicable, consistent with the adopted fee program. Fees shall be paid prior to receiving a building permit for each residential unit or commercial or industrial building.

PF Policy 2-2 states “provide and maintain public safety services that are adequate in manpower, equipment, and resources to respond to emergencies and calls for service within the Plan area and that meet the three to four minute response time of the City of Marina Police and Fire Departments.” Implementation measures are as follows:

- The master developer and/or individual project developers shall pay the public safety impact fees to the city consistent with the city’s established fee program. Fees shall be paid prior to receiving a building permit for each residential unit, commercial, office or industrial building or as otherwise stipulated in the fee ordinance.

Section 5.8 of the Marina Station Specific Plan identifies policies and implementation measures to ensure adequate open space and recreation in the Plan area. Open Space (OS) Policy 2-1 states “provide neighborhood and/or local parks with appropriate facilities within each neighborhood in the Plan area.” Implementation measures are as follows:

- The master developer shall provide the land for formal and linear parks within the Specific Plan area, consistent with this Specific Plan, and that adhere to city standards. Development plans for each park and trail system shall be prepared by the developer and approved by the appropriate City staff prior to the approval of that phase.
- The master developer shall design, finance and construct the major parks and open space areas within the Specific Plan area consistent with city standards. Individual project developers shall also construct small sub-neighborhood parks within the boundaries of their individual projects. Design and landscaping of the park shall be subject to review and approval of the appropriate City staff for consistency with city standards.

Relevant Project Characteristics

The project proposes a mixed-use development consisting of residential, commercial, and industrial uses, and will include three village centers, open space buffers, and recreation areas. The project would create 824 single family units and 536 multi-family units, and would add 3,794 new residents to the area. The project would reserve two acres for the possible future expansion of Olson Elementary School. The project proposes open space and recreation areas, including parks, playgrounds, and open space buffer areas (between proposed uses and surrounding neighborhoods).

Thresholds of Significance

In accordance with CEQA Guidelines, a project impact would be considered significant if the project would:

- result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any public services:
 - fire protection;
 - police protection;
 - schools;
 - parks;
 - other public facilities
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands;
- increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Impacts and Mitigation

Police and Fire

Implementation of the proposed project would create a demand for increased police and fire services due to the increase in the square footage of commercial and industrial spaces and development of new residential units. The introduction of 3,794 persons onto the project site will add to the PSD's caseload. The increased demand for police service would be generated by potential crimes that could occur at the site, including traffic violations, thefts, vandalism, loitering, and assaults. Calls for fire service could be generated by hazardous materials incidents or fires and other emergency response at the project site. The General Plan requires an average response time of four minutes for both police and fire.

Fire hazards in the Marina Planning Area exist primarily as wildfire potential in open areas and habitat areas. The California Department of Forestry rates wildlands for fire hazards based on slope, climate, fuel loading, and water availability. Structural fire hazards are not covered. While agricultural/urbanized areas, such as those adjoining the Specific Plan area, are considered to have a relatively low fire hazard compared to wildlands, fire hazards do exist there. To minimize these hazards, the City Fire Chief implements the fire prevention regulations of the Uniform Fire Code. These regulations specify minimum safety standards for water flow, water pressure, street width and access, and turning radius for fire equipment.

The proposed development will be constructed in accordance with all applicable fire and building safety codes (Uniform Building Code and Uniform Fire Code). New roads will be designed with appropriate widths and turning radiuses in order to safely accommodate emergency response and the transport of emergency/public safety vehicles. The project will be designed to meet Fire District requirements regarding fire flow, water storage requirements, hydrant spacing, and emergency access. The project will not interfere with an adopted emergency response/evacuation plan since the project site is currently undeveloped grazing land located north of existing urban areas.

The project will result in an increase in the number of calls for police protection and emergency response. The project site is within range of the average response time of four minutes, however, additional staffing, equipment, and infrastructure (substation) will be necessary in order to serve the proposed development and maintain an average response time of four minutes (Harold Kelly, PSD, personal communication, December 2005). The City is planning to construct a fire substation at the Marina Municipal Airport. This would further reduce the fire response time to less than four minutes.

Impact **The project would result in an increased demand for police and fire services. This would represent a potentially significant impact that can be reduced to a less-than-significant level with implementation of the following mitigation measures.**

Mitigation

4.12-1 The applicant/developer shall pay a City Development Impact Fee for each type of development pursuant to the criteria set forth within the Development Impact Fee Study prepared for the City of Marina by Harris & Associates, dated December 6, 2005. Fees shall be paid prior to receiving a building permit for each residential unit, commercial, office or industrial building, or as otherwise stipulated in the fee ordinance.

Schools

The project lies within the NMCUSD service area. However, the closest NMCUSD school to the Specific Plan area is approximately six miles away, in Castroville. Olson Elementary School, an MPUSD school, is located immediately adjacent to the Plan area. An application has been made to transfer the project property into the MPUSD boundaries.

Development of proposed residential uses would generate additional students, associated with the increase in population. The MPUSD has prepared student generation rates for single and multi-family uses. Using these rates, project buildout is anticipated to generate 517 school-aged children, as presented in Table 4.12-1 below.

Housing Type	Grade Level	Generation Rate/Unit*	No. Units	No. New Students
Single-Family Residential	K-5	0.25	824	206
	6-8	0.08	824	66
	9-12	0.12	824	99
Multi-Family Residential	K-5	0.15	536	81
	6-8	0.05	536	27
	9-12	0.07	536	38
Total				517
* The “low” student generation rates were used for the Multi-Family residential units and the “medium” student generation rates were used for the Single-Family residential as directed by Charlie Van Meter of the MPUSD. Source: EMC Planning Group Inc. and Monterey Peninsula Unified School District 2006.				

The project proposes to reserve two acres of land for expansion of the Olson Elementary School. The master developer and MPUSD are currently negotiating a school expansion agreement. The expansion site is located in the southwestern corner of the project area, adjacent to the existing school. Figure 3-3 shows the location of the school expansion site (in blue). No additional school sites have been requested by MPUSD. The City of Marina requires that school impact fees be paid to the school district. California State law (Government Code Section 65995) specifies the payment of a school impact fee as the exclusive method of offsetting the effect of new development on the adequacy of school facilities. Under this law, the impact fee is estimated at \$2.63 per square foot of residential development and \$0.42 per square foot for commercial development.

The NMCUSD is currently assessing the potential impact of the project on school facilities in the event that the project remains within their district, and it is not yet clear whether the project-generated students would be accommodated in existing facilities or new facilities (either permanent or relocatable) would be required.

It is anticipated that the MPUSD will be able to accommodate students generated by the project based on current student capacity (Charlie Van Meter, MPUSD, personal communication, December 2005). Project adherence to the General Plan public education provisions, as well as payment of the impact fee will reduce educational service impacts to a less-than-significant level.

Impact **The project would result in an increased demand for educational services. This would represent a potentially significant impact that can be reduced to a less-than-significant level with implementation of the following mitigation measures.**

Mitigation

4-12.2 The applicant/developer shall pay a school impact fee for each type of development pursuant to the criteria set forth within California Government Code Section 65995 and shall reserve two acres of land for expansion of the Olson Elementary School for five years from the date of tentative map approval. Prior to the issuance of building permits, the applicant shall pay required school mitigation fees. As indicated above, the fees set forth in Government Code Section 65996 constitute the exclusive means of both “considering” and “mitigating” school facilities impacts of projects [Government Code Section 65996(a)]. They are “deemed to provide full and complete school facilities mitigation” [Government Code Section 65996(b)].

Parks and Recreation

The project proposes to provide public park lands to serve the recreational needs of the proposed development and surrounding community. This is consistent with Provision 2.16, which is intended to provide neighborhood-serving park and recreation facilities for underserved existing neighborhoods and new residential areas in the Armstrong Ranch area. The project includes a linear park (greenbelt) or other open space buffer between new development and existing adjoining residential neighborhoods.

The General Plan designates 35 acres of land for open space and 80 acres of land for parks within the entire Armstrong Ranch planning area. However, the City determined that this amount of parkland designated by the General Plan for the project site is in excess of what is necessary, since the project site encompasses a small portion of the Armstrong Ranch planning area. The project will require a General Plan amendment, which will eliminate any inconsistencies with the General Plan land use designations. The project will designate 38 acres of land as open space or “linear parks” and 20 acres of land as “formal parks” for a total of 58 acres of parkland. Formal parks include small sub-neighborhood parks, neighborhood parks, playfields, playgrounds and community parks that meet City standards. Formal parks are dispersed throughout the project site as shown on the Land Use Plan in Figure 3-3. The land dedicated to formal parks will include one or more of the following park types:

Sub-neighborhood. A small-scale passive and active area for informal play and relaxation close to place of residence. May be common open space available only to residents of a specific project, or public and open to all residents. City standard is 0.2 acres per 40 housing units. The service area is typically within 300 feet of housing units served.

Playground. Play area for active and passive recreation needs of preschool and elementary-school children. City standard is 1.3 acres per 360 housing units (or 1,000 residents). The service area is typically within 1,200 to 1,500 feet of housing units served.

Neighborhood Park. Passive landscaped area for relaxation, picnicking, and other forms of socializing. City standard is 0.5 acres per 360 housing units (or 1,000 residents). The service area is typically within 1,200 to 1,500 feet of housing units served.

Playfield. Active, turfied play fields suitable for softball, baseball, football, soccer, and other field sports. City standard is 0.5 acres per 360 housing units (or 1,000 residents).

Community Park. Passive landscaped area for relaxation and accommodation of large-scale groups for social, cultural, or other community-oriented events. City standard is 0.25 acres per 360 housing units (or 1,000 residents).

Recreation Trails. Pathways suitable for walking, running, or biking with a minimum right-of-way width of 20 feet where trails are not located within a designated recreation or park area. City standard is 1,600 linear feet per 360 housing units (or 1,000 residents).

The City of Marina General Plan establishes a standard of 5.3 acres of parkland per 1,000 residents. City Municipal Code 16.08.090 requires a dedication of the equivalent of 3 acres of parkland for every 1,000 residents of the development, or payment of an in lieu fee sufficient to provide the equivalent amount of improved parkland. Based upon the General Plan standard of 5.3 acres and the projection of 3,795 new residents by this development, the project would need to provide approximately 20.1 acres of parkland to meet this standard. Under 16.08.090, the project would be required to dedicate approximately 11.4 acres of parkland. The project proposes 20 acres of formal parks for active recreational uses, which exceeds both standards. These include community parks, neighborhood parks, and playfields. The project

proposes an additional 38 acres of linear parks, which include recreational trails and open space. These linear parks are designated for native habitat and passive recreation and will serve as a greenbelt around the project site. The linear parks provide scenic vistas for the community and active/passive recreation with a walking/jogging and biking trail system linking to other neighborhood recreational areas, while restoring and protecting the sensitive native habitat of the area. No further dedication of park and recreation facilities is required by the City; as the project will provide adequate parkland that meets the City's standards and will not constitute a significant impact on park and recreation resources. Indeed, the provision of more parkland than is required constitutes a beneficial impact. Because all of the parks and recreation facilities necessitated by the project would be provided on the project site, the environmental impacts of constructing the parks and recreation facilities (e.g., dust and noise emitted during grading) are addressed in the relevant chapters of this EIR. **This represents a less-than-significant impact.**

Cumulative Impacts

Future development of the project site as proposed by the Marina Station Specific Plan would not significantly contribute to cumulative impacts associated with public services and recreation. The cumulative demand for services would be provided by planned or developer-subsidized improvements as well as by the collection of fees pursuant to the City's impact fee ordinance. **This represents a less-than-significant impact.**

4.13 TRAFFIC AND CIRCULATION

Introduction

The following discussion is based on a traffic analysis prepared for the project by Higgins Associates (December 5, 2006). The text of this analysis is contained in Appendix H of this EIR. The full report is available for review at the City of Marina.

Setting

Roadway Network

The project site is located east of Highway 1, which extends north-south along the Monterey Peninsula coast. Regional access to the project site would be provided from Highway 1 from the interchanges at Reservation Road and Del Monte Boulevard (North and South). Other regionally significant highways include Highway 101 to the east, Highway 156 to the north, and Highway 68 to the south of the project.

Local access to the project site would be provided from Del Monte Boulevard, Reservation Road, Beach Road, and Marina Greens Drive, as well as extensions of Drew Street, Cardoza Avenue, De Forest Road, and Crescent Avenue. The local roadway network is presented in Figure 4.13-1, and described below.

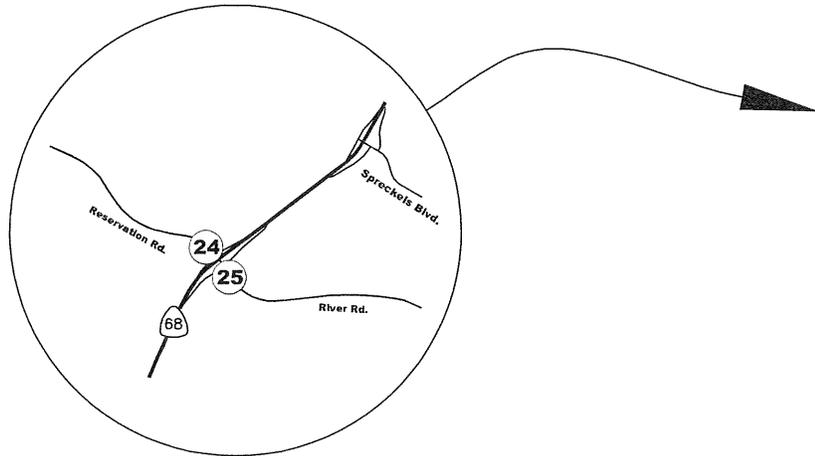
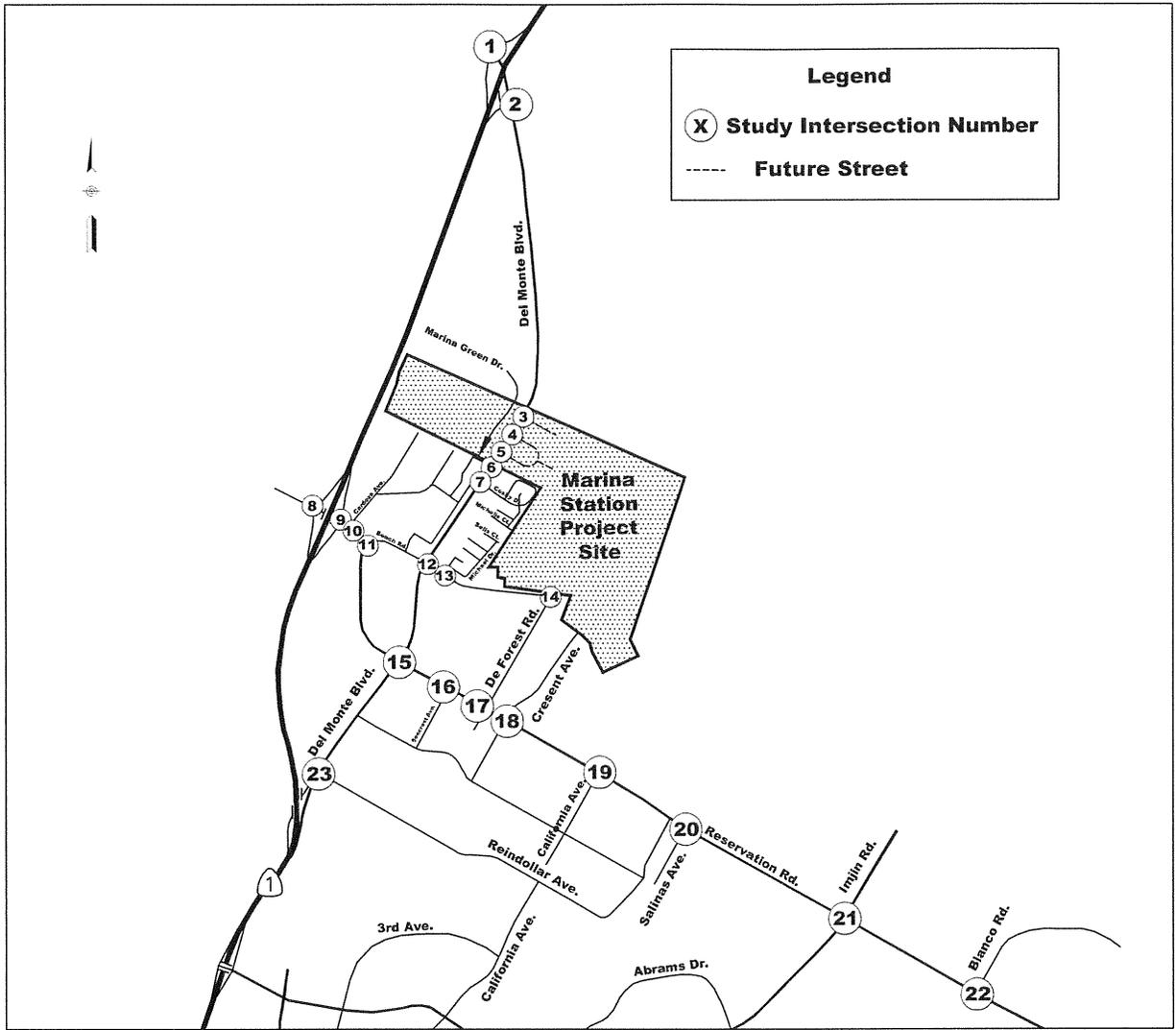
Highway 1 is a state highway, providing access along the California coast. In the vicinity of the project, it is a four-lane freeway north of the southern Del Monte Boulevard interchange and south of Fremont Boulevard, and a six-lane freeway between the southern Del Monte Boulevard and Fremont Boulevard interchanges.

Del Monte Boulevard is a major arterial on the western side of the City of Marina, extending from a partial interchange with Highway 1 north of Imjin Parkway (Twelfth Street) to Highway 1 north of Marina. In the project vicinity, Del Monte Boulevard is a four-lane divided roadway between the southern Del Monte Boulevard/Highway 1 interchange and just north of Beach Road, and a two-lane roadway with left turn channelization north of Beach Road to the Marina city limits. Del Monte Boulevard is a two-lane rural highway between the Marina City limits and the northern Del Monte Boulevard/Highway 1 interchange.

Reservation Road is a major arterial extending through Marina. Between Marina State Park and Del Monte Boulevard, Reservation Road is two lanes with left turn channelization at key intersections. Between Del Monte Boulevard and Blanco Road, Reservation Road is a four-lane facility, in some locations it is divided and others it has a two-way left turn lane. Reservation Road is under the jurisdiction of the City of Marina west of Blanco Road and the County of Monterey east of Blanco Road.

Blanco Road is a major arterial extending from Reservation Road to the City of Salinas. Between Reservation Road and the Salinas River Bridge, Blanco Road is four lanes with left turn channelization at key intersections. For the remainder of its length to Salinas, it is a two-lane rural highway.

Imjin Parkway is predominantly a four-lane arterial roadway within the City of Marina. Imjin Parkway is a two-lane road over Highway 1 and just east of its interchange with Highway 1; east of the interchange it becomes a four-lane divided roadway with left turn channelization. The current exit signing from Highway 1 identifies Imjin Parkway as 12th Street. In this report, the roadway is referred to as “Imjin Parkway (12th Street).”



Source: Higgins Associates, 2006

Roadway Network

Figure
4.13-1

Imjin Road is a two-lane, north-south roadway within the City of Marina. Imjin Road has two distinct sections. South of Imjin Parkway, Imjin Road connects to Eighth Street, providing access to California State University at Monterey Bay (CSUMB). Imjin Road also serves as a northerly extension of Imjin Parkway, providing access to both Reservation Road and the Marina Municipal Airport. Combined with Imjin Parkway, Imjin Road forms a bypass around central and southern Marina.

Beach Road is a two-lane roadway within the City of Marina. Beach Road provides access to residential neighborhoods in northern Marina, as well as a connection to Highway 1 via Reservation Road. Beach Road is classified as an arterial roadway between Reservation Road and Del Monte Boulevard, and as a collector roadway between Del Monte Boulevard and De Forest Road.

De Forest Road is a two-lane collector street within Marina. De Forest Road provides access to neighborhoods in north central Marina.

Crescent Avenue is a two-lane collector street within central Marina. Crescent Avenue provides access to neighborhoods both north and south of Reservation Road.

Cardoza Avenue is a two-lane collector street in northwestern Marina. It provides access to neighborhoods north of Reservation and Beach Roads, east of Highway 1, and west of Del Monte Boulevard.

Marina Greens Drive is a two-lane local street in northwestern Marina. It provides access from neighborhoods west of Del Monte to Del Monte Boulevard and north of Reservation and Beach Roads.

California Avenue is a two-lane collector street connecting the former Fort Ord area with central Marina. At present there is an undeveloped link between Carmel Avenue and Reindollar Avenue; planned future construction of this link will enable California Avenue to connect Reservation Road to Imjin Parkway.

Reindollar Avenue is a two-lane collector street within the southern portion of central Marina, providing access to adjacent businesses and residential neighborhoods.

Transit Service

The largest single public transit provider in Monterey County is the Monterey-Salinas Transit (MST). MST operates from five key transit centers, the Monterey Transit Plaza, Salinas Transit Center, Watsonville Transit Center, Edgewater Transit Exchange, and Marina Transit Exchange. MST currently operates four public bus routes that serve the greater project area: Routes 16 and 17 between Sand City and Marina; Route 20 between Monterey and Salinas via Marina; and Route 27 between Monterey and Watsonville (via Marina and Castroville). Route 16 travels along several roads adjacent to the project site, including Cardoza Avenue, Abdy Way, Healy Avenue, Paul Davis Drive, Marina Greens Drive, Del Monte Boulevard, Beach Road, and De Forest Road. Route 17 serves the neighborhoods east of Del Monte Boulevard and south of Reservation Road. Route 20 travels along Del Monte Boulevard and Reservation Road between Monterey and Salinas. Route 27 also travels along Del Monte Boulevard, directly adjacent to the project site in northern Marina, as well as along Reservation Road via a short spur. All four routes also serve the Marina Transit Station, a bus stop and informal park-and-ride facility located at the corner of De Forest Road and Reservation Road, about one-half mile south of the project site.

Bicycle and Pedestrian Facilities

The City of Marina General Plan establishes a local system of integrated pedestrian and bicycle routes that link neighborhoods, commercial areas, schools, recreation areas, transit facilities, and regional-serving trail facilities. Bike and pedestrian facilities in the larger project area are described below.

Bikeways

There are three types of bicycle facilities on the Monterey Peninsula. (The first two have been included in the City of Marina's General Plan.) Each type is described below:

- Bike path (Class I) - A completely separate right-of-way designed for the exclusive use of cyclists and pedestrians, with minimal crossings for motorists. These paths should have a minimum width of nine feet when two-way travel is required and six feet in width to accommodate one-way movement.
- Bike lane (Class II) - A lane on a regular roadway, separated from the motorized vehicle right-of-way by paint striping, designated for the exclusive or semi-exclusive use of bicycles. Bike lanes allow one-way bike travel. A minimum width of five feet should be provided and adjacent curbside parking avoided where feasible; where curbside parking is allowed adjoining a bike lane, the combined width of the parking and adjacent bike lane should be not less than 13 feet.
- Bike route (Class III) - Provides shared use of the roadway, designated by signs or permanent markings and shared with motorists.

The majority of the roadways adjacent to the project site do not currently have dedicated bicycle lanes, nor do they allow enough room for vehicles and bicycles to comfortably share the road. In the project vicinity, a Class I bikeway is located along Del Monte Boulevard, and a Class II bike lane extends along Reservation Road between Highway 1 and Beach Road.

Pedestrian Facilities

The City of Marina's General Plan clearly specifies the requirements to ensure safe, direct and pleasant pedestrian circulation. All new local residential and commercial streets must comply with the following standards:

- Sidewalks with a minimum of five feet shall be provided on each side of residential streets, or on one side of cul-de-sacs and auto courts serving less than seven units.
- All new streets shall provide sidewalks separated from the residential roadway by a planting strip with a minimum width of six feet.
- Along commercial-serving and other non-residential streets, a minimum of 10 to 12 feet shall be provided from the back of the curb to the front lot line.

The road width of Del Monte Boulevard varies significantly as it extends through Marina. Sidewalks are currently only provided along the east side of Del Monte Boulevard, and in some locations are discontinuous. Along Reservation Road, sidewalks are provided on both sides of the street through the commercial district between Del Monte Boulevard and east of Crescent Avenue. Sidewalks are also located along Reservation Road from south of Beach Road to west of Highway 1, although they are discontinuous at the corner of Reservation and Beach. Sidewalks are provided along the local collector and residential streets in the project vicinity, though in some locations they are found only on one side or are discontinuous. Sidewalks are lacking along Beach Road east of Reservation Road, near Michael Drive, and east of Melanie Road and De Forest Road.

Traffic Study and Methodology

A traffic analysis was prepared for the project by Higgins Associates.¹ Traffic conditions were analyzed for intersections, road segments, and freeways based on level of service (LOS) evaluations. LOS is a measure of roadway quality of service. LOS describes traffic conditions on a scale of A to F, with LOS A indicating free flow conditions with minimum delay, and LOS F representing severe congestion with major delay. The traffic study analyzed traffic conditions under the following scenarios:

- Existing Conditions (2005)
- Existing Plus Project Conditions
- Background Conditions
- Background Plus Project Conditions
- Baseline Cumulative (Without Project) Conditions
- Cumulative Conditions

The project study area covers multiple jurisdictions, including the City of Marina, Monterey County, and California Department of Transportation (Caltrans). Each agency establishes acceptable level of service standards for roadway facilities within its jurisdiction. These standards are described below.

- The City of Marina has established LOS D as the general threshold for acceptable overall traffic operations for both signalized and unsignalized intersections.
- The County of Monterey uses LOS C as their level of service standard on roadway facilities and intersections.²
- The Transportation Agency for Monterey County (TAMC) identifies appropriate LOS for regional facilities, which includes all of the state highways, Reservation Road, and Blanco Road. LOS D was used in the traffic study as the minimally acceptable level of service for these facilities, which is consistent with Caltrans' long-range goals.
- The Caltrans level of service goal is the transition between LOS C and D. However, the *Transportation Concept Report for Highway 1* states that Caltrans anticipates future congestion and has set the future level of service standard as LOS D for the portions of the highway within the greater Monterey Peninsula.³ In addition, the Monterey County Regional Transportation Plan identifies LOS D as acceptable on the regional roadway network (Road and Highway Transportation, Objective 2, Goal 1.1); therefore, LOS D was used as the acceptable LOS for state facilities.

Intersection operations were evaluated using technical methodology documented in the *2000 Highway Capacity Manual* (HCM). For signalized and four-way stop intersections, LOS is based on average vehicle delay. Delay is dependent on a number of factors including the signal cycle length, the roadway capacity (number of travel lanes) on each approach, and the traffic demand. The TRAFFIX software program (versions 7.7 and 7.8) was utilized to model the traffic impact of the different development scenarios and calculate signalized and unsignalized intersection levels of service.

For all-way (or four-way) stop intersections, average control delay per vehicle is used to determine level of service. The delay is dependent on various factors including roadway capacity and traffic demand. At

¹ The originally proposed Specific Plan included 1,504 rather than 1,360 residential units. The traffic study for the EIR was conducted prior to the unit reduction; therefore, the EIR overstates the traffic impacts of the residential component of the final proposed Specific Plan by approximately 10%.

² The County is recommending a standard of LOS D as part of its future General Plan Update, currently in draft.

³ *Transportation Concept Report for State Route 1 in District 5*, California Department of Transportation, April 2006.

one- and two-way stop controlled intersections, the operating efficiency of vehicle movements that must yield to through movements are analyzed. The level of service for vehicle movement on the controlled approaches is based on the distribution of gaps in the major street traffic stream and driver judgment in selecting gaps.⁴

Peak hour signal warrants were analyzed for the unsignalized intersections using Caltrans criteria (MUTCD 2003 California Supplement, Caltrans, May 2004). For this traffic analysis, only the peak hour signal warrant was evaluated.

Evaluation of freeway segments and ramps was based on the volume threshold planning methodology set forth in the 2000 HCM. This methodology converts peak hour traffic volumes in each direction of the freeway into vehicle density, which is correlated to a level of service. The volume threshold planning methodology in the 2000 HCM was used to evaluate operating conditions on roadway segments and ramps. A detailed description of levels of service thresholds for freeway segments, road segments, and ramps is provided in the traffic study. A weaving analysis was performed for the freeway between the Del Monte Boulevard South and the 12th Street (Imjin Parkway) interchanges, based on the methodologies identified in the Caltrans Highway Design Manual (5th Edition).

The analysis of the project's impact on the regional roadway network, combined with buildout of Marina and surrounding jurisdictions, was based on the Transportation Agency of Monterey County (TAMC) Nexus Study (May 2004). The Nexus study was prepared in conjunction with a proposed countywide traffic impact fee program, intended to fund regional traffic improvements needed to accommodate future growth. These traffic impact fees have not been adopted by the regional agencies and the mechanism for collecting the fees is not fully implemented at this time. Once fully implemented, the TAMC fees would not be sufficient, without funds from other sources (e.g., sales tax, state and federal funds), to complete all of the regional improvements identified in the TAMC Nexus Study (Higgins, 2006). If implemented prior to construction of the proposed project, the applicant would be required to pay the applicable TAMC fees; however, these fees alone cannot be relied upon to mitigate significant cumulative regional traffic impacts.

The traffic volume forecasts presented in the traffic analysis represent conservative traffic projections throughout the study network. These forecasts include conservatively high land use assumptions and trip generation estimates for many of the future development projects within the study area, and do not fully take into account possible shifts in travel patterns of existing and future trips that could occur with some of the larger employment and retail developments that have been approved and proposed in the greater Monterey Peninsula area. Therefore, these traffic volume projections represent higher traffic volumes than projected in either the AMBAG regional traffic demand model, or other regional traffic forecasts in reports such as the TAMC Nexus Study, and represent conservative projections as to the project's local and regional impacts.

The traffic analysis completed for the Marina Station project evaluated 25 intersections, four freeway segments, three freeway ramps, and 18 roadway segments, as presented below. Eleven of the 25 intersections are currently signalized, one is all-way stop, nine are one-way or two-way stop, one has no traffic controls, and three are new intersections created by the project. The jurisdiction of each facility is provided at the end of each entry.

⁴ The 2000 HCM calculates the level of service of the minor street approaches. Using this data, an overall intersection level of service was calculated. Both are reported in this study because traffic on the minor street approaches has the lowest priority of right-of-way at the intersection and is the most critical in terms of delay. Generally, LOS E/F operations on the side street approach are the thresholds that warrant improvements.

Study Intersections⁵

1. Highway 1 SB Ramps/Del Monte Boulevard (North) – Caltrans
2. Highway 1 NB Ramps/Del Monte Boulevard (North) – Caltrans
3. Del Monte Boulevard/Future Project Access 1 – City of Marina
4. Del Monte Boulevard/Future Project Access 2 – City of Marina
5. Del Monte Boulevard/Future Project Access 3 – City of Marina
6. Del Monte Boulevard/Marina Greens Drive – City of Marina
7. Del Monte Boulevard/Cosky Drive – City of Marina
8. Highway 1 SB Ramps/Reservation Road – Caltrans
9. Highway 1 NB Ramps/Reservation Road – Caltrans
10. Cardoza Avenue/Reservation Road – City of Marina
11. Reservation Road/Reservation Road-Beach Road – City of Marina
12. Del Monte Boulevard/Beach Road – City of Marina
13. Michael Drive/Beach Road – City of Marina
14. De Forest Road/Beach Road – City of Marina
15. Del Monte Boulevard/Reservation Road – City of Marina
16. Seacrest Avenue/Reservation Road – City of Marina
17. De Forest Road/Reservation Road – City of Marina
18. Crescent Avenue/Reservation Road – City of Marina
19. California Avenue/Reservation Road – City of Marina
20. Salinas Avenue/Reservation Road – City of Marina
21. Imjin Road/Reservation Road – City of Marina
22. Blanco Road/Reservation Road – Monterey County
23. Del Monte Boulevard/Reindollar Avenue – City of Marina
24. WB Highway 68 Ramps/Reservation Road – Caltrans
25. EB Highway 68 Ramps/Reservation Road-River Road – Caltrans

Freeway Segments

1. Highway 1, north of Del Monte Boulevard (North) – Caltrans
2. Highway 1, between Del Monte Boulevard (North) and Reservation Road – Caltrans
3. Highway 1, between Reservation Road and Del Monte Boulevard (South) – Caltrans
4. Highway 1, between Del Monte Boulevard (South) and Imjin Parkway (12th Street) – Caltrans

Freeway Ramps

1. Highway 1 NB and SB on and offramps, at Del Monte Boulevard (North) interchange – Caltrans
2. Highway 1 NB and SB on and offramps, at Reservation Road interchange – Caltrans
3. Highway 1 NB onramp and SB offramp, at Del Monte Boulevard (South) interchange – Caltrans

Road Segments

1. Beach Road, between Reservation Road and Marina Drive – City of Marina
2. Beach Road, between Marina Drive and Del Monte Boulevard – City of Marina
3. Beach Road, between Del Monte Boulevard and Michael Drive – City of Marina

⁵ Note: NB = northbound, SB = southbound, EB = eastbound, WB = westbound

4. Beach Road, between Michael Drive and De Forest Road – City of Marina
5. Cardoza Avenue, between Reservation Road and Abdy Way – City of Marina
6. Crescent Avenue, north of Reservation Road – City of Marina
7. De Forest Road, south of Beach Road – City of Marina
8. De Forest Road, north of Reservation Road – City of Marina
9. Del Monte Boulevard, south of Reservation Road – City of Marina
10. Del Monte Boulevard, between Reservation Road and Beach – City of Marina
11. Del Monte Boulevard, between Beach Road and Marina Greens Drive – City of Marina
12. Del Monte Boulevard, between Marina Greens Drive and Marina City limits – City of Marina
13. Del Monte Boulevard, between Marina City Limits and Highway 1 NB ramps – Monterey County
14. Del Monte Boulevard, between Highway 1 NB and SB ramps – Monterey County
15. Reservation Road, between Highway 1 SB and NB ramps – Monterey County
16. Reservation Road, between Highway 1 NB ramps and Cardoza Avenue – City of Marina
17. Reservation Road between Cardoza Avenue and Beach Road – City of Marina
18. Second Avenue, south of Del Monte Boulevard (future street) – City of Marina

Existing Conditions

Intersection Operations

To establish existing traffic flow conditions, traffic counts were conducted in 2005 at all but four of the study intersections during the weekday morning and evening peak hours (7–9 AM and 4–6 PM).⁶ Existing AM and PM intersection levels of service are presented in Figure 4.13-2. The type of traffic control at each intersection (e.g., signal, two-way stop) is also shown in Figure 4.13-2.

All of the study intersections currently operate at or better than their respective jurisdiction's LOS standard. However, one of the two-way stop controlled intersections, California Avenue/Reservation Road, has a side street that operates at a LOS F, which represents unacceptable conditions.

Roadway Segment Operations

The volumes used for the roadway segment analysis are based on two sources. The ramp, weaving, and non-freeway segment volumes are based on intersection turning volumes, while the freeway volumes were obtained from Highway 1 counts performed in January 2005. Existing levels of service on the study segments are presented in Figure 4.13-3. All of the study road segments, freeway segments, and ramps evaluated currently operate at acceptable levels of service.

The weaving analyses of the Highway 1 freeway section between the Imjin Parkway and Del Monte Boulevard interchanges showed that the weaving operating conditions are acceptable.

⁶ The traffic data for the four uncounted intersections was obtained from the Marina University Village Traffic Impact Analysis (Higgins Associates, December 17, 2004), counted in June and September 2004.

Segment	Type	Direction	LOS	Existing Conditions		Entering+Project Conditions		Background Conditions		Background+Project Conditions		Cumulative Without Project Conditions		Cumulative Plus/Minus Project Conditions																						
				AM Peak Hr Volume	PM Peak Hr Volume	AM Peak Hr Volume	PM Peak Hr Volume	AM Peak Hr Volume	PM Peak Hr Volume	AM Peak Hr Volume	PM Peak Hr Volume	AM Peak Hr Volume	PM Peak Hr Volume	AM Peak Hr Volume	PM Peak Hr Volume	AM Peak Hr Volume	PM Peak Hr Volume																			
Freeway Segments																																				
1 Highway 1	Between Nashua/Main Rd. & Del Monte North interchange	NB	D	1,171	9	A	2,267	22	C	1,539	12	B	3,346	26	C	1,688	15	B	3,517	21	C	2,067	15	B	4,084	32	D	2,097	16	B	4,356	34	D			
		SB	D	1,783	14	B	1,400	11	A	1,927	15	B	1,985	15	B	2,241	17	B	2,104	16	B	2,757	21	C	2,967	21	C	2,901	22	C	2,898	22	C			
2 Highway 1	Between Del Monte North interchanges & Reservation Rd.	NB	D	1,073	8	A	2,382	21	C	1,441	11	A	3,184	24	C	1,497	12	B	3,227	25	C	1,922	15	B	4,022	31	D	1,879	15	B	4,084	31	D			
		SB	U	1,866	13	B	1,381	10	A	1,949	13	B	1,923	15	B	2,048	16	B	1,946	15	B	2,871	21	C	2,703	21	C	2,703	21	C	2,703	21	C	2,703	21	C
3 Highway 1	Between Reservation Rd. & Del Monte South interchange	NB	D	962	6	A	2,634	22	C	1,373	11	A	3,273	25	C	1,400	11	B	3,465	27	D	1,846	14	B	4,167	32	D	1,853	15	B	4,200	33	D			
		SB	U	1,928	15	B	1,242	10	A	2,222	17	B	1,948	15	B	2,344	18	B	2,060	16	B	2,871	22	C	2,770	21	C	2,862	23	C	2,841	22	C			
4 Highway 1	Between Del Monte South interchanges & Irwin Parkway	NB	D	1,488	8	A	4,210	22	C	1,983	10	A	4,892	25	C	2,479	13	B	5,339	28	D	2,140	12	B	5,623	29	D	2,680	15	B	6,076	31	D			
		SB	D	3,401	17	B	2,300	12	B	3,870	20	C	2,707	14	B	3,706	19	C	3,857	19	C	4,386	22	C	3,752	19	C	4,770	25	C	4,298	22	C			
Freeway Ramps																																				
5 Hwy 1 NB Onramp	At Del Monte North	NB	D	136	A	206	A	270	A	137	A	206	A	206	A	137	A	305	A	305	A	163	A	163	A	244	A	244	A	225	A	343	A			
6 Hwy 1 NB Offramp	At Del Monte North	NB	D	36	A	45	A	45	A	38	A	45	A	45	A	38	A	45	45	45	45	103	A	103	A	82	A	82	A	108	A	62	A			
7 Hwy 1 SBO Onramp	At Del Monte North	SB	U	41	A	55	A	55	A	41	A	55	A	55	A	41	A	55	55	55	55	81	A	81	A	147	A	147	A	81	A	147	A			
8 Hwy 1 SBO Offramp	At Del Monte North	SB	D	139	A	94	A	172	A	139	A	94	A	94	A	139	A	174	A	174	174	167	A	167	A	110	A	110	A	251	A	169	A			
9 Hwy 1 NB Onramp	At Reservation Road	NB	U	208	A	200	A	249	A	248	A	303	A	303	A	248	A	306	306	306	306	259	A	259	A	352	A	352	A	375	A	424	A			
10 Hwy 1 NB Offramp	At Reservation Road	NB	D	116	A	338	A	223	A	480	A	482	A	482	A	479	A	614	614	614	614	160	B	160	B	487	A	487	A	267	A	622	B			
11 Hwy 1 SBO Onramp	At Reservation Road	SB	D	416	A	187	A	528	B	231	A	346	A	346	A	466	B	477	477	477	463	A	463	A	350	A	350	A	571	B	462	A				
12 Hwy 1 SBO Offramp	At Reservation Road	SB	D	172	A	200	A	262	A	223	A	307	A	307	A	223	A	339	339	339	253	A	253	A	331	A	331	A	319	A	393	A				
13 Hwy 1 NB Offramp	At Del Monte South	SB	D	517	A	1,216	B	926	A	1,758	C	1,591	A	1,520	C	1,591	A	1,904	1,904	1,904	564	A	564	A	1,466	B	1,466	B	910*	A	1,782*	C				
14 Hwy 1 SBO Onramp	At Del Monte South	SB	D	1,478	C	855	B	1,828	D	1,286	C	1,185	C	1,185	C	1,546	C	1,877	1,877	1,877	1,487	D	1,487	D	1,043	C	1,043	C	1,789*	D	1,448*	C				
Weaving Segments																																				
15 Highway 1 NB	Between Irwin Parkway & Del Monte Blvd. South	W, W ₂	D	540	21	A	1,317	59	C	881	C	1,365	A	1,365	A	588	C	1,231	1,231	1,231	671	B	671	B	1,224	D	1,224	D	1,024	C	1,570	D				
		W, W ₁	D	1,453	76	D	943	38	C	1,180	C	989	D	989	D	1,466	D	1,872	1,872	1,872	1,414	D	1,414	D	1,051	D	1,051	D	1,678	E	1,487	E				
16 Highway 1 SB	Between Irwin Parkway & Del Monte Blvd. South	W, W ₁	D	1,453	76	D	943	38	C	1,180	C	989	D	989	D	1,466	D	1,872	1,872	1,872	1,414	D	1,414	D	1,051	D	1,051	D	1,678	E	1,487	E				



Levels of Service - Road Segments

Figure 4.13-3

Segment	Type	Direction	LOS Std.	Existing Conditions		Existing + Project Conditions		Background Conditions		Background + Project Conditions		Cumulative + Visual Project Conditions		Cumulative Plus Project Conditions							
				AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr						
17. Beach Road	2-Lane Arterial	Two-Way	D	392	A	623	A	600	A	882	A	1,351	C	882	A	1,083	B	945	A	1,491	D
Between Reservation Road & Maina One																					
18. Beach Road	2-Lane Arterial	Two-Way	D	392	A	684	A	593	A	684	A	1,140	B	674	A	1,014	A	985	A	1,345	C
Between Maina Drive and Del Monte Boulevard																					
19. Beach Road	2-Lane Collector	Two-Way	D	438	A	889	B	448	A	889	A	805	C	489	A	453	A	840	C	886	C
Between Del Monte Boulevard and Michael One																					
20. Beach Road	2-Lane Collector	Two-Way	D	326	A	605	B	335	A	703	B	717	B	357	A	359	A	724	B	777	C
Between Michael One and De Forest Road																					
21. Carozza Avenue	2-Lane Collector	Two-Way	D	327	A	442	A	335	A	416	A	458	A	384	A	477	A	483	A	587	A
Between Reservation Road and Abby Way																					
22. Crescent Avenue	2-Lane Collector	Two-Way	D	238	A	649	B	238	A	700	B	786	C	243	A	254	A	705	B	777	C
North of Reservation Road																					
23. De Forest Road	2-Lane Collector	Two-Way	D	229	A	547	A	228	A	636	B	649	B	229	A	188	A	636	B	649	B
South of Beach Road																					
24. De Forest Road	2-Lane Collector	Two-Way	D	228	A	575	A	235	A	602	B	679	B	279	A	284	A	682	B	757	C
North of Reservation Road																					
25. Del Monte Blvd.	5-Lane Arterial with turn lane	Two-Way	D	1,893	A	2,891	B	1,314	A	2,050	A	2,172	A	1,547	A	2,410	A	2,404	A	3,391	C
South of Reservation Rd.																					
26. Del Monte Blvd.	4-Lane Arterial with turn lane	Two-Way	D	427	A	1,170	A	591	A	1,133	A	1,297	A	789	A	1,223	A	1,484	A	2,039	A
Between Reservation Rd. & Beach Rd.																					
27. Del Monte Blvd.	2-Lane Arterial	Two-Way	D	433	A	1,232	B	444	A	1,175	B	1,404	C	538	A	644	A	1,277	C	1,511	D
Between Beach Rd. & Cosby Dr.																					
28. Del Monte Blvd.	2-Lane Arterial	Two-Way	D	283	A	1,000	A	294	A	1,012	A	1,135	B	359	A	408	A	1,104	B	1,263	C
Between Cosby Dr. & Maina Green Dr.																					
29. Del Monte Blvd.	2-Lane Arterial	Two-Way	D	225	A	582	A	228	A	592	A	638	A	259	A	303	A	578	A	687	A
Between Maina Green Dr. & Maina City Limits																					
30. Del Monte Blvd.	2-Lane Rural Highway	Two-Way	C	491	B	611	B	402	B	647	B	648	B	646	B	652	B	802	C	830	C
Between Maina City Limits & Hwy 1 NB Ramps at De Monte N.																					
31. Del Monte Blvd.	2-Lane Rural Highway	Two-Way	D	180	A	221	A	180	A	264	A	214	A	248	A	252	A	332	A	331	A
Between Hwy 1 NB Ramps & Hwy 1 SB Ramps at De Monte N.																					
32. Reservation Road	2-Lane Arterial	Two-Way	D	671	A	709	A	762	A	834	A	1,302	A	801	A	887	A	973	A	1,031	A
Between Hwy 1 SB Ramps & Hwy 1 NB Ramps at Reservation Rd.																					
33. Reservation Road	2-Lane Arterial	Two-Way	D	938	A	1,300	C	1,133	B	1,616	E	1,501	F	1,183	B	1,388	D	1,619	D	1,887	F
Between Hwy 1 NB Ramps at Reservation Rd. & Carozza Ave.																					
34. Reservation Road	2-Lane Arterial	Two-Way	D	952	A	1,041	A	1,155	B	1,237	C	1,839	F	1,291	C	1,779	E	1,839	F	2,097	F
Between Carozza Ave. & Beach Rd.																					
35. Second Avenue	2-Lane Arterial	Two-Way	D	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	437	A	688	A	555	A	803	A
South of Del Monte Boulevard																					

Notes:

- Vehicle density is measured in passenger cars per mile during the specific noted peak hour period.
- Vehicle density is measured in passenger cars per mile during the specific noted peak hour period.
- Based on the Caltrans Highway Design Manual, Section 504.4.6(a), (b) and 504.5.
- Levels of service shown in bold type represent the level of service with existing lane configurations, or what the level of service would be assuming all previous mitigation measures have been implemented.
- WV = Existing and smaller weaving segments within analyzed weaving segment.
- WV = Existing and smaller weaving segments within analyzed weaving segment.
- N/A = Not Applicable - segment does not exist under this scenario.
- NWV = No Weave - mitigation would remove weaving segment.
- Cumulative Conditions include extensions to 2nd Avenue extension from Del Monte ramps and highway 1, resulting in slight reduction in volumes.
- Visual Conditions include extensions to 2nd Avenue extension from Del Monte ramps and highway 1, resulting in slight reduction in volumes.
- Traffic on the Del Monte Blvd. (South) on ramp is southbound Highway 1, does not directly merge with mainline traffic.
- When the Del Monte Blvd. (South) on ramp is southbound Highway 1, does not directly merge with mainline traffic.
- When it enters its own lane on the freeway. For this reason, levels of service for this ramp are based upon the capacity of a single freeway lane.

	LOS A	LOS B	LOS C	LOS D	LOS E
1-Lane Freeway Ramp	500	750	1,000	1,300	1,500
2-Lane Freeway Ramp	1,000	1,500	2,100	2,800	3,000
1-Lane Freeway	1,000	1,500	2,100	2,800	3,000
2-Lane Freeway	1,000	1,500	2,100	2,800	3,000
1-Lane Freeway	770	1,100	1,500	2,000	2,200
2-Lane Freeway	770	1,100	1,500	2,000	2,200



Figure 4.13-3

Levels of Service - Road Segments

Background Conditions

Background conditions represent traffic generated under existing conditions combined with approved unbuilt development. A number of projects have already been approved by the City of Marina and other agencies within or in close proximity to the study area that have not been constructed and/or occupied. These projects are listed in the traffic study.⁷ Also included in the background traffic scenario are trips generated by the anticipated growth of the California State University at Monterey Bay (CSUMB). An estimation of the CSUMB trip generation under background conditions was based on the phased student and staff growth provided by the university in its Master Plan Update (2004). The approved project trips were distributed onto the study road network based on the specific distribution patterns identified in their respective traffic studies.

The analysis of background conditions assumes completion of roadway improvements planned in conjunction with the development of the approved Marina Heights project and the first phase of the approved University Villages project. This includes the internal street systems and new access points to the existing street network from both projects, as well as the extension of Salinas Avenue south to Abrams Road. In addition, the proposed California Avenue extension, between Reindollar Avenue and Carmel Avenue, is assumed to be complete. This latter segment is now open, but was constructed after the traffic counts were performed at the study intersections, and thus was not considered as part of the based street network under existing conditions. All the trip assignments for the background projects, as well as other proposed projects in the area (including the project) in later scenarios, incorporate this opening. The analysis also includes reassignment of existing trips that would likely occur with the roadway's opening. The California Avenue extension improvement is included within the City's Capital Improvements Program (CIP) and Traffic Impact Fee (TIF), while the Salinas Avenue extension is included within the Fort Ord Reuse Authority (FORA) CIP program.

Intersection Operations

The traffic that will be generated by the approved projects was combined with existing traffic to provide background traffic volumes. Levels of service under background conditions at the study intersections are presented in Figure 4.13-2. Three of the study intersections would fail to operate at or better than their respective jurisdiction's LOS standard under background conditions, as described below.

The SB Highway 1/Reservation Road intersection would operate at an LOS E during the AM peak hour and LOS F during the PM peak hours, with the worst approaches operating at LOS F during both peak hours. The Imjin Road/Reservation Road intersection would operate at LOS F during the AM and PM peak hours. The Blanco Road/Reservation Road intersection would operate at LOS E during the AM peak hour and LOS F during the PM peak hour.

Road Segment Operations

The levels of service on the study street segments under background conditions are present in Figure 4.13-3. One of the study road segments would operate at unacceptable level of service under background conditions. Reservation Road, between Highway 1 ramps and Cardoza Avenue, would operate at LOS B during the AM peak hour, but LOS E during the PM peak hour.

⁷ Three of the larger approved projects, University Villages, East Garrison, and the UCMBEST business park, were analyzed based on their currently proposed construction schedules. All other projects were included in their entirety for background conditions.

The weaving analyses of the Highway 1 freeway section between the Imjin Parkway and Del Monte Boulevard interchanges showed that the weaving operating conditions would be acceptable.

Specific Plan Requirements

The Specific Plan identifies circulation policies and implementation measures to assure development and maintenance of an adequate on and offsite circulation system. These policies and implementation measures are presented below.

Circulation (Circ) Policy 1-1 states “provide a system of neighborhood roads that facilitate internal circulation.” Implementation measures are as follows:

- The master developer and/or individual project developers shall construct neighborhood streets and/or neighborhood alleys as shown in Appendix A, Street Types. Final improvement plans shall be subject to review and approval of the appropriate City staff. Grading plans may be issued prior to approval of the improvement plans.

Circ Policy 1-2 states “traffic should operate at low speeds compatible with pedestrian and bicycle traffic through the use of speed control and traffic calming measures.” Implementation measures are as follows:

- The master developer will construct the narrow curvilinear, slow speed neighborhood streets required in Appendix A, Street Types, and shall post traffic speed limit signage. The improvement plans shall be subject to review and approval of the appropriate City staff and shall be fully implemented for each block prior to approval of an occupancy permit on any block within the Plan area.
- The master developer shall submit final improvement plans to the City for review and approval. The appropriate City staff should ensure that the inclusion of City speed control and the traffic-calming street standards are shown in the plan prior to approval of final improvement plans for each phase.

Circ Policy 1-3 states “provide access to transit.” Implementation measures are as follows:

- The master developer shall consult with MST and TAMC to identify required project-wide transit improvements, bus stop location and spacing, pullouts and shelter design, signage, etc. The master developer shall prepare improvement plans that specify the required transit improvements. The master developer and/or individual project developers shall implement the plan for their respective phases or projects. Improvement plans for all individual phases or projects shall be subject to review and approval by the appropriate City staff prior to approval of any final map.
- The master developer shall consult with TAMC to identify necessary TAMC corridor improvements including crossing and access to the proposed transit station within the Plan area. TAMC corridor improvement plans shall be subject to review by the appropriate City staff and TAMC.

Circ Policy 1-4 states “provide shade and landscaping on all streets and surface parking lots to improve pedestrian movement, calm traffic, and improve project aesthetics.” Implementation measures are as follows:

- The master developer, as a part of each improvement plan set, shall prepare a master street tree planting and landscaping plan for all streets and alleys that describes tree spacing, landscaping, installation, and irrigation standards/improvements. Sycamore, maple, elm, Monterey cypress, or similar large fast growing deep rooted tree species will be used for street trees and street landscaping. The landscaping plan shall be consistent with Specific Plan standards and shall be subject to approval

by the appropriate City staff. Each developer shall finance and construct improvements on all neighborhood streets and lanes serving each block prior to approval of an occupancy permit on that block.

Circ Policy 1-5 states “encourage pedestrian circulation by providing clearly identifiable pedestrian circulation routes that connect neighborhoods, parks, recreation trails and facilities, commercial areas, and transit stops.” Implementation measures are as follows:

- Pedestrian circulation routes shall be separated from vehicular traffic on all streets containing sidewalks consistent with the cross-section specifications shown in Appendix A.
- Crosswalks where required by the City shall be white striped and surfaced with a red brick color between the stripes. The appropriate City staff shall review the master developer’s circulation improvement plans to ensure this feature is included prior to approval of the improvement plans.
- Pedestrian seating shall be provided at all parks, every one-quarter mile maximum along recreational trails, and at all transit stops. The appropriate City staff shall review the master developer’s circulation improvement plans to ensure this feature is included prior to approval of the improvement plans. Streets, but not recreational trails, shall have nighttime lighting that meets the minimum illumination standards contained in Section 7.0. Lighting fixtures and lighting design shall be consistent with Specific Plan standards. The appropriate City staff shall review master developer and individual project developer improvement plans for consistency with these lighting standards prior to approval of any final map or commercial, office or industrial project.

Circ Policy 1-6 states “encourage use of bicycles for internal trips and transit for local trips.”

- The master developer shall include bicycle travel lanes on type B46 streets and a Class I bike path on the type D72 and D110 streets, in substantial conformance with the street cross-section specifications and standards shown in Appendix E.
- The master developer and individual project developers shall ensure that every park/recreation facility, retail, light industrial, and office use shall have permanent bicycle and/or motorcycle parking for not less than five percent of the minimum total number of required car parking spaces or one bicycle and one motorcycle, whichever is greater. Spaces shall be located near building entrances. This requirement shall be reflected on improvement plans and be subject to review and approval of the appropriate City staff prior to approval of any final map, commercial, office or light industrial project.

Thresholds of Significance

In accordance with CEQA Guidelines, a project impact would be considered significant if the project would:

- cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);

- exceed, either individually or cumulatively, a level of service standard established by the county congestion/management agency for designated roads or highways;
- result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- result in inadequate emergency access;
- result in inadequate parking capacity; or
- conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

As per each jurisdiction's standards, the following significance criterion is applied to the proposed project.

A significant impact at a *signalized* intersection would occur under the following conditions:

- The addition of project traffic causes pre-project operations to deteriorate from LOS D or better to LOS E or F, or
- The addition of project traffic increases the pre-project average delay by more than 1.0 second at intersections operating at LOS E or F.

A significant impact at an *unsignalized intersection* is defined to occur under the following conditions:

- The addition of project traffic causes operations to deteriorate from LOS E or better on a side street for two-way stop control and LOS D or better for all-way stop control to LOS F on a side street for two-way stop control and LOS E for all-way stop control, or
- At two-way or one-way stop controlled intersections, the project adds traffic to any intersection movement that results in an increase to the delay for any approach operating at LOS F in pre-project conditions, or
- At all-way stop controlled intersections, the project adds traffic to an intersection operating at LOS E or worse in the pre-project condition that results in an increase to overall intersection delay, or
- The Caltrans peak-hour volume signal warrant is met, or
- The left-turn peak hour volume warrant is met.

A significant impact on a *roadway or highway segment* is defined to occur under the following conditions:

- The addition of project traffic causes a roadway segment operating at LOS D or better to degrade to LOS E, or LOS F, or
- The addition of project traffic causes a roadway segment operating at LOS E or LOS D to degrade one service level, or
- The addition of one project trip to a segment already operating at LOS E or F in the pre-project condition.

Impacts and Mitigation

Project Trip Generation

The trip generation estimates for project are shown in Table 4.13-1, and are based on trip rates published in the Institute of Transportation Engineers' (ITE) Trip Generation (7th Edition, 2003). These are supplemented with rates compiled by the San Diego Association of Governments where ITE rates were not available. Secondary residential units are not included in the ITE or SANDAG trip rates; therefore, the trip generation rate for an apartment was applied to the proposed secondary carriage units.

Based on the Caltrans Guide for the Preparation of Traffic Impact Studies, a 5% reduction was applied to the number of trips generated by the project to account for captured trips (i.e., trips that do not enter or leave the boundaries of the mixed-use development). In addition, 25%-30% reductions were applied for pass-by trips for the assumed fast food and convenience market components of the project. Due to the proposed integration of commercial areas into residential neighborhoods in the Specific Plan, as many as an estimated 75% of the diverted-link trips would be made by future residents traveling to/from the site. The remaining diverted-link trips would occur on the existing street system surrounding the site. No diverted-link trips would be applied to Highway 1 traffic.

Based on the trip generation calculations, the project, at buildout, would generate a net 25,837 daily trips. A total of 2,276 trips would occur during the AM peak hour and 2,606 trips during the PM peak hour. The trip generation for each of the proposed land use components of the project is presented in Table 4.13-1.

Project Trip Distribution and Assignment

The distribution of the project trips to/from the project site was based on the origin/destination data provided by AMBAG (from its TransCAD regional traffic model). In addition, the locations and proximity of future projects in former Fort Ord and at the CSUMB campus, and other existing and future land uses adjacent to and in proximity to the project site were considered in the project trip distribution. The project trips were added to the background volumes to generate the anticipated project traffic volumes.

Project Access and Circulation

Regional access to the project site is from Highway 1 via the Reservation Road interchange from the south, and the Del Monte Boulevard interchanges from the north and south. Local access to the project site would be provided via Del Monte Boulevard, Reservation Road, Beach Road, Drew Street, Cardoza Avenue, De Forest Road, Crescent Avenue, and three new project access points off Del Monte Boulevard (intersections numbered 3, 4, and 5). Direct access into the site would occur via the three access points proposed off Del Monte Boulevard, as well as northerly extensions of De Forest Road and Crescent Avenue. The project may be required to provide full access from the discontinuous ends of Michael Drive to the project site, as a condition of project approval. No trucks would be allowed on this route. The impacts from this access are addressed later in this section. The Circulation Plan of the proposed Specific Plan, showing the requested Michael Drive access, is presented in Figure 4.13-4.

**Table 4.13-1
Marina Station Buildout – Project Trip Generation**

TRIP GENERATION RATES	PROJECT SIZE	PEAK HOUR TRIP RATES & DISTRIBUTION								
		DAILY TRIP RATES	AM PEAK HOUR				PM PEAK HOUR			
			PEAK HOUR RATES	% OF DAILY RATE	% IN	% OUT	PEAK HOUR RATE	% OF DAILY RATE	% IN	% OUT
Single Family Detached Housing (Low & Medium Density)	816 Homes	9.57/unit	0.75	8%	0.25	0.75	1.01	11%	0.63	0.37
Apartments	648 Units	6.72/unit	0.51	8%	0.20	0.80	0.62	9%	0.65	0.35
“Auxiliary Carriage” Units ¹	40 Units	6.72/unit	0.51	8%	0.20	0.80	0.62	9%	0.65	0.35
Retail - Specialty Retail ²	24,800 SF	44.32/ksf	1.33	3%	0.60	0.40	2.72	6%	0.44	0.56
- Supermarket	10,400 SF	102.24/ksf	3.25	3%	0.61	0.39	10.45	10%	0.51	0.49
Restaurants – Quality	8,900 SF	89.95/ksf	0.81	1%	0.50	0.50	7.49	8%	0.67	0.33
- Fast Food with Drive Through Windows	11,200 SF	496.12/ksf	53.11	11%	0.51	0.49	34.64	7%	0.52	0.48
Convenience Market (15 to 16 hours)	4,700 SF	492.00/ksf	31.02	6%	0.50	0.50	34.57	7%	0.49	0.51
General Offices	143,808	11.01/ksf	1.55	14%	0.88	0.12	1.49	14%	0.17	0.83
Light Industrial	651,624 SF	6.97/ksf	0.92	13%	0.88	0.12	0.98	14%	0.12	0.88
NUMBER OF TRIPS GENERATED										
PROJECT TRIPS BUILDOUT	PROJECT SIZE	DAILY TRIPS	AM PEAK HOUR				PM PEAK HOUR			
			PEAK HOUR TRIPS	% OF DAILY TRIPS	# TRIPS IN	# TRIPS OUT	TOTAL PEAK HOUR	% OF DAILY TRIPS	# TRIPS IN	# TRIPS OUT
Single Family Detached Housing	816 Homes	7,809	612	8%	153	459	824	11%	519	305
Apartments	648 Units	4,355	330	8%	66	264	402	9%	261	141
“Auxiliary Carriage” Units ¹	40 Units	269	20	7%	4	16	25	9%	16	9
Retail – Specialty Retail	24,800 SF	1,099	33	3%	20	13	67	6%	29	38
- Supermarket	10,400 SF	1,063	34	3%	21	13	109	10%	56	53
Restaurants – Quality	8,900 SF	801	7	1%	4	3	67	8%	45	22
- Fast Food with Drive Through Window	11,200 SF	5,557	595	11%	303	292	388	7%	202	186
Convenience Market (15 to 16 hours)	4,700 SF	2,312	146	6%	73	73	162	7%	79	83
General Offices	143,808 SF	1,583	223	14%	196	27	214	14%	36	178
Light Industrial	651,624 SF	4,542	599	13%	527	72	639	14%	77	562
Sub-Total Project Trips		29,390	2,599	9%	1,367	1,232	2,897	10%	1,320	1,577
Mixed Land Use Trip Reduction³		1,470	130	9%	68	62	145	10%	66	79
Diverted-linked Trip Reduction for Fast Food⁴ (-25%)		1,389	149	11%	76	73	98	7%	51	47
Diverted-linked Trip Reduction for Convenience Market⁵ (-30%)		694	44	6%	22	22	49	7%	24	25
TOTAL PRIMARY MARINA STATION PROJECT TRIPS		25,837	2,276	9%	1,201	1,075	2,605	10%	1,179	1,426

Notes: ksf = thousand square feet

Trip generation rates published by Institute of Transportation Engineers, “Trip Generation”, 7th Edition, 2003, unless otherwise noted

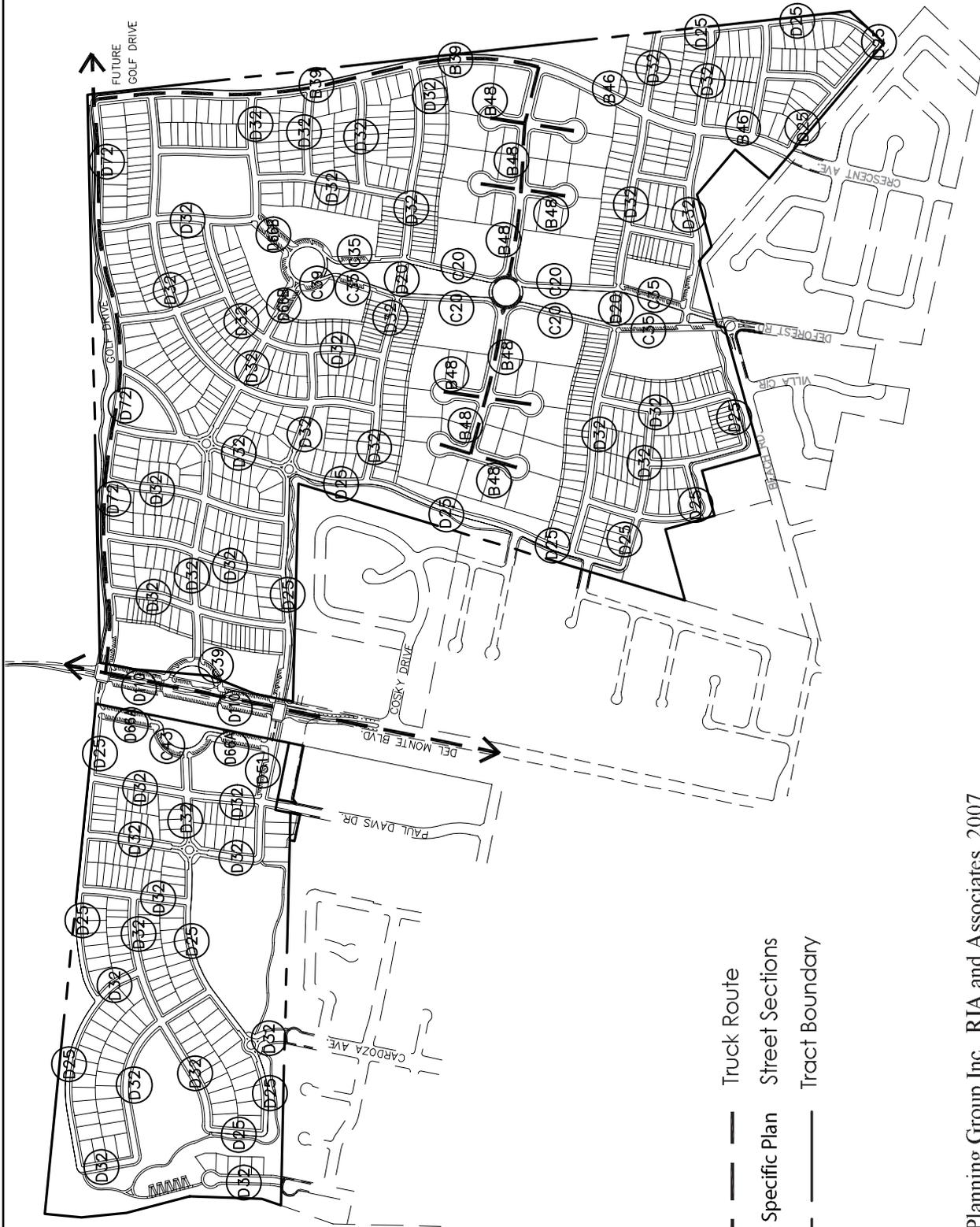
1. The SANDAG AM peak hour trip generation rate was used in the calculation of the Specialty Retail AM trips

2. Internal capture rate of trips DUE TO Neighborhood District Land Use

3. Internal capture of diverted-linked trips for Fast Food Land Use; please note that smaller than recommended ITE reduction was used due to location of the Fast Food Land Use

4. Internal capture of diverted-linked trips for Convenience Store Land Use; please note that a smaller than recommended ITE reduction was used due to location of the Convenience Market Land Use

5. Internal capture of diverted-linked trips for Convenience Store Land Use; please note that smaller than recommended ITE reduction was used due to location of the Convenience Market Land Use



Source: EMC Planning Group Inc., RJA and Associates, 2007

Figure
4.13-4

Roadway Circulation Plan



Transit Systems

MST would provide transit opportunities to the project area. As part of the City of Marina's General Plan, Del Monte Boulevard, Reservation Road, and the Imjin Parkway/Blanco Road corridors would serve as the primary routes for intra-city bus service. Furthermore, MST has plans to upgrade and expand the existing transit center located on the corner of Reservation Road and De Forest Drive, although no proposals have been formalized. This transit center is in close proximity to the eastern part of the project site. To date no specific discussions regarding possible new MST transit routes to serve the Marina Station project have taken place.

TAMC is exploring long term plans to reinstate the intra-regional passenger rail service to Monterey on the Union Pacific rail line that runs through the City of Marina, which is supported by the City of Marina. One of the proposed rail station locations is along Del Monte Boulevard, in the middle of the project site. This feature was acknowledged in the design of the project site and the provision for a future rail station has been included in the Specific Plan. Land uses that will encourage the use of transit have been incorporated into the project at the future rail station location. The train station is not proposed as part of this project, nor is it expected to be operational in the next 20 years; therefore, train station operations are not included in this EIR analysis.

Bicycle and Pedestrian Facilities

The Marina Station project proposes an integrated system of roads, transit stops, footpaths, and bikeways. Details of the pedestrian and bicycle network are presented in Figure 4.13-5. All pedestrian walkways and bicycle routes will be constructed to the City of Marina's requirements. The Class I bicycle route along Del Monte Boulevard will also meet Caltrans' requirements. During construction, the existing Class I bicycle route along Del Monte Boulevard will remain in operation.

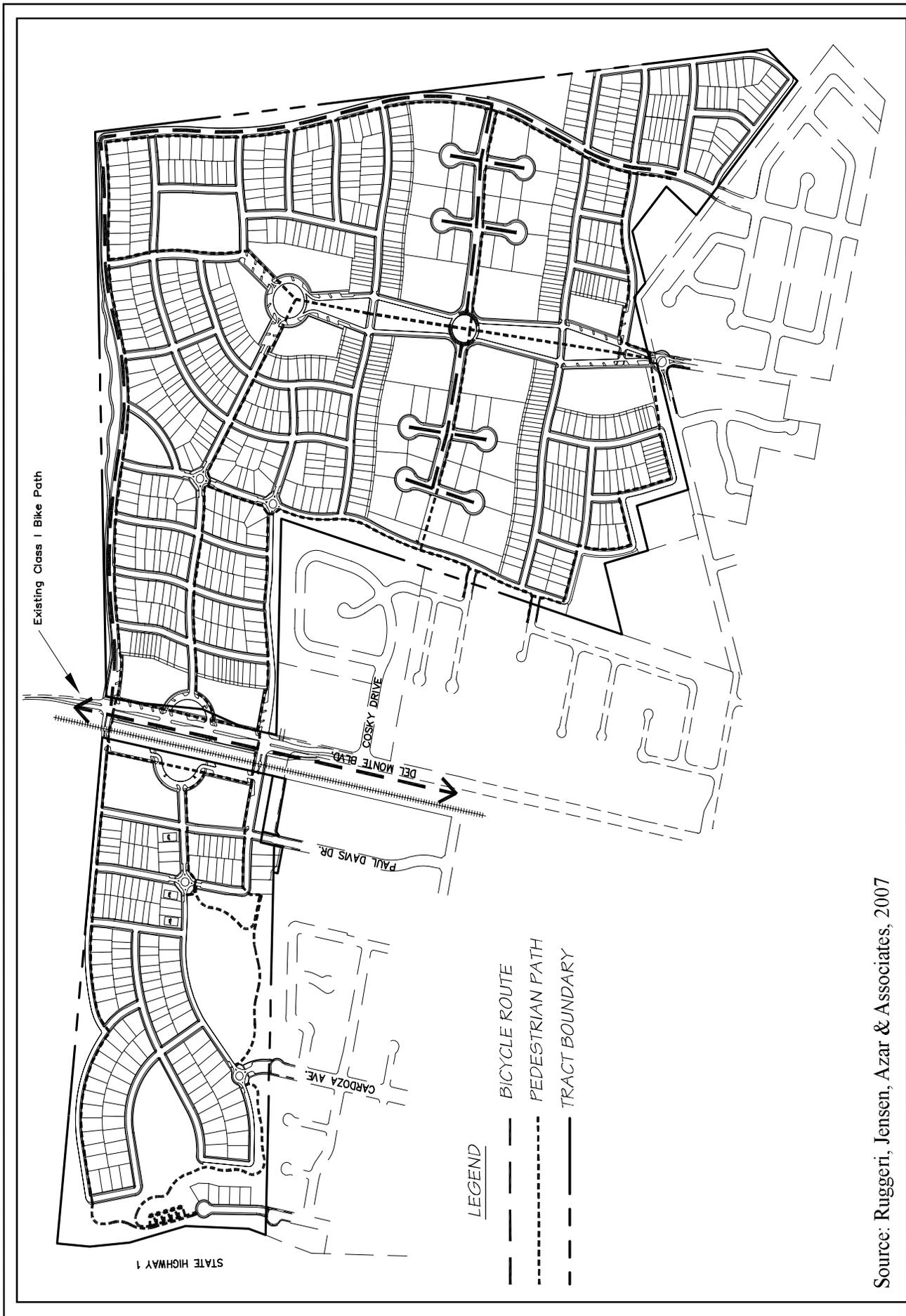
Existing Plus Project Conditions

This scenario addresses the traffic impacts under existing plus project conditions. This scenario is included in accordance with the requirements of the City of Marina.

Intersection Operations

Traffic generated by the project was combined with existing traffic to identify the traffic impacts from project implementation without background traffic. Figure 4.13-2 shows the levels of service at the study intersections under existing plus project conditions. Results of the traffic analysis indicate that six intersections would fail to operate at or better than LOS D under these conditions. In addition, turning warrants would be met and channelization required at two additional intersections. A summary of these impacts is provided below.

- The NB Highway 1 Ramps/Del Monte Boulevard North intersection (unsignalized) would operate at LOS B during the AM peak hour and LOS A during the PM peak hour. The worst movement operates at LOS D during the AM and PM peak hours. The left turn warrant is met at this intersection. This represents a significant impact.
- The Del Monte Boulevard/North Project Access intersection (unsignalized) would operate at LOS A during both the AM and PM peak hours. However, left turn warrants are met for this intersection. This represents a significant impact.



Source: Ruggeri, Jensen, Azar & Associates, 2007

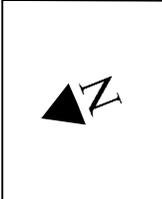


Figure
4.13-5

Pedestrian/Bicycle Network

- The Del Monte Boulevard/Marina Greens Drive intersection (unsignalized) would operate at LOS C during the AM and LOS F during the PM peak hour. The worst movement would operate at LOS F during both peak hours. In addition, the left turn and all-way stop control warrants are met at this intersection.⁸ This represents a significant impact.
- The SB Highway 1 Ramps/Reservation Road intersection (unsignalized) would operate at LOS F during the weekday AM and LOS C during the PM peak hour. The worst movement would operate at LOS F during both peak hours. The all-way stop warrant is also met at this intersection. This represents a significant impact.
- The Del Monte Boulevard/Beach Road intersection (unsignalized) would operate at LOS F during the AM peak and LOS D during the PM peak hour. This represents a significant impact.
- The De Forest Road/Beach Road intersection (unsignalized) would operate at LOS C during the AM and LOS B during the PM peak hours. The worst movement would operate at LOS F during the AM and LOS E during the PM peak hours. This represents a significant impact.
- The California Avenue/Reservation Road intersection (unsignalized) would operate at LOS A during the AM peak hour and LOS B during the PM peak hour. The worst movement would operate at LOS E during AM peak and LOS F during the PM peak hour. This represents a significant impact.
- The Imjin Road/Reservation Road intersection (signalized) would operate at LOS D during the AM peak hour and LOS E during the PM peak hour. This represents a significant impact.

Road Segment Operations

The results of the level of service analysis for the road and freeway segments and ramps are presented in Figure 4.13-3. All of the study road segments, freeway segments and ramps evaluated would operate at acceptable levels of service under existing plus project conditions.

The weaving analyses of the Highway 1 freeway section between the Imjin Parkway and Del Monte Boulevard interchanges showed that the weaving operating conditions would be acceptable.

Background Plus Project Conditions

This scenario evaluates traffic conditions from project traffic combined with traffic from approved unbuilt development in the area (i.e., background traffic).

Intersection Operations

Traffic generated by the project was combined with the background traffic to identify impacts. Figure 4.13-2 shows the levels of service at the study intersections under background plus project conditions. Results of the traffic analysis indicate that eight of the study intersections would fail to operate at or better

⁸ It should be noted that this analysis assumes that the Marina Green approaches to the intersection will not be offset from each other. If neither of the two legs (the existing eastbound leg nor the project-access westbound leg) is realigned to connect opposite each other, the driveway into an existing apartment complex would be located in between the two intersection legs. If the two legs are not oriented opposing each other, it is recommended that the intersection containing the westbound leg be converted to all-way stop control, due to its heavier traffic demand and the potential for sight distance deficiencies caused by the adjacent apartment complex. Conversion of just the existing eastbound leg intersection, or both the eastbound and westbound legged intersections, is not recommended, for the same reasons.

than their jurisdiction's LOS standard under background plus project conditions. In addition, turning warrants would be met and channelization required at four intersections.⁹

- The NB Highway 1 Ramps/Del Monte Boulevard North intersection (unsignalized) would operate at LOS B during the AM peak hour and LOS A during the PM peak hour. The worst movement operates at LOS D during both peak hours. The left turn warrant is met for the WB approach. This represents a significant impact.
- The Del Monte Boulevard/North Project Access intersection (unsignalized) would operate at LOS A during both the AM and PM peak hours. However, left turn warrant is met for the SB approach. This represents a significant impact.
- The Del Monte Boulevard/Marina Greens Drive intersection (unsignalized) would operate at LOS C during the AM and LOS F during the PM peak hour. The worst movement would operate at LOS F during both peak hours. This represents a significant impact.
- The SB Highway 1 Ramps/Reservation Road would operate at LOS F during both peak hours. This represents a significant impact.
- The intersection of NB Highway 1 Ramps/Reservation Road would operate at LOS A during the weekday AM and LOS D during the PM peak hour. The worst movement would operate at LOS C during the AM and LOS F during the PM peak hours. This represents a significant impact.
- The Del Monte Boulevard/Beach Road intersection (unsignalized) would operate at LOS F during both peak hours. This represents a significant impact.
- The De Forest Road/Beach Road intersection (unsignalized) would operate at LOS C during the AM and LOS B during the PM peak hours. The worst movement would operate at LOS F during the AM and LOS E during the PM peak hours. This represents a significant impact.
- The Salinas Avenue/Reservation Road intersection (unsignalized) would operate at LOS A during both peak hours. However, the worst movement would operate at LOS E during the AM and LOS F during the PM peak hours. This represents a significant impact.
- The Imjin Road/Reservation Road intersection (signalized) would operate at LOS F during the AM and PM peak hours. This represents a significant impact.
- The Blanco Road/Reservation Road intersection (signalized) would operate at LOS E during the AM and LOS F during the PM peak hours. The addition of project traffic increases the pre-project average delay by more than 1.0 second at an intersection operating at LOS F and, therefore, represents a significant impact.

⁹The warrants are met at the following intersections: NB Highway 1 Ramps/Reservation Road; NB Highway 1 Ramp/Del Monte Blvd; SB Highway 1 Ramp/Reservation Road; and Del Monte Blvd/Marina Green Drive.

Road Segment Operations

The results of the level of service analysis for the road and freeway segments and ramps are presented in Figure 4.13-3. Two of the study road segments would operate at acceptable levels of service under project conditions, as summarized below.

- The segment of Reservation Road, between Highway 1 NB Ramps and Cardoza Avenue, would operate at LOS D during the AM and LOS F during the PM peak periods. The addition of project traffic would cause the roadway segment to degrade from LOS E to F, representing a significant impact.
- The segment of Reservation Road, between Cardoza Avenue and Beach Road, would operate at LOS C during the AM and LOS F during the PM peak periods. The addition of project traffic would cause the roadway segment to degrade from an acceptable LOS D to unacceptable level LOS F, representing a significant impact.

The weaving analyses of the Highway 1 freeway section between the Imjin Parkway and Del Monte Boulevard interchanges showed that the weaving operating conditions would be acceptable.

Impact **Based on the significance impact criteria, the project will have a significant impact on eight study intersections under existing plus project conditions. Under background plus project conditions, the project will significantly impact an additional two intersections and two roadway segments. *This is a significant impact that would be reduced to a less-than-significant level with the following mitigation.***

Mitigation

Existing Plus Project Conditions

- 4.13-1 Add a left turn pocket on the WB approach at the NB Highway 1 Ramps/Del Monte Boulevard North intersection. This improvement is not included in the City's CIP or TIF, and shall be funded by the project and paid to Monterey County, assuming Monterey County and Caltrans approve this measure.
- 4.13-2 Add a left turn pocket on the SB approach at the Del Monte Boulevard/North Project Access intersection. This improvement is not included in the City's CIP or TIF, and shall be funded and implemented by the project.
- 4.13-3 Add a SB left turn lane, and EB and WB right turn lanes at the intersection of Del Monte Boulevard/Marina Greens Drive, in combination with conversion to all-way stop control. These improvements are not included in the City's CIP or TIF, and shall be funded and implemented by the project.
- 4.13-4 Convert the intersection of SB Highway 1 Ramps/Reservation Road to all-way stop control. This improvement shall be funded and implemented by the project.
- 4.13-5 Signalize the intersection of Del Monte Boulevard/Beach Road and add an EB left turn lane. This improvement will require the reconstruction of the adjacent Beach Road rail crossing and rail crossing preemption. This improvement is included in the City's CIP and TIF. The project shall pay the City's traffic impact fee to mitigate the impact at this location.

- 4.13-6 Convert the intersection of De Forest Road/Beach Road to all-way stop control and add a NB left turn lane and a SB right turn lane. These improvements shall be funded and implemented by the project.
- 4.13-7 Signalize the intersection of California Avenue/Reservation Road. This improvement is included in the City's CIP and TIF; the project shall pay the City of Marina's traffic impact fee to mitigate impacts at this location.
- 4.13-8 Widen and restripe the Imjin Road/Reservation Road intersection to accommodate one NB left, one NB through, and three NB right turn lanes. (This improvement has already been identified as part of previous traffic studies and is included in the City's CIP and TIF.) The project shall pay the City's traffic impact fee to mitigate impacts at this location.

Background Plus Project Conditions

- 4.13-9 Signalize the SB Highway 1 Ramps/Reservation Road intersection. The project shall pay the City's traffic impact fee to mitigate impacts at this location.
- 4.13-10 Signalize the NB Highway 1 Ramps/Reservation Road intersection. The project shall pay the City's traffic impact fee to mitigate impacts at this location.
- 4.13-11 Signalize the intersection of Salinas Avenue/Reservation Road. The project shall pay the City's traffic impact fee to mitigate impacts at this location.
- 4.13-12 Add a second WB through lane at the Blanco Road/Reservation Road intersection. If the City of Marina adds this project to its CIP and TIF prior to the project's payment of the TIF, the project payment of the TIF would fully mitigate the project's impacts at this location. If the City does not add this improvement to its CIP and TIF prior to the project's payment of the TIF, the project would implement this improvement, subject to reimbursement from third parties, as and when available, for all but its proportional share of the cost of implementation.
- 4.13-13 Widen the section of Reservation Road between Cardoza Avenue and the Highway 1 NB Ramps to two lanes to facilitate one right turn lane and one through lane. The WB section of Reservation Road between Beach Road and Cardoza Avenue is already two lanes and only restriping would be required. The project shall pay the City's traffic impact fee to mitigate impacts at this location.

Regional Impacts

The City identified the study area for the project in consultation with Caltrans, AMBAG, and TAMC. The study area encompasses 25 intersections, four Highway 1 segments, 10 freeway ramps, two weaving segments, and 19 road segments. Vehicles traveling to/from the project site would use regional transportation facilities *outside* the study area. The 2004 TAMC Nexus Study indicates that some of these facilities, i.e., along Highways 1, 156, and 68, currently operate at LOS E and F. A copy of the Nexus Study is attached to the traffic analysis. The proposed project is not expected to cause the level of service at any of these facilities to fall from LOS D to E, or LOS E to F. The project would, however, contribute one or more trips to transportation facilities outside the project study area that are currently operating at LOS F; therefore, the project would cause a significant impact at these locations.

In 2025, assuming buildout of anticipated projects in the County, including the project, the Nexus Study indicates that more regional transportation facilities would, absent physical improvements, operate at LOS

F. The project would contribute to some of these deficiencies, and along Highway 1, the project's contribution would be cumulatively considerable; therefore, the project would have a significant cumulative impact at regional transportation facilities outside the study area.

Since any improvements to these facilities would be regional improvements, funding of the necessary mitigations (other than funding from state and federal sources), should be the responsibility of TAMC. Funding for improvements along Highway 1 in Seaside, Highway 68 east of Monterey, Highway 101 through Prunedale, and for right-of-way acquisition along Del Monte Boulevard are all included within the current TAMC fee program. The remaining regional improvements along these highways should also be included by TAMC within its traffic impact fee, in which case the project's payment of the TAMC fee would mitigate the study project's impacts on these regional facilities. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the regional impact would remain significant and unavoidable.

Impact **The project will have a significant impact on regional roadways outside the study area, as described above. This is a significant impact that would be unavoidable if adequate funding is not available to provide regional improvements.**

Mitigation

Refer to mitigation 4.13-23 below under the cumulative analysis.

Evaluation of Michael Drive Access

Michael Drive is a discontinuous street that extends through residential neighborhoods in northern Marina. The southern portion of Michael Drive only has one access, off Beach Road immediately east of Del Monte Boulevard. The northern portion of Michael Drive connects to Cosky Drive, which is accessible only from the Cosky Drive intersection with Del Monte Boulevard. The City's General Plan calls for second access routes at the discontinuous ends of Michael Drive, connecting to a roadway on the project site. The project may be required by the City to provide full access from Michael Drive to the project site, as a condition of project approval (no trucks would be allowed along this route). The traffic analysis evaluated the potential traffic impacts from this access, as summarized below.

If both segments of Michael Drive were public access points to the Marina Station site, some project traffic would use both segments as alternatives to the other project access roads. Few, if any, industrial- or office-based trips are expected to use either segment of Michael Drive to the project site. This is due in part to the fact that the Michael Drive connections to the project site would be a less direct and more circuitous route to the industrial and office areas than other routes. No truck traffic would use the Michael Drive accesses, since truck traffic to the site would be restricted to the project roads that border the eastern and northern edges of the project site. Some residential project trips would likely use the Michael Drive connections to access Del Monte Boulevard, primarily from the residential areas closest to this access point. Some residents from the Michael Drive and Cosky Drive neighborhoods would also use the Michael Drive connections to the commercial areas of the project site.

The circuitousness of the street network in the Michael Drive and Cosky Drive neighborhoods would limit the number of trips that would shift from the other access roads to the project site, since other routes provide more direct access. Overall, the number of trips that would shift from other access routes to Michael Drive would be relatively small, representing less than 5% of the total number of project trips. As the other access points would not have a substantial change in traffic volumes, the addition of the Michael Drive access points would not lead to any changes in the recommended improvements at other locations. At the Del Monte Boulevard/Cosky Drive intersection, the recommended improvement of a

median acceleration lane should adequately handle the additional traffic that would use Michael Drive under project and cumulative conditions. This improvement would likely be needed under the background plus project conditions, as the new project trips on Cosky Drive would be expected to create deficient operations on that approach to the intersection. No additional improvements would be required at the Michael Drive/Beach Road intersection with the addition of the Michael Drive connection.

Cumulative Impacts

This section describes the results of the traffic analysis under cumulative conditions. The traffic analysis evaluated two cumulative conditions: 1) baseline cumulative conditions without the project, and 2) cumulative conditions with the project. The cumulative traffic condition is defined as traffic conditions roughly 20 years into the future, or 2025 and beyond. The projects included in the cumulative traffic scenario are presented in Table 4.13-2. The locations of these projects are shown in Figure 4.13-6.

Trip Generation

Various approved and proposed projects throughout the Cities of Marina and Seaside, as well as in the surrounding former Fort Ord areas are anticipated to be developed, or at least partially developed, within approximately the next 25 years. For this analysis, it was assumed that most of the surrounding projects would be fully built out.¹⁰ The expected number of students at the nearby CSUMB (at the Master Plan level) was used to determine the anticipated number of trips that would be generated by CSUMB staff and students.

For the evaluation of the cumulative traffic scenarios all approved projects and other known cumulative projects were added together to determine the anticipated cumulative traffic impact on the area. The cumulative projects, including the project, would generate a total of 336,387 daily trips, with 20,451 trips occurring during the AM peak hour, and 31,807 trips occurring during the PM peak hour.

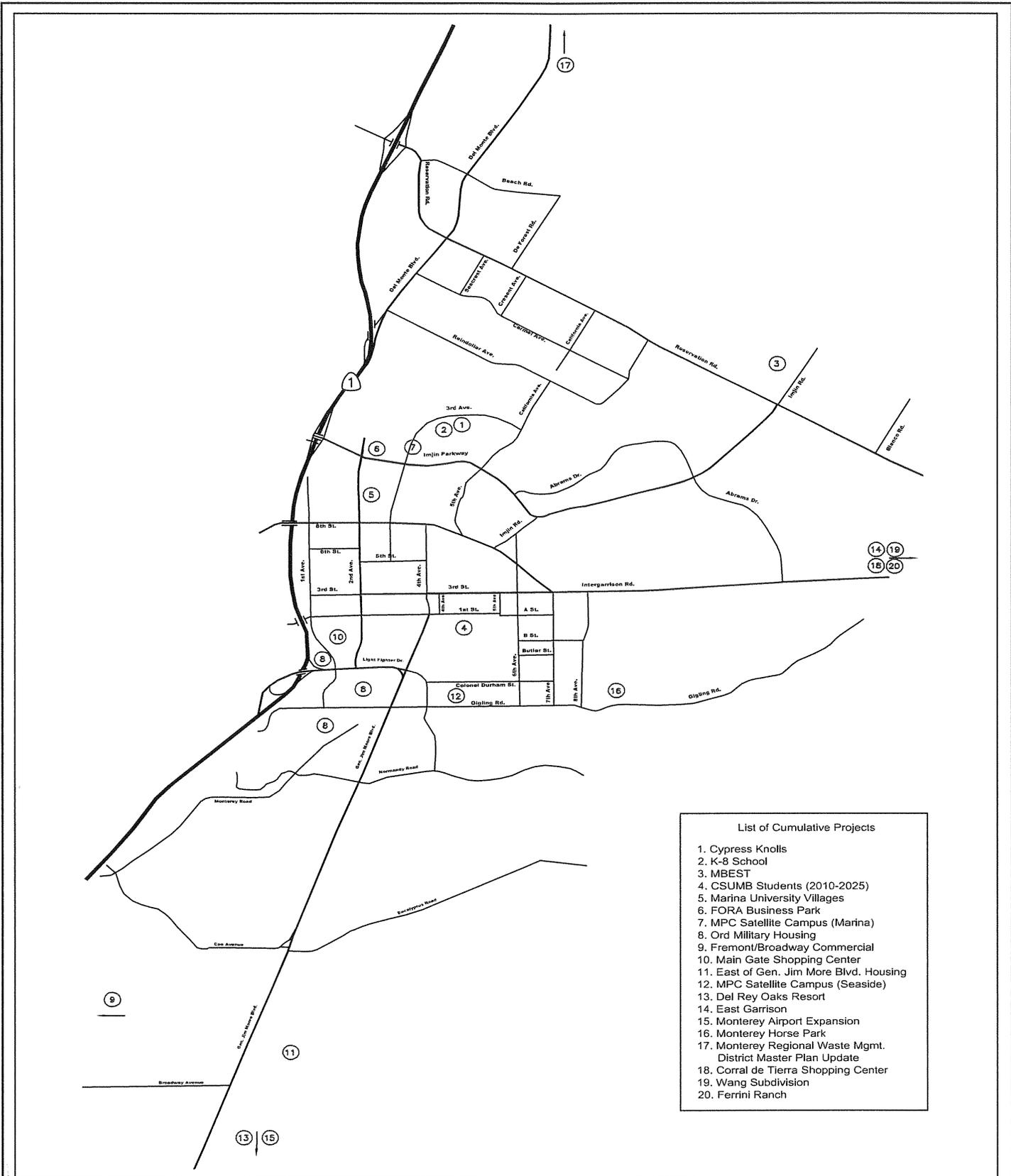
Trip Distribution and Assignment. The distribution of the estimated cumulative trips to and from the FORA and Marina Station traffic zones (in which most of the cumulative projects fall) to the Monterey Peninsula and the surrounding region was based on the origin/destination matrices provided by AMBAG. Furthermore, the locations and proximity of campus activities, other future FORA projects, and other existing and future land uses adjacent to the Marina Station project site boundaries were considered in the project trip distribution. Trip generation for the cumulative scenario is presented in the traffic analysis.

Future Road Network

Under the cumulative traffic scenarios, it was assumed that some changes to the local roadway network would be in place, based on the City of Marina CIP improvements and the FORA CIP network. The FORA CIP sets forth the FORA Base Reuse Plan required improvements. The current FORA CIP has been structured to cover costs of four regional improvements, five off-site improvements (outside former Fort Ord), 11 onsite improvements, and two transit capital improvements. The primary sources of revenue expected to cover these costs are Development Fees and Land Sale/Lease proceeds. Since the project is not located in former Fort Ord, it is not responsible for any FORA fees.

¹⁰ The assumption of full buildout of the cumulative projects used for this analysis is conservative and may change over time due to market conditions, development decisions, and other conditions beyond the scope of the traffic study.

Table 4.13-2 Cumulative Projects List		
No.	Project	Size/Use
City of Marina		
1	Cypress Knolls	596 senior units 60 assisted living beds 116 apartments
2	K-8 School	850 students
3	MBEST	150 hotel rooms 287,000 s.f. retail 676,000 s.f. office 326,000 s.f. light industrial
4	CSUMB (2010-2025)	6,389 students
5	Marina University Villages	1,129 units 108 apartments 750,000 s.f. retail 760,000 s.f. office 810,000 s.f. business park parks, church
6	Monterey Peninsula College Satellite Campus	8,380 students
7	FORA Business Park	13,772 s.f. office/light industrial
City of Seaside		
8	Ord Military Housing	563 units 3,000 s.f. retail
9	Fremont/Broadway Commercial	24, 672 s.f. restaurants 4,000 s.f. bank 15,236 s.f. commercial/retail
10	Main Gate Shopping Center	600,000 s.f. commercial/retail
11	East of Gen. Jim Moore Blvd. Housing	1,800 units
12	Monterey Peninsula College Satellite Campus	400 students
City of Del Rey Oaks		
13	Del Rey Oaks Resort	395 units 150 senior units 454 hotel rooms 96 timeshare units 400,000 s.f. office 20,000 s.f. retail golf course/driving range
Unincorporated Monterey County		
14	East Garrison	2,887 units 280,000 s.f. commercial/retail 350,000 s.f. institutional
15	Monterey Airport Expansion	355,000 s.f.
16	Monterey Horse Park	horse park 16 units
17	MRWMD Master Plan Update	expansion of landfill capacity
18	Corral de Tierra Shopping Center	114,200 s.f. retail 12,300 s.f. office
19	Wang Subdivision	29 units
20	Ferrini Ranch	212 units
Source: Higgins Associates, December 2006.		



Location of Cumulative Projects

Figure 4.13-6

The City of Marina's CIP includes a series of planned intersection and road segment improvements throughout the city. A subset of the CIP improvements are funded through a citywide TIF. This TIF program was officially adopted by the City of Marina in 2005. The following improvements at the study intersections and along the study roadway segments are included within the City of Marina traffic impact fees:

- Del Monte Boulevard/Marina Greens Drive – Signalize intersection;
- Southbound Highway 1 Ramps/Reservation Road – Signalize intersection;
- Northbound Highway 1 Ramps/Reservation Road – Signalize intersection;
- Del Monte Boulevard/Beach Road – Signalize intersection, add eastbound left turn channelization;
- California Avenue/Reservation Road – Signalize intersection;
- Salinas Avenue/Reservation Road – Signalize intersection;
- Imjin Road/Reservation Road – Widen and restripe northbound Imjin as one left turn lane, one through lane, and three right lanes, add third eastbound Reservation through lane, add third westbound Reservation through lane, add third westbound Reservation left turn lane and associated southbound Imjin Parkway receiving lanes.
- Widen Reservation Road to four lanes between northbound Highway 1 ramps and Beach Road;
- Extend 2nd Avenue from Imjin Parkway to Del Monte Boulevard;
- Widen Imjin Parkway from 2 to 4 lanes between Imjin Road and Reservation Road;
- Extend California Avenue from Reindollar to Carmel Avenue, creating a 2-lane arterial from Reservation Road to the CSUMB campus (constructed since time of traffic counts).
- Restripe northbound Del Monte Boulevard as one left turn lane, two through lanes, and one right turn lane. (Although this item is not specifically listed within the City's CIP, the City of Marina plans to implement this improvement as part of a proposed restriping of northbound Del Monte Boulevard south of this intersection to provide a Class II bicycle lane.)

Cumulative Baseline Conditions. For the baseline cumulative scenario, traffic from cumulative development was combined with existing and background traffic. This scenario evaluates cumulative traffic conditions without the addition of traffic from the proposed project.

Intersections

If all of the TIF-funded improvements are implemented, three of the study intersections would fail to operate at or better than their jurisdiction's operational LOS standard under cumulative traffic conditions. The Imjin Road/Reservation Road intersection would operate at LOS D during the AM peak hour, and LOS F during PM peak hour. The Blanco Road/Reservation Road intersection would operate at LOS F during both peak hours. The Highway 68 WB Ramps/Reservation Road intersection would operate at LOS C during the AM and LOS E during the PM peak hour.

Roadway Segments

Four of the study road segments, freeway segments, and ramps would operate at unacceptable levels of service under baseline cumulative conditions. Highway 1 would experience deficient freeway operations in the northbound direction during the PM peak hour on three segments: 1) between Nashua/Molera Roads and Del Monte Boulevard (North), 2) between Del Monte Boulevard (North) and Reservation Road, and 3) between Reservation Road and Del Monte Boulevard (South). All three segments would operate at LOS E in the northbound direction during the PM peak hour.

The weaving analyses of the Highway 1 freeway section between the Imjin Parkway and Del Monte Boulevard interchanges showed that the weaving operating conditions would be acceptable.

Cumulative Plus Project Conditions. Cumulative plus project traffic volumes include both the future growth projected under the cumulative without project conditions, plus trips generated by the proposed project. For the evaluation of cumulative plus project conditions, all approved projects, the Marina Station project, and other known cumulative projects were combined to determine the anticipated cumulative traffic impact on the area. In the cumulative traffic scenario a total of 362,224 daily trips would be generated, with 22,727 trips generated during the AM peak hour and 34,412 trips generated during the PM peak hour.

It is anticipated that a considerable number of linked trips would occur between the residential and commercial uses within the Marina Station site, University Villages, the CSUMB campus, and existing and planned surrounding residential developments as part of the FORA Reuse Plan. The linked trips have been taken into consideration in the cumulative project trip distribution to avoid double counting of trips on the study intersections and road network.

The cumulative plus project scenario assumes the same roadway network improvements as the baseline cumulative condition. The project trip assignments used in the cumulative plus project analysis were adjusted to account for the completion of the 2nd Avenue Extension between Imjin Parkway and Del Monte Boulevard, and the extension of Patton Parkway from Crescent Avenue to the 2nd Avenue extension. These assignment adjustments reassigned some project trips bound for portions of Marina within the former Fort Ord off Highway 1 and the Imjin Parkway interchange, and onto the 2nd Avenue extension. Some trips from the approved and cumulative projects were also reassigned onto 2nd Avenue and Patton Parkway. These links are included in the cumulative road network, but are not elements of the existing or background condition networks, since construction of the links is not a condition of development for any new development project. These improvements are, however, included in the Marina TIF and FORA CIP.

Intersections

The level of service results for the study intersections under cumulative plus project conditions are presented in Figure 4.13-2. If all of the TIF-funded improvements are implemented, six of the study intersections would fail to operate at or better than their jurisdiction's LOS standard under cumulative plus project conditions, and channelization would be required at one intersection, as summarized below.

- The NB Highway 1 Ramps/Del Monte Boulevard North intersection would operate at LOS D during the AM and LOS C during the PM peak hours. The worst movement approach operates at LOS F during both peak hours. The project would make a cumulatively considerable contribution to this significant cumulative impact.
- The Del Monte Boulevard/North Project Access intersection (unsignalized) would operate at LOS A during both peak hours, and the worst movements would operate at LOS B. However, the left turn peak hour volume warrant is met for the SB approach under existing plus project, background, and cumulative plus project conditions. Mitigation identified under the earlier scenarios (Mitigation 4.13-2) would reduce impacts at this intersection to a less-than-significant level.
- The Del Monte Boulevard/Marina Greens Drive intersection (unsignalized) would operate at LOS B during the AM and PM peak hours. However, the left turn peak hour volume warrant is met for this intersection under existing plus project, background, and cumulative plus project conditions. Mitigation identified under the earlier scenarios (Mitigation 4.13-3) would reduce impacts at this intersection to a less-than-significant level.

- The Del Monte Boulevard/Cosky Drive (unsignalized) intersection would operate at LOS A during the AM and PM peak hours. However, the worst movement would operate at LOS E during the AM and LOS F during the PM peak hours. The project would make a cumulatively considerable contribution to this significant cumulative impact.
- The De Forest Road/Beach Road intersection (unsignalized) would operate at LOS C during the AM and LOS B during the PM peak hours. The worst movement would operate at LOS F during the AM and LOS E during the PM peak hours. Mitigation identified under the earlier scenarios (Mitigation 4.13-6) would reduce impacts at this intersection to a less than significant level.
- The Imjin Road/Reservation Road intersection (signalized) would operate at LOS E during the AM and LOS F during the PM peak hour. The project would make a cumulatively considerable contribution to this significant cumulative impact.
- The Blanco Road/Reservation Road intersection (signalized) would operate at LOS F during both peak hours. The project would make a cumulatively considerable contribution to this significant cumulative impact. Mitigation identified under earlier scenarios (Mitigation 4.13-12), would reduce this impact to a less-than significant level.
- The Highway 68 WB Ramps/Reservation Road intersection (signalized) would operate at LOS C during the AM and LOS E during the PM peak hours. The project would make a cumulatively considerable contribution to this significant cumulative impact.

Roadway Segments

The level of service results for the study road segments under cumulative conditions are presented in Figure 4.13-3. If all of the TIF-funded improvements are implemented, five of the study road segments, freeway segments, and ramps evaluated would operate at unacceptable levels of service under cumulative plus project conditions, as described below

- Highway 1 would experience deficient freeway operations in the northbound direction during the PM peak hour on all four study freeway segments: 1) between Nashua/Molera Roads and Del Monte Boulevard (North), 2) between Del Monte Boulevard (North) and Reservation Road, 3) between Reservation Road and Del Monte Boulevard (South), and 4) between Del Monte Boulevard (South) and Imjin Parkway (12th Street). Northbound operations between Nashua/Molera Roads and Del Monte Boulevard (North) would be LOS F during the PM peak hour, while the other three segments would operate at LOS E in the northbound direction during the PM peak hour. Operations on segments 1 and 4 would represent changes in the levels of service from those under the baseline cumulative conditions (LOS E to LOS F, and LOS D to LOS E, respectively), and would represent significant cumulative impacts. Operations on segments 2 and 3 would represent the same levels of service as under cumulative plus project conditions; however, since these freeway segments operate at deficient levels of service, the project would considerably contribute to these significant cumulative impacts.
- The weaving analyses for the Highway 1 freeway section between the Imjin Parkway and Del Monte Boulevard interchanges showed that conditions would be acceptable in the northbound direction, but would be deficient during both the AM and PM peak hours in the southbound travel direction, where operating conditions would be LOS E. The project would make a cumulatively considerable contribution to this significant cumulative impact.

Regional Facilities

As described under Regional Impacts above, the project would make a cumulatively considerable contribution to significant cumulative impacts at regional transportation facilities outside the project study area.

Impact **Based on the significance impact criteria, the project together with the cumulative developments will have a significant impact on five study intersections. In addition, five roadway segments will be significantly impacted. The traffic impacts would be reduced to a less-than-significant level with implementation of mitigation identified below. However, if adequate funding from the TAMC fee and other sources is not available, impacts at the following locations would be unavoidable: the intersections of Imjin Road/Reservation Road and Highway 68 WB Ramps/Reservation Road, the roadway segments of Highway 1 between Nashua/Molera Roads and Del Monte Boulevard (North), Del Monte Boulevard (North) and Reservation Road, Reservation Road and Del Monte Boulevard (South), and Del Monte Boulevard (South) and Imjin Parkway. Cumulative impacts to regional highways would also be unavoidable without adequate funding.**

Mitigation

- 4.13-14 Add all-way stop control at the NB Highway 1 Ramps/Del Monte Boulevard intersection. The project shall contribute its proportional share of the cost of this improvement, to be paid to Monterey County, assuming Monterey County and Caltrans approve implementation of the improvement and the County establishes a mechanism to collect funding from all responsible parties.
- 4.13-15 Add a SB median left turn acceleration lane on Del Monte Boulevard south of Cosky Drive. The project shall contribute its proportional share of the cost of this improvement, to be paid to the City of Marina. If the City of Marina adds this project to its CIP and TIF prior to the study project's payment of the TIF, the project payment of the TIF would fully mitigate the project's impacts at this location. If the City does not add this improvement to its CIP and TIF prior to the project's payment of the TIF, the project would be solely responsible for implementation of this improvement, and would be eligible for reimbursement (for all but its proportional share of the cost of implementation) via any future payments received by the City of Marina from other future projects towards their individual proportional shares of this cost.
- 4.13-16 Add a second northbound through lane and a second southbound through lane on Imjin Road at Reservation Road at the Imjin Road/Reservation Road intersection. The City of Marina's TIF and CIP improvements at this intersection represent the City's share towards mitigation of this regional interchange. Funding of the remainder of this mitigation should be the responsibility of TAMC and should be included within its traffic impact fee; in this case the project's payment of the TAMC fee would mitigate the project's impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact would remain significant and unavoidable
- 4.13-17 Widen the intersection of Highway 68 WB Ramps/Reservation Road to facilitate an EB right turn lane. Improvements to this corridor should be added to the TAMC Nexus Study and payment of the TAMC fee would, thus, mitigate the impact at this intersection. However, if either this fee structure is not adopted or this improvement is not added to the TAMC fee program, and if the County establishes no alternative mechanism for the collection and

disbursement of improvement contributions from all responsible parties, the impact would remain significant and unavoidable.

- 4.13-18 Widen northbound Highway 1 between Nashua/Molera Roads and Del Monte Boulevard (North) from two to three lanes. This improvement is not included within the City's CIP, the City's TIF, the FORA CIP, or the TAMC Nexus study. This improvement is also not currently included in long-range improvement plans for Highway 1. The Caltrans Route Concept Report for Highway 1 includes widening four lane segments of Highway 1 to six lanes. However, there is currently no funded improvement that would widen this segment of Highway 1. As this is a regional improvement, funding of at least part of the mitigation along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee; in this case, the project's payment of the TAMC fee would mitigate the project's impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact would remain significant and unavoidable.
- 4.13-19 Widen northbound Highway 1 between Del Monte Boulevard (North) and Reservation Road from two to three lanes. This improvement is not included within the City's CIP, the City's TIF, the FORA CIP, or the TAMC Nexus study. This improvement is also not currently included in long-range improvement plans for Highway 1. The Caltrans Route Concept Report for Highway 1 includes widening four lane segments of Highway 1 to six lanes. However, there is currently no funded improvement that would widen this segment of Highway 1. As this is a regional improvement, funding of at least part of the mitigation along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee. In this case, the project's payment of the TAMC fee would fully mitigate the project's impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact would remain significant and unavoidable.
- 4.13-20 Widen northbound Highway 1 between Reservation Road and Del Monte Boulevard (South) from two to three lanes. This improvement is not included within the City's CIP, the City's TIF, the FORA CIP, or the TAMC Nexus study. This improvement is also not currently included in long-range improvement plans for Highway 1. The Caltrans Route Concept Report for Highway 1 includes widening the four-lane segments of Highway 1 to six lanes. However, there is currently no funded improvement that would widen this segment of Highway 1. As this is a regional improvement, funding of at least part of the necessary mitigations along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee. In this case, the project's payment of the TAMC fee would mitigate the project's impact in this location. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact would remain significant and unavoidable.
- 4.13-21 Widen northbound Highway 1 between Del Monte Boulevard (South) and Imjin Parkway (12th Street) from three to four lanes would be required. This improvement is not included within the City's CIP, the City's TIF, the FORA CIP, or the TAMC Nexus study. This improvement is not currently included in long-range improvement plans for Highway 1. Widening Highway 1 beyond the existing 6-lane section south of Imjin Parkway is not anticipated in the Caltrans Route Concept Report. As this is a regional improvement, funding of at least part of the mitigation along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee. In this case, the project's payment of the TAMC fee would mitigate the project's impact in this location. However, if

this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact would remain significant and unavoidable.

- 4.13-22 Implement improvements to southbound Highway 1 between Del Monte Boulevard (South) and Imjin Parkway, in order to improve weaving operations. Multiple improvement options are possible, including grade-separating the ramps and increasing the weaving distance between the ramps (the preferred improvement). The results of the on-going Project Study Report for the Highway 1/Imjin Parkway interchange improvements will make the final determination of the ultimate weaving improvement. Funding for construction of the interchange modification is identified in the City's CIP and TIF. Through payment of the City's TIF, the project would contribute its fair share towards the development of a long-range improvement plan for the Highway 1/Imjin Parkway interchange; the interchange improvements would, in turn, be expected to improve the operation of the weaving segment.

Funding for construction of the interchange modification is identified in the City's TIF; however full funding has not been identified and interchange improvements at this location are not included in the TAMC Nexus Study. Since this is a regional improvement, funding of at least part of the necessary improvements along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee. In this case, the project's payment of the TAMC fee, in combination with payment of the City of Marina TIF, would mitigate the project's impact in this location. If the City, TAMC, or other validly enacted fee structures for improvements that would address the weaving segment are in place prior to the issuance of the building permits for this project, the project would pay its fair share of the costs of the improvements and its cumulative impact would be mitigated. However, if such a fee structure is not adopted, the cumulative impact would remain significant and unavoidable.

- 4.13-23 Contribute funding towards the improvement of deficient operations along Highway 1 through the greater Monterey Peninsula, Highway 1 north of Castroville, Highway 68 through the Del Monte Forest, Highway 68 between Monterey and Salinas, Highway 101 through Prunedale, Highway 101 south of Salinas, and Highway 156 between Castroville and Prunedale through the payment of the TAMC regional traffic impact fee. Funding for improvements along Highway 1 in Seaside, Highway 68 east of Monterey, Highway 101 through Prunedale, Highway 156 between Castroville and Prunedale, and for right-of-way acquisition along Del Monte Boulevard, are all included within the current TAMC fee program. The remaining regional improvements along these highways should also be included by TAMC within its traffic impact fee. In this case, the project's payment of the TAMC fee would mitigate the study project's impacts on these regional highways. However, if this fee structure is not adopted, or if all of the necessary improvements to improve operations are not added to the fee program, the cumulative impact would remain significant and unavoidable.

4.14 UTILITIES AND SERVICE SYSTEMS

Introduction

This section evaluates the impacts of the project on water distribution systems and facilities, wastewater collection, treatment and disposal systems and facilities, solid waste disposal facilities, and energy (specifically electricity) supply and infrastructure. Impacts related to the quality of water supply and stormwater/drainage infrastructure are addressed in **Section 4.9 Hydrology and Water Quality**.

To obtain information from public utility providers, DD&A contacted the sanitary sewer, water, and landfill operators. This information was used to evaluate existing capacity, projected capacity, and projected future use of that capacity.

Letters were received from the California Department of Health Services and the general public during circulation of the Notice of Preparation for this EIR, calling for analysis of the adequacy of utilities and service system relative to the project. A major concern expressed in letters from the public was the adequacy of the water supply to serve the development. The following section evaluates the potential for water supply, wastewater collection, solid waste disposal, and energy supply impacts, and presents mitigation in accordance with CEQA Guidelines.

Setting

Water Supply/System

The public water supplier for the project is the Marina Coast Water District (MCWD), a County water district formed and authorized by Division 12 of the California Water Code. MCWD is located on the coast of Monterey Bay, and occupies an area of about 4.5 square miles. MCWD was established in 1960 and has provided potable water, wastewater treatment, and reclaimed water services to customers within the City of Marina. Under agreements with the U.S. Army and the Fort Ord Reuse Authority (FORA), MCWD also provides water and wastewater services within the former Fort Ord Army Base (known as the Ord Community). Fort Ord lies to the southeast of the City of Marina and the present MCWD boundaries. MCWD refers to its historic, City of Marina service area as “Central Marina” and Ford Ord as the “Ord Community.” The project site is in the process of being annexed to the MCWD’s Central Marina service area, pending final approval from LAFCO, and will obtain all water for the project from the Central Marina service area. The project will not utilize, either directly or indirectly, water from the Ord Community area water supply and will not impose a demand on the Ord Community area water supply and will not impose a demand on the Orde Community service area water supply. The District has historically served approximately 18,000 customers in the City of Marina.

As an urban water supplier, MCWD is required, under Water Code §§ 10620-10631, to prepare and periodically update an urban water management plan that describes and projects estimated past, present, and future water sources, supply and demand for at least 20 years into the future. The MCWD’s most recent urban water management plan (UWMP) was adopted in December 2005. The projected water demand associated with the project was included in the UWMP. Under Water Code § 10910(c)(2), and Public Resources Code § 21151.9, when an individual land use project’s water demand was accounted for in the most recently adopted urban water management plan, the urban water management plan’s information and analysis may be incorporated in the water supply and demand assessment required by both the Water Code and CEQA. Accordingly, the information and analysis in the UWMP, including the overall water planning projections and the Project’s individual demand and supply projections, is incorporated into this EIR. It is available at: http://www.mcwd.org/docs/engr/uwmp_final_12-27-05.pdf.

The water supply analysis in this section is based on a number of sources in addition to the UWMP, including the following: the June 2001 EIR/EIS for the Salinas Valley Water Project, information developed by the MCWD, and contained in the MCWD'S 2004 Regional Urban Water Augmentation Project EIR, the Groundwater Inventory and Status Report prepared for MCWD (DDA; Martin Feeney 2004) and the MCWD's 2006 Water Supply Assessment and Written Verification of Supply (WSA) prepared for this project by MCWD pursuant to Water Code (sections 10910 *et seq*).

The Monterey County Water Resources Agency (MCWRA) is responsible for the regulation of water from the Salinas Valley Groundwater Basin, which supplies the majority of the water to the former Fort Ord and all the MCWD's groundwater supplies. (The Monterey Peninsula Water Management District (MPWMD) is responsible for regulation and supply of the water from the Seaside Groundwater Basin; however, the MCWD does not use groundwater from the Seaside Basin to supply its service areas.)

MCWD's primary potable water supply source is the Salinas Valley Groundwater Basin. The Salinas Valley Groundwater Basin is divided into five subareas (Pressure, East Side, Forebay, Arroyo Seco and Upper Valley). The MCWD obtains all of its groundwater from the Pressure subarea. The Pressure subarea is further defined by distinct aquifers, commonly referred to as the 180-foot, 400-foot and 900-foot or "deep aquifer." The deep aquifer comprises a series of aquifers extending from approximately 600 feet to more than 2,000 feet below ground surface, not all of which are hydraulically connected. While originally thought to be geologically confined in the Marina area (meaning there was no ready physical connection between the aquifers allowing flow between them) recent stratigraphic analysis has indicated that these aquifers are connected hydraulically, with water from the upper (180-foot and 400-foot) layers recharging the deep aquifer. Groundwater Status and Inventory Report (DDA; Martin Feeney 2004) ("Feeney 2004"). Further information and analysis regarding groundwater pumping and its impact on the Pressure subarea aquifers, see **Section 4.9 Hydrology and Water Quality**.

The groundwater supplied to the Central Marina service area, in which the project will be located, comes solely from the deep aquifer. MCWD utilizes three wells that extract water solely from the deep aquifer to supply the Central Marina distribution system. To supply the Ord Community, MCWD uses three wells drilled by the U.S. Army. These wells are located inland from the wells that serve the Central Marina area, and draw from the 180-foot and 400-foot aquifers, not from the deep aquifer. Other than MCWD, only a very small number of wells draw from the deep aquifer, some of which also draw from the 400-foot aquifer. Prior to receiving recycled water for crop irrigation, there were agricultural lands in the Castroville area that pumped water from the deep aquifer, but these agricultural wells are now only used to meet supplemental needs during peak summer demand periods and also as part of the monitoring network overseen by the MCWRA.

Year	Central Marina Service Area	Ord Community Service Area (former Fort Ord)
1999	2,241	2,396
2000	2,300	2,371
2001	2,285	2,228
2002	2,306	2,137
2003	2,185	2,146
2004	2,266	2,420
Source: MCWD Urban Water Management Plan, Byron Buck & Associates, December 2005. Ord Community figures include water that was used in the City of Marina's portion of the Ord Community. AFY = acre-feet per year		

MCWD's existing groundwater production is shown in Table 4.14-1. MCWD's total annual groundwater production is approximately 4,700 acre-feet per year (AFY), which represents less than one percent of the total annual basin withdrawals of about 500,000 AFY. From 1999 through 2004, the average annual groundwater production for the Central Marina service area was 2,263 AFY, and the average annual production for the Ord Community service area was 2,283 AFY. In 2004, groundwater production for the Central Marina service area totaled 2,266 AFY, and production for the Ord Community service area totaled 2,420 AFY.

The Salinas Valley Groundwater Basin is experiencing overdraft, with seawater intrusion of about 9,000 AFY at its coastal margins affecting portions of the 180-foot and 400-foot aquifer systems. There is no evidence of seawater intrusion in the deep aquifer, nor is there evidence that such intrusion will likely occur (2005 UWMP at 2-10.) MCWD presently operates a monitoring well installed between Monterey Bay and MCWD's production wells that serve the Central Marina area. The monitoring well serves as an early detection system to identify any future seawater intrusion that might subsequently affect MCWD's production wells, which are located further inland. Detection of seawater in the monitoring well would provide advance notice to MCWD to install or reinstate one or more back-up wells to replace any potential future loss of production capacity (2005 UWMP at 2-10.) Detailed information regarding the background and history of the condition of the Salinas Valley Groundwater Basin, including the cause and extent of overdraft and seawater intrusion, current and future water needs and trends, and efficacy of alternative mitigation measures is contained in the EIR/EIS for the Salinas Valley Water Project (described more fully below). This document and the final EIR are available at http://www.mcwra.co.monterey.ca.us/SVWP/DEIR_EIS_2001/index.htm. The information and analysis in the Salinas Valley Water Project EIR/EIS is incorporated into this EIR.

To slow the advancement of seawater intrusion, the MCWRA, together with the Monterey Regional Water Pollution Control Agency, developed the Monterey County Recycled Water Project (MCRWP). The project consists of two components: 1) a water recycling facility at the Regional Treatment Plant and 2) a recycled water distribution system. This project, which has been in operation since 1998, delivers recycled water for irrigation use and thereby reduces demand, and hence pumping, from the basin.

MCWRA is also in the process of implementing a long-term program to address and ultimately eliminate overdraft and seawater intrusion in the basin known as the Salinas Valley Water Project (SVWP). The objectives of the SVWP, as delineated in the June 2001 EIR/EIS (SVWP EIR) for the project, include halting seawater intrusion, continuing conservation of winter flows for recharge of the Salinas Valley basin through summer releases, improving long-term hydrologic balance between recharge and withdrawal, and providing a sufficient water supply to meet water needs through the year 2030. (Detailed information regarding these matters is provided in the SVWP EIR and further information regarding the project is in the Final Engineer's Report available at <http://www.mcwra.co.monterey.ca.us>.)

The SVWP anticipates that current demands on the basin will decline by about 20,000 AFY by 2030 due to urban and agricultural conservation efforts, conversion of agricultural lands and some crop shifting. This overall decline is expected to occur despite a near doubling of the population served by the Salinas Valley Groundwater Basin, from 188,949 in 1995 to 355,829 in 2030. Under the SVWP, additional water to balance basin recharge with pumping will be provided through (1) capture and diversion of reservoir releases down the Salinas River, which would otherwise be lost to the ocean; (2) additional recycled water from the Monterey County Recycled Water Projects; and (3) modification of the spillway at Nacimiento Reservoir, which will allow re-operation of this reservoir and the San Antonio Reservoir, producing the additional system yield. In total, by 2030 an additional yield of 37,000 AFY is expected. Part of the increased releases from Nacimiento and San Antonio reservoirs will be impounded and diverted by a new in-stream dam near Marina, and added to the MCWRP water supply. Recipients of this

water will be required to reduce their coastal groundwater pumping. Funding for the SVWP, under a special property assessment in accordance with Proposition 218, was approved by a vote of property owners by mail-in ballot in 2003. A second phase of the SVWP involves supplying a portion of the available surface water to coastal urban water agencies to further reduce pumping in the coastal areas. The MCWRA has secured federal grants to fund analysis of this second phase.

The State Water Resources Control Board has been monitoring the MCWRA's ongoing efforts to halt seawater intrusion in the basin and has provided \$1.4 million in funding to the MCWRA for development of this seawater intrusion solution.¹ After reviewing the technical documents analyzing the probable effects of the SVWP on seawater intrusion, the SWRCB concluded "that seawater intrusion can be stopped," (SVWP Final EIR at p. 2-129).

MCWD accounts for less than 1% of the pumping from the Salinas Valley Groundwater Basin and hence cannot, by itself, resolve the overdraft and intrusion issues. However, it continues to actively cooperate with the MCWRA and MRWCPA by participating in benefit zones that fund the ongoing operation of the Nacimiento and San Antonio reservoirs, and the MCRWP. In addition, the benefit zones would partially fund the implementation and operation of the SVWP. Under various agreements discussed below, the MCWD has also agreed to limit its pumping from the Salinas Valley Groundwater Basin for land in the Marina area until various basin mitigation plans have been implemented.

The MCWD and the Fort Ord Reuse Authority ("FORA") have also approved a program known as the "Regional Urban Water Augmentation Project" (the "Augmentation Project"). The goal of the Augmentation Project is to provide an additional 3,000 AFY of water supplies, primarily for use within the former Fort Ord. Up to 2,400 AFY of this water is intended to meet redevelopment requirements described in the Fort Ord Reuse Plan; 300 AFY is being considered to replace potable uses within Cal-Am's Monterey District service area; and 300 AFY is for other uses by the MCWD. The environmental effects of the Augmentation Project were analyzed in a Final Environmental Impact Report that MCWD certified in September 2004 (the "Augmentation Project EIR"). The Augmentation Project EIR evaluated two distinct alternatives and one hybrid alternative:

- "Seawater Desalination Alternative" - a new 3,000 AFY desalination facility in the area currently occupied by the MCWD's existing desalination plant. The proposed replacement desalination project meets the project objective of 2,400 AFY, replaces the MCWD's existing 300 AFY desalination plant, and also provides 300 AFY for use within or outside of the MCWD service areas, e.g., on the Monterey Peninsula.
- "Recycled Water Alternative" - provides 3,000 AFY of recycled water, which meets the project objective of 2,400 AFY, but would also provide 300 AFY of recycled water to the Monterey Peninsula and an additional 300 AFY for use within or outside MCWD service areas.
- "Hybrid Alternative" - includes a water supply of up to 1,500 AFY from an expansion of MCWD's seawater desalination production (including replacement of the existing 300 AFY capacity plant), and the production and distribution of up to 1,500 AFY of recycled water for landscape irrigation. Of this amount, 2,400 AFY would be used on the Monterey Peninsula and 300 AFY would replace the idle desalination plant.

¹ The State Water Resources Control Board initiated proceedings to adjudicate the basin in 1996, but suspended the proceedings in order to allow the MCWRA and other local jurisdictions to agree upon a process to protect the groundwater resources in the basin. The SVWP represents the current local consensus regarding protection of the groundwater resource (SVWP EIR, § 2.1).

In June 2005, the MCWD and FORA Boards jointly endorsed the “Hybrid Alternative” and directed development of the new supply sources; the augmentation supply is expected to be online from between three and ten years from June of 2005.² The MCWD determined that the Augmentation Project need is consistent with water required by the existing Fort Ord Base Reuse Plan (2005 UWMP at 3-9.) A capital fund collected by FORA as part of its development fee program is estimated to generate about \$33 million by 2015, which is available to carry out the Augmentation Project. The 2005 UWMP deems the Augmentation Project to be a planned future water supply and the City considers the Augmentation Project to be a reasonably foreseeable planned water supply for purposes of S.B. 610 and S.B. 221. MCWD has completed preliminary design of the recycled water project and initiated final design. FORA and MCWD have installed approximately one mile of recycled water pipeline. The rest of the project will begin construction in Spring 2007 and service is expected in 2008. MCWD has also awarded a contract to initiate preliminary design and environmental analysis for the desalination component of the Augmentation Project. That work is expected to be completed in early 2007. Detailed design should begin in 2007 with construction completed in 2009.

Both the Army (as former owner of the Fort Ord lands) and MCWD have agreements with MCWRA, which allow MCWD to participate in and benefit from MCWRA’s regional basin management planning process. Pursuant to a 1993 agreement under which the Fort Ord lands and MCWD’s Central Marina service area were annexed into MCWRA Zones 2 and 2A (the “1993 Annexation Agreement”), groundwater extraction for the Ford Ord service area is presently limited to 6,600 AFY (5,200 AFY from the 180-foot and 400-foot aquifers, and up to 1,400 AFY from the deep aquifer). This total is approximately equal to the historic demand from Army uses at Fort Ord. This 6,600 AFY groundwater supply is allocated by FORA among its member jurisdictions, which, in turn, sub-allocate their portions among their individual projects.

Additionally, a 1996 agreement between MCWD, MCWRA, MCWPA and several property owners (the “1996 Annexation Agreement”) approved annexation of the Armstrong Ranch and RMC Lonestar Property to MCRWA’s Zones 2 and 2A. The agreement provided for a maximum withdrawal by MCWD of 3,020 AFY from the basin, limited to uses in the City of Marina outside the Ord service area. Under the 1996 Annexation Agreement, the groundwater allocation for Armstrong Ranch is 920 AFY, and the allocation for the RMC Lonestar Property (for which there is no current plan for development, and which could not be developed until after 2020 under the UGB) is 500 AFY, which corresponds to current estimated use on the property. These allocations are in addition to the 3,020 AFY allocation for the uses within the current boundaries of the Central Marina service area. Under this agreement, MCWD was also granted a right to receive recycled water from the SVRP, although no more than 300 acre-feet could be obtained during the months of April through September. During the remainder of the year, MCWD is entitled to take its full entitlement to recycled water as stipulated in previous agreements. Specifically, MCWD has the right to obtain tertiary treated wastewater for reuse from the MRWPCA in quantities equal to the volume of MCWD wastewater treated by the MRWPCA.

The MCWD’s most recent (2005) UWMP projected water demands for 50 years, and assumed development of the Marina Station project site in evaluating demand on MCWD’s water supplies. The projected 2025 water demand within the Central Marina service area (exclusive of Armstrong Ranch and the RMC Lonestar property) is 2,632 AFY, which is within the 3,020 AFY allocation for this area. Projected 2025 demand for the Armstrong Ranch is 680 AFY, which is within its 920 AFY allocation. Year 2025 demand within the RMC Lonestar property is projected to match its allocated supply. The 2005 UWMP found that sufficient supplies are available to meet the expected demands of the project. This analysis is summarized in Table 4.14-2.

² MCWD UWMP, pp 2-21 to 2.22; June 10, 2005 Minutes from Joint MCWD and FORA Board Meeting, Item 5B.

	2004	2005	2010	2015	2020	2025	FORA Allocation	Surplus (Shortage)
Jurisdiction							2015	2025
Former Fort Ord								
CSUMB	602	677	920	1,081	1,150	1,192	1,035	(157)
Del Rey Oaks	0	0	472	762	837	838	243	(596)
City of Monterey	0	53	78	94	110	126	65	(61)
Co. of Monterey	1	1	569	682	1,209	1,209	710	(499)
UCMBEST	4	4	561	735	942	1,187	230	(957)
City of Seaside	525	525	1,221	1,238	1,984	1,984	1,012	(972)
U.S. Army	529	529	1,102	1,659	1,659	1,659	1,577	(82)
St. Parks & Rec.					45	45	45	0
Marina Ord Comm.	302	302	2,309	2,773	2,773	2,773	1,325	(1,448)
Marina Sphere							10	10
FORA Strat. Res.							(187)	(187)
Assumed line loss	457	578	578	578	578	578	578	0
Subtotal	2,420	2,669	7,810	9,602	11,286	11,591	(rounded) 6,600	(4,948) (see note below)
Marina Area							Available Supply	Surplus (Shortage)
Armstrong Ranch	0	0	680	680	680	680	920	240
RMC Lonestar	0	0	0	0	500	500	500	0
Marina – Central	2,266	2,200	2,366	2,534	2,617	2,632	3,325	688
Subtotal	2,266	2,200	3,046	3,214	3,797	3,812		
Total Demands	4,686	4,869	10,856	12,816	15,083	15,403		
Source: UWMP Table 3.4 at p. 3-9.								
Notes: Year in which current FORA allocation exceeded shown in bold/italics; includes FORA Strategic Reserve allocation in 2015 of 150 AFY each to Del Rey Oaks, Marina, Monterey Co. and Seaside. When they were first granted, these 150 AFY allocations were characterized as “loans” to be repaid from the Water Augmentation Project. However, on January 12, 2007, the FORA Board voted to make these loans permanent allocations. (US Army projections are preliminary pending 2007 Master Plan EIS. The Army water allocation is not part of FORA sub-allocation.)								
The UWMP concluded that if development limitations that prohibit development in the Ord Community service area “were lifted,” the Ord Community service area would have a projected imbalance of 4,948 AFY in 2025. The Augmentation Project, which is consistent with the existing Fort Ord Base Reuse Plan, would reduce this imbalance to 2,548 AFY (2005 UWMP at 3-9). Development limitations in the FORA Master Resolution and in a 1998 Settlement Agreement and General Release, entered between the Sierra Club and FORA establish restrictions on the Ord Community that cannot be exceeded without analyzing environmental impacts and securing additional water supply. The City is obligated to these terms pursuant to the May 1, 2001 Implementation Agreement between FORA and the City. As a result, the imbalance identified above is purely speculative in the sense that, while conceptual potential “build out” development may be identified for long-range planning purposes, this potential development is not planned or probable because such potential development cannot occur until additional water supplies are secured and until such development undergoes environmental review. Thus, the noted imbalance will not materialize since, pursuant to the FORA Master Resolution, development will not be permitted without sufficient water supply to serve the development. The UWMP recognized that the imbalance was predicated on removing existing development restrictions (2005 UWMP at 3-9).								

The UWMP concludes that its supply and demand projections show that sufficient available water exists within the Central Marina service area to meet expected demands through 2025 with a surplus of about 688 AFY. It further notes that, in the Ord Community service area, the approved FORA Base Reuse Plan limits the amount of planned development by the land use jurisdictions based upon available water supply. It adds, however, that “if that limitation were lifted, and the long-term development that is projected by the land use jurisdictions beyond the current limits now imposed by the Base Reuse Plan were permitted and constructed in the future, additional water supplies beyond the planned 2,400 AFY Regional Urban Water Augmentation Project would be required.”

The development limitations referenced in the UWMP (which are found in the Reuse Plan, FORA Master Resolution, and the Settlement Agreement between FORA and the Sierra Club) establish a cap on development in the Ord Community service area, based on assured water supply. The cap may not be exceeded unless and until additional water supply for the Ord Community service area is achieved and further environmental review is conducted. Because FORA's allocations are expressly restricted by the Reuse Plan based upon available water supply, development that exceeds these limitations cannot be considered probable or planned for CEQA or SB 610 purposes. It is, therefore, speculative to conclude that potential future uses that would exceed the development restrictions under the Reuse Plan will lead to an imbalance in supply since such potential uses cannot exist until additional supply is secured. As noted, in the UWMP, "MCWD will provide water service only within the limits of current and future allocations of Salinas Valley groundwater pursuant to agreement with MCWRA, and FORA allocations of currently available and future supply as it is available." Additionally, such uses cannot be considered planned or probable because there is no specific development proposal, application, identified use, identified intensity of use, identified developer, or identified funding source for such development. Further, the MCWD has determined in the Augmentation Project, which is projected to supply 2,400 AFY of water to the Ord Community service area, is a reasonably foreseeable source of future water supply that will be available to serve the future needs of the Ord Community service area. It is therefore reasonable for Marina to assume that once the augmentation supply becomes available, a portion of it will be allocated to the City of Marina's portion of the Ord Community. However, as noted above, any development in the Ord Community service area that exceeds development restrictions imposed by the Reuse Plan, FORA Master Resolution or the Sierra Club Settlement Agreement is not permitted unless and until environmental review is performed and water supply is available for such development.

MCWD will provide water service within the Ord Community only within the limits of current and future allocations of water from the Salinas Valley Groundwater Basin under the 1993 agreement (6,600 AFY) plus any water under the Augmentation Project as it becomes available. It will provide service within the Central Marina service area only within the limits of the 1996 Annexation Agreement, which provides for 3,020, 920 and 500 AFY respectively, for the City of Marina, Armstrong Ranch and RMC Lonestar property. Under the Annexation Agreement, MCWD must use the 3,020, 920 and 500 AFY allocations only within the boundaries of each of the three identified areas. Based upon specified allocations and current and future projected water supplies, there is sufficient water to meet the demands of the project together with other existing and planned future uses within the MCWD.

Wastewater

The provision of sanitary sewer or wastewater service in the Monterey area is organized at two levels. Local cities and sanitation districts are responsible for maintenance and extension of sewer lines, and the Monterey Regional Water Pollution Control Agency (MRWPCA) is responsible for development and operation of treatment facilities. The wastewater system in Marina is maintained and operated by the MCWD. Wastewater is carried by the MCWD sanitary collection system to the MRWPCA pump stations. From local pump stations, the wastewater is transported to the MRWPCA treatment plant located two miles north of Marina. MCWD is currently preparing a Wastewater System Master Plan for the former Fort Ord and for the City of Marina.

The regional treatment facility has a design capacity of 29.6 million gallons per day (mgd), but is permitted to treat a maximum of 27 mgd. In 2004, the average dry weather flows were approximately 21.5 mgd. Based on regional population forecasts for the MRWPCA service area, the facility has sufficient capacity to serve proposed uses and new development in Marina, including portions of the former Fort Ord for at least the next 10 to 15 years. The MRWPCA has initiated the process to increase the permitted operational capacity of the facility to the full 29.6 mgd and anticipates receiving the permit prior to reaching the facility's existing permitted use of 27 mgd. Since the existing capacity of the facility

is sufficient, there are no capacity expansions planned. However, MRWPCA has a Facility Expansion Master Plan, which would be implemented when there is a need to expand the facility (Mary Price, MRWPCA, personal communication, December 2005).

Short-term constraints to new residential development may occur as a result of a MRWCPA requirement to limit wastewater treatment for new residential development. In 1998, MRWPCA passed Ordinance 98-01 limiting the allocation of available wastewater treatment capacity among MRWPCA member jurisdictions between 1998 and 2002. The Ordinance was extended by Ordinance 2004-04 under which the facility allocation available to member jurisdictions as a whole is 7,066 housing units (Ordinance 2004-04 expires on September 30, 2008). Furthermore, due to the requirement to make only 85 percent of the allocation initially available for distribution, the total allocation available on a first-come first-served basis is 6,006 housing units. Commercial/industrial projects will not be limited by Ordinance 2004-04 unless they generate more than 100,000 gallons per day of sewage. Those projects generating more than 100,000 gallons per day would require review and approval by the MRWPCA. Upon the expiration of Ordinance 2004-04, a new allocation plan would be adopted using the updated Association of Monterey Bay Area Governments population projections.

MRWPCA operates the water recycling facility at the treatment plant and manages the distribution system under contract with the MCWRA. It also maintains 25 wastewater pump stations that transport raw wastewater to the treatment plant. In 1997, the MRWCPA completed construction of a tertiary treatment facility. Recycled water from this facility is now distributed to farms in the Castroville area and to a limited number of recharge wells to reduce groundwater pumping and seawater intrusion. A 1992 agreement between MRWPCA and MCWRA requires delivery of the first 19,500 AFY of recycled water to MCWRA for use in the Castroville Seawater Intrusion Project. Treated water not used by the Monterey County Recycling Projects is discharged, under an approved National Pollutant Discharge Elimination System (NPDES) permit, via a 48- to 60-inch outfall pipeline into the Monterey Bay approximately 2.5 miles off the coast.

Solid Waste

The project area is within the jurisdiction of the Monterey Regional Waste Management District (MRWMD). Solid waste collection is provided by the Carmel-Marina Corporation, a private hauler. Solid waste is transported to the Monterey Peninsula Landfill and Recycling Facility in the City of Marina, which is operated by the MRWMD and serves western Monterey County. This facility serves the solid waste and recycling needs of an estimated 170,000 residents in the project area. Among other things, the facility accepts basic solid waste, liquid waste and sewage sludge (biosolids), wood waste, yard waste, concrete, brick, rock, asphalt, tires, appliances, furniture, plastics, and boats. The Materials Recovery Facility (MRF) targets materials brought in from self-haul loads and commercial wastes, construction and demolition debris, wood waste, and yard waste, and diverts 64% of incoming material. The facility has off-site local recycling centers that collect household recyclables (glass, aluminum, paper, and plastics).

According to the District's Landfill Site Master Plan, the proposed remaining site waste capacity is approximately 40 million tons, with an available capacity of 24 million tons. The remaining site life assumes a maximum site elevation of 284 feet above mean sea level, the use of alternate daily cover, a waste to soil ratio of 10 to 1, and an in-place waste density of 1,400 pounds per cubic yard. Assuming the District continues to achieve the State-mandated 50% recycling goal, the landfill will continue to serve the present service area through the year 2090. A new Master Plan recently completed by Vector Engineering could extend the site life to 2117 (Rick Shedden, MRWMD, personal communication, December 2005).

During the 2004-2005 fiscal year, the Monterey Peninsula Landfill and MRF received 369,389 tons of solid waste, including 186,010 tons from the garbage companies, such as Carmel-Marina Corporation, 123,805 tons of commercial and industrial waste, 59,575 tons of waste from small businesses and individuals who haul their own trash, 35,181 tons of dewatered sewage sludge, and 5,087 tons of liquid waste. In 2000, the City of Marina sent 14,479 total tons to the landfill. The City implements a curbside recycling program for single-family residential development through a franchise agreement with a private hauler.

Energy

Pacific Gas & Electric Co. (PG&E) provides gas and electric service to the project site. Natural gas is measured in British thermal units (Btu), which is the quantity of heat necessary to raise the temperature of one pound of water one degree Fahrenheit. Electricity is measured in kilowatt hours (kwh). A kilowatt (kw) is a measure of power produced through sources of generation at 3,413 Btu/kw-hour. Most electricity is produced by converting other primary energy sources into electricity. PG&E operates a grid distribution system that transmits electricity with a vast network of transmission and distribution lines throughout the service area to the users. Most of the electricity that PG&E distributes throughout Monterey County is obtained from the Duke Energy Moss Landing Plant. The Moss Landing Plant generates over 1,500 megawatts, which is adequate to supply the Monterey region (Jose Rios, PG&E, personal communication, December 2005).

Local Requirements

Marina General Plan. The City of Marina General Plan includes provisions for adequate utilities and service systems. Please refer to Table 4.9-1 of the Land Use section for a detailed analysis of the project's consistency with the relevant utilities and service systems provisions of the Marina General Plan. The below provisions were used to assist in the water supply analysis.

3.43. The City's potable water supply is provided by the Marina Coast Water District (MCWD). The primary water sources are wells tapping the deep aquifer of the Salinas Valley Water Basin. MCWD also operates a desalinization plant with a limited capacity of 300 acre-feet of water per year. The total potable water supply from these sources is estimated at 5,845 AFY, of which approximately 55 percent, or 3,230 AFY, is available to support new development in the planning area, accounting for the 15 percent reserve set forth by this plan. However, the actual use and distribution of Marina's water supply is limited pursuant to a 1996 agreement under which the Marina Coast Water District received separate allocations from the Monterey County Water Resources Agency of 3,020, 920 and 500 AFY, respectively, for the City of Marina (excluding former Fort Ord), Armstrong Ranch and RMC Lonestar property. Under this Annexation Agreement, the MCWD is limited to using the 3,020 AFY within the identified service area; the Agreement prohibits the use of any portion of this allocation to serve new development in other areas of the City such as former Fort Ord. Similarly, allocations to the Armstrong Ranch and RMC Lonestar properties must be used within the boundaries of those separate allocation entities as specified by this Agreement. Former Fort Ord has received a separate allocation from the Monterey County Water Resources Agency of which 1,175 AFY has been allocated by FORA to the City of Marina (excluding MBEST) and 230 AFY to the MBEST Center.³ There is also a potentially substantial non-potable water supply available in Marina for irrigation of large areas of turf such as golf courses or parks. Under an agreement with the Monterey Regional Water Pollution Control Agency, the MCWD is entitled to receive tertiary-treated water from the regional facility up to the volume of wastewater it conveys for treatment.

³ Pursuant to a 150 AFY loan from the FORA Strategic Reserve, the FORA allocation presently available to Marina is 1,325 AFY.

3.44. The total demand for potable water by 2020 is estimated at approximately 7,720 AFY, of which an estimated 5,470 AFY would be the demand generated by new land uses and development within the planning area. This estimate assumes a total build-out of all residential designated areas. For commercial and industrial lands, the estimate is based on potential market demand for these uses by 2020. With use of recycled water for irrigation of large areas of turf, the total demand for potable water could drop to a level roughly commensurate with total available supply and assuming the long-term reliability of existing deep aquifer wells. However, current limitations on the use of specified water allocations within the Marina Planning Area – pursuant to the 1996 Annexation Agreement – result in individual water use deficits for certain allocation entities – i.e., former Fort Ord, the MBEST Center and Armstrong Ranch. At the present time, the most feasible ways of reducing these water demand deficits appear to be increased reliance on water conservation, expansion of the existing desalinization facility, construction of a new desalinization facility, and/or recycled water for irrigation of large areas of turf and City parks.

Environmental Impact Report on the Marina General Plan. The General Plan EIR evaluated potential utilities and service systems impacts associated with the adoption and implementation of the Marina General Plan, including future development within the Marina Station project site. This program-level EIR focused on general impacts associated with implementation of the General Plan, rather than project-specific impacts associated with individual development projects, such as the Marina Station Specific Plan project. According to the General Plan EIR, the following utilities and service systems impacts were identified: insufficient water supply to support anticipated development under the Draft General Plan, identified as a significant mitigable impact.

Marina Station Specific Plan. Section 4.2 of the Marina Station Specific Plan identifies policies and implementation measures that are part of the proposed project to ensure adequate water supply, wastewater collection and treatment, storm drainage infrastructure, and solid waste disposal in the Plan area. Public Facilities (PF) Policy 1-1 states “ensure sufficient water supply for the buildout of the Plan area.” Implementation measures are as follows:

- The Marina Coast Water District, in its SB610 Water Supply Assessment and SB221 Water Supply Verification, determined that there is an adequate water supply to serve the Specific Plan area. No further implementation measures are needed.

PF Policy 1-2 states “construct a water supply system that expands on and is integrated with the existing system and meets the needs of future project developments.” Implementation measures are as follows:

- Individual project developers shall install water supply system improvements within the boundaries of their individual projects that tie into the backbone infrastructure system, which shall be installed by the master developer. Water supply improvement plans shall be subject to review and approval of the MCWD for consistency with the master water supply plan and related MCWD standards prior to the City’s approval of a final map, commercial, office or industrial project for development within the Specific Plan area.
- As a part of the final map improvement plans, the developer shall grant easements for the MCWD to maintain water supply and wastewater collection mains to be located in dedicated city collector roads.

PF Policy 1-3 states “reduce potable water consumption.” Implementation measures are as follows:

- The master developer shall prepare a detailed master reclaimed water distribution plan that identifies backbone collection infrastructure needed to serve new public open spaces and parks within the Specific Plan area. The plan shall identify, in detail, facility locations, engineering specifications,

funding mechanisms, and construction timing consistent with the backbone infrastructure concept plan illustrated in Figure 4-3, Reclaimed Water Master Plan. The plan must be reviewed and approved by the MCWD for consistency with its reclaimed water regulatory requirements and design standards prior to the City's approval of the improvement plans for the affected areas.

- MCWD and the Master Developer shall construct a reclaimed water distribution system that ensures availability of reclaimed water to the public open spaces and parks shown as being served by reclaimed water and to the industrial/office park if sufficient water is allocated within the Specific Plan area and the Master Developer and MCWD determines its safe use can be assured.
- The master developer and individual project developers shall prepare detailed landscaping irrigation plans that comply with MCWD's Water Conservation Ordinance No. 40 and Section 700 of the Procedures and Design Requirements for landscaping and irrigation.

PF Policy 1-4 provides for construction of a wastewater collection and treatment system that efficiently builds on the existing system and that meets the needs of future development within the Specific Plan area. Implementation measures are as follows:

- The master developer has prepared a detailed master wastewater collection as a part of the Specific Plan that identifies backbone collection and treatment infrastructure needed to serve new development within the Plan area. Improvement plans for all projects within the Specific Plan area must be reviewed and approved by MCWD and MRWPCA.
- Individual project developers shall install wastewater collection improvements within the boundaries of their individual projects that tie into the backbone wastewater collection system. Wastewater collection system improvement plans for individual projects shall be subject to review and approval of the MCWD for consistency with the master wastewater collection and treatment plan and related MCWD standards prior to the City's approval of any final map, commercial, office or industrial project within the Specific Plan area.

PF Policy 1-5 states "construct a storm water collection and disposal system that efficiently ensures separation of existing natural storm drainage from storm water generated within the Specific Plan area." Implementation measures are as follows:

- The master developer has prepared a detailed master storm drainage plan as a part of this Specific Plan that identifies backbone collection and retention infrastructure needed to serve development within the Specific Plan area. Any improvement plans shall incorporate use of structural and institutional best management practices for storm water quality management and to prevent soil erosion. The improvement plans shall be subject to review and approval by the appropriate City staff.
- Individual project developers shall install storm drainage collection improvements within the boundaries of their individual projects and which tie into the backbone storm drainage infrastructure system. Storm water collection system improvement plans for individual projects shall be subject to review and approval of the appropriate City staff prior to the City's approval of any commercial, office or industrial project.

PF Policy 1-6 states "utilize best management practices to minimize surface water quality degradation from discharge of storm drainage." Implementation measures are as follows:

- The master developer shall prepare and submit a storm water pollution prevention program application to the Central Coast Regional Water Quality Control Board and the appropriate City staff

to secure a NPDES General Construction Permit for the entire project site. Each individual project developer shall incorporate the structural and institutional best management practices identified in the storm water management plan in improvement plans for their respective projects. The appropriate City staff must review these plans to ensure inclusion of the practices prior to approval of a building permit for that phase. The City shall monitor implementation of the measures.

PF Policy 2-3 states “ensure adequate availability of solid waste disposal services.” Implementation measures are as follows:

- Prior to the City’s approval of any final map or commercial project, the master developer or individual developer shall obtain verification from Carmel-Marina Corporation that it can provide solid waste collection services to meet demand from build out of the Specific Plan area. Waste collection services shall be financed through the most recently adopted fee program of Carmel-Marina Corporation.

PF Policy 2-4 states “ensure availability of recycling, reduction, and reuse programs.” Implementation measures are as follows:

- The master developer or individual developer(s) shall distribute, to all home buyers, the educational program provided by service providers as a citywide recycling effort.

Relevant Project Characteristics

The project proposes a mixed-use development that would add 3,794 new residents to the area. The project proposes a public street system to serve the development. Storm drainage mains, sanitary sewer lines, and water lines will be located within the street right-of-ways. Total development of the site will be phased over a 10- to 20-year period.

Thresholds of Significance

In accordance with CEQA Guidelines, a project impact would be considered significant if the project would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction or which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have projected total water demand that could not be satisfied from either presently existing sources of supply or reasonably foreseeable planned future sources of supply;
- Have total projected water demand from existing and reasonably foreseeable planned future development that could not be satisfied from either presently existing sources of supply or reasonably foreseeable planned future sources of supply;
- Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has inadequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments;

- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Not comply with federal, state, and local statutes and regulations related to solid waste.

Impacts and Mitigation

Water System

Potable Water Supply and Distribution System

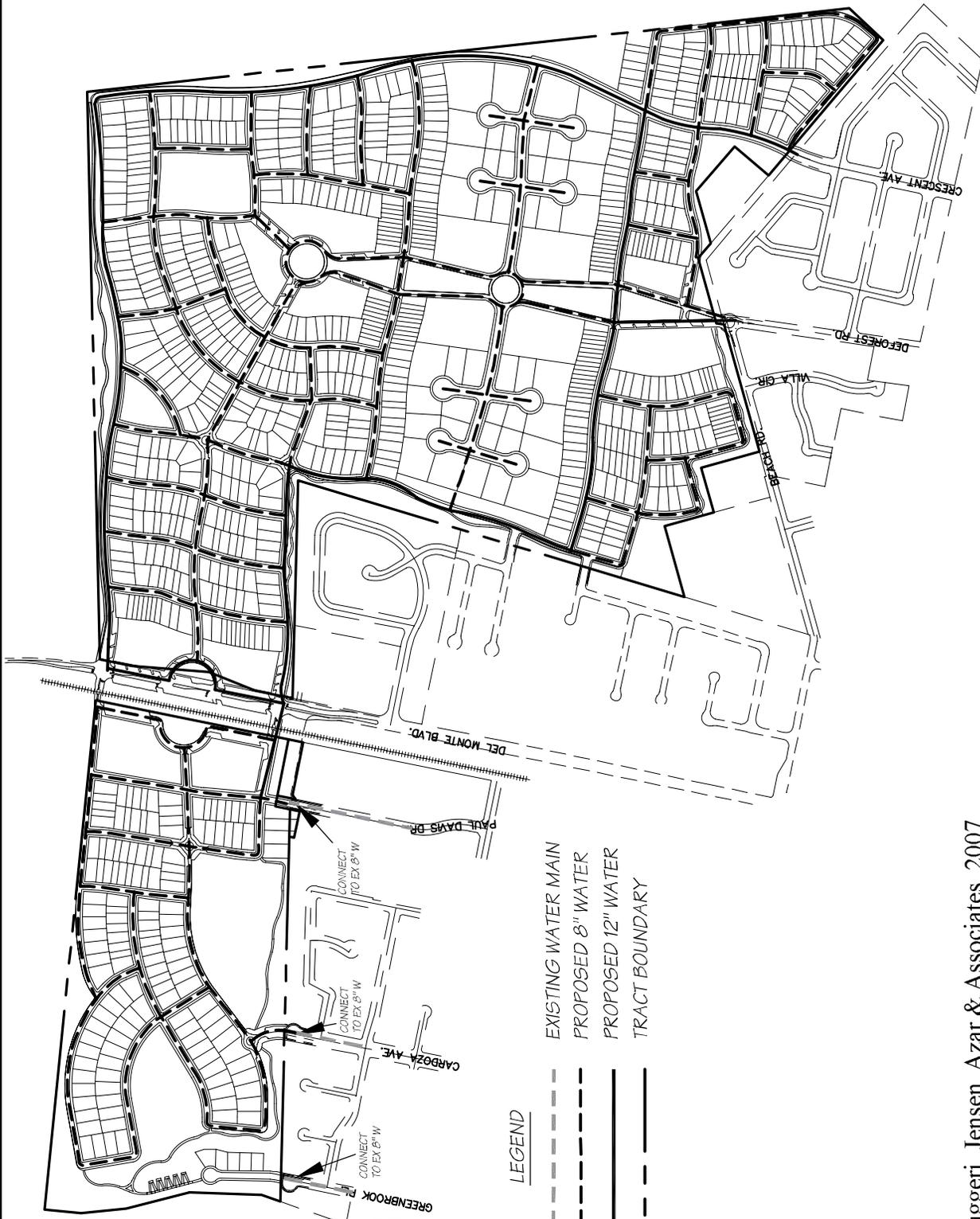
MCWD will provide domestic water service to the Marina Station project. The 2005 UWMP, which includes the anticipated land uses for the proposed Specific Plan, states that MCWD has sufficient water supply for development within the City of Marina and the project site.

Senate Bills 610 (Water Code Section 10910 *et seq.*) and 221 (Government Code Section 66473.7), require the preparation of a water supply assessment in conjunction with project review under CEQA. The intent of SB 221 and 610 is to assure that certain new developments are provided with a reliable supply of water, and informed decision making regarding water supply implications of development is provided. A Water Supply Assessment (WSA) has been prepared for this project by MCWD (January 4, 2006). This EIR section supports the City's fulfillment of its obligation to independently assess and publicly disclose potential water-supply-related impacts of the project under CEQA Guidelines Section 15083.5, Water Code Section 10911(c), and Government Code Section 66473.7. The factual analysis in this EIR draws upon and discusses a range of water supply related information, including information developed by MCWD, MCWD's Augmentation Project EIR, MCWD's 2005 UWMP, and MCWD's WSA for this project. The WSA for the project is included as part of this EIR (as required by SB 610) and is attached as Appendix I.

Table 4.14-3 shows the projected average annual water demand from the Marina Station project determined in the WSA. The project's water demand was accounted for in the UWMP. The WSA estimated that the proposed project will demand approximately 652.7 AFY of water. This assessment applied accepted water use factors and assumed the use of low flow plumbing devices and other water conservation measures. In addition, the assessment assumed that open space areas designated for native landscaping will receive irrigation only to establish vegetation and irrigation will be disconnected within three years. A 15% demand factor was added to commercial and industrial uses to account for associated landscaping. Actual water demands will vary depending on the ultimate mix of specific uses, water use behavior, and landscape development/maintenance practices. In any given year, consumption is expected to vary by as much as seven percent, depending on weather and precipitation.

MCWD plans to upgrade the transmission system to serve the water capacity needs of the project. A new pipeline will be constructed that connects the well pipeline at Well 11 (at Salinas and Reservation Roads) to the existing pipeline in Crescent Avenue. The project proposes about 4,800 linear feet of pipeline that will improve cross-city flows, improve fire flows, and provide redundant water service to the project site (from Wells 10, 11, or possibly the Ord Community) in the event of system failures. Other system improvements would be negotiated with the developer. All onsite distribution systems would be designed and constructed by the project to accommodate necessary demand and fire flows, in accordance with MCWD standards. Water lines will generally be installed within the proposed street right-of-ways, and connect to the existing MCWD water lines that serve the City. The proposed water system layout is presented in Figure 4.14-1.

Table 4.14-3 Marina Station Development – Long Term Projected Water Demands (AFY)				
Land Use	Units	Demand Factor Pot./Irr.	Projected Consumption Potable (AFY)	Projected Consumption Irrigation (AFY)
Residential				
Large Lot Single Family Homes (6,500 to 15,000 sq. ft. lots)	146	.25/.25	37	37
Standard Single Family Homes (3,000 to 6,500 sq. ft. lots)	678	.20/.13	135.6	88.1
Condominium Apartments (Including the Secondary Units Included On SF Lots Above)	536	0.18/.07	96.5	37.5
Total Residential (Plus 40 Secondary Units)	1,360 units		269.1	162.6
Non-Residential				
	Sq. Ft.			
Mixed-Use Retail	60,000	0.000210	12.6	0
Office Uses	143,808	0.000135	19.4	0
Light Industrial	651,624	0.000150	97.7	0
Landscape uses (at 15% of indoor consumption)	-	-	0	19.5
Total Non-Residential	855,432 sf		129.7	19.5
Open Spaces				
	Acres			
Irrigated Parkland (less hardscape)	12.5	2.5	0	31.2
Passive Open Space – native landscape (Note 1)	38.7	0.0	0	0.0
Passive Open Space – turf Total Open Space	4.3 55.5 acres	2.5	0 0	10.8 42.0
Subtotal All Uses	-	-	398.8	224.1
System Losses at 5% of Demands	-	-	19.9	11.2
Water Demand Total (Note 2)			418.7	235.3
Notes:				
1. Temporary irrigation only.				
2. MCWD required conservative demand factors in preparation of the above water needs assessment. MCWD is now delivering 2,300 AFY to the existing 18,500 residents of central Marina, which equals 0.12 AFY per resident. MCWD's demand factors required in Table 4-1 result in an estimate that the 3,795 future residents of Marina Station will use a total of 652.7 AFY or 0.17 AFY per resident, which is 42% more per person than the existing residents, even though the new homes and businesses will incorporate many more water conservation measures than the existing homes. The real water demand will be measured at the completion of the project.				
Source: Demand Factors: MCWD 2005 and 2006; and CreekBridge Homes 2006				



LEGEND

- EXISTING WATER MAIN
- PROPOSED 8" WATER
- PROPOSED 12" WATER
- TRACT BOUNDARY

Source: Ruggeri, Jensen, Azar & Associates, 2007



Proposed Water System Layout

Figure 4.14-1

In order to independently review the sufficiency of water supply for the existing, project, and planned future uses in MCWD's service areas, as required by Water Code Section 10911(c), the City has reviewed the record for the WSA. Based on this independent review summarized below, and the record for the WSA and this EIR, the City concludes that there is sufficient supply for the proposed project, existing uses, and planned future uses.

According to the WSA, the project is estimated to generate an average demand of about 652.7 acre feet of water per year. As indicated in Tables 4.14-2 and 4.14-3, existing sources of water supplies are available to meet the projected annual water demands of the project. Additionally, MCWD has determined in the WSA that there is sufficient water supply from existing and planned sources of water supplies allocated to development on the Armstrong Ranch to serve the project under various conditions for the next 20 years, as well as existing and planned future uses in the Central Marina service area. This conclusion was based on the project's inclusion in the MCWD's 2005 UWMP's analysis of projected supply and demand.

The WSA did note, however, that there may be an imbalance in MCWD's supply to meet all potential future demand in the Ord Community service area. While the Ord Community service area is also part of the MCWD water system, it is a totally separate and distinct service area from the Central Marina service area. The Ord Community service area is subject to its own distinct water allocation limits, pumps water from a different aquifer (i.e., the service area does not) and, does not provide water to the project or the Central Marina service area. As a result, while the WSA notes that there is a potential imbalance in the Ord Community service area supply to meet potential future demand in that service area, the project does not have an impact on Ord Community service area's water supply or demand in that service area. Regardless, the FORA Master Resolution and 1998 Settlement Agreement establish restrictions on development within the Ord Community based upon water supply. Therefore, although a potential water supply imbalance may occur for conceptual long-range buildout of the Ord Community, this potential development is not planned or probable because it cannot occur until additional water supplies are secured and until relevant environmental review is completed. The UWMP recognized that the imbalance would only occur by removing existing development restrictions (2005 UWMP at 3-9.).

MCWD's 2005 UWMP projects that the water demand from full development of potential future Ord Community service areas land uses could exceed projected water supplies. However, the UWMP also determined that a maximum potential development scenario is speculative because it could occur only if current development limits imposed by the adopted FORA Reuse Plan "were lifted" (2005 UWMP). As discussed above, these development limitations (which are found in the Reuse Plan, FORA Master Resolution, and the Settlement Agreement between FORA and the Sierra Club) establish a cap on development in the Ord Community service area, based on assured water supply. These limits cannot be exceeded unless and until additional water supply for the Ord Community is obtained. The UWMP states "If that limitation were lifted, and the long-term development that is projected by the land use jurisdictions beyond the current limits now imposed by the Base Reuse Plan were permitted and constructed in the future," additional water supplies beyond the planned 2,400 AFY Regional Urban Water Augmentation Project would be required." Conversely, because FORA's allocations are restricted by the Reuse Plan, development that exceeds these limitations cannot be considered probable or planned for CEQA or SB 610 purposes. It is therefore unrealistic and speculative to conclude that potential future uses that could exceed the development restrictions under the Reuse Plan will lead to an imbalance in supply since such potential uses cannot exist until additional supply is secured. With respect to the imbalance described for potential future uses in the Ord Community service area, such uses are not planned or probable because there is no specific development proposal, application, identified use, identified intensity of use, identified developer or identified funding source for such development. Further, MCWD has determined in the Augmentation Project, which is projected to supply 2,400 AFY of water to the Ord Community, is a reasonably foreseeable source of future water supply that will be available to serve the future needs of the Ord Community service area (*See* 2005 UWMP at pp. 2-21 to 2-

22; *see also* June 10, 2005, minutes from Joint MCWD and FORA board meeting for agenda item 5B.) Recent groundwater studies indicate that the MCWD may continue to rely on groundwater as its primary source of supply in accordance with the 1996 Annexation Agreement (under which the project's 920 AFY allocation was obtained) without adversely affecting the groundwater basin (Feeney 2004). **The project would result in a less-than-significant impact on water supply and services.**

Recycled Water Distribution and Storage

MCWD is currently developing its Augmentation Project to produce a total of 3,000 AFY of a combined of recycled water⁴ and desalinated water. The recycled project is anticipated to be in operation by the end of 2010. This water is earmarked primarily for the Fort Ord community; however, the Marina Station project may be eligible to receive up to 100 AFY of the recycled water. The project would utilize recycled water for irrigation of the large public-controlled landscape areas. The water may also be used at future commercial facilities as determined on a case-by-case basis. Recycled water would not be used at individual residences.

The recycled water system for the Marina Station site would be distributed through a system of 12-inch "purple" pipes (as required for recycled water under Title 22). Mains would be extended to enable access to recycled water at most areas of the site where it can be used for irrigation of the public open space/parks. Lines would also be extended into the industrial/office park area if the City determines that this is appropriate. Installation of the backbone infrastructure would be a joint effort between MCWD and the project. **The project would result in a less-than-significant impact on water distribution and storage services.**

Wastewater and Sewage Collection

MCWD provides sewer collection services to the City of Marina, which would be extended to the Specific Plan area. The current Wastewater Collection System Master Plan includes the Specific Plan area within its study boundary, however, it does not provide a projected wastewater generation for the Plan area. Ruggeri, Jensen, Azar and Associates calculated the MCWD's Projected Wastewater Generation for the Specific Plan area, using the land use assumptions for the Plan area and design criteria provided in the MCWD Wastewater Collection System Master Plan, which assumes 207 gallons per residential unit (single family and multi-family), in order to approximate MCWD's assumed wastewater generation for the Plan area. Wastewater generation was calculated to be 258,325 gallons per day for the Plan area.

Table 4.14-4 shows the projected wastewater generation for the project from the Specific Plan using the actual land uses proposed for the Plan area. The criteria used by MCWD to calculate flows from residential, office/retail, industrial and commercial were used to determine the projected wastewater generation for the Specific Plan area based on the project as currently proposed. Wastewater generation was calculated to be 340,120 gallons per day for the Plan area. The wastewater generation for the Specific Plan area is greater than that projected in MCWD's Wastewater Collection System Master Plan due to the difference between the assumed land uses and the proposed land uses.

⁴ Reclaimed water consists of highly treated effluent that meets or exceeds Health Department standards for irrigation and similar (non-potable) uses. It cannot be used as a potable water source.

**Table 4.14-4
Specific Plan Projected Wastewater Generation**

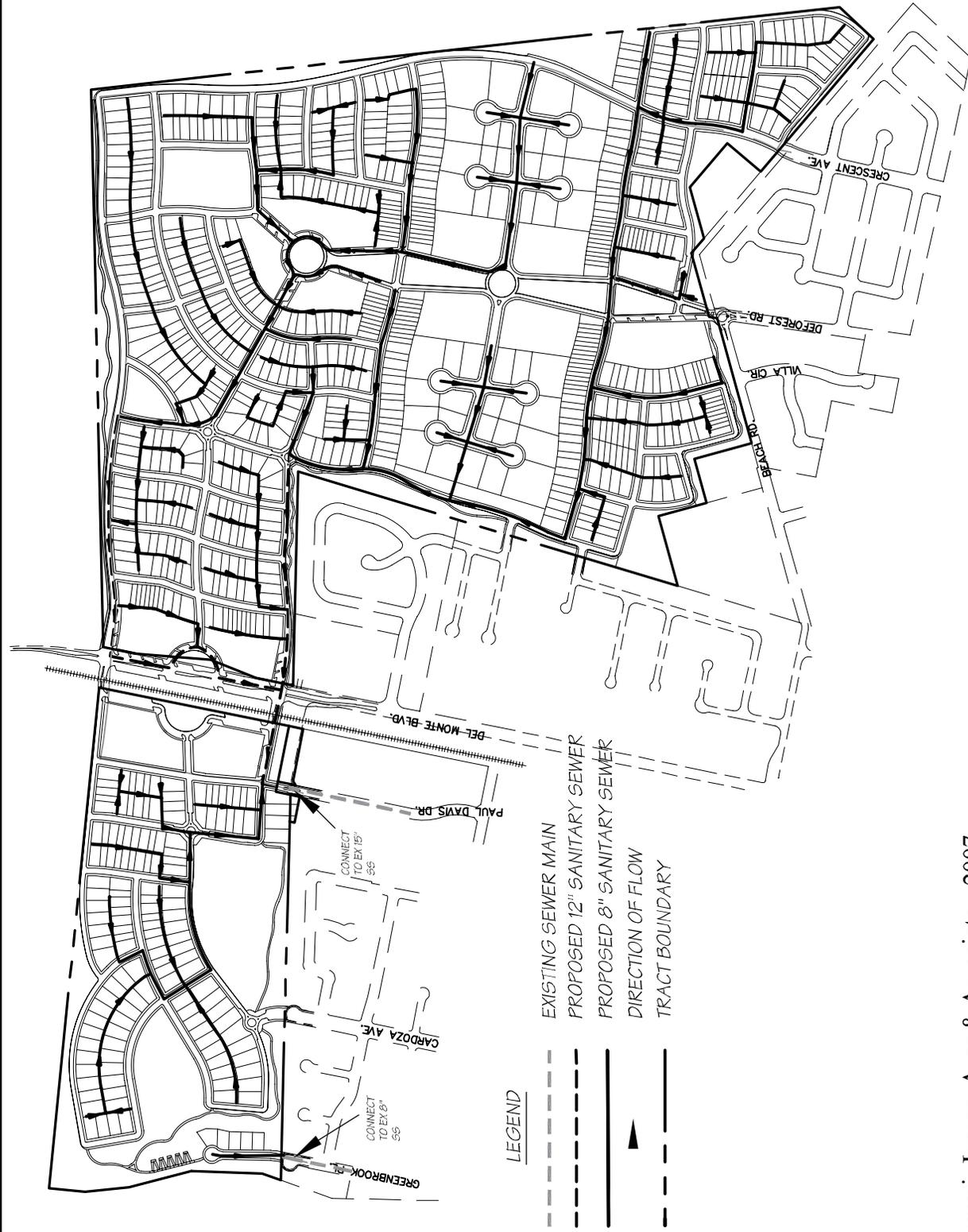
Land Use	Units	Gallons per Unit	Total Base Flow (gallons per day)¹
Single Family Residential	824	207	170,568
Multi Family Residential	536	207	110,952
Office/Retail Uses	18 acres	2,520	45,360
Industrial/Commercial	38 acres	350	13,300
Total	-	-	340,120
<p>1. The sewer generation rates are based on Table 7-1 in MCWD's Wastewater Collection System Master Plan. Residential: 90 gallons per person per day times 2.3 persons per household = 207 gallons per day per house Light Industrial: 350 gallons per day/acre Office: 2520 gallons per day/acre Mixed-Use: 4215 gallons per day/acre Source: Ruggeri, Jensen, Azar and Associates 2006; EMC Planning Group Inc. 2006; and CreekBridge Homes 2006.</p>			

The MRWPCA provides treatment of sanitary sewer for the City of Marina. This facility has a use permit to treat 27 mgd of wastewater, with average dry weather flow of 21.5 mgd. Presently, there are short-term constraints to new residential development as a result of a MRWCPA requirement to limit wastewater treatment (Ordinance 2004-04). Any residential development constructed prior to the Ordinance sunset date of September 30, 2008 would be required in conjunction with pulling its building permit, to demonstrate sufficient MRWCPA capacity. Upon the expiration of Ordinance 2004-04, a new allocation plan would be adopted.

The MRWCPA treatment facility has a supply capacity of 29.6 mgd, and is currently permitted to operate at 27 mgd. Average dry weather flows in 2004 were 21.5 mgd. Based on regional population forecasts for the MRWPCA service area, the treatment plan has sufficient capacity to serve proposed uses and new development in Marina for at least the next 10 to 15 years. The MRWPCA has initiated the process to increase the permitted operational capacity of the facility to the full 29.6 mgd and anticipates receiving the permit prior to reaching the facility's existing permitted use of 27 mgd. Since the existing capacity of the facility is sufficient to accommodate existing and planned uses, there are no capacity expansions planned. However, MRWPCA has a Facility Expansion Master Plan, which would be implemented when there is a need to expand the facility (Mary Price, MRWPCA, personal communication, December 2005). Therefore, the project would not result in the need to either construct new wastewater treatment facility or expansion of an existing facility. **This would represent a less-than-significant impact to wastewater treatment services.**

The Marina Station Specific Plan has developed a preliminary onsite sanitary sewer plan that addresses the development of the Specific Plan area, as well as its relationship to the existing sewer system. This plan analyzes the sewer system for the Plan area and establishes policies that will help to facilitate the design and construction of a system that will meet the needs of the public.

Sanitary sewer lines will be located within the proposed street right-of-ways, and connect to the existing MCWD sanitary sewer lines that serve the City. Specifically, a series of mains will flow towards the current terminus of Paul Davis Drive where there is an existing 15 inch sanitary sewer main. With the exception of the five units located at the end of Drew Street along the project's western edge, all of the project area will gravity flow to the collection point in Paul Davis Drive. Directing all of the project's sewage to the collection point at the end of Paul Davis Drive is consistent with the latest MCWD sewer conveyance and collection master plan. The proposed wastewater system layout is presented in Figure 4.14-2.



Source: Ruggeri, Jensen, Azar & Associates, 2007



Proposed Wastewater System Layout

Figure 4.14-2

Ultimately, all wastewater generated by the project would flow to a MRWPCA interceptor facility. The wastewater infrastructure would be designed with sufficient capacity to accommodate the project, plus additional wastewater flows from upstream portions of the MCWD collection system. Construction of wastewater infrastructure has the potential to result in physical environmental impacts such as noise dust, water quality, and potential biological impacts. These issues are addressed within their respective section of this EIR.

All wastewater mains would be designed consistent with the requirements set forth by MCWD. All wastewater pipelines would be placed underground and in the utilities right-of-way, located in both public roadways and private streets and alleys. The project will construct new infrastructure that is of adequate capacity to serve the project's projected demand in addition to the wastewater provider's existing commitments (Jade Sullivan, MCWD, personal communication, December 2005). **This would represent a less-than-significant impact to sewer collection services.**

Solid Waste

Change in solid waste streams generally results from population growth, successful diversion efforts, and substantial fluctuations in demolition and construction activities. The project would result in a population increase as well as new construction activities. As a result, it would increase solid waste generation that could adversely affect local facilities that process or store solid waste.

The project would generate solid waste related to project operations. The solid waste generation rate of 5.4 pounds per person per day is a target rate mandated by the Waste Management Act of 1989 (AB 939) and assumes that solid waste reduction and recycling program would be implemented at the project site. This assumption is appropriate for evaluating the project since the City has met and exceeded its AB 939 goal since 1996 and it has a curbside recycling program for single family residential developments. Based on a solid waste generation rate of 5.4 pounds per person per day, upon buildout, the project would generate about 20,493 pounds of solid waste per day, or 3,739 tons per year. The Monterey Peninsula Landfill has capacity to serve its present service area through the year 2090 with a remaining available solid waste capacity of 24 million tons. The project's solid waste generation of 3,739 tons per year represents an incremental increase in the yearly receipt of solid waste by Monterey Peninsula Landfill that can be accommodated by existing landfill facilities (Rick Shedden, MRWMD, personal communication, December 2005). **This would represent a less-than-significant impact to solid waste disposal needs.**

Energy

The project site would be constructed with a variety of residential, commercial, and industrial uses, increasing demands on electricity and natural gas supplies. It is anticipated that PG&E would extend their services to the project area under a franchise agreement with the City. According to PG&E, the project will not result in any adverse effects on their services, and PG&E has the capacity to provide electric service to the project. Existing PG&E-operated gas mains and electrical distribution systems will be extended and new distribution mains installed in a new joint trench adjacent to roadways. In addition, the expansion of existing gas and electrical transmission facilities outside of the project site may be required. The need for these improvements will be determined by PG&E. More specifically, applications for service will be required for both electrical and natural gas service. Once an application and payments are received, planning for gas and electrical services can begin concurrent with approval of tentative subdivision plans. PG&E estimates that engineering of structures can be developed within four weeks for trenching construction to begin (Jose Rios, PG&E, personal communication, December 2005). Potential impacts from construction of the underground line are addressed as part of construction of the project in other sections of this document.

SBC provides telephone services and Comcast Cable provides cable television to the City of Marina. Both companies as well as other local service providers offer internet services. The services of both companies would be extended to meet the needs of the project area. Residents would be allowed to choose their service providers for telephone, cable and internet services. The project would be adequately served by PG&E, SBC, and Comcast Cable. **This would represent a less-than-significant impact.**

Cumulative Impacts

Future development of the project site as proposed by the Marina Station Specific Plan would not significantly contribute to cumulative impacts associated with utilities and service systems. As discussed above, the projected water demands of the project, existing uses, and probable future projects are not expected to exceed the MCWD's currently available water supply and reasonably foreseeable future water supplies based on the 2005 UWMP. With respect to the potential imbalance noted in the WSA between future demand and future supply in the Ord Community service area, such imbalance is not reasonably foreseeable because, as noted in the 2005 UWMP, existing development restrictions contained in the Reuse Plan, FORA Master Resolution, and the Settlement Agreement prohibit development in the Ord Community absent an assured water supply. Further, the project, which was assumed in the MCWD's 2005 UWMP, is not located in the Ord Community service area and does not rely on or require water from the Ord Community service area. All water supplied for the project will be provided by the Central Marina service area. As a result, this project will not contribute to any potential imbalance in the Ord Community service area, regardless of how speculative the imbalance may be based on existing regulatory limitations in the Ord Community. The project would not cumulatively contribute to the need for new wastewater treatment facilities or landfills, since the existing facilities have sufficient capacity to serve planned City of Marina and former Fort Ord development. The cumulative demand for services would be met through planned or developer-subsidized improvements as well as by the collection of fees pursuant to the City's impact fee ordinance. **This would represent a less-than-significant impact and no mitigation measures are necessary.**

5.0 CEQA CONSIDERATIONS

5.1 GROWTH INDUCEMENT

CEQA requires an EIR to discuss the ways in which the proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment (CEQA Section 15126.2(d).) Included in this evaluation are elements of the project that would remove obstacles to population growth, such as unavailability of major utility capacity or infrastructure, as well as any characteristics of the project that may encourage and facilitate other activities that could significantly affect the environment. Recognizing the inherent difficulties involved in forecasting the extent and type of development that might be fostered by a particular project, CEQA calls for a general assessment of possible growth-inducing impacts rather than a detailed analysis of project's specific impacts on growth.

Growth inducement may be considered detrimental, beneficial, or insignificant under CEQA. Typically, induced growth is considered a significant adverse impact if it:

- Provides infrastructure or capacity to accommodate growth beyond the levels currently permitted in applicable local and regional plans and policies.
- Encourages growth or a concentration of population in excess of what is planned for in the applicable general plan or other land use plan, or in projections made by regional planning agencies such as the Association of Monterey Bay Area Governments (AMBAG).
- Adversely affects the ability of agencies to provide needed public services or infrastructure.
- In some other way significantly affects the environment, such as through a substantial increase in traffic congestion or deterioration of air quality.

Potential Growth Related to the Project

The project would increase population in the area. Marina's existing population, based on the 2000 Census, is approximately 25,000. The average household size in Marina, according to the General Plan Housing Element, is 2.79. Based on this factor, the 1,360 housing units proposed by the project would generate approximately 3,794 people. This would represent an approximate 15% increase in the City's population. Increases in population create additional demand for services and infrastructure, requiring construction of new facilities that may, in turn, induce growth or otherwise cause significant environmental effects.

The Specific Plan contains financing and implementation measures to ensure that adequate infrastructure and community facilities are available to meet the increased demands of the project. No significant additional impacts on services (such as water, wastewater, storm drainage, flood control, police, fire, parks and recreation, libraries and schools) are expected beyond what has been planned and provided for in the Specific Plan and related project approvals. The additional infrastructure and community facilities that are proposed for the project do not exceed what is necessary to mitigate impacts of the project, and will not provide additional capacity that would accommodate any significant growth beyond what is currently permitted under the General Plan and other local and regional plans.

The project includes industrial, office and commercial/retail uses that will create jobs and thereby stimulate demand for housing. The project is estimated to generate approximately 2,044 jobs from the proposed industrial, commercial, and office components. Additional minor demand for housing can also be expected as a result of any secondary employment in the area that will be associated with the project. The project will provide 1,360 residential units. This equates to a jobs/housing ratio of approximately 1.5 new jobs for each new home within the Specific Plan area. This represents over twice the City's existing ratio of 0.6. The City of Marina anticipates and plans for a city-wide jobs/housing ratio of 1.5 upon buildout of the General Plan, which includes development of the Marina Station site. To meet the City's goal, buildout of the job generating component of the Specific Plan will be coordinated with buildout of the residential component, market conditions allowing. The project will provide housing and jobs in a ratio consistent with the City's General Plan and Housing Element objectives and, therefore, is not expected to generate additional housing demand beyond that which is currently planned.

The project would provide new infrastructure in the City of Marina, including roadways, traffic intersection improvements, and extensions of water and sewer lines, which could facilitate additional growth. Roadway and intersection improvements would be limited to increases in capacity to offset the additional traffic volumes generated by the project. The proposed utilities and related infrastructure would be planned and sized to accommodate the needs of the project, and do not include oversized components designed to facilitate other development or further extensions of utilities or services. Although the project will generate additional demand for water and wastewater treatment facilities, it is not expected to result in any expansion of current facilities that would accommodate additional growth.

Growth to the east of the project site is constrained by airport safety zones associated with Marina Municipal Airport. Although the roadways and utility extensions could provide some potential benefit to any future development in areas north of the project site, such benefit would be minor and incidental and would not substitute for other major extensions of infrastructure and utilities necessary to accommodate significant growth. Additionally, the project is bounded to the north by the City limits and Urban Growth Boundary, and property outside the growth boundary is not eligible for development until 2020 (with narrow exceptions that are unlikely to occur).

Based upon the above discussion, the project would not result in significant growth-inducing impacts.

5.2 CUMULATIVE IMPACTS

Section 15130 of the CEQA Guidelines requires an EIR to discuss cumulative impacts of a proposed project when the project's incremental effect is cumulatively considerable. Cumulative impacts refer to two or more individual effects that, when combined, are considerable or that compound or increase other environmental impacts. The purpose of the cumulative impact analysis is to identify and summarize the environmental impacts of the proposed project in conjunction with existing, approved, and anticipated development in the project area. Cumulative impacts associated with the project are addressed within the individual sections of this EIR.

5.3 SIGNIFICANT UNAVOIDABLE IMPACTS

The proposed project would result in significant impacts in the following categories, as described in this EIR: aesthetics, air quality, biological resources, cultural resources, geology/soils/mineral resources, hazardous materials, noise, public services, traffic, and water quality. All project impacts can be reduced to a less-than-significant level with implementation of mitigation identified in the EIR, with the exception of the following:

- Significant unavoidable project and cumulative impacts to a scenic vista and to the visual character of the project site.
- Significant unavoidable project impacts from the generation of regional emissions of ROG, an ozone precursor.
- Significant unavoidable loss of access to mineral resources.
- Significant unavoidable noise impacts during construction, and significant project/cumulative noise impacts from increases in traffic volumes that may not be avoidable at all locations.
- Significant project and cumulative impacts to regional transportation facilities, including highways, if other agencies do not establish or approve funding mechanisms for the identified mitigation measures.

5.4 IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 15126(f) of the State CEQA Guidelines requires EIRs to include a discussion of significant, irreversible environmental changes that would result from project implementation. CEQA Section 15126.2(c) identifies irreversible environmental changes as those involving a large commitment of nonrenewable resources or irreversible damage resulting from environmental accidents.

The project would develop residential, commercial, office, and industrial uses on the site. Irreversible changes associated with the project include the use of nonrenewable resources during construction, including building materials (such as concrete, glass, some types of plastic) and use of petroleum products. During the operational phase of the project, natural gas and electricity would be used for lighting, cooling, and heating. Industrial development would use such energy sources for manufacturing and/or other related uses. In addition, grading from the project would permanently alter the topography of the site.

Future industrial uses on the site could involve the transport, use, and handling of hazardous materials. Accidental release of hazardous materials could result in impacts to environmental health and public safety. However, implementation of federal, state, and local regulations for the handling and cleanup of such materials would minimize the potential for irreversible damage.

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6.0 ALTERNATIVES

6.1 INTRODUCTION

CEQA Guidelines Section 15126.6 requires the consideration of a range of potentially feasible alternatives to the proposed project. CEQA further requires that the discussion focus on alternatives capable of eliminating significant adverse impacts of the project, or reducing them to a less-than-significant level, even if the alternative would not fully attain the project objectives or would be more costly. The range of alternatives discussed in an EIR is governed by the “rule of reason” that requires an EIR to evaluate only those alternatives necessary to allow a reasoned choice. An EIR need not consider an alternative where the effects cannot be reasonably ascertained, or where implementation is remote and speculative.

Alternatives Not Analyzed in Detail

The following discussion addresses those alternatives that were considered but not selected for detailed analysis.

Alternative Project Development Scenarios. Conceptual scenarios were developed early in the project planning process. During development of the Specific Plan, the developer and consultants met with City staff to consider various circulation and land use patterns on the site. The elements incorporated into the project plan are intended to meet the City’s housing and economic goals, while addressing community concerns.

Alternative Location. Other than the Marina Station site, there are no single sites remaining within the City of Marina that could accommodate the scale of the project. The November 7, 2000, Urban Growth Boundary (UGB) Initiative generally precludes the City from approving urban development outside this 20-year growth boundary, which generally follows the City limit boundary. All large sites in the City are either committed to non-urban uses, committed to other urban development projects, or constrained by the safety zones of the Marina Municipal Airport. In central Marina, the City’s Housing Element identifies approximately 33 acres of land with residential potential; however, the largest site is just over two acres. Within Fort Ord, the City has about 20 parcels remaining. The largest is approximately 40 acres and designated for *Mixed Use*. The project would not be feasible on this site due to its small size and water limitations in Fort Ord. In addition, a fundamental project objective is to develop the portion of the Armstrong Ranch that is within the City limits and UGB. For these reasons, this EIR does not examine in detail an alternative location for the proposed project.

Alternatives Selected for Further Analysis

The following section discusses the alternatives evaluated in this EIR and the comparative environmental effects of each. The alternatives considered in this analysis are as follows:

- *No Project/No Development*
- *Existing General Plan*
- *Mineral Extraction*
- *All Residential*
- *No Industrial*
- *Reduced Project*

The alternatives chosen for this analysis, beyond those mandated by CEQA, were developed specifically to avoid or substantially reduce the significant, unavoidable impacts of the project (summarized below). A comparison of the impacts for each alternative is presented in Table 6-1.

Impact	No Project	Existing Gen Plan	Mineral Extraction	All Residential	No Industrial	Reduced Project
Aesthetics	<	<	=	=	=	<
Agricultural Resources		=	=	=	=	=
Air Quality	<	<	<	<	≤	<
Biological Resources	<	<	<	<	≤	<
Cultural Resources	<	=	=	=	=	=
Geology/Soils/ Mineral Resources	<	<	<	=	=	<
Hazards & Hazardous Materials	<	<	<	<	<	<
Hydrology & Water Quality	<	=	=	=	=	=
Land Use & Planning	>	>	>	>	>	>
Noise	<	<	<	<	<	<
Public Services & Utilities	<	<	<	<	<	<
Traffic	<	<	<	<	<	<
> Impact Greater than Project = Impact Comparable to Project < Impact Less than Project						

6.2 SUMMARY OF PROJECT OBJECTIVES AND SIGNIFICANT IMPACTS

Objectives

The primary objectives of the project, as described in **3.0 Project Description** of this EIR, are as follows:

- Provide additional housing to advance the City's goal of accommodating a fair share of Monterey County's future population and employment growth within the City's Urban Growth Boundary.
- Provide approximately 1,300 units of residential development in the portion of Armstrong Ranch that is within City's Urban Growth Boundary.
- In order to promote a jobs-housing balance that would allow residents to both live and work in Marina, provide office, research, commercial and industrial uses, as well as housing, in the portion of Armstrong Ranch that is within the City's Urban Growth Boundary.
- Provide a variety of housing types for all economic levels and ages.
- Create a community using neotraditional design principles, including the development of housing, commercial services, businesses, and community facilities.
- Create a community with varied uses that are within easy walking or bicycling distance from each other.
- Support the local economy by increasing income on the site through property taxes, sales taxes, and job creation.

Significant Impacts

The proposed project would result in significant or potentially significant impacts in the following categories, as described in this EIR: aesthetics, air quality, biological resources, cultural resources, geology/soils/mineral resources, hazards, noise, public services, traffic, and water quality. All project impacts can be reduced to a less-than-significant level with implementation of mitigation identified in this EIR, with the exception of the following:

- Significant unavoidable project and cumulative impacts to a scenic vista and to the visual character of the project site.
- Significant unavoidable project impacts from the generation of regional emissions of ROG, an ozone precursor.
- Significant unavoidable loss of access to mineral resources.
- Significant unavoidable noise impacts during construction, and significant project/cumulative noise impacts from increases in traffic volumes that may not be avoidable at all locations.
- Significant project and cumulative impacts to regional transportation facilities, including highways, if other agencies do not establish or approve funding mechanisms for the identified mitigation measures.

6.3 NO PROJECT/NO DEVELOPMENT ALTERNATIVE

Description

CEQA requires the discussion of the No Project Alternative “to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.” The No Development Alternative consists of leaving the site in its current undeveloped condition. The No Development Alternative would avoid both the adverse and beneficial effects of the proposed project.

Impacts

The No Development Alternative would avoid the significant or potentially significant environmental impacts of the project in the following areas: aesthetics, air quality, biological resources, cultural resources, geology/soils/mineral resources, hazardous materials, noise, public services, traffic, and water quality. This includes the avoidance of potentially unmitigable impacts in the areas of visual quality, emissions of regional air pollutants (i.e., ROG, an ozone precursor), loss of access to mineral resources, and project and cumulative noise and traffic effects. However, this alternative is inconsistent with the City’s goals for the site that call for a wide range of uses on the site, a pedestrian-oriented layout, and 1,300 housing units. It would also conflict with the General Plan provision to prevent under-utilization of land that is appropriate for community development within the UGB, to ensure that development proceeds in an orderly and consistent manner.

Summary

The No Development Alternative would avoid all of the environmental impacts of the proposed project, but would increase land use impacts compared to the proposed project. The No Development Alternative could also encourage leapfrog development by displacing housing demand to less central sites outside the City. The No Development Alternative would fail to meet any of the project objectives to provide an integrated mixed-use community on the portion of the Armstrong Ranch within the City limits and UGB.

This alternative would also fail to meet the primary objectives of the plan to meet the City's housing and employment goals to achieve a City-wide jobs/housing balance.

6.4 EXISTING GENERAL PLAN ALTERNATIVE

Description

This alternative assumes buildout of the existing General Plan land use designations for the project site. Under this scenario, the Specific Plan would not be implemented and the project site would retain its current land use designations, as shown in the current General Plan map in Figure 6-1. Current designations on the site consist of the following: *Public Facilities, Light Industrial/Service Commercial, Multiple Use, Single Family Residential (5 du/ac), Parks and Recreation, and Habitat Reserve/Other Open Space*. Table 6-2 lists the approximate acreage of each use. It should be noted that the City has decided not to construct the California Avenue extension, as currently shown in Figure 6-1.

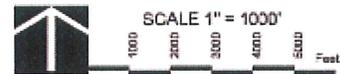
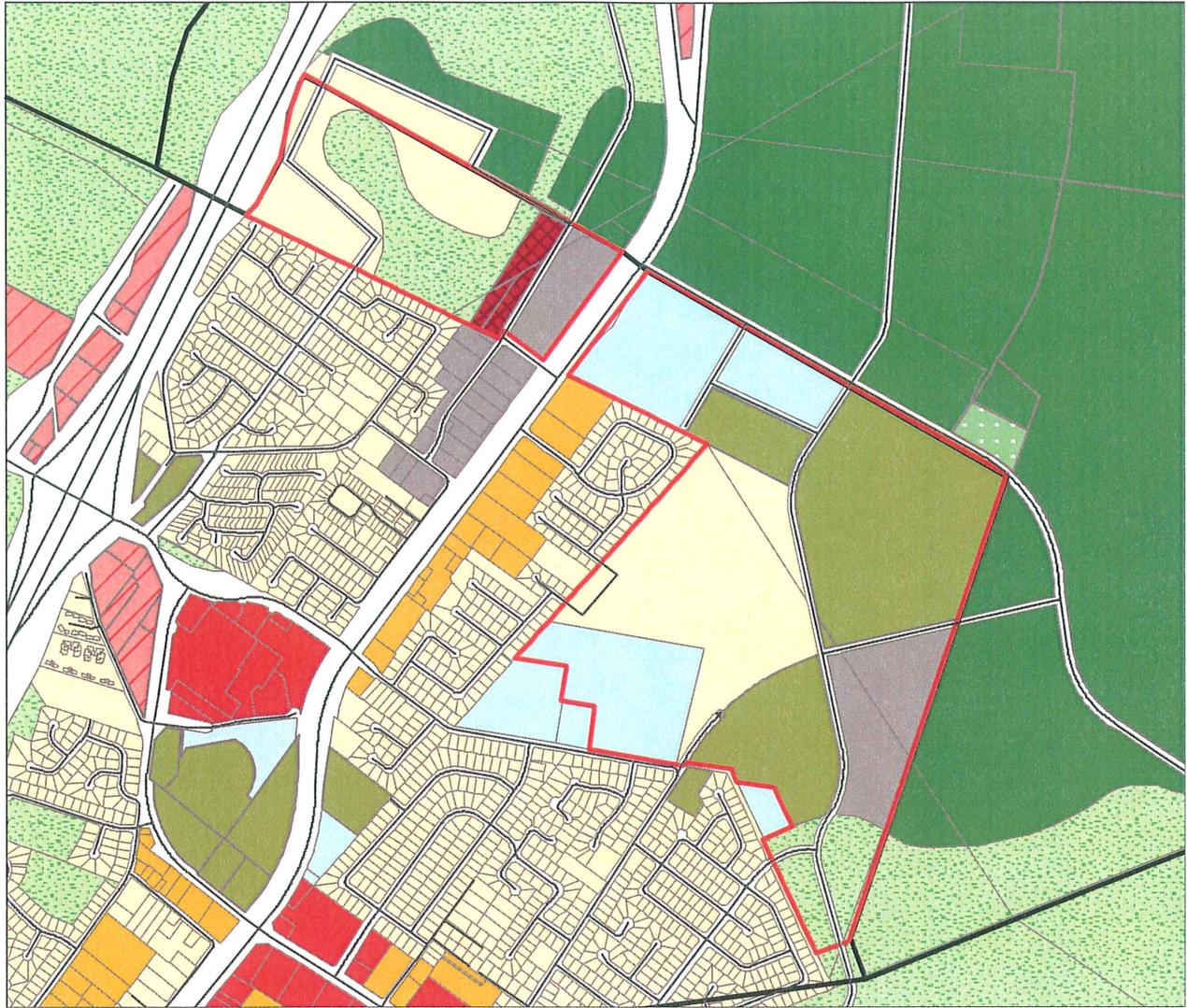
Land Use	Acreage
Public Facilities	50
Light Industrial/Service Commercial	27
Multiple Use	6
Single Family Residential (5 du/acre)	83
Parks and Recreation	96
Habitat Reserve and Other Open Space	36
TOTAL	298

Impacts

Aesthetics. This alternative would result in less intensive urban development of the project site than the proposed project, since the existing General Plan designations are less dense and provide more open space. Buildout of the existing designations would still substantially alter the scenic vista from Highway 1 and alter the visual character of the project site by introducing urban development onto currently vacant grazing lands. Development under the existing General Plan map would result in significant unavoidable visual impacts associated with grading and alteration in topography, removal of vegetation, and the construction of roads and buildings. The effects of new light/glare sources would be less than those of the proposed project, since more of the site would remain in open space. The overall impacts to aesthetics from the Existing General Plan Alternative would be somewhat less than those of the proposed project.

Agricultural Resources. The existing General Plan map does not preserve any portion of the project site in agricultural uses. The site consists of grazing land and does not contain any prime or important farmland. This alternative would result in the loss of grazing land comparable to the proposed project. However, the loss of grazing land is not considered a significant impact.

Air Quality. Because development under this alternative would be less intensive than the proposed project, both construction and operation of the project are expected to generate lower levels of criteria pollutants and toxic air contaminants. This reduction would be offset somewhat by the fact that the proposed project provides an integration of land uses that could reduce the number and length of vehicle trips, which is lacking in the current General Plan map. This alternative could avoid the significant unavoidable air quality impact of the proposed project on regional emissions (i.e., ROG, an ozone precursor). For both the proposed project and this alternative, most air quality impacts would be mitigable



LEGEND

Urban Services Boundary	Residential	Marina Station Project Boundary	Commercial	Industrial	Public Facilities
<ul style="list-style-type: none"> Habitat Reserve & Other Open Space Parks and Recreation Agriculture Golf Course Mini-Park (General Location) 	<ul style="list-style-type: none"> Single Family Residential (Ave density 5 dwelling units/acre) Marina Heights Residential (Ave density 5.5 to 6.5 dwelling units/acre) Village Homes (Ave density 8 dwelling units/acre) Multi-family Residential (15-35 dwelling units/acre) 	<ul style="list-style-type: none"> Multiple Use Office/Research Retail/Service Visitor-Serving 	<ul style="list-style-type: none"> Light Industrial/Service Commercial 	<ul style="list-style-type: none"> Education Alternative Middle School site Civic Alternative Civic Center site Other Public Facilities 	

Source: Marina General Plan December, 2005



Existing General Plan Designations

Figure
6-1

to less-than-significant levels. The overall air quality impacts of the Existing General Plan Alternative would be less than those of the proposed project.

Biological Resources. The existing General Plan map identifies a portion of the west side of the site as Habitat Reserve and Other Open Space. This alternative would retain an estimated 36 acres of the site for biological preservation and/or restoration, reducing the potential impacts of the project on sensitive biological resources, particularly Monterey spineflower, a special status plant species, and coastal dune scrub and native grassland habitats. For both the proposed project and this alternative, impacts to biological resources would be mitigable to a less-than-significant level by on- and off-site preservation and restoration, and other measures identified in this EIR. The overall impacts of the Existing General Plan Alternative to biological resources would be less than those of the proposed project.

Cultural Resources. Because of its reduced development footprint, the Existing General Plan Alternative could reduce the overall potential impacts to undiscovered cultural resources, though this cannot be definitively stated since it depends on the existence and locations of any unknown resources. For both the proposed project and this alternative, the potential impact on undiscovered cultural resources would be mitigable to a less-than-significant level. In addition, the impact to the remnants of the old railroad grade are not significant for both the project and alternative. The overall impacts to cultural resources from the Existing General Plan Alternative would be approximately equal to those of the proposed project.

Geology/Soils/Mineral Resources. This alternative would reduce grading in areas designated for non-urban uses. The portions of the site developed for urban uses would be subject to the same soil, geologic and seismic hazards as the proposed project. However, because the site would be occupied by fewer residents and employees under this alternative, fewer persons would be exposed to these hazards. The unavoidable impacts to mineral resources would be comparable to the project, since urban uses are designated in identified mineral resource areas (MRZ-2 for aggregate) and this alternative would eliminate the possibility of extracting any mineral resources on the site. For both the proposed project and this alternative, the geology and soils impacts would be mitigable to less-than-significant levels. The overall impacts related to geology, soils, and mineral resources from the Existing General Plan Alternative would be less than those of the proposed project, since it includes less urban development and more open space.

Hazards. The existing General Plan designations place residential uses outside of air traffic hazard zones under the existing 1996 ACLUP. The existing General Plan designations for this site include industrial uses that could introduce hazards similar to those identified for the industrial uses included in the project. However, because of its less dense development pattern, fewer persons would be exposed to hazards on the project site. For both the proposed project and this alternative, the generation of hazardous materials and exposure to non-airport hazards would be mitigable to less-than-significant levels. The overall impacts relating to hazards and hazardous materials from the Existing General Plan Alternative could be less than those of the proposed project, since it includes less industrial development overall, and less residential development near the existing OU-1 plume.

Hydrology/Water Quality. Development under this alternative would be subject to the City's requirement that all storm water runoff be retained onsite. In addition, this alternative would not require the use of onsite wells. Assuming all uses are developed in accordance with the City's requirements, this alternative would not cause significant drainage, flooding, or groundwater impacts. This alternative would reduce impervious surfaces due to the decrease in overall development, and therefore could decrease the potential for water quality impacts compared to the proposed project. However, for both the proposed project and this alternative, water quality impacts would be avoided by implementation of required BMPs. The overall hydrology and water quality impacts of the Existing Alternative would be approximately equal to those of the proposed project.

Land Use. Although the Existing General Plan Alternative would be consistent with the current General Plan map for the project site, it would be less consistent than the proposed project with the goals and policies of the General Plan, since those goals and policies are more difficult to implement given the constraints of the existing General Plan map uses. The General Plan calls for approximately 1,300 residential units on the project site, including a mix of residential, office, research, commercial and industrial uses, and a pedestrian-oriented layout. The proposed project meets these General Plan policies better than the Existing General Plan Alternative, which would provide fewer than 500 residential units, no office uses, very limited retail uses, and a less pedestrian/bicycle oriented layout. Because of the difficulties in attaining all of the applicable goals and policies of the General Plan within the constraints of the existing General Plan map, the Existing General Plan Alternative would be less consistent than the proposed project with City land use policy, which would result in greater land use impacts than the proposed project.

Noise. Construction noise impacts from this alternative would be comparable to those of the proposed project in some existing neighborhoods and less in others, depending on how much earthmoving and other construction activities would occur adjacent to residential areas (refer to Figure 6-1). During project operations, traffic noise impacts in existing neighborhoods would be reduced since development would be less intensive than under the proposed project, and may be mitigable to less-than-significant levels when compared to the proposed project. Overall, the noise impacts of the Existing General Plan Alternative could be less than those of the proposed project.

Public Services & Utilities. Buildout of the existing General Plan map would result in overall demand for services and utilities that would be somewhat lower than for the proposed project due to the decrease in development density. Service extensions could be less efficient than under the proposed project, since development would be more spread out. For both the proposed project and this alternative, public services and utilities impacts would be mitigable to a less-than-significant level. The overall public services and utilities impacts of the Existing General Plan Alternative would be less than those of the proposed project.

Traffic. This alternative would result in less intensive development than the proposed project, generating fewer vehicle trips. However, the Existing General Plan Alternative lacks the neotraditional design of the project, which integrates a variety of land uses in a pedestrian-oriented community that could reduce the number and length of vehicle trips. For both the proposed project and this alternative, local traffic impacts would be mitigable to less-than-significant levels. Regional traffic impacts for this alternative and the project would be mitigable only with the cooperation of outside agencies. Overall, the traffic impacts of the Existing General Plan Alternative are expected to be less than those of the proposed project since this alternative involves less development.

Summary

Because of its reduced development intensity and inclusion of more open space, the Existing General Plan Alternative would generally result in reduced environmental impacts compared to the proposed project. This alternative would likely avoid the project's significant unavoidable regional air quality impact, reduce the extent of significant unavoidable noise impacts, and reduce the severity of significant unavoidable visual effects and traffic impacts. This alternative would not avoid the project's significant unavoidable scenic vista and mineral resource impacts. This alternative would be less consistent with the goals of the General Plan calling for a wide range of uses on the site, a pedestrian-oriented layout, and 1,300 housing units. This alternative would not meet the project objectives of providing a Specific Plan for a mixed-use, neotraditional community that integrates residential, industrial, commercial, and park uses on the site.

6.5 MINERAL EXTRACTION ALTERNATIVE

Description

The Mineral Extraction Alternative is examined because the loss of access to mineral resources on the project site is a significant unavoidable impact of the project, and would occur under all of the other alternatives discussed (with the exception of the No Project Alternative). General Plan provision 4.124.5 states that mineral extraction on Armstrong Ranch may constitute an appropriate interim use of the property prior to its urban development. Under this alternative, mineral extraction would be permitted on approximately 106 acres of the project site, which includes all portions of the project site east of Del Monte Boulevard that are more than 1,000 feet distant from existing residences, per provision 4.124.6 of the General Plan. The west side of the site (west of Del Monte Boulevard) would remain undeveloped and in grazing use.

Impacts

Aesthetics. This alternative would introduce mineral extraction (sand mining) activities and associated equipment and structures onto currently vacant land. This alternative would avoid visual impacts on the project site west of Del Monte Boulevard, but would result in significant unavoidable impacts to the visual character of the site east of Del Monte Boulevard from the introduction of mineral extraction activities, alteration in topography, removal of vegetation, and the construction of access roads. Although the mineral extraction activities would occur on a smaller (106-acre) portion of the site, these uses would be aesthetically inferior to existing conditions, and would likely be more aesthetically degrading than urban development of the same area. The aesthetic effects of new light/glare sources would be less than under the proposed project; however, the light and glare impact would be mitigable to a less-than-significant level for both scenarios. The overall impacts to aesthetics from the Mineral Extraction Alternative would be approximately equal to those of the proposed project on the east side of the site; however, the impacts on the west side of the site would be avoided. The overall visual impacts would, therefore, be less than under the proposed project.

Agricultural Resources. The project site consists of grazing land and does not contain any prime or important farmland. Assuming cattle grazing would be compatible with nearby mineral extraction activities, this alternative could reduce the amount of grazing land removed by the project since cattle could theoretically graze in the 1,000-foot buffer between the sand mining area and residential areas, as well as on the west side of the site. However, the loss of grazing land is not considered a significant impact.

Air Quality. Mineral extraction activities on the project site would result in the generation of dust during ongoing operations, as well as the generation of NO_x from the use of heavy equipment and truck traffic. These air quality impacts, however, would be mitigated by standard requirements imposed by the MBUAPCD. Compared with the proposed project, this alternative would reduce overall air quality impacts, since a much smaller area of the site would be disturbed by construction and less traffic would be generated. More diesel truck traffic would likely be generated from the mineral extraction operations. For both the proposed project and this alternative, most significant air quality impacts would be mitigable to less-than-significant levels. The Mineral Extraction Alternative, however, is likely to avoid the project's significant impacts from mobile emissions of ROG (an ozone precursor), due to a substantial reduction in trip generation. The overall impacts to air quality from this alternative would be less than under the proposed project.

Biological Resources. Mineral extraction activities would reduce some areas of habitat and could introduce noise and dust that disturb wildlife. However, the Mineral Extraction Alternative could preserve

substantially more existing habitat than the project by providing a 1,000-foot buffer between mineral extraction activities and residential areas, and eliminating development on the west portion of the site. For both the proposed project and this alternative, significant impacts to biological resources could be reduced to less-than-significant levels by mitigation identified in the EIR. The overall impacts to biological resources from the Mineral Extraction Alternative would be less than under the proposed project.

Cultural Resources. Because of its reduced footprint, the Mineral Extraction Alternative could reduce potential impacts to undiscovered cultural resources, particularly on the west side of the site where no development would occur. For both the proposed project and this alternative, the potential impact on undiscovered cultural resources would be mitigable to a less-than-significant level. In addition, the impact to remnants of the old railroad grade are not significant for the project or this alternative. The overall impacts to cultural resources from this alternative could be less than those of the proposed project.

Geology/Soils/Mineral Resources. The purpose of this alternative is to eliminate the project's significant unavoidable impact on mineral resources. By reducing the project's footprint and greatly reducing the number of persons occupying the site, the Mineral Extraction Alternative would also reduce the number of persons exposed to on-site soil, geologic, and seismic hazards compared to the proposed project. Mineral resource extraction would impact local geology through mining activities; however, these are highly regulated and do not represent a significant impact. For both the proposed project and this alternative, the exposure to soil, geologic and seismic hazards would be mitigable to a less-than-significant level. Since this alternative eliminates the significant unavoidable impact to mineral resources, the overall geologic impacts would be less than the project.

Hazards. This alternative would reduce impacts of the project associated with hazards since it would avoid the use of hazardous materials from industrial development and be occupied by far fewer persons (with no sensitive residential uses). With regards to airport hazards, the Mineral Extraction Alternative, like the proposed project, would be consistent with the 2006 Draft ACLUP. For both the proposed project and this alternative, the exposure to hazards would be mitigable to a less-than-significant level. The overall impacts from the Mineral Extraction Alternative with respect to hazards and hazardous materials would be less than under the proposed project.

Hydrology/Water Quality. Development under this alternative would be subject to the City's requirement that all storm water runoff be retained onsite. In addition, this alternative would not require the use of onsite wells. Assuming all uses are developed in accordance with the City's requirements, this alternative would not cause significant drainage, flooding, or groundwater impacts. This alternative would reduce impervious surfaces compared to the proposed project. Mining activities would be required to implement industry-specific BMPs to avoid significant water quality impacts. Overall, the hydrology/water quality impacts of the Mineral Extraction Alternative would be somewhat less than those of the proposed project, since the area of disturbance would be substantially smaller.

Land Use. Mineral extraction is identified as a potentially feasible interim use of the Armstrong Ranch property as set forth in the City's General Plan. However, this alternative would undermine or substantially delay achievement of numerous General Plan policies that call for a substantial mixed-use housing project on the portion of the Armstrong Ranch property that is within the City's limits and UGB, policies that would be met by the proposed project. Although this alternative would slightly improve the City's jobs/housing balance by providing some employment opportunities, it would fail to meet the primary objectives of the proposed project to meet the City's housing and employment goals. This alternative would be less consistent with the City's long-term development goals calling for residential, commercial, and industrial development on the project site and, therefore, could result in a greater land use impact than the proposed project. This alternative would also conflict with the General Plan policy against the under-utilization of land within the UGB.

Noise. Mineral extraction on the site would generate ongoing noise from operations, including blasting, heavy equipment use, and truck traffic. It is expected that noise from these sources would be avoided by placing operations at least 1,000 feet from existing residences and restricting truck traffic to approved routes. This alternative would reduce the noise impacts of the project associated with construction and generation of new vehicle trips near existing and proposed residential areas. Overall, the noise impacts of the Mineral Extraction Alternative are expected to be less than those of the project.

Public Services & Utilities. The Mineral Extraction Alternative would substantially reduce public services and utilities impacts compared to the proposed project. Because of its reduced level of activity and lack of urban uses, this alternative would not require infrastructure upgrades or new public facilities. The Mineral Extraction Alternative would be expected to require less water, wastewater capacity, solid waste capacity, and energy than the proposed project. Overall, the demands and associated impacts to public services and utilities of the Mineral Extraction Alternative would be less than those of the proposed project.

Traffic. This alternative would generate traffic from employees traveling to/from the site, and trucks hauling aggregate materials. Compared with the proposed project, this alternative would generate far fewer vehicle trips since it would avoid urban development on 320 acres. This would substantially reduce traffic impacts, including significant and potentially unavoidable impacts to regional traffic facilities that are not under the City's control. Overall, the traffic impacts of the Mineral Extraction Alternative would be less than those of the proposed project.

Summary

Because of its reduced footprint (106 acres versus 320 acres) and development intensity, the Mineral Extraction Alternative would reduce most impacts of the proposed project. This alternative would avoid the significant unavoidable mineral resources impacts of the proposed project by providing access and allowing mineral extraction uses to occur. This alternative would cause significant unavoidable aesthetic impacts, but would avoid the significant unavoidable regional air quality impact from ROG of the project and reduce the extent of the proposed project's significant and potentially unavoidable noise and traffic impacts. The Mineral Extraction alternative would be inconsistent with the City's goals and policies calling for a mixed-use development on the site. The Mineral Extraction Alternative would fail to meet any of the project objectives to provide an integrated mixed use community on the portion of the Armstrong Ranch within the City limits and UGB. Although this alternative would slightly improve the City's jobs/housing balance by providing some employment, it would fail to meet the primary objectives of the proposed project to meet both the City's housing and employment goals.

6.6 ALL RESIDENTIAL ALTERNATIVE

Description

This alternative consists of developing the project site with all residential uses, and eliminating the commercial, industrial, and office components. This alternative assumes a maximum of 1,360 units at the same residential density mix as the proposed project. Areas proposing office and industrial uses would be retained as open space or park uses. All residential development would be restricted to three stories in height.

Impacts

Aesthetics. This alternative would not reduce the project's significant unavoidable impact on the scenic vista from Highway 1 because development along Highway 1 would be unchanged from the proposed project. This alternative would slightly reduce the project's significant unavoidable impact on the visual character of the site by eliminating development on approximately 50 acres of the site. The effects from new light and glare sources would be slightly less than under the proposed project on the east side of the site where industrial development would be replaced with open space. For both the proposed project and this alternative, the light and glare impact would be mitigable to less-than-significant levels. The overall impacts of this alternative on aesthetics would be less than those of the proposed project.

Agricultural Resources. The site consists of grazing land and does not contain any prime or important farmland. This alternative would result in a loss of grazing land comparable to the proposed project, depending on the use of the open space areas. However, the loss of grazing land is not considered a significant impact.

Air Quality. Because development under this alternative would be less intensive than the proposed project, both construction and operation of the project are expected to emit lower levels of criteria pollutants and toxic air contaminants. This reduction would be offset somewhat by the fact that the proposed project provides an integration of land uses (including industrial and neighborhood-serving residential uses) that could reduce the number and length of vehicle trips that would not occur under this alternative. However, this alternative might avoid the significant unavoidable impacts from ROG emissions. For both the proposed project and this alternative, most air quality impacts would be mitigable to less-than-significant. The overall air quality impacts of the All Residential Alternative would be somewhat less than those of the proposed project.

Biological Resources. This alternative would retain an estimated 50 acres of the site in open space, which could be used for biological preservation and/or restoration, reducing the potential impacts of the project on sensitive biological resources, including Monterey spineflower, coastal dune scrub, and native grassland habitats. However, if this open space area were used for public parkland, the impacts to biological resources would be comparable to the proposed project. For both the project and this alternative, impacts to biological resources would be mitigable to less-than-significant levels by on- and off-site preservation and restoration, and other measures identified in this EIR. The overall impacts of the All Residential Alternative to biological resources could be less than those of the proposed project.

Cultural Resources. Because of this alternative eliminates development on up to 50 acres of the project site, it could reduce the overall potential impacts to undiscovered cultural resources, although this cannot be definitively stated since it depends on the existence and locations of any unknown resources. For both the proposed project and this alternative, the potential impact on undiscovered cultural resources would be mitigable to a less-than-significant level. In addition, the impact to the remnants of the old railroad grade are not significant for both the project and alternative. The overall impacts of the All Residential Alternative to cultural resources would be approximately equal to those of the proposed project.

Geology/Soils/Mineral Resources. This alternative could reduce grading in the 50-acre open space area; however, this may not be the case if parks are developed. The portions of the site developed for urban uses would be subject to the same soil, geologic and seismic hazards as the proposed project. The unavoidable impacts to mineral resources would be comparable to the project, since urban uses are designated in identified mineral resource areas (MRZ-2 for aggregate). For both the proposed project and this alternative, the geology and soils impacts would be mitigable to less-than-significant levels. The overall impacts related to geology, soils and mineral resources from the All Residential Alternative would be generally equal to those of the proposed project.

Hazards. This alternative would eliminate the potential use, storage, and transport of hazardous materials associated with the industrial component of the proposed project. This alternative would also expose fewer persons to hazards associated with development in Airport Safety Zone 4 of the 2006 Draft ACLUP (expected for adoption this year), by placing this area in open space. For both the proposed project and this alternative, the exposure to hazards would be mitigable to less-than-significant levels. The overall impacts of the All Residential Alternative associated with hazards would be somewhat less than those of the proposed project.

Hydrology/Water Quality. Development under this alternative would be subject to the City's requirement that all storm water runoff be retained onsite. In addition, this alternative would not require the use of onsite wells. Assuming all uses are developed in accordance with the City's requirements, this alternative would not cause significant drainage, flooding, or groundwater impacts. This alternative would decrease impervious surfaces by retaining a 50 acre portion of the site in open space or park uses. For both the proposed project and this alternative, water quality impacts would be avoided by implementation of required BMPs. The overall hydrology and water quality impacts of the All Residential Alternative would be approximately equal to those of the proposed project.

Land Use. The All Residential Alternative would be less consistent than the proposed project with the goals of the General Plan that call for a mix of residential, office, research, commercial, and industrial uses on the project site. The All Residential Alternative would be less consistent with City land use policy, which could result in greater land use impacts than the proposed project.

Noise. The All Residential Alternative would eliminate construction and operational noise sources associated with the industrial, commercial, and office components of the proposed project. Construction noise impacts from this alternative would be comparable to those of the proposed project in all neighborhoods except those located immediately west of the currently proposed industrial/office area near Cosky Drive. During project operations, traffic noise impacts in existing neighborhoods would be reduced in correspondence with the decrease in vehicle trips from the industrial, office, and commercial uses. This reduction may be somewhat offset if residents of the project are required to commute offsite to their jobs. Elimination of the trips generated by the industrial, office, and commercial uses could reduce the traffic noise impacts under this alternative, though it is uncertain if this would reduce such noise levels to less-than-significant levels in affected neighborhoods. The overall noise impacts of the All Residential Alternative would be somewhat less than those of the proposed project.

Public Services & Utilities. The All Residential Alternative would result in an overall demand for services and utilities that would be lower than for the proposed project due to the decrease in development density and elimination of industrial and commercial uses. The impacts to schools would remain largely the same, since residential uses would be unchanged. For both the proposed project and this alternative, public services and utilities impacts would be mitigable to a less-than-significant level. The overall public services and utilities impacts of the All Residential Alternative would be less than those of the proposed project.

Traffic. This alternative would result in less intensive development than the proposed project, generating fewer vehicle trips. However, the All Residential Alternative lacks the variety of land uses of the proposed project that are intended to reduce the number and length of vehicle trips. For both the proposed project and this alternative, local traffic impacts would be mitigable to less-than-significant levels. Regional traffic impacts for this alternative and the project would be mitigable only with the cooperation of outside agencies. Overall, the traffic impacts of the All Residential Alternative are expected to be somewhat less than those of the proposed project since it involves less development.

Summary

Because of its reduced development intensity and integration of more open space, the All Residential Alternative would generally result in reduced environmental impacts compared to the proposed project. This alternative might avoid the project's significant unavoidable air quality impact, reduce the extent of significant unavoidable noise impacts, and reduce the severity of traffic impacts. This alternative would not avoid the project's significant unavoidable scenic vista, visual character, and mineral resource impacts. This alternative would be less consistent than the proposed project with the goals of the General Plan calling for a wide range of uses on the site that provide housing and employment opportunities, and would worsen the City's jobs-housing ratio. This alternative would not meet the project objectives of providing a mixed-use, neotraditional community that integrates residential, industrial, commercial, and park uses on the site.

6.7 NO INDUSTRIAL

Description

This alternative consists of eliminating the industrial component of the proposed project and placing the 38 acres designated for industrial use in some type of open space use. This alternative was selected for analysis because several neighbors expressed concern over the proposed industrial use during the EIR scoping process, and because eliminating the industrial use could reduce some of the significant impacts of the proposed project.

Impacts

Aesthetics. This alternative would not reduce the project's significant unavoidable impact on the scenic vista from Highway 1 because development along Highway 1 would be unchanged from the proposed project. This alternative would slightly reduce the project's significant unavoidable impact on the visual character of the site by eliminating development on 38 acres of the site. The effects from new light and glare sources would be slightly less than under the proposed project on the east side of the site where industrial development would be replaced with open space. For both the proposed project and this alternative, the light and glare impact would be mitigable to less-than-significant levels. The overall impacts of this alternative to aesthetics would be less than those of the proposed project.

Agricultural Resources. If the 38-acre industrial area was used for grazing, then this alternative would slightly reduce the removal of grazing land from the proposed project. However, the loss of grazing land is not considered a significant impact for the proposed project, because such land is not prime or important farmland.

Air Quality. This alternative would reduce air quality impacts during construction compared to the proposed project by eliminating industrial development on 38 acres of the site. This alternative would also reduce potential stationary and mobile source emissions during project operations by eliminating potential stationary industrial sources, and reducing vehicle trips from employees. The reduction in mobile source emissions would be offset somewhat when compared with the project, since more residents may be required to travel off-site for their employment, increasing the number and length of vehicle commute trips. For both the proposed project and this alternative, the air quality impact from regional emissions of ROG would remain significant and unavoidable. The overall impacts of the No Industrial Alternative to air quality would be somewhat less than those of the proposed project.

Biological Resources. This alternative could reduce the proposed project's impacts to sensitive biological resources on the portion of the site currently designated for industrial uses. This alternative could make additional acreage available for on-site, as opposed to off-site, biological resource mitigation/restoration areas. The open space area would allow for preservation of special status plant and animal species (refer to Figure 4.4-1). For both the proposed project and this alternative, impacts to biological resources would be mitigable to less-than-significant levels. The overall impacts of the No Industrial Alternative to biological resources would be somewhat less than those of the proposed project.

Cultural Resources. Because this alternative reduces development on 38 acres of the project site, it could reduce the overall potential impacts to undiscovered cultural resources, although this cannot be definitively stated since it depends on the existence and locations of any unknown resources. For both the proposed project and this alternative, the potential impact on undiscovered cultural resources would be mitigable to a less-than-significant level. In addition, the impact to the remnants of the old railroad grade are not significant for both the project and alternative. The overall impacts of the No Industrial Alternative to cultural resources would be approximately equal to those of the proposed project.

Geology/Soils/Mineral Resources. This alternative would reduce grading on 38 acres of the site. The remainder of the site that would be developed with urban uses would be subject to the same soil, geologic and seismic hazards as the proposed project. The unavoidable impacts to mineral resources would be comparable to the project, since urban uses are designated in identified mineral resource areas (MRZ-2 for aggregate). For both the proposed project and this alternative, the geology and soils impacts would be mitigable to less-than-significant levels. The overall impacts related to geology, soils and mineral resources from the No Industrial Alternative would be slightly less than those of the proposed project.

Hazards. This alternative would eliminate the potential use, storage, and transport of hazardous materials associated with industrial uses. This alternative would also expose fewer persons to hazards associated with development in Airport Safety Zone 4 of the 2006 Draft ACLUP (expected for adoption this year). For both the proposed project and this alternative, the exposure to hazards would be mitigable to less-than-significant levels. The overall impacts of the No Industrial Alternative associated with hazards would be somewhat less than those of the proposed project.

Hydrology/Water Quality. Development under this alternative would be subject to the City's requirement that all storm water runoff be retained onsite. In addition, this alternative would not use any wells onsite. This alternative, like the proposed project, would not cause significant drainage, flooding, or groundwater impacts. The replacement of 38 acres of industrial development with open space would reduce the amount of impervious surfaces and could slightly decrease water quality impacts compared to the proposed project. However, the implementation of BMPs for all development under both this alternative and the proposed project would avoid significant water quality impacts. The overall hydrology and water quality impacts of this alternative would be approximately equal to those of the proposed project.

Land Use. This alternative would be less consistent than the proposed project with the goals and policies of the General Plan calling for industrial development in this area and an overall improvement in the City's jobs/housing ratio. This alternative would be less consistent with the City's long-term development goals for the project site, and would not be consistent with the General Plan policy against under-utilization of land within the UGB, resulting in a greater land use impact than the proposed project.

Noise. This alternative would eliminate construction and operational noise sources associated with the industrial component of the proposed project. Construction noise impacts from this alternative would be comparable to those of the proposed project in all neighborhoods except those located immediately west of the currently proposed industrial area near Cosky Drive. During project operations, traffic noise impacts in existing neighborhoods would be reduced in correspondence with the decrease in vehicle trips

from the industrial uses. This reduction may be somewhat offset if residents of the project are required to commute offsite to their jobs. Elimination of the trips generated by the industrial uses (employee vehicles and trucks) could reduce the traffic noise impacts under this alternative, though it is uncertain if this would reduce such noise levels to less-than-significant levels in affected neighborhoods. The overall noise impacts of the No Industrial Alternative would be somewhat less than those of the proposed project.

Public Services & Utilities. This alternative would reduce the overall demand on services and utilities by eliminating industrial development on the site. This alternative would slightly reduce the demand on police and fire services, water, sanitary sewer, and solid waste disposal services, as well as energy. Because the No Industrial Alternative would include the same level of residential development as the proposed project, it would have largely the same impacts on schools. For both the proposed project and this alternative, public services and utilities impacts would be mitigable to less-than-significant levels. The overall public services and utilities impacts of the No Industrial Alternative would be somewhat lower than those of the proposed project.

Traffic. The number of daily vehicle trips from the No Industrial Alternative would be reduced by up to approximately 4,500 trips compared to the proposed project. The reduction in vehicle trips could be offset somewhat by the lack of industrial jobs on the project site, which could increase the number of project residents required to commute to work off-site. The reduction in trip generation is not likely to avoid the project's significant, and potentially unavoidable, project and cumulative impacts on regional transportation facilities such as highways. For both the proposed project and this alternative, local traffic impacts would be mitigable to less-than-significant levels. The overall traffic impacts of the No Industrial Alternative would be somewhat lower than those of the proposed project.

Summary

Because of the deletion of 38 acres of industrial use, the No Industrial Alternative would somewhat reduce environmental impacts compared to the proposed project. This alternative is not expected to eliminate any significant unavoidable impacts. It would reduce the severity of the proposed project's significant unavoidable impacts to visual character, regional air pollution emissions (from ROG), construction and traffic-generated noise, and traffic. This alternative would not reduce the project's significant unavoidable impacts to mineral resources or to a scenic vista. This alternative would not meet the project objectives to provide industrial uses on the project site and maximize the provision of housing and jobs within the City.

6.8 REDUCED PROJECT ALTERNATIVE

Description

This alternative consists of reducing development on the project site to avoid the proposed project's significant regional air quality impacts (from ozone precursors) and reduce other significant impacts while retaining the same mix of uses as the proposed project. The Reduced Project alternative consists of reducing all land uses by 50% and moving the project footprint approximately 1,000 feet from Highway 1 and the southernmost residential areas.

Impacts

Aesthetics. This alternative would reduce or avoid the project's significant unavoidable impact on the scenic vista from Highway 1 adjoining the project since it would provide a 1,000 foot setback from the highway. The Reduced Project Alternative would, like the proposed project, significantly and unmitigably

alter the visual character of the project site, but the impact would be reduced because of the alternative's reduced footprint. The effects from new light and glare sources would be less than under the proposed project because more of the project would remain in open space. For both the proposed project and this alternative, the light and glare impact would be mitigable to less-than-significant levels. The overall impacts of the Reduced Project Alternative to aesthetics would be less than those of the proposed project.

Agricultural Resources. This alternative would result in less loss of grazing land than the project. However, the loss of grazing land is not considered a significant impact for the proposed project, because such land is not prime or important farmland.

Air Quality. This alternative would substantially reduce construction air quality impacts on many nearby residences compared to the proposed project by eliminating 50% of development and providing a 1,000 foot setback to the south. This alternative would also decrease stationary and mobile-source emissions during project operations, reducing the proposed project's significant unavoidable impact to regional emissions to a less-than-significant level. For both the proposed project and this alternative, all other air quality impacts would be mitigable to a less-than-significant level. The overall impacts of the Reduced Project Alternative to air quality would be less than those of the proposed project.

Biological Resources. This alternative would reduce the proposed project's impacts to biological resources, including impacts to coastal dune scrub, native grassland, Monterey spineflower, and special-status wildlife species, because of its reduced footprint. For both the proposed project and this alternative, impacts to biological resources would be mitigable to less-than-significant levels. The overall impacts of the Reduced Project Alternative to biological resources would be less than those of the proposed project.

Cultural Resources. Because of its reduced footprint, this alternative could reduce potential impacts to undiscovered cultural resources. For both the proposed project and this alternative, the potential impact on undiscovered cultural resources would be mitigable to a less-than-significant level. In addition, the impact to the remnants of the old railroad grade are not significant for both the project and alternative. The overall impacts of the Reduced Project Alternative to cultural resources would be approximately equal or somewhat less than those of the proposed project.

Geology/Soils/Mineral Resources. This alternative would decrease overall grading on the site by 100 acres or more, since development would be reduced by 50%. The portions of the site developed for urban uses would be subject to the same soil, geologic and seismic hazards as the proposed project. However, because the site would be occupied by fewer residents and employees under this alternative, fewer persons would be exposed to these hazards. The unavoidable impacts to mineral resources would be comparable to the project, since urban uses are designated in identified mineral resource areas (MRZ-2 for aggregate). For both the proposed project and this alternative, the geology and soils impacts would be mitigable to less-than-significant levels. The overall impacts related to geology, soils and mineral resources from the Reduced Project Alternative would be less than those of the proposed project.

Hazards. This alternative would reduce impacts associated with hazards by reducing the amount of development and industrial uses on the site. This alternative would reduce the amount of hazardous materials used, stored, and transported by decreasing industrial development. This alternative may also expose fewer persons to hazards associated with development in Airport Safety Zone 4 of the 2006 Draft ACLUP (expected for adoption this year). For both the proposed project and this alternative, the exposure to hazards would be mitigable to less-than-significant levels. The overall impacts of the Reduced Project Alternative from hazards would be less than those of the proposed project.

Hydrology/Water Quality. Development under this alternative would be subject to the City's requirement that all storm water runoff be retained onsite. In addition, this alternative would not require the use of onsite wells. Assuming all uses are developed in accordance with the City's requirements, this alternative would not cause significant drainage, flooding, or groundwater impacts. This alternative would reduce impervious surfaces up to 50% compared to the proposed project. Both the project and this alternative would be required to implement BMPs to avoid significant water quality impacts. The overall hydrology and water quality impacts of this alternative would be comparable to those of the proposed project.

Land Use. This alternative would create a land use impact because it would be inconsistent with General Plan policies against calling for 1,300 residences on Armstrong Ranch, sufficient housing to meet the City's fair share of regional housing demand, and sufficient jobs to help the City attain jobs/housing balance on a Citywide basis. This alternative would also be inconsistent with the General Plan policy against under-utilization of land within the UBG.

Noise. Construction noise impacts from this alternative would be reduced in accordance with the decrease in site development. Construction noise impacts would still occur in those neighborhoods located to the east of the site (near Cosky Drive) that are adjacent to the property boundaries. During project operations, traffic noise impacts in existing neighborhoods would be reduced from the 50% reduction in vehicle trips. This would likely reduce the traffic noise impacts to less-than-significant levels in affected neighborhoods. The overall noise impacts of the Reduced Project Alternative would be substantially lower than those of the proposed project.

Public Services & Utilities. This alternative would reduce the overall demand on services and utilities by decreasing the amount of development on the project site. This alternative would reduce the demand on police and fire services, schools, water, sanitary sewer, and solid waste disposal services, as well as energy. This alternative may reduce the amount of infrastructure required and reduce the need for facility upgrades. For both the proposed project and this alternative, public services and utilities impacts would be mitigable to a less-than-significant level. The overall public services and utilities impacts of the Reduced Project Alternative would be substantially less than those of the proposed project.

Traffic. The number of vehicle trips under this alternative would be reduced by approximately 50% compared to the proposed project. This would reduce some of the traffic impacts at the studied intersections and roadway sections, but is not expected to eliminate the significant regional cumulative impacts. For both the proposed project and this alternative, local traffic impacts would be mitigable to less-than-significant levels. The overall traffic impacts of the Reduced Project Alternative would be substantially less than those of the proposed project.

Summary

The Reduced Project Alternative would lessen the overall impacts of the development. This alternative would avoid the project's significant unavoidable regional air quality impact and reduce the severity of the proposed project's significant unavoidable aesthetic, noise, and traffic impacts. This alternative would not reduce the proposed project's significant unavoidable mineral resource impact. The Reduced Project Alternative would create a land use impact since it would be inconsistent with General Plan policies calling for approximately 1,300 units of housing, provision of the City's fair share of regional housing needs, and maximizing the site's contribution to improving the City's jobs/housing balance through additional industrial and commercial development. This alternative would also fail to meet the City's and project's objectives of providing a wide range of uses on the site.

6.9 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

A comparison of the impacts of each alternative relative to the proposed project is presented in Table 6-1. CEQA requires that an environmentally superior alternative to the proposed project be specified. In general, the environmentally superior alternative is that which minimizes the adverse impacts of the project to the greatest extent, while achieving the basic objectives of the project.

The No Project/No Development Alternative would be considered the environmentally superior alternative because all adverse impacts associated with project construction and operation would be avoided. CEQA Guidelines section 15126.6(e)(2) states: "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

Among the remaining alternatives, the Reduced Project Alternative would represent the environmentally superior alternative, since it avoids or reduces many of the project's impacts associated with more intense development on the site while providing mixed uses on a reduced scale. This alternative would avoid the regional air quality (ROG) impact of the project, and would substantially decrease aesthetic, traffic and noise impacts. This alternative would reduce impacts in other impact areas in accordance with the decrease in development.

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APPENDIX A

Responses to Notice of Preparation (NOP)



STATE OF CALIFORNIA

Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

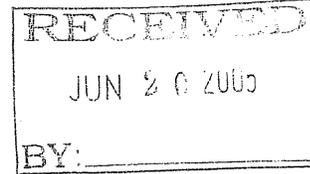
*EIR's were copy
NOP Public Comments*

Arnold
Schwarzenegger
Governor

Sean Walsh
Director

Notice of Preparation

June 10, 2005



To: Reviewing Agencies

Re: Marina Station
SCH# 2005061056

Attached for your review and comment is the Notice of Preparation (NOP) for the Marina Station draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Robert L. Borchard
City of Marina
211 Hillcrest Avenue
Marina, CA 93933

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

SM

Scott Morgan
Project Analyst, State Clearinghouse

Attachments
cc: Lead Agency

**Document Details Report
State Clearinghouse Data Base**

SCH# 2005061056
Project Title Marina Station
Lead Agency Marina, City of

Type NOP Notice of Preparation

Description The Marina Station project proposes a mixed-use development consisting of approximately 1,400 residential units, approximately 142,000 square feet of commercial space, and approximately 830,000 square feet of business park/industrial space. The project would create approximately 1,000 lots. The proposed development includes three village centers featuring shopping, service businesses, and civic uses. The Marina Station project also proposes approximately 30 acres of open space and recreation areas, including parks, playgrounds, and a 100-foot buffer between proposed uses and surrounding neighborhoods. Conceptual plans include a variety of residential types, including apartments, townhouses, and small and large detached homes. The project proposes the use of Neo-Traditional design standards that incorporate living, working, shopping, learning, and play areas into the community development.

Lead Agency Contact

Name Robert L. Borchard
Agency City of Marina
Phone (831) 884-1236 **Fax**
email
Address 211 Hillcrest Avenue
City Marina **State** CA **Zip** 93933

Project Location

County Monterey
City Marina
Region
Cross Streets Del Monte Avenue

Parcel No.	Township	Range	Section	Base
-------------------	-----------------	--------------	----------------	-------------

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Biological Resources; Archaeologic-Historic; Geologic/Seismic; Toxic/Hazardous; Water Quality; Landuse; Noise; Population/Housing Balance; Housing; Public Services; Traffic/Circulation; Water Supply; Growth Inducing; Cumulative Effects; Other Issues

Reviewing Agencies Resources Agency; Department of Conservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 3; Department of Health Services; Native American Heritage Commission; California Highway Patrol; Department of Housing and Community Development; Caltrans, District 5; Regional Water Quality Control Board, Region 3

Date Received 06/10/2005 **Start of Review** 06/10/2005 **End of Review** 07/11/2005

Resources Agency
 Fish & Game Region 3 Robert Floerke
 Fish & Game Region 4 William Laudermilk
 Fish & Game Region 5 Don Chadwick
 Dept. of Boating & Waterways David Johnson
 California Coastal Commission Elizabeth A. Fuchs
 Colorado River Board Gerald R. Zimmerman
 Dept. of Conservation Rosanne Taylor
 California Energy Commission Environmental Office
 Dept. of Forestry & Fire Protection Allen Robertson
 Office of Historic Preservation Wayne Donaldson
 Dept of Parks & Recreation B. Noah Tlghman
 Reclamation Board DeeDee Jones
 Santa Monica Mountains Conservancy Paul Edelman
 S.F. Bay Conservation & Dev't. Comm. Steve McAdam
 Dept. of Water Resources Resources Agency Nadell Gayou

fish and Game
 Dept. of Fish & Game Scott Flint
 Environmental Services Division Donald Koch
 Fish & Game Region 1 Fish & Game Region 2 Banky Curtis

Other Departments
 Food & Agriculture Steve Shaffer
 Dept. of Food and Agriculture Dept. of General Services Public School Construction
 Dept. of General Services Robert Sleppy
 Dept. of Health Services Veronica Rameriz
 Dept. of Health/Drinking Water

Independent Commissions/Boards
 Coachella Valley Mountains Conservancy
 Delta Protection Commission Debby Eddy
 Office of Emergency Services Dennis Castrillo
 Governor's Office of Planning & Research State Clearinghouse
 Native American Heritage Comm. Debbie Treadway

Public Utilities Commission
 Ken Lewis
 San Gabriel & Lower LA Rivers
 San Joaquin River Conservancy
 State Lands Commission Jean Sarino
 Tahoe Regional Planning Agency (TRPA) Cherry Jacques

Business, Trans & Housing
 Caltrans - Division of Aeronautics Sandy Hesnard
 Caltrans - Planning Terri Pencovic
 California Highway Patrol John Olejnik
 Office of Special Projects
 Housing & Community Development Lisa Nichols
 Housing Policy Division

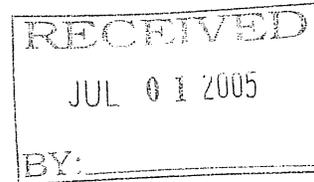
Dept. of Transportation
 Caltrans, District 1 Mike Eagan
 Caltrans, District 2 Don Anderson
 Caltrans, District 3 Jeff Pulverman
 Caltrans, District 4 Tim Sable
 Caltrans, District 5 David Murray
 Caltrans, District 6 Marc Birnbaum
 Caltrans, District 7 Cheryl J. Powell

Cal EPA
 Air Resources Board
 Airport Projects Jim Lerner
 Transportation Projects Kurt Karperos
 Industrial Projects Mike Tollstrup
 California Integrated Waste Management Board Sue O'Leary
 State Water Resources Control Board Jim Hockenberry
 Division of Financial Assistance
 State Water Resources Control Board
 Student Intern, 401 Water Quality Certification Unit
 Division of Water Quality
 State Water Resources Control Board Steven Herrera
 Division of Water Rights
 Dept. of Toxic Substances Control CEQA Tracking Center
 Department of Pesticide Regulation

Regional Water Quality Control Board (RWQCB)
 RWQCB 1 Cathleen Hudson
 North Coast Region (1)
 RWQCB 2 Environmental Document Coordinator
 RWQCB 3 San Francisco Bay Region (2)
 RWQCB 4 Central Coast Region (3)
 RWQCB 5 Jonathan Bishop
 Los Angeles Region (4)
 RWQCB 5F Central Valley Region (5)
 RWQCB 5R Central Valley Region (5)
 Redding Branch Office
 RWQCB 6 Lahontan Region (6)
 RWQCB 6V Lahontan Region (6)
 Victorville Branch Office
 RWQCB 7 Colorado River Basin Region (7)
 RWQCB 8 Santa Ana Region (8)
 RWQCB 9 San Diego Region (9)
 Other

DEPARTMENT OF TRANSPORTATION

50 HIGUERA STREET
SAN LUIS OBISPO, CA 93401-5415
PHONE (805) 549-3101
FAX (805) 549-3077
TDD (805) 549-3259
<http://www.dot.ca.gov/dist05/>



*Flex your power!
Be energy efficient!*

June 29, 2005

MON-001-78.88
SCH# 2005061056

Robert Borchard
City of Marina
211 Hillcrest Avenue
Marina, CA 93933

Dear Mr. Borchard:

COMMENTS TO MARINA STATION DEVELOPMENT

The California Department of Transportation (Department), District 5, Development Review, has reviewed the above referenced project and offers the following comments to consider in preparation of your environmental impact report.

1. The Department supports local development that is consistent with State planning priorities intended to promote equity, strengthen the economy, protect the environment, and promote public health and safety. We accomplish this by working with local jurisdictions to achieve a shared vision of how the transportation system should and can accommodate interregional and local travel and development.
2. To ensure the traffic study in the Draft EIR includes the information needed by the Department to analyze the impacts (both cumulative and project-specific) of this project, it is recommended that the analysis be prepared in accordance with the Department's *"Guide for the Preparation of Traffic Impact Studies."* Further, we request early and regular consultation with County staff or the consultants who will be preparing the traffic study.
3. Because the Department is responsible for the safety, operations, and maintenance of the State transportation system, our Level of Service (LOS) standards should be used to determine the significance of the project's impact. We endeavor to maintain a target LOS at the transition between LOS C and LOS D on all State transportation facilities. In cases where a State facility is already operating at an unacceptable LOS, *any* additional trips added should be considered a significant cumulative traffic impact, and should be mitigated accordingly.
4. The traffic study should include information on existing traffic volumes within the study area, including the State transportation system, and should be based on recent traffic volumes less than two years old. Counts older than two years cannot be used.

5. The methodologies used to calculate the LOS should be consistent with the methods in the current version of the Highway Capacity Manual. All LOS calculations should also be included in the Draft EIR as an appendix made available for review. Additionally, the project trip generation rates should be based on the latest edition of the Institute of Transportation Engineers Trip Generation Report.
6. A regional analysis should be conducted that includes a discussion of land use and roadway network assumptions used in the forecasts.
7. The traffic study for this project should clearly indicate that in addition to mitigating project-specific impacts, any applicant for development would be required to pay their pro-rata share of cumulative impact mitigation per the Transportation Agency for Monterey County Nexus Study for Regional Development Impact Fees.

We look forward to receiving the Draft EIR, and providing comments from a more thorough analysis. At that time, we may include comments on other pertinent issues related to environmental justice, water quality, and hydrology.

District 5 staff has been, and will continue to be, committed to working very closely with you to achieve a shared vision of how the transportation system should and can accommodate interregional and local travel. Please don't hesitate to call me at (805) 542-4751.

Sincerely,



JOHN J. OLEJNIK
Associate Transportation Planner
District 5 Development Review Coordinator

cc: Roger Barnes (D5)
Andy Cook (TAMC)
Ron Lundquist (Monterey DPW)
File



DEPARTMENT OF FISH AND GAME

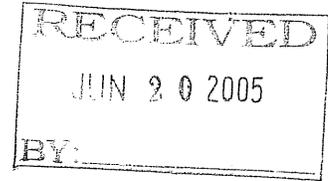
<http://www.dfg.ca.gov>

POST OFFICE BOX 47
YOUNTVILLE, CALIFORNIA 94599
(707) 944-5500



June 15, 2005

Mr. Robert L. Borchard
City of Marina, City Hall
211 Hillcrest Avenue
Marina, CA 93933



Dear Mr. Borchard:

Creekbridge Homes
City of Marina, Monterey County

Department of Fish and Game (DFG) personnel have reviewed the subject project, and we have the following comments.

A complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, and locally unique species and sensitive habitats, should be provided. Rare, threatened and endangered species to be addressed should include all those which meet the California Environmental Quality Act (CEQA) definition (see CEQA Guidelines, Section 15380). The assessment should identify any rare plants and rare natural communities, following DFG's Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (revised May 8, 2000). The Guidelines are available at www.dfg.ca.gov/whdab/pdfs/guidepln.pdf

Please be advised that a California Endangered Species Act (CESA) Permit must be obtained if the project has the potential to result in take of species of plants or animals listed under CESA, either during construction or over the life of the project. Issuance of a CESA Permit is subject to CEQA documentation; therefore, the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the project will impact CESA listed species, early consultation is encouraged, as significant modification to the project and mitigation measures may be required in order to obtain a CESA Permit.

If you have any questions, please contact Ms. Deborah Hillyard, at (805) 772-4318, or Mr. Carl Wilcox, Habitat Conservation Manager, at (707) 944-5584.

Sincerely,

Robert W. Floerke
Regional Manager
Central Coast Region

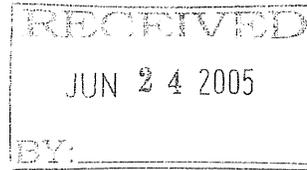


NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4882
Fax (916) 657-6390



June 23, 2005



Robert Borchard
City of Marina
211 Hillcrest Avenue
Marina, CA 93933

RE: SCH# 2005061056, Marina Station, Monterey County

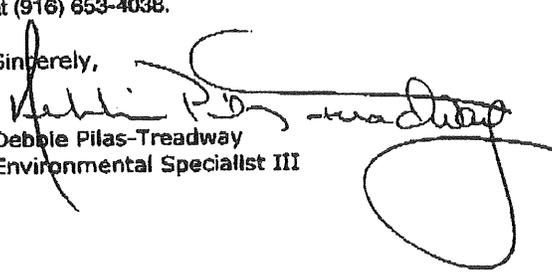
Dear Mr. Borchard:

The Native American Heritage Commission has reviewed the above mentioned NOP. To adequately assess and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required:

1. Contact the appropriate Information Center for a record search. The record search will determine:
 - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
 - If any known cultural resources have already been recorded on or adjacent to the APE.
 - If the probability is low, moderate, or high that cultural resources are located in the APE.
 - If a survey is required to determine whether previously unrecorded cultural resources are present.
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure.
 - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
3. Contact the Native American Heritage Commission for:
 - A Sacred Lands File Check. Requests must be made in writing with the County, Quad map name, township, range and section.
 - A list of appropriate Native American Contacts for consultation concerning the project site and to assist in the mitigation measures.
4. Lack of surface evidence of archeological resources does not preclude their subsurface existence.
 - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5 (f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
 - Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
 - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5 (e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

If you have any questions, please contact me at (916) 653-4038.

Sincerely,


Debbie Pilas-Treadway
Environmental Specialist III

CC: State Clearinghouse



Department of Toxic Substances Control



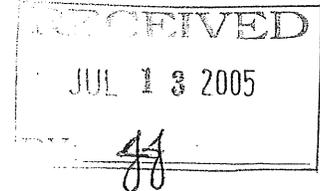
Alan C. Lloyd, Ph.D.
Agency Secretary
Cal/EPA

700 Heinz Avenue, Suite 200
Berkeley, California 94710-2721

Arnold Schwarzenegger
Governor

July 8, 2005

Mr. Robert L. Borchard
City of Marina, City Hall
211 Hillcrest Avenue
Marina, California 93933



Dear Mr. Borchard:

Thank you for the opportunity to comment on the Notice of Preparation for a Draft Environmental Impact Report (EIR) for the Marina Station. As you may be aware, the California Department of Toxic Substances Control (DTSC) oversees the cleanup of sites where hazardous substances have been released pursuant to the California Health and Safety Code, Division 20, Chapter 6.8. As a potential Responsible Agency, DTSC is submitting comments to ensure that the environmental documentation prepared for this project to address the California Environmental Quality Act (CEQA) adequately addresses any remediation of hazardous substance releases that may be necessary.

The Hazardous Materials/Health and Safety section on page 3 of the Notice of Preparation states that the EIR will address the presence of any hazardous materials associated with past or current uses of the project site. DTSC recommends that soil, and possibly groundwater, sampling of areas of the project site where releases of hazardous materials may have occurred from past or current uses be performed and the results should be discussed in the EIR. If any detected contaminants are determined to be present at concentrations that do not pose a risk to human health or the environment, the screening levels or other criteria used in making this determination should be identified in the EIR. If remediation of any contamination is required, the EIR should discuss the planned cleanup measures, the cleanup levels, the anticipated regulatory oversight, and the potential impacts associated with cleanup activities.

If the remedial activities include the need for soil excavation, the EIR should address the following: (1) potential air impacts and health impacts associated with the excavation activities; (2) applicable local standards which may be exceeded by the excavation activities, including dust and noise levels; (3) transportation impacts from the removal or remedial activities; and (4) risk of upset should there be an accident at the Site during implementation of cleanup activities.

Mr. Robert L. Borchard
July 8, 2005
Page 2

Please contact Claude Jemison of my staff at (510) 540-3803 if you have any questions.
Thank you in advance for your cooperation in this matter.

Sincerely,

Mark E. Piros

Mark E. Piros, P.E.
Unit Chief
Northern California
Coastal Cleanup Operations Branch

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044

Guenther Moskat
CEQA Tracking Center
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

Department of Health Services

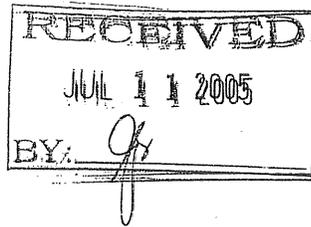
Northern California Drinking Water Field Operations Branch
Monterey District



ARNOLD SCHWARZENEGGER
Governor

California
Department of
Health Services

SANDRA SHEWRY
Director



July 8, 2005

Water System No. 2710017

Robert L. Borchard
City of Marina
211 Hillcrest Avenue
Marina, CA 93933

Notice of Preparation for the Marina Station Draft EIR, State Clearinghouse No. 2005061056

The Department of Health Services, Drinking Water Field Operations Branch (CDHS), Monterey District office, has received and reviewed the above-cited document. The overall development to be evaluated in the DEIR includes up to 1,400 new residential units, parks, commercial and industrial development. The CDHS has the following comments:

1. The California Waterworks Standards enforced by the CDHS requires water utilities to be able to meet *maximum day demand* through source and storage capacity. As such, the Department recommends the DEIR evaluate the water supply needs for existing customers and new growth based on maximum day water demand records maintained by the Marina Coast Water District.
2. The Department will require that the separation criteria between the water and wastewater pipelines comply with the separation criteria specified in the California Waterworks Standards Section 64630 in all new development.
3. The Department has the responsibility for reviewing all new proposals for the use of recycled water to ensure compliance with California Code of Regulations, Title 22, Water Recycling Criteria. The Water Recycling Criteria require the submission of an engineering report to the Regional Water Quality Control Board (RWQCB) and the Department of Health Services before recycled water projects are implemented. If the project is intended to use recycled water for public areas or irrigation of the residential landscaping via a dual plumbed project, the DEIR should evaluate the effectiveness of the water utility's Cross Connection Control Program and improvements or mitigations needed to ensure there will be adequate public health protection to domestic water users once the recycled water distribution system is in place.

Thank you for the opportunity to comment on the NOP for the Marina Station DEIR. If you have any questions regarding these comments, please contact me at (831) 655-6933.

Sincerely,

A handwritten signature in cursive script that reads "Betsy S. Lichti".

Betsy S. Lichti, P.E.
District Engineer, Monterey District
DRINKING WATER FIELD OPERATIONS BRANCH

BSL/bl

cc: State Clearinghouse
Office of Planning and Research
P.O. Box 3044
Sacramento, CA 95812-3044

CDHS-DWP Environmental Coordinator

Monterey County Environmental Health

Michael Armstrong, Marina Coast Water District



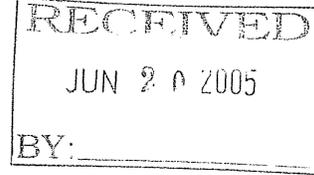
MONTEREY BAY

Unified Air Pollution Control District
serving Monterey, San Benito, and Santa Cruz counties

AIR POLLUTION CONTROL OFFICER
Douglas Quetin

24580 Silver Cloud Court • Monterey, California 93940 • 831/647-9411 • FAX 831/647-8501

June 14, 2005



Mr. Robert L. Borchard, AICP
City of Marina
211 Hillcrest Avenue
Marina, CA 93933

SUBJECT: NOP FOR DEIR FOR MARINA STATION

Staff has reviewed the referenced document and has the following recommendations for a scope of work for the air quality analysis:

1. Direct and indirect source emissions (VOC and NO_x) from all proposed operational activities should be quantified and assessed. VOC and NO_x emissions need not be quantified for "typical" construction activity. Staff should be consulted regarding potential construction equipment to be used on the project.
2. If project or cumulative traffic would cause LOS to decline from D or better to E or F, dispersion modeling should be undertaken to determine if carbon monoxide concentrations would violate ambient air quality standards at sensitive receptor locations.
3. Project operational and construction PM₁₀ emissions should be quantified. If emissions would exceed 82 lb/day, the project would have a significant impact on air quality. However, PM₁₀ modeling could be undertaken to verify or dispute this finding per the District's CEQA Air Quality Guidelines.
4. If the project might expose sensitive receptors in adjacent land uses to air quality problems such as odors or toxic air contaminants (e.g., diesel exhaust), the DEIR should include an assessment of these impacts. The impact of prescribed burning on sensitive receptors who would reside in the project area should also be addressed.
5. Mitigation measures should be identified for any significant impacts on air quality. The EIR should quantify the emission reduction effectiveness of each measure, identify agencies responsible for implementation and monitoring, and conclude whether mitigation measures would reduce impacts below significance levels.

DISTRICT BOARD MEMBERS

CHAIR:
Lou Calcagno
Monterey County

VICE CHAIR:
Tony Campos
Santa Cruz County

Anna Caballero
Salinas

Butch Lindley
Monterey County

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Marina

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John Myers
King City

Dennis Norton
Capitola

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Santa Cruz County

Jerry Smith
Monterey County

6. Project consistency with the 2004 Air Quality Management Plan for the Monterey Bay Region should be addressed. Consistency is used by the District to determine a project's cumulative impact on regional air quality (ozone levels). AMBAG should be contacted for a formal consistency determination, which should be included in the DEIR.

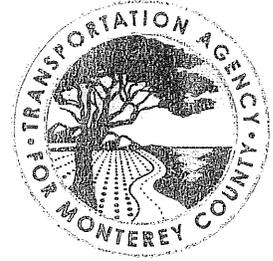
The District's CEQA Air Quality Guidelines may be used to prepare the air quality analysis. The Guidelines are available on the District's website – www.mbuapcd.org.

Please call if you have any questions or would like assistance.

Sincerely,



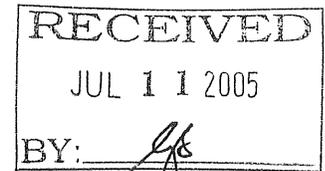
Jean Getchell
Supervising Planner
Planning and Air Monitoring



Regional Transportation Planning Agency • Congestion Management Planning
Local Transportation Commission • Monterey County Service Authority for Freeways & Expressways

July 8, 2005

Mr. Robert Borchard
Project Manager
City of Marina
265 Reservation Road, Suite E
Marina CA 93933



SUBJECT: Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Marina Station Project

Dear Mr. Borchard:

Transportation Agency for Monterey County (TAMC) staff has reviewed the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) to be prepared for the Marina Station project in the City of Marina. TAMC is the designated Regional Transportation Planning Agency and Congestion Management Agency for Monterey County.

The project proposes to develop approximately 1400 residential units, 142,000 square foot retail commercial component, and approximately 830,000 square feet of business park/industrial space. Although TAMC strongly supports the mixed-use, "neo-traditional" orientation proposed for the project, it would nevertheless be expected to generate traffic that will impact regional transportation infrastructure requiring analysis and mitigation in the DEIR.

TAMC staff offers the following comments for your consideration:

1. Our agency thanks the City of Marina for the opportunity to participate in the May 31, 2005 traffic analysis scoping meeting held for this project. This meeting helped to identify and address potential transportation concerns at an early stage, and we suggest that this process be used as a model for future projects.
2. The methodology used for the traffic analysis should be reviewed and approved by AMBAG.
3. TAMC requests that the DEIR include a project-specific, and cumulative traffic analysis of the study area and study intersections as identified, discussed, and agreed-to at the May 31st scoping meeting. TAMC expects that cumulative traffic impacts of the project will be addressed through payment of TAMC's proposed regional development impact fee on an ad hoc basis, as was also discussed at the scoping meeting. Just as other

development projects within Marina's jurisdiction contribute FORA infrastructure fees toward regional transportation improvements, the proposed TAMC regional fee should be considered the mechanism for mitigating the cumulative regional traffic impacts of development outside the FORA area.

4. TAMC staff recommends that the attached list of alternative mitigation measures be considered for this project.
5. The DEIR should analyze the need for appropriate grade crossing improvements to address vehicular, bicycle, and pedestrian circulation across the Monterey Branch Line. TAMC is actively pursuing the reinstatement of passenger fixed-guideway vehicle service along the branch line, which TAMC purchased in 2003. TAMC policies specify that this former rail right-of-way be preserved for future transportation use. The Marina Station project should be developed assuming that the Monterey Branch Line will return to active use as a fixed-guideway for bus rapid transit or light rail.
6. The DEIR should discuss bus, bicycle and pedestrian movement to, from and within the project and accommodate transportation by these modes.

Thank you for the opportunity to review this document. We would be happy to meet with you to discuss these comments. We would also like to request that any subsequent documentation on this project be forwarded to our agency for review.

Sincerely,



Wm. Reichmuth, P.E.
Executive Director

Attachment: Sample of Alternative Measures

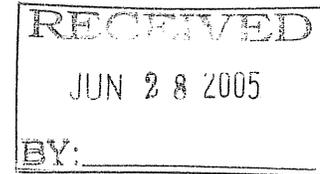
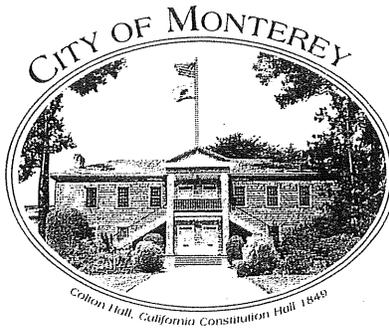
cc: Dave Murray, Caltrans District 5
John Olejnik, Caltrans District 5
Michael Houlemard, Fort Ord Reuse Authority
Ron Lundquist, Monterey County Department of Public Works
Neil Hudson, City of Marina Department of Public Works
Nicolas Papadakis, Association of Monterey Bay Area Governments (AMBAG)
Douglas Quetin, Monterey Bay Unified Air Pollution Control District (MBUAPCD)
Hunter Harvath, Monterey-Salinas Transit (MST)
TAMC Board of Directors, via enclosure to Board agenda

SAMPLES OF ALTERNATIVE MEASURES

1. Provide ridesharing, public transportation and nearby licensed child care facility information to tenants/buyers as part of move-in materials.
2. Print transit information on promotional materials.
3. Install bicycle amenities, such as bicycle racks and bicycle lanes.
4. Provide bus pullouts, pedestrian access, transit stops, shelters and amenities as part of the site plan.
5. Provide locked and secure transportation information centers or kiosks with bus route/schedule information, in common areas.
6. Provide pedestrian facilities linking transit stops and common areas.
7. Provide resources for site amenities that reduce vehicular trip making.
8. Park-and-ride facilities.
9. On-site childcare facilities.
10. Shuttle bus service, bus pools or improved transit service as part of the development.
11. Facilities to encourage telecommuting.
12. Pedestrian and bicycle system improvements.
13. Transit oriented design and/or pedestrian oriented design.
14. Provide preferential carpool/vanpool parking spaces.
15. Implement a parking surcharge for single occupant vehicles.
16. Provide shower/locker facilities.
17. Employ or appoint a transportation/rideshare coordinator.
18. Implement a rideshare program.
19. Provide incentives for employees to rideshare or take public transportation.
20. Implement compressed work schedules.

SAMPLES OF STREET AND ROAD IMPROVEMENTS

1. Safety improvements
2. Traffic signal improvements.
3. Traffic signals.
4. Turning or auxiliary lanes.
5. Add travel lanes.
6. Improve highway interchange.
7. Construct interchange.
8. Construct new street or road.



June 23, 2005

Mr. Robert Borchard, AICP
City of Marina, City Hall
211 Hillcrest Avenue
Marina, CA 93933

RE: Notice of Preparation for the Draft Environmental Impact Report for Marina Station

Dear Mr. Borchard,

The City of Monterey requests that the EIR evaluate the project's individual as well as cumulative circulation impacts on Highway 1, Del Monte Avenue, Highway 68 (East), Holman Highway (Highway 68 West), Highway 1 Fremont Exit (Intersection of Fremont/ Camino Aguajito), and Munras/Soledad intersection. The City would like the opportunity to participate in discussions regarding mitigation.

Sincerely,


Kimberly Cole, AICP
Senior Planner

S:\planning\data\letters\2005 letters\ 0623 Marina Station NOP

To the City of Marina
Robert L. Barchard
Armstrong Ranch
Project Manager

Page one
of three
pages

June 20, 2005

Erna Ewall
246 Cosky Drive
Marina, CA 93933

RECEIVED
JUN 29 2005
BY: [Signature]

My concerns about the Proposed Construction on the Armstrong Ranch are:

The added traffic on Del Monte and Highway one.

The water supply that is already stretched to the limit.

The proposed walk way behind the existing Cosky Subdivision, who will maintain that?

Will the builder put up a Stone Wall to protect the Cosky Subdivision from the run off and noise? Cosky is lower than the Ranch. *Concern about Security.*

Can Marina really support more shopping and Office buildings when there are already many large buildings vacant, some of them for years.

And who wants to buy a nice home and live next door to Row Houses which are already going up on Crescent Ave in Marina. Too much is being built at once in this County our small town life is being destroyed. Look what happened in Salinas.

Erna Ewall 246 Cosky Dr.

The following People have the same concerns.

- Karl E Krueger 241 Cosky Dr.*
- Grace Krueger 241 Cosky Dr.*
- Joe Lynn 240 Cosky Dr.*
- Medellina Figueroa 240 Cosky Dr.*
- William Kellum 251 Cosky Dr.*
- Bonnie Kellum 251 Cosky Dr.*
- Toya Gavliah 226 COSKY DR*
- Walter M Sanders 226 COSKY DR*
- Hylvia Brito 227 COSKY DR*
- Marnese Cole 228 Cosky, Dr.*

*more on
back
page*

Mr. Richard + Suelter 227 Cosky Dr. Marina
DORIS N. DANENHOUR,
272 COSKY DR.
MARINA, CA 93933

GERRY + BARBARA GENOVESE 269 COSKY DR.
MARINA, CA. 93933

Ann Steffer
265 Cosky Dr.
Marina, CA 93933

KARL CRUSIUS
216 COSKY DR

Lilia Hadron
266 Cosky Drive
Marina, 93933

Ginger Crusius
216 Cosky Dr.
Marina, CA 93933

Nortensie Quenones
261 Cosky Dr
Marina, Ca. 93933

Elwynne + Manuel Marquez
250 Cosky Drive Jr
Marina, Ca 93933

DAVID VEGA
252 COSKY DR
MARINA, CA. 93933

Star Gerawan
9 Sleepy Hollow
Carmel Valley 93924

Sherry Brady
253 Cosky Dr
Marina, Ca 93933

Margaret + Bankston
484 Jean Cir.
Marina, Ca. 93933

Y. K. An
248 Cosky Drive
Marina CA 93933

Walt Carl
256 Cosky Dr
Marina, Ca 93933

Erna Cwall's letter dated 6-20-05 Page Three

Donald J. and Chie O'Higgins 254 COSKY DR.

Gay Brady 253 COSKY DR. MARINA CA 93933

Sorathy Culatta 236 Cosby Dr. Marina, CA 93933

Lee But 268 Cosby Dr. Marina 93933

All the people who signed
this letter would like to see
an unbiased impact
report.

Erna Cwall



City of Marina

Strategic Development Center, Robert L. Borchard, AICP; Marina Station (Armstrong Ranch) Project Manager. 265 Reservation Road, Suite E, Marina, CA 93933
831-384-7324 Phone-209-617-8366 Cell (www.ci.marina.ca.us)

RECEIVED
JUN 24 2005
BY: _____

MARINA STATION PROJECT EIR SCOPING MEETING COMMENT FORM

Date: JUNE 21, 2005

Name JOSE FIGUEROA
Address 240 COSKY DRIVE
City MARINA CA Zip 93933

Please drop comments in the comment box at this meeting or mail to:

Robert L. Borchard, AICP
City of Marina
211 Hillcrest Avenue
Marina, CA 93933

Please file the following comments in the record (please print):

- SEE ATTACHED (2) PAGE
LETTER -

Over-More Space If Needed.

Robert L. Borchard, AICP
City of Marina
211 Hillcrest Avenue
Marina, C493933

June 21, 2005

Dear Sir:

The following comments address my concerns with the proposed Marina Station Project on the Armstrong Ranch property located in the City of Marina.

A. 830,000 square feet of business park/industrial space -

Marina currently has numerous business park, industrial, and commercial lots and developed properties located at the Marina Airport, the Old K-Mart location on Beach Road, the Business Park at Marina Greens, the expansive areas along Reservation Road and the unlimited acreage of Fort Ord. The Marina Airport has yet to be developed and has no major tenants. The K-Mart location sits idle with no proposed tenants. Reservation Road still has empty areas with no proposed tenants. Fort Ord is still in the stages of development with no proposed tenants.

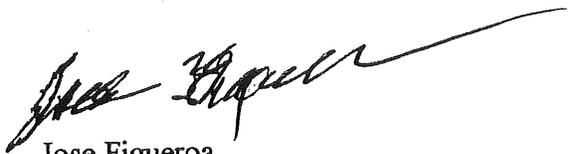
It is preposterous to even suggest that Marina now needs another business park in the middle of a proposed residential subdivision. In a time where the public focus is on housing, this plan is taking approximately a third of the proposed development and dedicating it to commercial development. The Monterey Peninsula has a deep housing shortage which no one denies. Yet this plan goes against all principal that residential housing is a priority for the City of Marina. Businesses are supported by customers. Customers live in houses, not in industrial spaces. To try and mix residential with business, specifically light industrial, the people of Marina may as well live in Sand City among the rows of commercial buildings. This indiscriminate mixing of commercial with residential development is the very reason Marina is currently battling the expensive task of trying to define a "downtown" area. The thought of business traffic (trucks, deliveries, employees etc.) traversing through a residential neighborhood is appalling. Commercial traffic will have to travel on Beach Road in front of an Elementary school and through an existing residential neighborhood or via De Forest, another established neighborhood. Neighborhoods by design should reflect the American Dream of a haven for families. A place where children can play safely without worry of commercial traffic. A place where people can relax at home without listening to an 18 wheeler rev its engines during a delivery to an industrial plant. I would venture a pretty sure bet that none of the people designing or proposing this idea live anywhere near an industrial park. The commercial proposal for this development needs to be removed from the middle of the proposed residential units and at the very least moved to the eastern limits of the site where a new access can be developed from Reservation Road without traversing through any residential neighborhood. That includes the City proposing the banning of any truck traffic and/or parking on any of the affected neighborhoods.

B. Greenbelt and pedestrian access along the east property lines of Cosky Drive and associated neighborhood -

I congratulate the designers for the inclusion of green areas and pedestrian walkways. As I referred in paragraph A, a neighborhood should be a refuge from the daily stresses of the business world. I can picture kids riding their bicycles along the paths and parents taking a walk with their children after a hard day's work. Well done. However, to improve upon this great idea, I propose that a block wall be built along the property lines east of Cosky Drive. The wall will serve to define the green belt area and provide a sense of security. We have to acknowledge that we live in a world that needs to be more conscious of security issues. With dwindling City resources, it is apparent to me that there will be no extra security measures, such as police officers walking these trails. Therefore it is imperative that lighting and a wall on both sides of the walking trail be provided to the existing as well as the new homeowners. A block wall will also serve to reduce noise that is inevitable by its mere use. Block walls also offer a certain level of fire suppression in the event the green belt were to catch fire.

These concerns weigh heavily on the minds of the existing homeowners. I want to express that I personally welcome new development in Marina. However, just as I do the best at supporting the City and being a good neighbor to all, I expect that same courtesy from the City leaders and any new entries of development into our fine City. That said, I would expect a serious consideration into a plan that would mitigate my concerns. I would also expect a serious response to my letter.

Respectfully submitted,



Jose Figueroa
Homeowner
240 Cosky Drive
Marina, CA 93933
(831) 384-8202



City of Marina

Strategic Development Center, Robert L. Borchard, AICP; Marina Station (Armstrong Ranch) Project Manager. 265 Reservation Road, Suite E, Marina, CA 93933
831-384-7324 Phone-209-617-8366 Cell (www.ci.marina.ca.us)

RECEIVED
JUL 01 2005
BY: *ff*

MARINA STATION PROJECT EIR SCOPING MEETING COMMENT FORM

Date: 6/30/05

Name TONY SHEPPARD
Address 3351 CARDOZA AVE
City MARINA, CA Zip 93933

Please drop comments in the comment box at this meeting or mail to:

Robert L. Borchard, AICP
City of Marina
211 Hillcrest Avenue
Marina, CA 93933

Please file the following comments in the record (please print):

PLEASE SEE THE
ATTACHED SHEET.

Over-More Space If Needed.

I am extremely concerned about the adverse effects that the building of Marina Station will have on our local environment. My reasons for concern are as follows:

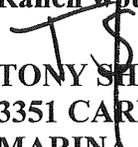
1. The building of Marina Station will create more traffic which will cause an increase in air pollution and more dangerous driving conditions.
2. More people will mean a greater need for water which is a precious and at times scarce natural resource in our community and the entire state of California.
3. More people means more waste that we have to deal with.
4. The noise levels that have increased dramatically in the last thirty years will continue to get worse.
5. The significant increase in population will create a greater strain on our emergency services and the people who maintain our city.
6. As far as I know, definitive arrangements have not been made with the Monterey Peninsula Unified School District to build another school in order to provide adequate space for the education of more children. This a major problem in itself since planning can only be based upon projections and not facts.
7. The many forms of plants and animals that have been disappearing from the Marina area for the last thirty years will be eliminated at an even more rapid rate.
8. The environment of my family and my neighbors will be directly affected. The fact that Cardoza Avenue will become a thru street is totally unacceptable. I have lived on this street for almost three decades. I want to keep it the way it is.

It is my opinion that in this case growth does not mean better. I feel that the Marina Station project would only add to the problems that we already have to deal with ---- especially because of its proposed location on the Armstrong Ranch. If we must build we should do it on the former Ft Ord. It would make more sense to build in an area that used to be the home of an entire infantry division. Building on Ft Ord would have far less of an impact on our coastal community.

My wife and I have been living in Marina in the same house for almost thirty years. The reason why we loved this town was because it was nice and quiet with a very small crime rate. We have seen things change over the years. More housing right where we live would not do anything to improve our quality of living. It would certainly provide places for more people to live but I think that most of the families who will be able to afford to live in Marina Station will be from other cities -- not Marina.

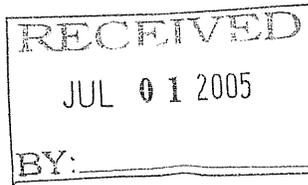
Marina is still a great town and I enjoy living here. Let's improve on what we already have and not compound our problems by making poor decisions that result from the fact that many individuals in our society have come to believe that bigger is always better.

Our planet cannot sustain such a rapid depletion of her natural resources forever. The individual communities that make up our great nation need to find better ways to alleviate the the strain that is being put on our environment. Building Marina Station on Armstong Ranch would only make matters worse.


TONY SHEPPARD
3351 CARDOZA AVE
MARINA, CA 93933
831- 883-0561

TONYSHEPPARD@REDSHIFT.COM

City of Marina, City Hall
211 Hillcrest Avenue
Marina, California 93933



29 June 2005

Subject: Notice of Preparation (NOP) for the Draft Environmental Impact Report for Marina Station

In response to your letter dated 6-7-05, signed by Robert L. Borchard, AICP, I am concerned about several issues regarding the proposed project of Creekbridge Homes on Armstrong Ranch property: (1) The water supply which is already tasked; this has also been a concern of the Marina area with its various wells (sometimes shutting down temporarily for health reasons); and (2) the noise pollution; having my house built before Highway 1 pass by it and the increasing traffic was reason enough for me to relocate to another area; and (3) the infrastructure needed to support additional homes and businesses – our police and fire support personnel. As a current Marina home owner, I have concerns on the long term impact of noise, water and air pollution as well. I understand that these issues will be addressed in the environmental study; however, I hope that the focus is on the 'wellness' of the community instead of the pure expansion of the city of Marina. How is the City of Marina planning to address public and safety for the future when the present is always a concern?

Respectfully,

A handwritten signature in cursive script that reads "Judy Willis".

Judy Willis
18488 Little Thrush Court
Salinas, CA 93908

RECEIVED
JUL 08 2005
BY: SPC



City of Marina

Strategic Development Center, Robert L. Borchard, AICP; Marina Station (Armstrong Ranch) Project Manager. 265 Reservation Road, Suite E, Marina, CA 93933
831-384-7324 Phone-209-617-8366 Cell (www.ci.marina.ca.us)

MARINA STATION PROJECT EIR SCOPING MEETING COMMENT FORM

Date: 7 5
6/17/05

Name Glyde F. SOVERNS
Address 238 COSKY DR
City MARINA CA Zip 93933

Please drop comments in the comment box at this meeting or mail to:

Robert L. Borchard, AICP
City of Marina
211 Hillcrest Avenue
Marina, CA 93933

Please file the following comments in the record (please print):

I AM NOT opposed TO THE PROJECT.

MY CONCERNS ARE NOISE DURING CONSTRUCTION
AND FLOODING DURING AND AFTER CONSTRUCTION

MY PROPERTY IS BELOW THE LEVEL OF THE LAND
ON ALL SIDES.

"WATER SEEKS THE LOWEST LEVEL"

I HAVE LIVED HERE FOR 39 YEARS. THE
SETTLING POND HAS ALWAYS TAKEN CARE OF THE
STORM RUN OFF.

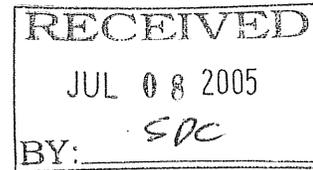
THE STORM DRAIN SYSTEM FOR THE
NEW AREA MUST BE WELL PLANNED TO AVOID ANY
FLOODING DUE TO OVERFLOW.

Over-More Space If Needed.

THE TIME OF CONSTRUCTION MUST BE REGULATED
TO AVOID AS MUCH NOISE AS POSSIBLE.

Clyde F. Johnson

Monique P. Fargues
3235 Isla del Sol Way
Marina, CA 93933
384-3234



July 8, 2005

Robert L. Borchard
City of Marina, City Hall
211 Hillcrest Avenue
Marina, CA 93933

Re: NOP for Marina Station

Dear Mr. Borchard,

Please find below my comments regarding the scope of the EIR for the proposed Marina Station Project.

- 1) **Traffic and circulation impacts along Beach Road/De Forest Avenue/Olson School/ Windy Hill Park:**
 - The current proposed plan shows high density housing and a main entrance point to the proposed office/industrial portion of the development located at the intersection of Beach Road and De Forest Avenue. Such development will result in significant traffic increase along the residential two-lane roads: Beach Road and De Forest Avenue. Beach Road and De Forest Avenue were not designed for heavy industrial/residential traffic, and will result in negative impact on the neighborhood. In addition, the proposed development will result in significantly higher traffic along Olson School and Windy Hill Park located by Beach road resulting in negative impacts on the student population attending Olson School, and Marina residents using Windy Hill Park.
 - The proposed development should be revised to move the main entrance point to the development currently shown at the intersection of Beach Road and De Forest Avenue to the four-lane Seacrest Avenue, which was designed to handle a higher traffic density.
 - I would like to request the EIR study traffic and circulation impacts of the proposed development on Beach Road/de Forest Avenue and Seacrest Avenue areas and consider alternatives to the current entrance point along Beach Road/de Forest Avenue.

- 2) **Traffic and circulation impacts of roadway system on current residents along the east side of the proposed development (denoted as area A on the attached map):**
 - The proposed development shows a major roadway system along the east border of the development to lead to the proposed office/industrial section.

This will have negative impacts on the current residential neighborhoods bordering the proposed development in terms of traffic, noise, and air pollution.

- The roadway shown bordering the greenbelt shown in Area A of the attached map should be moved from the proposed location and replaced with direct access from Del Monte Boulevard to the office/industrial section without going through existing and planned residential neighborhoods.
- I would like to request the EIR include the study of traffic and circulation impact along these areas, provide impact comparisons, and propose alternatives to the currently proposed roadway system in that section of the development.

3) Office/Industrial land use impact on neighboring communities:

- Marina Station proposes to locate an office/industrial part in the center of the development, adjacent to existing and proposed residential areas. Such development will potentially negatively impact current residential neighborhoods (along Cosky and Michael Drives), and planned residential neighborhoods.
- Strict restrictions regarding the types of proposed industrial/office land use should be put in place to minimize noise/air quality/aesthetics impacts on existing surrounding neighborhoods.
- I would like to request the EIR to include the study of noise/air quality/aesthetics impacts on existing and planned surrounding neighborhoods, and alternatives considered to 1) restrict the type of office/industrial usage in that section of the development so as to minimize such impacts, and/or 2) relocate the office/industrial section to an section not bordering residential neighborhoods.

4) Lack of open space/parks in the proposed development:

- The proposed development does not show open space/parks in high density sections of the development. As a result, significantly higher usage than what was planned for is expected to occur at Windy Hill Park resulting in degradation of the facility.
- The proposed development shows very little open space in the BeachRoad/deforest avenue portion of the development where high density housing is planned. Instead the current development shows significant park/open space acreage along the Highway 1 section of the development which is already slated for lower density housing. As a result, current planned open space/parks areas distribution is unbalanced and does not address the expected demand for parks from high density residential sections of the proposed plan.
- The development plans should be revised 1) to include open spaces/park areas within the boundaries of the development itself, so as not to overburden current

city park facilities; and 2) to redistribute open space/park areas where high density housing is planned.

- I would like to request the EIR study the impact the lack of open space/parks in high density housing areas will have on the existing and planned residential areas, and propose alternatives to redistribute these open spaces/parks within high density areas of the project to minimize use impacts on existing city park facilities and properly address expected resident demands in the planned residential areas.

5) Pedestrian access on Michael Drive:

- The proposed development currently indicates 2 pedestrian access points to link the two sides of Michael Drive to the proposed office/industrial section of the development. However, the developer representative also indicated in his presentation to the Planning Commission on April 7th, 2005, that such access could potentially change to road access at a later phase of the development process.
- Opening road access to the development at these two access points will have significant negative impacts on the current residents living along Cosky and Michael Drive.
- I would like to request the EIR include the study and comparisons of noise/traffic/air quality impacts on these neighborhoods both for pedestrian and road access to the development from the two access point along Michael Drive.

6) Lack of green Belt Area along windy Hill Park and neighboring residential area:

- The proposed development shows no green belt area along the south portion of the development along Windy Hill Park, as indicated on the attached map as Area C.
- Measure E requests the inclusion of a greenbelt along the entire section of the development bordering Marina.
- Development plans should be revised to include a greenbelt along that section of the development to satisfy Measure E directions.

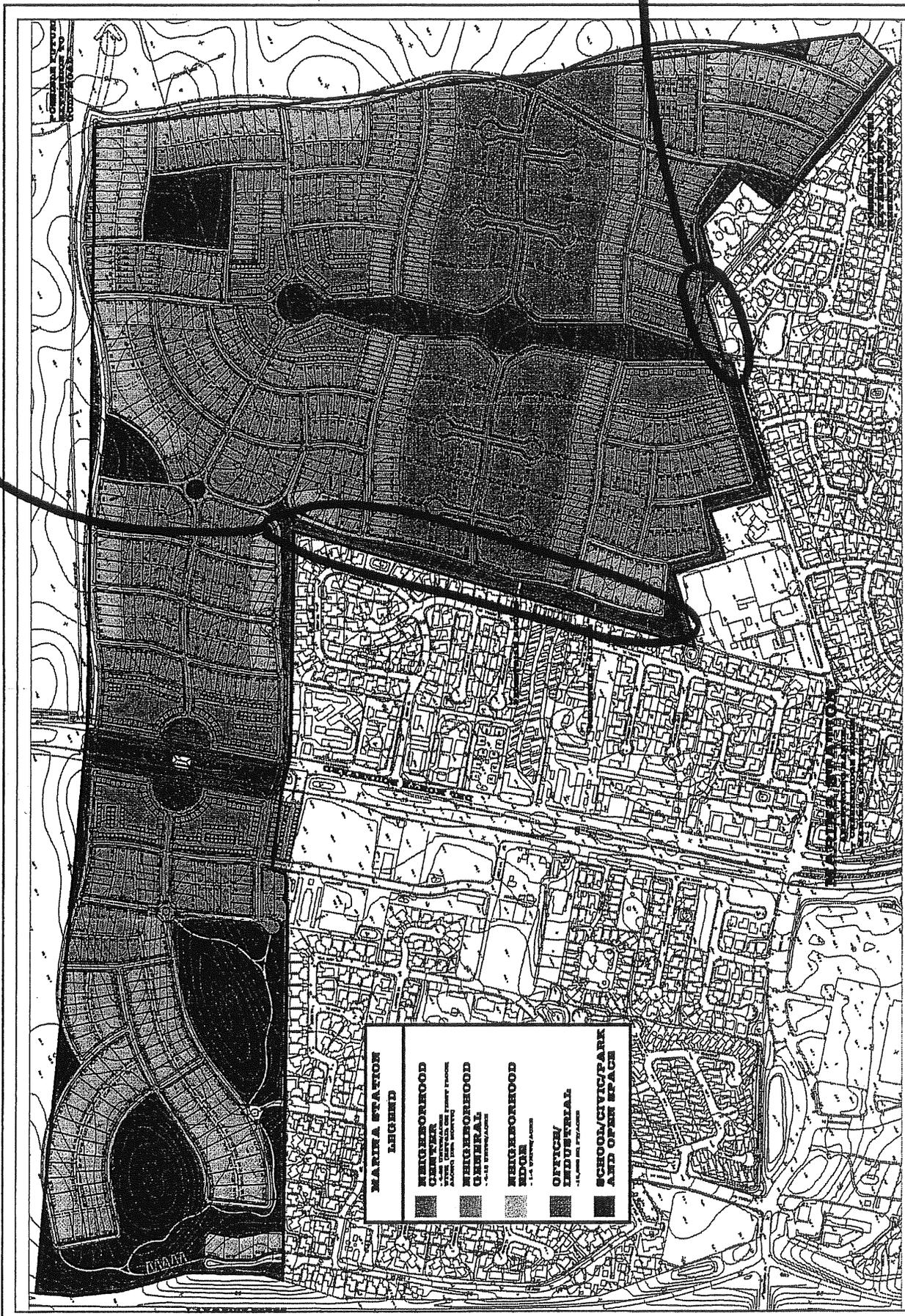
Sincerely,



Monique P. Fargues

Figure
2

Site Plan



SAC (Doney + Bob Borchard)

RECEIVED
JUL 08 2005
CITY OF MARINA

July 7, 2005
The Mayor and the City Council
City of Marina
211 Hillcrest Avenue
Marina, CA 93933

Dear Marina Mayor and City Council,

My husband and I are very concerned about the proposed Marina Station Project to be built on the Armstrong Ranch property behind our home on Cosky Drive. We have lived at 251 Cosky Drive since we bought our home in 1972. We had a home on the other side of Marina, sold it, and bought our home on Cosky Drive because we liked the "view" behind us on the Armstrong Ranch. We liked looking at the hills and the cows and their calves. For me, Bonnie Hellam, it was moving back again. I had lived at 236 Cosky Drive from 1967 to 1969 at the home that my parents built on Cosky prior to my getting married and moving away from Marina for a year. What drew my husband and I back to Cosky Drive was the view of the Armstrong Ranch. This neighborhood is where we have lived since 1972. We raised our children here, and we always loved the peaceful, quiet and beautiful neighborhood.

I remember when my parents first built their home on 236 Cosky. The builder and the owner of the Armstrong Ranch told them that there would NEVER be any development behind us. Times change, and people pass their property on to their heirs—we can't change that—but we STRONGLY OPPOSE any kind of industry being built in our "backyard". Who wants to live in a neighborhood with the noise and traffic and 'UGLINESS' of an industrial park? Certainly not us! We do not want to look out our windows and see walls of industrial buildings or metal buildings like those on Marina Greens Drive. The thought of going from looking at beautiful fields and cows with their calves to looking at industrial buildings is incomprehensible to us.

We also feel that industrial buildings behind us would definitely decrease the value of our home and our neighborhood. Who wants to buy a home with an industrial park in their backyard.

We strongly request that any thought of a "light" industrial park be reconsidered. If we have to have development behind our home, we would prefer that it be only a residential area with nice homes.

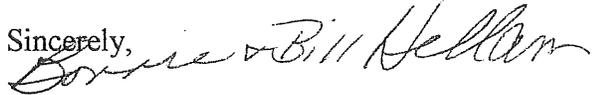
We would also request that any thought of an industrial park be moved east closer to the Marina Airport. We are also concerned about the increased traffic and noise that this development would bring to our neighborhood. We are concerned about the traffic this would bring to our elementary school and to children walking to and from school on Beach Road.

We do like the idea of a greenbelt being built behind our properties and thank the

Creekbridge builders for taking our concerns into consideration. This would help
The homeowners on Cosky Drive contain some semblance of beauty or aesthetic
Viewpoint for the homeowners in my neighborhood.

Thank you for taking our concerns into consideration.

Sincerely,

A handwritten signature in cursive script, appearing to read "Bonnie & Bill Hellam".

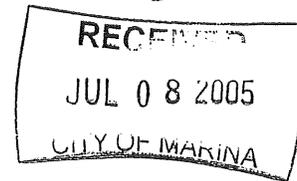
Bonnie and Bill Hellam

251 Cosky Drive

Marina, Ca 93933

(831) 384-6203

cc: Council ; City Manager ;
SDC (Doug + Bobo Borchard)



July 7, 2005
The Mayor and the City Council
City of Marina
211 Hillcrest Avenue
Marina, Ca 93933

Dear Marina Mayor and City Council,

I have been a resident of Marina since 1967, having been one of the first residents to build a home on Cosky Drive. My husband and I chose Cosky Drive to build our home because of the open space behind us—the Armstrong Ranch. We were promised at that time by the builder, Joe Tate, and the owner of the Armstrong Ranch, Mr. Armstrong Sr., that the land would NEVER be parceled off and that industry would NEVER be allowed to build on the property (“light” or any other kind).

Times change, and money talks, but always to the detriment of an awful lot of people, especially the senior citizens who planned to live their years in a peaceful and pleasant surrounding—not an “industrial stronghold”.

I’m 88 ½ years old. I enjoy the peaceful scene behind me—certainly not the prospect of concentrated activities of a work related population as opposed to a friendly, peaceful neighborhood.

I am opposed to any development on the Armstrong Ranch behind me, especially if such development brings a reduction in value to my property.

Should such “progress” override my desires and concerns, then I’d side for the building of residential homes to be the only changes— not Row houses, or industrial facilities.

Also, for security purposes, I would desire a sufficient barrier between my property and the greenbelt and walkway proposed by the developer. Incidentally, I do approve of the greenbelt walkway area. My preference of a barrier would be a 7 ft. wall on the property line of my house and all the other neighbors whose homes border this edge of the Armstrong Ranch.

I also would NOT approve of any traffic access to the new development through the Cosky Drive neighborhood.

As a taxpayer and concerned citizen of Marina, I respectfully request your consideration of my deep concerns about this proposed project. I would like to continue to spend my “twilight “ years in this quiet and peaceful neighborhood.

Sincerely,

A handwritten signature in cursive script that reads "Dorothy Culotta".

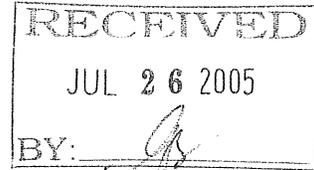
Dorothy Culotta

Homeowner since 1967

236 Cosky Drive, Marina (384-5272)

July 23, 2005

Leon E. Heller
138 Aaron Way
Marina, CA 93933
831-384-5359



Robert Borchard
Project Manager-Marina Station
Strategic Development Center
265 Reservation Road, Suite E
Marina, CA 93933

Dear Mr. Borchard,

I attended the Marina Station Scoping session on June 17th at the Marina City Hall. I think you have an excellent project. However, I still have some concerns about the impact the project will have on my cross street, Cardoza Avenue.

I firmly believe the majority of Marina Station residents, on the beach side of Del Monte Avenue, will use Cardoza Avenue to access Highway 1 at Reservation Road to reach the Monterey Peninsula. By using Cardoza, instead of Del Monte and Beach to reach Highway 1, motorists will avoid doubling back and avoid crossing the TAMC tracks twice.

When preparing the project EIR, particular attention should be directed towards implementing traffic calming measures on Cardoza...No speed bumps, please. In addition, the traffic impact on the left hand turn lane from Reservation to Cardoza should be closely scrutinized. A longer left hand turn lane may be needed to accommodate the increased traffic generated by the Marina Station..

Sincerely,

A handwritten signature in cursive script that reads "Leon E. Heller".

Leon E. Heller

July 7, 2005
The Mayor and the City Council
City of Marina
211 Hillcrest Avenue.
Marina, Ca. 93933

Dear Madam Mayor and City Council.

We have very big concerns about the proposed Marina Station Project on the Armstrong Ranch property, located within Marina City limits.

First of all my husband and I have lived at 226 Cosky Dr since 1967. When we moved to Marina, we were under the County of Monterey jurisdiction. As you look at the old maps of Marina off those times, there never was any sane planning of this place. Yes, streets were planned with the some houses, but in many instances no side walks on many streets. Services were practically nonexistent, save for couple of grocery stores and of gas stations.

Fastforward to a year 1975 when we became a City. Things started to move slowly for us to become a viable city. There has been many good improvements in our city and some very bad ones as well. The sorry state of affairs is that that the bad, mistaken ideas carried out by the Planning Commission and City Council Members at that time are there for everyone to see, with no way going back and we are forced to live with it in our Fair City now.

At one point the city was in need of apartments. Here come the developers with big money in their pockets, waving the dollar signs on the front of the City Council. Of course we were inundated with the apartments. Then came the need for storages and again the city was in need of tax dollars. We were again inundated with the storage buildings. Next came the fast food places, motels, video stores and business / commercial parks, right smack dab in the middle of housing development. And lets not forget the Kmart development, also in the middle of housing development.

I was personally involved against the rezoning of the Brown Bulb Ranch to a Commercial Zone. We lost it by 59 votes during the voting process. Consequently the K-Mart became a reality, despite my very public predictions of it not surviving the very UNpopular decision.

JUL 07 03 01:37P

The proof is in the pudding, so to speak. K-Mart was good for 9 years and is now biggest eye sore, grounds full of weeds, standing grandly empty. The City Council did not listen to the citizens concerns.

We have lived for 38 years next to Armstrong Ranch and have been subject to so many changes of plans for the place. So many developers was hired and fired by the Armstrong family. Not one ever contacted us for our views, even though we are right next to it. We were totally delighted, when we were contacted in regards of the Creekbridge Homes, a new company planning the Marina Station Development. In order for this project to be successful, you all will need our support for the betterment for our City.

We have taken the tours to Salinas to further acquaint us to the Creekbridge Homes. They were very nice indeed.

However, when we were given the site plan for this project, my husband and I were horrified to see the horrid "Business / Industrial park behind our house, all 70 acres of it. RIGHT IN THE MIDDLE OF THE NICE PLANNED HOMES AND NEXT TO OUR PROPERTY. Now that does not make any common sense whatsoever. It is appalling to think that those nice, new homes would be situated next to "Business Park" with all the large trucks and Commercial traffic going thru development and right behind our house.

For once, lets have a common sense prevail in this planned project for, once it is a done deal there is not going back one iota to something else.

Far better idea the developer has come up with is to split the 70 acres in half, with the 25 acres next to Cosky Drive and along the perimeter of existing houses on the western side for new houses, and the 10 acres he so generously would donate to our fair City for a Park. The remaining 35 acres would be situated in the easternmost section, closest to the airport for the industrial / business park. Business / industrial park has no business in the middle of nice new homes and existing homes. We are also very pleased to see the green zones as parks and such, as well as the very nice 100 foot green belt between existing homes and the new home development.

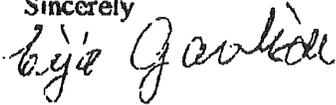
I have upgraded our house for the last 38 years. It does no resemble the track house it once was. As it is now it is completely customized to a very individual home, standing apart from the rest of homes on the Cosky Dr. I will not allow ugly commercial buildings downgrade the value of my hard earned custom home. It is bad enough when we exit from Cosky Drive to Del Monte Boulevard to see those horrid aluminum boxes of buildings in the Marina Greens Industrial Park across the street. They are eyesore, ugly and in most inappropriate location. I was very much against that development in its conception, but the good taste did not prevail. Any well planned city

WILL NOT PLACE INDUSTRIAL PARKS IN THE MIDS OF HOMES. Let the better judgment prevail for once in this city of ours.

City may be in need of tax dollars due to the citizens denial of additional years of Utility tax, but there must be better way of raising the money, instead of ruining the developers planned landscape with uncouth, bad, more of the same industrial look. We deserve better, want better and demand better quality in this development. We, the residents on the Cosky Dr. do not want to be the heart of Industrial Parks on both sides of our street. Enough is enough.. We have a very peaceful, nice, quiet neighborhood and want to keep it that way.

Since Marina Station is such a huge development in the planning stages at this time, please allow us longterm citizens ideas to prevail. We have a huge stake in the value of our properties, lives and well being in our daily lives and our voice must be heard .

Sincerely



Eija and William Gavlick
Homeowner since 1967.
226 Cosky Dr.
Marina, CA. 93933
(831)384-9107

APPENDIX B

Specific Plan Zoning Tables

TABLE 7-1 OF SPECIFIC PLAN
Permitted Uses by District

Land Uses: Office Industrial
Park/Open Space Neighborhood Edge (NE)
Neighborhood General (NG) Neighborhood Center (NC)

Classifications: NP Not Permitted P Permitted
C Conditional Use Permit

Use Classifications	Office	Industrial	Park/Open Space	NE	NG	NC
Residential Uses						
Single-Family	NP	NP	NP	P	P	P
Multi-Family	NP	NP	NP	P	P	P
Public and Semi-Public Uses						
Clinics	P	NP	NP	NP	NP	C
Colleges and trade schools, public or private	P	P	NP	NP	NP	C
Community service facilities	P	NP	NP	NP	NP	C
Cultural institutions, Museums, art, etc.	P	NP	NP	NP	NP	P
Day care center (6 or more) ¹	C	C	NP	C	C	C
Government offices	P	NP	NP	NP	NP	P
Hospitals	C	NP	NP	NP	NP	NP
Park and recreation facilities	P	P	P	P	P	P
Religious facilities (i.e. Churches)	P	P	NP	NP	C	C
Schools, public or private	C	NP	NP	NP	NP	C
Commercial Uses						
Animal hospitals (Veterinary services)	P	P	NP	NP	NP	C
Animal sales and services (pet stores)	NP	NP	NP	NP	NP	C
Appliance stores, household, sales	NP	NP	NP	NP	NP	P

Use Classifications	Office	Industrial	Park/Open Space	NE	NG	NC
Arcades, game or movie	NP	NP	NP	NP	NP	P
Art Galleries	P	NP	NP	NP	NP	P
Automobile sales/rental/leasing	NP	P	NP	NP	NP	C
Automobile service stations ⁴	NP	NP	NP	NP	NP	P
Bakeries	P	P	NP	NP	NP	P
Banks and financial institutions	P	NP	NP	NP	NP	P
Barbershops/beauty salons	NP	NP	NP	NP	NP	P
Bars and cocktail lounges ²	C	C	NP	NP	NP	P
Bed and breakfast/Inns	NP	NP	NP	NP	NP	NP
Bicycle sales/rental/repair	P	NP	NP	NP	NP	P
Billiard halls	NP	NP	NP	NP	NP	C
Bowling alley	NP	NP	NP	NP	NP	C
Breweries, micro	C	C	NP	NP	NP	P
Building materials and services (Lumber yards)	NP	P	NP	NP	NP	NP
Business services	P	P	NP	NP	NP	P
Commercial entertainment (Movie theaters, miniature golf, indoor rock climbing, etc.) ²	C	C	NP	NP	NP	C
Commercial recreation	C	P	NP	NP	NP	P
Convenience stores w/out gas station	C	C	NP	NP	NP	P
Distribution centers	NP	P	NP	NP	NP	NP
Drive-up/drive-through services	NP	NP	NP	NP	NP	NP
Dry cleaning, retail establishment ⁴	NP	NP	NP	NP	NP	C
Eating and drinking establishments ²	C	C	NP	NP	NP	P
Farmer's market ⁴	NP	NP	NP	NP	NP	P
Film laboratories	NP	P	NP	NP	NP	NP
Film processing, retail	P	NP	NP	NP	NP	P
Food and beverage sales	C	C	NP	NP	NP	P

Use Classifications	O	I	P/OS	NE	NG	NC
Food preparation	NP	P	NP	NP	NP	P
Grocery stores	NP	NP	NP	NP	NP	P
Health clubs	C	C	NP	NP	NP	P
Hotels/lodges ⁴	NP	NP	NP	NP	NP	P
Information centers	NP	NP	NP	NP	NP	P
Laboratories, research and testing	P	P	NP	NP	NP	NP
Laundries, self service	NP	NP	NP	NP	NP	P
Liquor and/or wine sales	NP	NP	NP	NP	NP	P
Newsstands	P	P	NP	NP	NP	P
Nightclubs ⁴	NP	NP	NP	NP	NP	P
Offices, business and professional (Medical, Dental, Financial, Insurance or similar use)	P	P	NP	NP	NP	P
Outdoor festivals, temporary ⁴	NP	NP	NP	NP	NP	P
Parking facilities, commercial	P	P	NP	NP	NP	P
Photocopying and duplicating services	P	P	NP	NP	NP	P
Post office	P	P	NP	NP	NP	P
Restaurants, full service ³	C	NP	NP	NP	NP	P
Restaurants, limited service ³	P	NP	NP	NP	NP	P
Retail sales	NP	P	NP	NP	NP	P
Trails, biking and walking/jogging	P	P	P	P	P	P
Industrial Uses						
Contractor's yards	NP	P	NP	NP	NP	NP
Handicraft, custom manufacturing	NP	P	NP	NP	NP	C
Industry, limited	NP	P	NP	NP	NP	NP
Custom Manufacturing	NP	P	NP	NP	NP	NP
Light Manufacturing	NP	P	NP	NP	NP	NP
Personal storage	NP	P	NP	NP	NP	NP
Warehousing and storage	NP	P	NP	NP	NP	NP

Use Classifications	O	I	P/OS	NE	NG	NC
Transportation, Communication, and Utility Uses						
Communication antennae and transmission towers	C	C	NP	NP	NP	C
Communication facilities within buildings	C	C	NP	C	C	C
Freight/truck terminals and warehouses	NP	C	NP	NP	NP	NP
Transportation passenger terminals	NP	NP	NP	NP	NP	P
Truck weigh stations	NP	P	NP	NP	NP	NP
Utilities, major	NP	C	NP	NP	NP	NP

Notes:

1. Child care uses are subject to the conditions of the Marina Airport Land Use Plan.
2. Small scale, 5,000 square feet or less.
3. Dry Cleaning and Laundries: Limited to dry cleaning and laundries which provide retail services only, use only non-flammable solvents, and employ no more than 10 persons on-site.
4. Permitted only within the Del Monte Boulevard Neighborhood Center.
5. Industrial uses must be consistent with those described in Section 7.2 under "Industrial Uses."

Source: EMC Planning Group Inc 2006 and CreekBridge Homes 2006

TABLE 7-3 OF SPECIFIC PLAN

**Height, Setback and Parking Requirements for
Neighborhood Center, Neighborhood General, and Neighborhood Edge Zones**

Architectural Type	Zones Permitted	Max. Height	Min. Front Setback	Min. Side Setback	Min. Side Street Setback	Min. On-site Parking	Min. Off-site Parking
Low Density							
Villas	NE	3 stories	20'	7.5'	15'	2	2
	NG	3 stories	15'	5'	10'	2	2
Large Single Family homes	NE	3 stories	20'	6'	15'	2	2
	NG	3 stories	15'	5'	10'	2	2
Medium Density							
Small Single Family Homes	NG	2 stories	10'	5'	10'	2	2
	NC	2 stories	5'	5'	10'	2	2
Cottages	NG	2 stories	10'	5'	10'	2	1
	NC	2 stories	5'	5'	10'	2	1
Lane Homes – Bungalow/Green Homes	NG	2 stories	3'	3'	5'	2	0.5
	NC	2 stories	3'	3'	5'	2	0.5
Row Homes	NG	3 stories	5'	1.5'	5'	2	0.5
	NC	3 stories	5'	1.55'	5'	2	0.5
Town Homes	NG	3 stories	5'	0	5'	2	0.5
	NC	3 stories	0	0	5'	2	0.5
High Density							
Mixed Use Condominium Apartments	NC	4 stories	0	0	0	1	1
Carriage Apartments	NC, NG, NE	2 stories	N/A	5'	10'	1	0

Retail Building Types							
Retail Portion of Mixed Use	NC	4 stories	0	0	0	1/1,000 sq. ft	1/1,000 sq. ft
Retail Stand Alone	NC	4 stories	0	0	0	1/1,000 sq. ft	2/1,000 sq. ft

Notes:

1. All structures must be set back 15 feet from the centerline of the alley.
2. A second story balcony may intrude 4' into the 15' rear alley setback.
3. Building heights are measured by the number of inhabited stories. Architectural elements such as clock towers, spires, or other uninhabitable elements intrinsic to the particular architectural style being used are exempt from height maximums, except no part of any building may exceed 75'.
4. Front setbacks for Lane Homes are measured from the edge of the paved lane which runs between two streets.
5. Front setbacks for Bungalow/Green Homes are measured from the inside edge of the sidewalk around the green.
6. The side setback for homes, which side onto alleys, shall be 15 feet from the center of the alley.
7. The side street setback for Lane & Bungalow Homes is measured from the edge of the public street right of way to the side of the homes which face the lane or green.
8. The total parking requirement is the combination of the parking provided on the same property (on-site), plus the parking provided on off-street parking lots within a 300 foot path of travel to the closest unit or store (the combination is considered the total on-site parking), plus on-street parking on the block containing the buildings, plus the parking across the street abutting the property if the property across the street is a public or quasi-public open space use, such as the plazas or park or PG&E tower line easement. Required street parking may be reduced by the additional number of on-site parking provided, but not vice versa.
9. The designated stand alone retail and service areas shall be developed to a minimum floor area ratio (FAR) of 0.25 to avoid economic under-utilization and to maintain sufficient intensity of use to promote a pedestrian-oriented pattern of development. A maximum FAR of 0.55 shall be allowed to ensure that transportation and other infrastructure requirements of such uses are consistent with the planned capacity of the transportation and infrastructure.
10. Row home/town home garages may have side yard setbacks of 0'.

Source: EMC Planning Group Inc 2006 and CreekBridge Homes 2006

TABLE 7-4 OF SPECIFIC PLAN

**Height, Setback and Parking Requirements for
Office and Industrial Zones**

Architectural Type	Zone Permitted	Max. Height	Min/Max. FAR	Front Setback Plane ⁵	Side Setback	Side Street Setback Plane ⁵	Setback from Residential Zone	On site Parking
Office Uses	O, I	3 stories Max. 75'	0.25 to 0.45	1' setback from property line per 1' of height Min. 30' setback	Min. 20'	1' setback from property line per 1' of height Min. 20'	15' from center of alley plus 2' setback per 1' of height. Min. 35' setback from center of alley.	4 spaces per 1,000 sq. ft.
Industrial Uses	I	2 stories Max. 35'	0.0 to 0.45	2' setback from property line per 1' of height Min. 20' setback	Min. 20'	2' setback from property line per 1' of height Min. 20'	15' from center of alley plus 2' setback per 1' of height. Min. 35' setback from center of alley	2 spaces per 1,000 sq. ft.

Notes:

- Office building height is measured by the number of inhabited stories. Architectural elements such as clock towers, spires, or other uninhabitable elements intrinsic to the particular architectural style being used are exempt from height maximums except no part of a structure may exceed 75'.
- All setbacks in the Office and Industrial zones must be landscaped and maintained in a professional manner to create a solid vegetated screen between the office or industrial building and the residential uses. Up to two driveways may cross the front setback at right angles to the street to the on site parking areas. The setback areas may be used for no other purpose.
- A six-foot high masonry wall shall be built along the Residential zone 15 feet from the center of the alley adjacent to the office and industrial zones.
- All office buildings and industrial buildings shall be subject to site plan and architectural review by the City of Marina.
- The 1' setback for each 1' in height for office and industrial buildings creates an inclined plane. No portion of the building may penetrate this plane except uninhabited architectural elements, not to exceed 20 percent of the frontage.
- All industrial and office buildings shall also be reviewed and conditioned, where appropriate, by the City to mitigate potential impacts caused by noise, traffic, truck routs, smoke, vibration, hours of operation and other potential causes of conflict between the industrial use and the surrounding homes.
- Min/Max FAR is calculated by dividing the total square footage of the buildings on the parcel measured to the outside face of wall by the total square footage of the parcel measured to the center of the street or 30 feet from the right-of-way lane, which ever is less.

Source: EMC Planning Group Inc 2006 and CreekBridge Homes 2006

APPENDIX C

Air Quality Analysis Calculations

AIR QUALITY APPENDICES FOR THE MARINA STATION PROJECT

**PREPARED BY: DENISE DUFFY & ASSOCIATES
FOR: CITY OF MARINA
DATE: FEBRUARY 2007**

CONTENTS:

- **RESULTS OF URBEMIS 2002 VERSION 8.7.0 MODEL ANALYSIS (WITH NORTH CENTRAL COAST AIR BASIN PATCH)**
 - **CONSTRUCTION**
 - **OPERATIONAL AND AREA**
 - **OPERATIONAL AND AREA WITH EIR MITIGATION MEASURES**
- **ANALYSIS OF EFFECTS OF LOCALIZED CARBON MONOXIDE EMISSIONS OF THE MARINA STATION PROJECT**
- **TOXIC AIR CONTAMINANT ADDITIONAL INFORMATION AND SPREADSHEETS BY MSW CONSULTING**
- **AMBAG LETTER DOCUMENTING THE CONSISTENCY ANALYSIS**

AIR QUALITY APPENDICES FOR THE MARINA STATION PROJECT

**PREPARED BY: DENISE DUFFY & ASSOCIATES
FOR: CITY OF MARINA
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**RESULTS OF URBEMIS 2002 VERSION 8.7.0 MODEL ANALYSIS (WITH
NORTH CENTRAL COAST AIR BASIN PATCH)**

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Marina Station 2_17_06.u
 Project Name: Marina Station 2_17_06
 Project Location: North Central Coast (Monterey area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
 (Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007 ***							
TOTALS (lbs/day, unmitigated)	95.82	611.27	806.78	0.01	349.19	25.16	324.03
TOTALS (lbs/day, mitigated)	95.82	611.26	806.66	0.01	53.98	25.16	28.82
*** 2008 ***							
TOTALS (lbs/day, unmitigated)	26.35	124.67	246.88	0.01	5.26	4.16	1.10
TOTALS (lbs/day, mitigated)	26.35	124.67	246.88	0.01	5.26	4.16	1.10
*** 2009 ***							
TOTALS (lbs/day, unmitigated)	25.77	122.58	241.26	0.01	4.95	3.85	1.10
TOTALS (lbs/day, mitigated)	25.77	122.58	241.26	0.01	4.95	3.85	1.10
*** 2010 ***							
TOTALS (lbs/day, unmitigated)	25.22	120.49	235.97	0.01	4.69	3.59	1.10
TOTALS (lbs/day, mitigated)	25.22	120.49	235.97	0.01	4.69	3.59	1.10
*** 2011 ***							
TOTALS (lbs/day, unmitigated)	1,196.06	200.77	411.69	0.03	8.04	5.83	2.21
TOTALS (lbs/day, mitigated)	1,196.06	200.77	411.69	0.03	8.04	5.83	2.21

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Marina Station 2_17_06.u
 Project Name: Marina Station 2_17_06
 Project Location: North Central Coast (Monterey area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: January, 2007
 Construction Duration: 60
 Total Land Use Area to be Developed: 129.44 acres
 Maximum Acreage Disturbed Per Day: 32.4 acres
 Single Family Units: 816 Multi-Family Units: 688
 Retail/Office/Institutional/Industrial Square Footage: 855432

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	324.00	-	324.00
Off-Road Diesel	95.35	610.45	797.40	-	25.14	25.14	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.47	0.82	9.38	0.00	0.05	0.02	0.03
Maximum lbs/day	95.82	611.27	806.78	0.00	349.19	25.16	324.03
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	19.88	123.34	166.79	-	4.48	4.48	0.00
Bldg Const Worker Trips	7.04	4.03	85.33	0.01	1.18	0.08	1.10
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	26.92	127.37	252.13	0.01	5.66	4.56	1.10
Max lbs/day all phases	95.82	611.27	806.78	0.01	349.19	25.16	324.03
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	19.88	120.91	167.33	-	4.08	4.08	0.00
Bldg Const Worker Trips	6.47	3.76	79.54	0.01	1.18	0.08	1.10

Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	26.35	124.67	246.88	0.01	5.26	4.16	1.10
Max lbs/day all phases	26.35	124.67	246.88	0.01	5.26	4.16	1.10

*** 2009***

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	19.88	119.13	167.89	-	3.77	3.77	0.00
Bldg Const Worker Trips	5.88	3.45	73.37	0.01	1.18	0.08	1.10
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	25.77	122.58	241.26	0.01	4.95	3.85	1.10

Max lbs/day all phases 25.77 122.58 241.26 0.01 4.95 3.85 1.10

*** 2010***

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	19.88	117.33	168.43	-	3.52	3.52	0.00
Bldg Const Worker Trips	5.34	3.15	67.54	0.01	1.18	0.08	1.10
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	25.22	120.49	235.97	0.01	4.69	3.59	1.10

Max lbs/day all phases 25.22 120.49 235.97 0.01 4.69 3.59 1.10

*** 2011***

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
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Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	19.88	117.33	168.43	-	3.52	3.52	0.00
Bldg Const Worker Trips	5.34	3.15	67.54	0.01	1.18	0.08	1.10
Arch Coatings Off-Gas	1,151.19	-	-	-	-	-	-
Arch Coatings Worker Trips	5.34	3.15	67.54	0.01	1.18	0.08	1.10
Asphalt Off-Gas	1.46	-	-	-	-	-	-

Asphalt Off-Road Diesel	12.56	73.07	106.78	-	2.06	2.06	0.00
Asphalt On-Road Diesel	0.25	4.04	0.95	0.01	0.11	0.10	0.01
Asphalt Worker Trips	0.04	0.02	0.45	0.00	0.01	0.00	0.01
Maximum lbs/day	1,196.06	200.77	411.69	0.03	8.04	5.83	2.21
Max lbs/day all phases	1,196.06	200.77	411.69	0.03	8.04	5.83	2.21

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jan '07
Phase 2 Duration: 6.6 months
On-Road Truck Travel (VMT): 0

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Graders	220	0.610	8.0
1	Off Highway Trucks	417	0.570	8.0
3	Rollers	125	0.560	8.0
3	Rubber Tired Dozers	380	0.590	8.0
12	Scrapers	450	0.720	8.0

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Jul '07
Phase 3 Duration: 53.4 months
Start Month/Year for SubPhase Building: Jul '07
SubPhase Building Duration: 53.4 months

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Excavators	321	0.570	8.0
1	Graders	220	0.610	8.0
1	Off Highway Trucks	417	0.570	8.0
2	Rollers	125	0.720	8.0
2	Rough Terrain Forklifts	94	0.475	8.0
1	Scrapers	265	0.720	8.0
2	Tractor/Loaders/Backhoes	103	0.550	8.0

Start Month/Year for SubPhase Architectural Coatings: Jul '11

SubPhase Architectural Coatings Duration: 5.3 months

Start Month/Year for SubPhase Asphalt: Oct '11

SubPhase Asphalt Duration: 2.7 months

Acres to be Paved: 33

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Off Highway Trucks	417	0.570	8.0
1	Pavers	158	0.620	8.0
3	Rollers	186	0.560	8.0
1	Scrapers	90	0.720	8.0

CONSTRUCTION EMISSION ESTIMATES MITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	28.79	-	28.79
Off-Road Diesel	95.35	610.45	797.40	-	25.14	25.14	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.47	0.81	9.26	0.00	0.05	0.02	0.03
Maximum lbs/day	95.82	611.26	806.66	0.00	53.98	25.16	28.82

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	19.88	123.34	166.79	-	4.48	4.48	0.00
Bldg Const Worker Trips	7.04	4.03	85.33	0.01	1.18	0.08	1.10
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	26.92	127.37	252.13	0.01	5.66	4.56	1.10

Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions								
Fugitive Dust	-	-	-	-	0.00	-	0.00	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	19.88	117.33	168.43	-	3.52	3.52	0.00
Bldg Const Worker Trips	5.34	3.15	67.54	0.01	1.18	0.08	1.10
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	25.22	120.49	235.97	0.01	4.69	3.59	1.10
Max lbs/day all phases	25.22	120.49	235.97	0.01	4.69	3.59	1.10

*** 2011***

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	19.88	117.33	168.43	-	3.52	3.52	0.00
Bldg Const Worker Trips	5.34	3.15	67.54	0.01	1.18	0.08	1.10
Arch Coatings Off-Gas	1,151.19	-	-	-	-	-	-
Arch Coatings Worker Trips	5.34	3.15	67.54	0.01	1.18	0.08	1.10
Asphalt Off-Gas	1.46	-	-	-	-	-	-
Asphalt Off-Road Diesel	12.56	73.07	106.78	-	2.06	2.06	0.00
Asphalt On-Road Diesel	0.25	4.04	0.95	0.01	0.11	0.10	0.01
Asphalt Worker Trips	0.04	0.02	0.45	0.00	0.01	0.00	0.01
Maximum lbs/day	1,196.06	200.77	411.69	0.03	8.04	5.83	2.21
Max lbs/day all phases	1,196.06	200.77	411.69	0.03	8.04	5.83	2.21

Construction-Related Mitigation Measures

- Phase 2: Soil Disturbance: Apply soil stabilizers to inactive areas
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
- Phase 2: Soil Disturbance: Replace ground cover in disturbed areas quickly
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 15.0%)
- Phase 2: Soil Disturbance: Water exposed surfaces - 3x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 50.0%)
- Phase 2: Stockpiles: Cover all stock piles with tarps
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 9.5%)
- Phase 2: Unpaved Roads: Water all haul roads 3x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 45.0%)
- Phase 2: Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 40.0%)
- Phase 2: Worker Trips: Use shuttle to retail establishments @lunch
Percent Reduction(ROG 1.0% NOx 1.3% CO 1.3% SO2 1.3% PM10 1.3%)
- Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jan '07
Phase 2 Duration: 6.6 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
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3	Graders	220	0.610	8.0
1	Off Highway Trucks	417	0.570	8.0
3	Rollers	125	0.560	8.0
3	Rubber Tired Dozers	380	0.590	8.0
12	Scrapers	450	0.720	8.0

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Jul '07

Phase 3 Duration: 53.4 months

Start Month/Year for SubPhase Building: Jul '07

SubPhase Building Duration: 53.4 months

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Excavators	321	0.570	8.0
1	Graders	220	0.610	8.0
1	Off Highway Trucks	417	0.570	8.0
2	Rollers	125	0.720	8.0
2	Rough Terrain Forklifts	94	0.475	8.0
1	Scrapers	265	0.720	8.0
2	Tractor/Loaders/Backhoes	103	0.550	8.0

Start Month/Year for SubPhase Architectural Coatings: Jul '11

SubPhase Architectural Coatings Duration: 5.3 months

Start Month/Year for SubPhase Asphalt: Oct '11

SubPhase Asphalt Duration: 2.7 months

Acres to be Paved: 33

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Off Highway Trucks	417	0.570	8.0
1	Pavers	158	0.620	8.0
3	Rollers	186	0.560	8.0
1	Scrapers	90	0.720	8.0

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Marina Station 2_17_06.u
Project Name: Marina Station 1_5_07
Project Location: North Central Coast (Monterey area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	131.60	17.96	46.31	0.37	0.18
TOTALS (lbs/day, mitigated)	131.60	17.96	46.31	0.37	0.18

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	96.19	99.42	959.30	1.63	261.17
TOTALS (lbs/day, mitigated)	89.25	91.34	881.20	1.50	239.96

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	227.79	117.38	1,005.61	2.00	261.35
TOTALS (lbs/day, mitigated)	220.85	109.30	927.51	1.87	240.14

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Marina Station 2_17_06.u
Project Name: Marina Station 1_5_07
Project Location: North Central Coast (Monterey area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)					
Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.36	17.76	8.53	0	0.03
Hearth - No summer emissions					
Landscaping	5.81	0.20	37.79	0.37	0.15
Consumer Prdcts	73.58	-	-	-	-
Architectural Coatings	50.84	-	-	-	-
TOTALS (lbs/day, unmitigated)	131.60	17.96	46.31	0.37	0.18

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Mitigated)					
Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.36	17.76	8.53	0	0.03
Hearth - No summer emissions					
Landscaping	5.81	0.20	37.79	0.37	0.15
Consumer Prdcts	73.58	-	-	-	-
Architectural Coatings	50.84	-	-	-	-
TOTALS (lbs/day, mitigated)	131.60	17.96	46.31	0.37	0.18

Area Source Mitigation Measures

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	26.59	26.24	262.64	0.47	67.20
Apartments low rise	17.04	15.95	159.66	0.29	40.85
City park	0.08	0.00	0.00	0.00	0.00
Quality resturant	2.25	2.54	23.58	0.04	6.76
Fast food rest. w/ drive	15.33	17.65	162.83	0.27	46.89
Specialty Retail	3.03	3.25	29.89	0.05	8.51
Supermarket	2.87	3.14	28.91	0.05	8.23
Convenience market (24 ho	5.31	4.55	42.50	0.06	10.71
General office building	5.69	6.47	61.27	0.10	17.80
General light industry	17.99	19.63	188.03	0.31	54.21
TOTAL EMISSIONS (lbs/day)	96.19	99.42	959.30	1.63	261.17

Includes correction for passby trips.

Includes the following double counting adjustment for internal trips:

Residential trips: 6.46 % reduction. Nonresidential trips: 4.29 % reduction.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2020 Temperature (F): 75 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	47.14	8.95 trips/dwelling unit	816.00	7,304.56
Apartments low rise	43.00	6.45 trips/dwelling unit	688.00	4,440.47
City park		0.00 trips/acres	17.85	0.00
Quality resturant		86.09 trips/1000 sq. ft.	8.90	766.19
Fast food rest. w/ drive		474.82 trips/1000 sq. ft.	11.20	5,317.99
Specialty Retail		42.42 trips/1000 sq. ft.	24.80	1,051.95
Supermarket		97.85 trips/1000 sq. ft.	10.40	1,017.65
Convenience market (24 ho		470.88 trips/1000 sq. ft.	4.70	2,213.12
General office building		10.54 trips/1000 sq. ft.	143.81	1,515.35
General light industry		6.67 trips/1000 sq. ft.	651.62	4,346.83
Sum of Total Trips				27,974.11
Total Vehicle Miles Traveled				171,128.71

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.40	0.40	99.40	0.20
Light Truck < 3,750 lbs	15.30	0.70	98.00	1.30
Light Truck 3,751- 5,750	16.40	0.60	98.80	0.60
Med Truck 5,751- 8,500	7.30	0.00	98.60	1.40
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.80	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	50.00	50.00	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.50	0.00	93.30	6.70

Travel Conditions

Residential

Commercial

	Home- Work	Home- Shop	Home- Other	Commuter	Non-Work	Customer
Urban Trip Length (miles)	10.0	5.0	6.5	9.6	9.6	9.6
Rural Trip Length (miles)	10.0	5.0	6.5	9.6	9.6	9.6
Trip Speeds (mph)	30.0	20.0	25.0	30.0	30.0	30.0
% of Trips - Residential	22.6	27.4	50.0			
% of Trips - Commercial (by land use)						
City park				5.0	2.5	92.5
Quality resturant				8.0	4.0	88.0
Fast food rest. w/ drive thru				5.0	2.5	92.5

Specialty Retail	2.0	1.0	97.0
Supermarket	2.0	1.0	97.0
Convenience market (24 hour)	2.0	1.0	97.0
General office building	35.0	17.5	47.5
General light industry	50.0	25.0	25.0

MITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	24.63	23.98	240.08	0.43	61.43
Apartments low rise	15.85	14.58	145.94	0.26	37.34
City park	0.08	0.00	0.00	0.00	0.00
Quality resturant	2.08	2.35	21.74	0.04	6.23
Fast food rest. w/ drive	14.14	16.27	150.14	0.25	43.24
Specialty Retail	2.81	2.99	27.56	0.04	7.85
Supermarket	2.65	2.90	26.66	0.04	7.59
Convenience market (24 ho	4.90	4.19	39.19	0.06	9.88
General office building	5.29	5.97	56.50	0.09	16.41
General light industry	16.82	18.10	173.39	0.29	49.99
TOTAL EMISSIONS (lbs/day)	89.25	91.34	881.20	1.50	239.96
PERCENTAGE REDUCTION %	7	8	8	8	8

Includes correction for passby trips.

Includes the following double counting adjustment for internal trips:

Residential trips: 6.46 % reduction. Nonresidential trips: 4.29 % reduction.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2020 Temperature (F): 75 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	47.14	8.18 trips/dwelling unit	816.00	6,677.14
Apartments low rise	43.00	5.90 trips/dwelling unit	688.00	4,059.06
City park		0.00 trips/acres	17.85	0.00
Quality resturant		79.38 trips/1000 sq. ft.	8.90	706.50
Fast food rest. w/ drive		437.83 trips/1000 sq. ft.	11.20	4,903.75
Specialty Retail		39.11 trips/1000 sq. ft.	24.80	970.01
Supermarket		90.23 trips/1000 sq. ft.	10.40	938.38
Convenience market (24 ho		434.20 trips/1000 sq. ft.	4.70	2,040.73
General office building		9.72 trips/1000 sq. ft.	143.81	1,397.31
General light industry		6.15 trips/1000 sq. ft.	651.62	4,008.24
Sum of Total Trips				25,701.12
Total Vehicle Miles Traveled				157,234.42

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.40	0.40	99.40	0.20
Light Truck < 3,750 lbs	15.30	0.70	98.00	1.30
Light Truck 3,751- 5,750	16.40	0.60	98.80	0.60
Med Truck 5,751- 8,500	7.30	0.00	98.60	1.40
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.80	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	50.00	50.00	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.50	0.00	93.30	6.70

Travel Conditions

	Residential			Commercial		
	Home- Work	Home- Shop	Home- Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.0	5.0	6.5	9.6	9.6	9.6
Rural Trip Length (miles)	10.0	5.0	6.5	9.6	9.6	9.6
Trip Speeds (mph)	30.0	20.0	25.0	30.0	30.0	30.0
% of Trips - Residential	22.6	27.4	50.0			
% of Trips - Commercial (by land use)						
City park				5.0	2.5	92.5
Quality resturant				8.0	4.0	88.0

Fast food rest. w/ drive thru	5.0	2.5	92.5
Specialty Retail	2.0	1.0	97.0
Supermarket	2.0	1.0	97.0
Convenience market (24 hour)	2.0	1.0	97.0
General office building	35.0	17.5	47.5
General light industry	50.0	25.0	25.0

MITIGATION OPTIONS SELECTED

Residential Mitigation Measures
=====

Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 2% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to the 'double counting adjusted' trip rate to get Mitigated Trips
Inputs Selected:
The Presence of Local-Serving Retail checkbox was selected.

Residential Transit Service Mitigation

Percent Reduction in Trips is 0.62% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to the 'double counting adjusted' trip rate to get Mitigated Trips
Inputs Selected:
The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 47
The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 0
The Number of Dedicated Daily Shuttle Trips is 0

Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 5.17% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to the 'double counting adjusted' trip rate to get Mitigated Trips
Inputs Selected:
The Number of Intersections per Square Mile is 454
The Percent of Streets with Sidewalks on One Side is 25%
The Percent of Streets with Sidewalks on Both Sides is 75%
The Percent of Arterials/Collectors with Bike Lanes or where Suitable, Direct Parallel Routes Exist is 50%

Residential Affordable Housing Mitigation

Percent Reduction in Trips is 0.8% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to the 'double counting adjusted' trip rate to get Mitigated Trips
Inputs Selected:
The Percent of Housing Units that are Deed-Restricted Below Market Rate Housing is 20%

Non-Residential Mitigation Measures
=====

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 2%
Inputs Selected:
The Presence of Local-Serving Retail checkbox was selected.

Non-Residential Transit Service Mitigation

Percent Reduction in Trips is 0.62%
Inputs Selected:
The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 47
The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 0
The Number of Dedicated Daily Shuttle Trips is 0

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 5.17%
Inputs Selected:
The Number of Intersections per Square Mile is 454
The Percent of Streets with Sidewalks on One Side is 25%

The Percent of Streets with Sidewalks on Both Sides is 75%
The Percent of Arterials/Collectors with Bike Lanes or where Suitable,
Direct Parallel Routes Exist is 50%

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/272. to 9.57/47.14

Changes made to the default values for Area

The area source mitigation measure option switch changed from off to on.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The double counting option switch changed from off to on.
The mitigation option switch changed from off to on.
The operational emission year changed from 2005 to 2020.
The operational winter selection item changed from 3 to 2.
The operational summer selection item changed from 6 to 5.
The Residential Affordable Housing Mitigation changed from off to on.
The Res and Non-Res Local-Serving Retail Mitigation changed from off to on.
The Res and Non-Res Transit Service Mitigation changed from off to on.
The Res and Non-Res Ped/Bike Mitigation changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Marina Station 2_14_07.u
Project Name: Marina Station 2_14_07
Project Location: North Central Coast (Monterey area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	131.60	17.96	46.31	0.37	0.18
TOTALS (lbs/day, mitigated)	131.60	17.96	46.31	0.37	0.18

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	96.19	99.42	959.30	1.63	261.17
TOTALS (lbs/day, mitigated)	85.80	87.19	841.25	1.44	228.76

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	227.79	117.38	1,005.61	2.00	261.35
TOTALS (lbs/day, mitigated)	217.40	105.15	887.57	1.81	228.94

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Marina Station 2_14_07.u
Project Name: Marina Station 2_14_07
Project Location: North Central Coast (Monterey area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)					
Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.36	17.76	8.53	0	0.03
Hearth - No summer emissions					
Landscaping	5.81	0.20	37.79	0.37	0.15
Consumer Prdcts	73.58	-	-	-	-
Architectural Coatings	50.84	-	-	-	-
TOTALS (lbs/day, unmitigated)	131.60	17.96	46.31	0.37	0.18

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Mitigated)					
Source	ROG	NOx	CO	SO2	PM10
Natural Gas	1.36	17.76	8.53	0	0.03
Hearth - No summer emissions					
Landscaping	5.81	0.20	37.79	0.37	0.15
Consumer Prdcts	73.58	-	-	-	-
Architectural Coatings	50.84	-	-	-	-
TOTALS (lbs/day, mitigated)	131.60	17.96	46.31	0.37	0.18

Area Source Mitigation Measures

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	26.59	26.24	262.64	0.47	67.20
Apartments low rise	17.04	15.95	159.66	0.29	40.85
City park	0.08	0.00	0.00	0.00	0.00
Quality resturant	2.25	2.54	23.58	0.04	6.76
Fast food rest. w/ drive	15.33	17.65	162.83	0.27	46.89
Specialty Retail	3.03	3.25	29.89	0.05	8.51
Supermarket	2.87	3.14	28.91	0.05	8.23
Convenience market (24 ho	5.31	4.55	42.50	0.06	10.71
General office building	5.69	6.47	61.27	0.10	17.80
General light industry	17.99	19.63	188.03	0.31	54.21
TOTAL EMISSIONS (lbs/day)	96.19	99.42	959.30	1.63	261.17

Includes correction for passby trips.

Includes the following double counting adjustment for internal trips:

Residential trips: 6.46 % reduction. Nonresidential trips: 4.29 % reduction.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2020 Temperature (F): 75 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	47.14	8.95 trips/dwelling unit	816.00	7,304.56
Apartments low rise	43.00	6.45 trips/dwelling unit	688.00	4,440.47
City park		0.00 trips/acres	17.85	0.00
Quality resturant		86.09 trips/1000 sq. ft.	8.90	766.19
Fast food rest. w/ drive		474.82 trips/1000 sq. ft.	11.20	5,317.99
Specialty Retail		42.42 trips/1000 sq. ft.	24.80	1,051.95
Supermarket		97.85 trips/1000 sq. ft.	10.40	1,017.65
Convenience market (24 ho		470.88 trips/1000 sq. ft.	4.70	2,213.12
General office building		10.54 trips/1000 sq. ft.	143.81	1,515.35
General light industry		6.67 trips/1000 sq. ft.	651.62	4,346.83
Sum of Total Trips				27,974.11
Total Vehicle Miles Traveled				171,128.71

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.40	0.40	99.40	0.20
Light Truck < 3,750 lbs	15.30	0.70	98.00	1.30
Light Truck 3,751- 5,750	16.40	0.60	98.80	0.60
Med Truck 5,751- 8,500	7.30	0.00	98.60	1.40
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.80	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	50.00	50.00	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.50	0.00	93.30	6.70

Travel Conditions

Residential

Commercial

	Home- Work	Home- Shop	Home- Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.0	5.0	6.5	9.6	9.6	9.6
Rural Trip Length (miles)	10.0	5.0	6.5	9.6	9.6	9.6
Trip Speeds (mph)	30.0	20.0	25.0	30.0	30.0	30.0
% of Trips - Residential	22.6	27.4	50.0			
% of Trips - Commercial (by land use)						
City park				5.0	2.5	92.5
Quality resturant				8.0	4.0	88.0
Fast food rest. w/ drive thru				5.0	2.5	92.5

Specialty Retail	2.0	1.0	97.0
Supermarket	2.0	1.0	97.0
Convenience market (24 hour)	2.0	1.0	97.0
General office building	35.0	17.5	47.5
General light industry	50.0	25.0	25.0

MITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	24.62	23.97	239.96	0.43	61.40
Apartments low rise	15.84	14.57	145.87	0.26	37.32
City park	0.08	0.00	0.00	0.00	0.00
Quality resturant	1.96	2.21	20.48	0.03	5.88
Fast food rest. w/ drive	13.39	15.42	142.17	0.23	40.98
Specialty Retail	2.68	2.85	26.22	0.04	7.47
Supermarket	2.53	2.76	25.37	0.04	7.23
Convenience market (24 ho	4.67	3.99	37.28	0.05	9.41
General office building	4.84	5.40	51.00	0.09	14.86
General light industry	15.19	16.00	152.89	0.25	44.21
TOTAL EMISSIONS (lbs/day)	85.80	87.19	841.25	1.44	228.76
PERCENTAGE REDUCTION %	11	12	12	12	12

Includes correction for passby trips.

Includes the following double counting adjustment for internal trips:

Residential trips: 6.46 % reduction. Nonresidential trips: 4.29 % reduction.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2020 Temperature (F): 75 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	47.14	8.18 trips/dwelling unit	816.00	6,677.14
Apartments low rise	43.00	5.90 trips/dwelling unit	688.00	4,059.06
City park		0.00 trips/acres	17.85	0.00
(Worker Trip Rate: 0)				
Quality resturant		75.80 trips/1000 sq. ft.	8.90	674.58
(Worker Trip Rate: 64.63)				
Fast food rest. w/ drive		418.05 trips/1000 sq. ft	11.20	4,682.16
(Worker Trip Rate: 356.46)				
Specialty Retail		37.35 trips/1000 sq. ft.	24.80	926.18
(Worker Trip Rate: 31.84)				
Supermarket		86.15 trips/1000 sq. ft.	10.40	895.98
(Worker Trip Rate: 73.46)				
Convenience market (24 ho		414.58 trips/1000 sq. ft.	4.70	1,948.52
(Worker Trip Rate: 353.5)				
General office building		9.28 trips/1000 sq. ft.	143.81	1,334.17
(Worker Trip Rate: 7.91)				
General light industry		5.87 trips/1000 sq. ft.	651.62	3,827.12
(Worker Trip Rate: 5.01)				
Sum of Total Trips			25,024.91	
Total Vehicle Miles Traveled			149,876.62	

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.40	0.40	99.40	0.20
Light Truck < 3,750 lbs	15.30	0.70	98.00	1.30
Light Truck 3,751- 5,750	16.40	0.60	98.80	0.60
Med Truck 5,751- 8,500	7.30	0.00	98.60	1.40
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00

Heavy-Heavy 33,001-60,000	0.80	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	50.00	50.00	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.50	0.00	93.30	6.70

Travel Conditions

Residential			Commercial		
Home- Work	Home- Shop	Home- Other	Commute	Non-Work	Customer

Urban Trip Length (miles)	10.0	5.0	6.5	9.6	9.6	9.6
Rural Trip Length (miles)	10.0	5.0	6.5	9.6	9.6	9.6
Trip Speeds (mph)	30.0	20.0	25.0	30.0	30.0	30.0
% of Trips - Residential	22.6	27.4	50.0			

% of Trips - Commercial (by land use)

City park		5.0	2.5	92.5
Quality resturant		8.0	4.0	88.0
Fast food rest. w/ drive thru		5.0	2.5	92.5
Specialty Retail		2.0	1.0	97.0
Supermarket		2.0	1.0	97.0
Convenience market (24 hour)		2.0	1.0	97.0
General office building		35.0	17.5	47.5
General light industry		50.0	25.0	25.0

MITIGATION OPTIONS SELECTED

Residential Mitigation Measures
=====

Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 2% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to the 'double counting adjusted' trip rate to get Mitigated Trips
Inputs Selected:
The Presence of Local-Serving Retail checkbox was selected.

Residential Transit Service Mitigation

Percent Reduction in Trips is 0.62% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to the 'double counting adjusted' trip rate to get Mitigated Trips
Inputs Selected:
The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 47
The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 0
The Number of Dedicated Daily Shuttle Trips is 0

Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 5.17% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to the 'double counting adjusted' trip rate to get Mitigated Trips
Inputs Selected:
The Number of Intersections per Square Mile is 454
The Percent of Streets with Sidewalks on One Side is 25%
The Percent of Streets with Sidewalks on Both Sides is 75%
The Percent of Arterials/Collectors with Bike Lanes or where Suitable, Direct Parallel Routes Exist is 50%

Residential Affordable Housing Mitigation

Percent Reduction in Trips is 0.8% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to the 'double counting adjusted' trip rate to get Mitigated Trips
Inputs Selected:
The Percent of Housing Units that are Deed-Restricted Below Market Rate Housing is 20%

Residential Free Transit Passes Mitigation

Percent Reduction in Trips is 0.15% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied ONLY to worker trips. And the 'double counting adjusted' trip rate is used to get the number of Mitigated Trips
Inputs Selected:
The Free Transit Passes checkbox was selected.

Non-Residential Mitigation Measures
=====

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 2%
Inputs Selected:
The Presence of Local-Serving Retail checkbox was selected.

Non-Residential Transit Service Mitigation

Percent Reduction in Trips is 0.62%
Inputs Selected:
The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 47
The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 0

The Number of Dedicated Daily Shuttle Trips is 0

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 5.17%

Inputs Selected:

The Number of Intersections per Square Mile is 454

The Percent of Streets with Sidewalks on One Side is 25%

The Percent of Streets with Sidewalks on Both Sides is 75%

The Percent of Arterials/Collectors with Bike Lanes or where Suitable,
Direct Parallel Routes Exist is 50%

Non-Residential Parking Pricing/Cash Out Mitigation

Percent Reduction in Trips is 4.17%
Inputs Selected:
The Daily Parking Change was set to 1.00 dollars

Non-Residential Free Transit Passes Mitigation

Percent Reduction in Trips is 0.15%
Note that the above percent is applied ONLY to worker trips.
Inputs Selected:
The Free Transit Passes checkbox was selected.

Non-Residential Telecommuting Mitigation

Percent Reduction in Trips is 12%
Note that the above percent is applied ONLY to worker trips.
Inputs Selected:
The Employee Telecommuting Program was selected with 10% of the employees participating
an average of 5 Days/Week
The Compressed Work Schedule 9/80 was selected with 20% of the employees participating

Non-Residential Other Transportation Demand Measures Mitigation

Percent Reduction in Trips is 2.58%
Note that the above percent is applied ONLY to worker trips.
Inputs Selected:
The 'Secure Bike Parking' measure was selected
The 'Showers/Changing Facilities Provided' measure was selected
The 'Guaranteed Ride Home Program Provided' measure was selected
The 'Car-Sharing Services Provided' measure was selected
The 'Information provided on Transportation Alternatives' measure was selected
The 'Dedicated Employee Transportation Coordinator' measure was selected
The 'Carpool Matching Programs' measure was selected
The 'Preferential Carpool/Vanpool Parking' measure was selected

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/272. to 9.57/47.14

Changes made to the default values for Area [No area source mitigation reductions were included]

The area source mitigation measure option switch changed from off to on. [required to get a "mitigated" output.]

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The double counting option switch changed from off to on.
The mitigation option switch changed from off to on.
The operational emission year changed from 2005 to 2020.
The operational winter selection item changed from 3 to 2.
The operational summer selection item changed from 6 to 5.
The Residential Affordable Housing Mitigation changed from off to on.
The Res and Non-Res Local-Serving Retail Mitigation changed from off to on.
The Res and Non-Res Transit Service Mitigation changed from off to on.
The Res and Non-Res Ped/Bike Mitigation changed from off to on.
The Res and Non-Res Trans Demand Mgmt Measures Mitigation changed from off to on.

**ANALYSIS OF EFFECTS OF LOCALIZED CARBON MONOXIDE EMISSIONS OF
THE MARINA STATION PROJECT**

ANALYSIS OF EFFECTS OF LOCALIZED CARBON MONOXIDE EMISSIONS OF THE MARINA STATION PROJECT

PREPARED BY: DENISE DUFFY & ASSOCIATES
FOR: CITY OF MARINA
DATE: MARCH 2006

METHODOLOGY: Transportation Project-Level Carbon Monoxide Protocol (U.C. Davis, Institute of Transportation Studies, December 1997): Screening Procedure in Appendix A [Available for download from the Caltrans Environmental Division's website at <http://www.dot.ca.gov/hq/env/air/index.htm>]

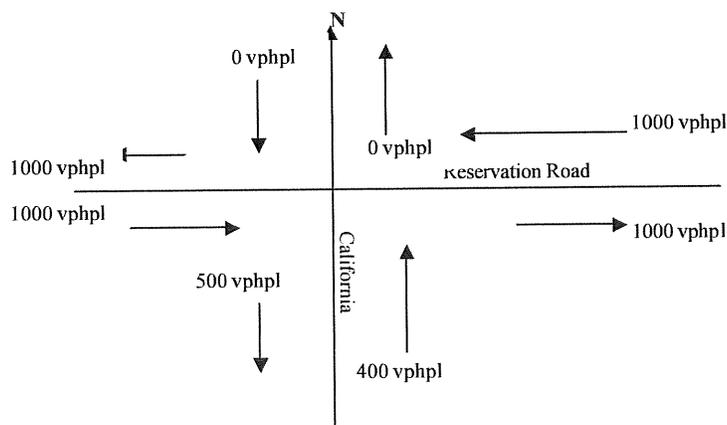
OVERVIEW: The Screening Procedure methodology is for estimation of the 8-hour CO concentrations. It uses estimates of the contributions to CO concentrations for a "base case" characterized by a specific intersection configuration, meteorology, traffic volume and measures related to the intersection performance. A series of correction factors specific to the conditions of the intersection under study is applied to adjust the base case estimates of CO concentrations to get the worst-case concentration expected near the intersection under study. The appropriate correction factors are provided in tables in Appendix A. The contribution of the project to the 1-hour CO concentration is obtained and subsequently added to the background concentration. The 8-hour CO concentration is then estimated by applying the appropriate persistence factor to the total 1-hour CO concentration. Finally, the 8-hour CO concentration is compared with the 8-hour CO standard or to the CO concentration for another scenario. More detail concerning the worst-case assumptions and methodology are found in the above-referenced document.

ANALYSIS: Section and table numbers referenced in the analysis below are to the above-referenced document unless otherwise described.

Note: No intersections affected by the project are located in dense development areas such as urban canyons, and all intersections are exposed to ocean air currents almost continually. There are no physical barriers to rapid pollutant dispersion such as tall buildings large elevated freeways, on or off-ramps, or tunnels.

Section A.1 Information Required

- A. Intersection type: 4x2
- B. Geographic Location: Coastal or Coastal Valley
- C. Average Cruise Speed (assume worst-case): 15 mph
- D. Percentage of Red Time (assume worst-case): primary legs are 30%; secondary legs 90%
- E. Analysis Year (assume worst-case): 2016
- F. % of Vehicles in Cold Start Mode: 30% (mid-range of the values recommended for Fringe Areas PM peak in §B.3.2)
- G. Traffic Volume (vphpl): 1000 EB and WB primary leg and 500 SB/ 400 NB on secondary leg
- H. Distance to nearest receptor (assumes worst-case for future receptors, cumulative): 3 m



Section A.2.2 Initial Estimates of CO Concentration Contributions

Contribution From Each Leg of Intersection, in ppm (Tables A.4)			
	California Avenue	Reservation Road	
	Southern leg	Western leg	Eastern leg
Approach	30.1	59.6	59.6
Departure	20.1	25.2	25.2

Section A.2.3 Traffic Volume Correction

Contribution From Each Leg: Corrected for Volumes, in ppm (Tables A.5)			
	California Avenue	Reservation Road	
	Southern leg	Western leg	Eastern leg
Approach	$30.1 * 0.47 = 14.15$	59.6	59.6
Departure	$20.1 * 0.58 = 11.17$	$25.2 * 0.93 = 23.4$	25.2

Section A.2.4 Intersection Performance Correction

Contribution From Each Leg: Corrected for Performance, in ppm (Tables A.6 & A.7)			
	California Avenue	Reservation Road	
	Southern leg	Western leg	Eastern leg
Approach	$14.15 * 1 = 14.15$	$59.6 * 0.45 = 26.8$	$59.6 * 0.45 = 26.8$
Departure	$11.17 * 1 = 11.17$	$23.4 * 0.11 = 2.6$	$25.2 * 0.13 = 3.3$
Total	25.32	29.4	30.1

Section A.2.5 Add the contributions from all legs

$25.32 + 29.4 + 30.1 = 84.82$ ppm

Section A.2.6 Worst-case wind speed correction

$84.52 * 0.7 = 59.37$ ppm

Section A.2.7 Cold start and analysis year correction

$59.37 * 0.19 = 11.28$ ppm

Section A.2.8 Not applicable (only applicable in SCAQMD)

Section A.2.9 Traffic volume ratio and receptor location correction

Ratio of Representative Volume = $1000/400 = 2.5 \rightarrow$

Wind Angle Correction Factor for Longest Distance from Receptor to either road of 3m (from Table A.9) = 0.86

Project Contribution to 1-hour CO = $11.28 * 0.86 = 6.77$ ppm

Section A.2.10 Background CO Concentration

Per MBUAPCD CEQA Guidelines (June 2004), the background CO concentrations may be as high as 3.8 ppm

Section A.2.11 Total 1-hour CO Concentration at Intersection

$3.8 + 6.77 = 10.6$ ppm

Section A.2.12 Conversion from 1-hour to 8-hour CO Concentration

Persistence Factor from section B.5.1.3, Table B.15 of 0.7

$10.6 * 0.7 = 7.4$ ppm

RESULTS: Both the 1-hour and the 8-hour worst-case CO concentrations (10.6 ppm and 7.4 ppm, respectively) are *less* than the relevant CO ambient air quality standards (20 ppm and 9 ppm).

**TOXIC AIR CONTAMINANT ADDITIONAL INFORMATION AND SPREADSHEETS
BY MSW CONSULTING**

Additional Information on Toxic Air Contaminants
Source: Michael S. Weber, December 2006

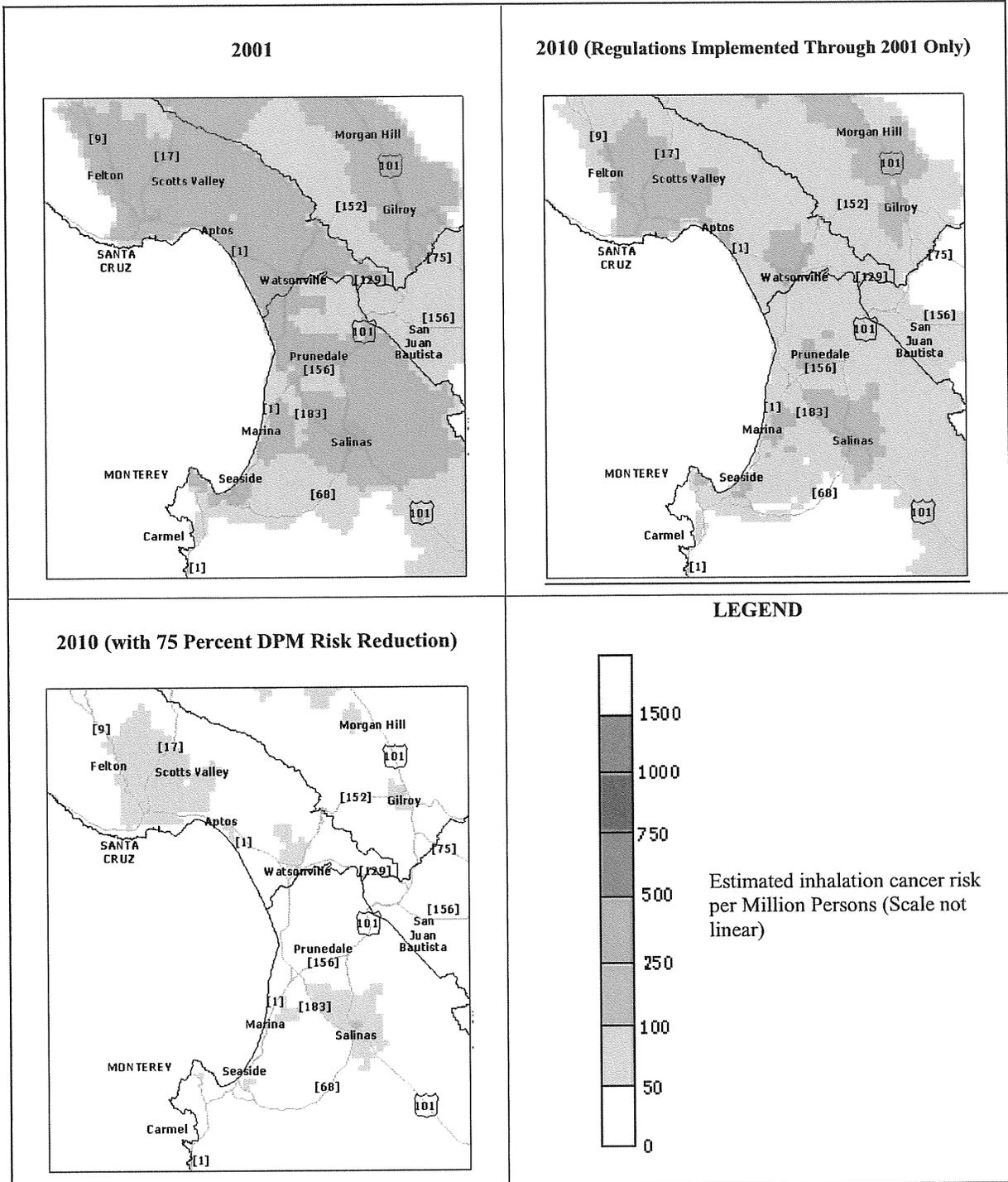
For TACs, impacts are often evaluated ultimately in terms of cancer risk or (for non-cancer effects) in terms of proportions of applicable risk exposure levels (RELs). Figure A presents regional-scale maps of total inhalation cancer risk levels from all modeled sources and categories of TACs. These risk levels are based on assumed lifetime-duration exposures, generally derived from an assumed 70-year exposure duration for a “representative” person. The ARB refers to the mapping excerpted in Figure A as a “working draft”, and has acknowledged that the underlying modeling does not incorporate all known sources of such pollutants. However, that modeling does include diesel exhaust emissions from on-road and off-road vehicles, sources that – based on the risk factors applied by the ARB and OEHHA -- are expected to dominate overall cancer risk at an area-wide and regional level throughout most developed areas within the state. To put the data presented in Figure A into context, note that the risk represented in this figure accounts only for exposure to toxics via inhalation. It therefore represents only a small (albeit important) proportion of total lifetime cancer risk. Other components of cancer risk include those associated with drinking and eating and with mechanisms of cancer generation (such as ultraviolet radiation exposure, genetic predisposition, et cetera) other than those associated with chemical exposure. Nevertheless, within the context of air quality considerations, it is the inhalation cancer risk addressed in Figure A that is of greatest relevance.

Figure A presents regional cancer risk maps for three of the four temporal and control-measure scenarios for which it has published such data on its web site. One scenario (2001) predates existing conditions (as of the publication of this public draft document) by about five and one half years; the other two (2010) represent scenarios about three and one half years in the future. Among the two year-2010 scenario maps considered in Figure A, the first (positioned in the upper right quadrant of Figure A) does not consider the potential beneficial effects of any relevant regulations implemented after 2001. The second 2010 scenario map (positioned in the upper right quadrant of Figure A) assumes achievement by 2010 the 75 percent DPM risk reduction target established in the *RRP* (discussed previously in this report within the “State” discussion under the “Regulatory Context” heading). Based on the level of relevant regulatory activity that has occurred from 2001 to the present (also addressed within the aforementioned “State” discussion), it appears that substantial progress has likely been made towards that 75 percent DPM risk reduction target.

The mapping representation in Figure A – and the modeling analysis that underlies it – is regional rather than local in scale, and it represents risk at no better than one-square-kilometer resolution. However, the Marina vicinity can be identified within it, and some order-of-magnitude conclusions regarding existing inhalation cancer risk levels in the general vicinity of the project can be inferred from it. The map in the upper left quadrant of Figure A suggests that – in 2001 – inhalation cancer risks between 100 and 250 per million persons (represented in a blue-green color) were estimated to have prevailed throughout a large extent of land surrounding the Monterey Bay, including the City of Marina and its immediate surroundings. The map in the upper right quadrant of Figure A shows that by the year 2010, areas within the Monterey Bay region exposed to lifetime inhalation cancer risks within the range of 100 to 250 per million persons are predicted to be much more geographically constrained to more developed areas within that region, with Marina representing one such area. The map in the lower left quadrant of Figure A visually demonstrates the substantial reduction in overall inhalation cancer risk levels in the Monterey Bay region that would be expected to occur by 2010 – relative to both of the two preceding mapping scenarios – if the *RRP*’s 75 percent diesel risk reduction target is met. In that case – within the square-kilometer resolution of the mapping – no areas within the Marina vicinity would be expected to be exposed to average TAC levels sufficient to generate cancer risk magnitudes above 100 per million persons, and only some areas within the Marina vicinity would be expected to be exposed to average TAC levels sufficient to generate cancer risk magnitudes between 50 and 100 per million persons (represented in light gray).

At the present time, one can infer from the risk mapping shown in Figure A that most areas within the City of Marina – including at least most if not all of the designated land use areas within the proposed project site – are exposed to average inhalation cancer risk levels between about 50 and 250 per million. While that is a relatively wide range, it can help put into context the incremental cancer risk thresholds that are discussed in Section 4.3 Air Quality.

Figure A – Estimated Total Regional Inhalation Cancer Risk for Recent-past and Near-future Scenarios



SOURCE: ARB:EIB:SRF: 6/20/04 (<http://www.arb.ca.gov/toxics/cti/hlthrisk/cncrinhl/riskmapviewfull.htm>)

SCREEN3 MODELING RESULTS - DIESEL CONSTRUCTION VEHICLE EMISSIONS

Color Key:

User Inputs
Emission Factors
Emissions
Modeling Results
Risk Results

Cancer Risk

	Project Emissions grams/project	Average Annual Emissions grams/sec
Diesel PM Emissions:		
Truck Emissions		
Non-Truck Construction Vehicle Emissions		
Total Emissions		
Emissions Release Parameters & Distance to Maximally Exposed Receptor:		
Model as an area source		
Release Height		
Urban or Rural Dispersion Coefficients		
Distance to nearest receptor		
Distance to Maximally exposed receptor		
Screen3 Modeling Results:		
Highest 1-hour concentration based on annual average emissions	5.756	@ Maximally exposed receptor
Annual Average Concentration	0.466	
Cancer Risk		
(Annual Average Diesel PM Concentration @ 200 meters) * (Unit Risk Value) * (1,000,000) $0.62 \text{ ug/m}^3 * [3e-4 \text{ (1/ug/m}^3\text{)}] * (1,000,000)$ 138 per million (This is > 10 per million)		
Factoring by 1 over 70 years, may be acceptable because additional projects are not likely in the same area in the future. But, OEHHA recommends in their new Risk Assessment Guidelines that a 9 over 70 years factor be applied for short term project.		
9/70 factored cancer risk	17.76	per million
1/70 factored cancer risk	2.0	per million
(This is > 10 per million, and above the significance threshold) (This is < 10 per million, and below the significance threshold)		

12/31/06
12:03:01

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

0619_CancerRisk

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = AREA
EMISSION RATE (G/(S-M**2)) = .403760E-07
SOURCE HEIGHT (M) = 3.0000
LENGTH OF LARGER SIDE (M) = 2000.0000
LENGTH OF SMALLER SIDE (M) = 625.0000
RECEPTOR HEIGHT (M) = 1.5000
URBAN/RURAL OPTION = RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = .000 M**4/S**3; MOM. FLUX = .000 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
10.	4.002	6	1.0	1.0	10000.0	3.00	15.
100.	4.188	6	1.0	1.0	10000.0	3.00	15.
200.	4.354	6	1.0	1.0	10000.0	3.00	13.
300.	4.554	6	1.0	1.0	10000.0	3.00	13.
400.	4.745	6	1.0	1.0	10000.0	3.00	13.
500.	4.927	6	1.0	1.0	10000.0	3.00	12.
600.	5.100	6	1.0	1.0	10000.0	3.00	12.
700.	5.267	6	1.0	1.0	10000.0	3.00	12.
800.	5.427	6	1.0	1.0	10000.0	3.00	12.
900.	5.579	6	1.0	1.0	10000.0	3.00	12.
1000.	5.727	6	1.0	1.0	10000.0	3.00	12.

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:
1036. 5.756 6 1.0 1.0 10000.0 3.00 15.

*** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION MAX CONC DIST TO TERRAIN

PROCEDURE	(UG/M**3)	MAX (M)	HT (M)
-----	-----	-----	-----
SIMPLE TERRAIN	5.756	1036.	0.

** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **

Project Name: Marine Station
 Acrolein emissions from diesel combustion.

User enters data in these cells

Diesel powered construction vehicle list	Engine Yr	HP	AVG. Annual Load Factor ⁽¹⁾	Hours on equipment	no DOC Area Source Dimensions (m ²), Rural Dispersion Coefficients					
					140	125	100	80	63	50
Loader	2000	170	0.54	8000						1.73
Scraper	2000	300	0.54	8000						1.62
Haul Trucks										0.14
										3.49

Assume average on 1 truck-hour of idling with vicinity of 50x50 grid

MitOp1: No Additive, equipment HP & scaling for haul truck idling tailored to project, 75%-efficient DOC, earliest year for off-road eqpt. that reduces HI to <=1

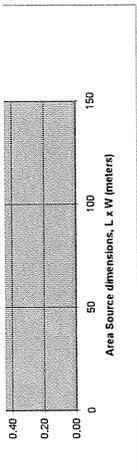
Loader	2000	170	0.54	8000						0.43
Scraper	2000	300	0.54	8000						0.41
Haul Trucks										0.14
										0.98

Assume average on 1 truck-hour of idling with vicinity of 50x50 grid

MitOp2: No Additive, newer off-road equipment HP & scaling for haul truck idling tailored to project

Loader	2005	170	0.54	2000						0.39
Scraper	2005	300	0.54	2000						0.44
Haul Trucks										0.14
										6.98

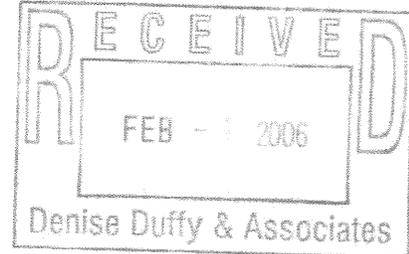
Assume average on 1 truck-hour of idling with vicinity of 50x50 grid



AMBAG LETTER DOCUMENTING THE CONSISTENCY ANALYSIS

AMBAG

ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS



January 30, 2006

Alison Imamura
Denise Duffy & Associates, Inc.
Monterey, CA 93940

Dear Ms Imamura:

This letter is in response to your January 23, 2005 request for a determination of consistency of the Marina Station Project in the City of Marina with the *Air Quality Management Plan for the Monterey Bay Region* (AQMP).

Consistency of the housing unit portion of this project with the AQMP was analyzed by comparing the total potential population growth facilitated by the project with the forecasted growth for Monterey County. The *2004 Population, Housing Unit, and Employment Forecasts* adopted by the AMBAG Board of Directors on April 14, 2004 are the forecasts used for this consistency determination.

Consistency of the commercial/retail portions of this project are determined by comparing the estimated current population of the jurisdiction in which the project is located with the applicable population forecast in the AQMP. If the estimated current population does not exceed the forecast, indirect emissions associated with the project are deemed to be consistent with the AQMP.

The current population of the City of Marina is 18,993 (1/1/05 California Department of Finance estimate). The forecasted population for the City of Marina in the year 2010, the next forecasted year, is 30,567. As the current population of the City of Marina is less than the forecasted population, the commercial/retail portion of the Marina Station Project is **consistent** with the AQMP.

AMBAG staff surveyed each jurisdiction in Monterey County to determine the number of housing units that jurisdictions have approved but have not yet received a building permit. The total number of units is 8,395. Building permit data was also collected. A total of 1,212 housing units have received building permits between January and December 2005. The California Department of Finance estimates there are 138,314 dwelling units in Monterey County as of

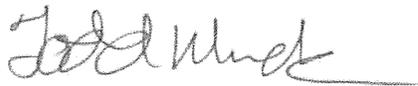
1/01/05. Combined, there are 147,921 existing, approved, and or permitted housing units in Monterey County.

The Marina Station Project consists of a total of 1,464 residential units. Occupancy of the housing units is estimated to take over two phases. Occupancy of the first 1,117 housing units will take place by 2015. The remaining 347 housing units will be occupied by 2025. The *2004 Population, Housing Unit, and Employment Forecast* forecasts there will be 161,255 housing units in Monterey County by the year 2015. An additional 17,557 housing units are forecasted to be built between 2015 and 2025.

The combination of the existing and approved housing units in Monterey County (147,921) plus the 1,464 housing units in the Marina Station Project is less then the regional forecasts for Monterey County (161,255 housing units by 2015 plus an addition 17,557 housing units by 2025.) Therefore the Marina Station Project is **consistent** with the 2004 regional forecasts and the Air Quality Management Plan.

Please feel free to contact me if you have any questions about this determination.

Sincerely,



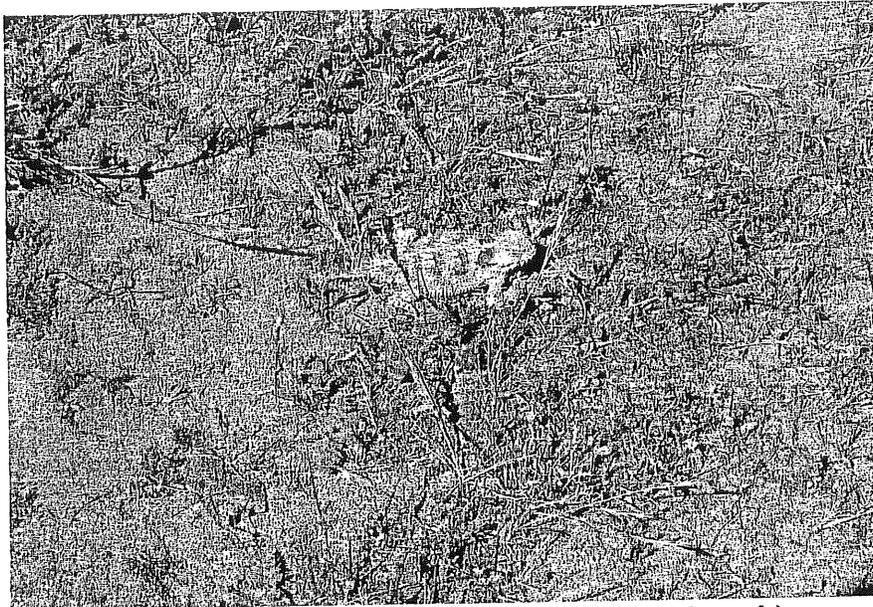
Todd Muck, AICP
Senior Transportation Planner

cc: Jean Getchell, MBUAPCD

APPENDIX D

Biotic Background Data

BASELINE STUDY OF WILDLIFE AND PLANTS
AT 320-ACRE PORTION OF ARMSTRONG RANCH
MARINA, CALIFORNIA



Coast horned lizard (*Phrynosoma coronatum frontale*)

Report Prepared By:

Kathleen Lyons, Plant Ecologist
Biotic Resources Group
2551 South Rodeo Gulch Rd, Suite 12
Soquel, CA 95073

And

Dana Bland, Wildlife Biologist
Dana Bland & Associates
P.O. Box 636
Aptos, CA 95001

July 2004

 **COPY**

INTRODUCTION

The Armstrong Ranch Project (Project) area is located within the City of Marina, Monterey County, California. The proposed Project area is located along Del Monte Boulevard near the northeastern perimeter of the existing developed portions of the City of Marina (Figure 1). The proposed Project area, encompassing approximately 320 acres, is currently undeveloped and is grazed by cattle. The 320-acre Project area is located along the southern portion of the Armstrong Ranch. The Project area is under consideration for development as residential housing.

Reconnaissance-level assessments of the biotic resources of the proposed Project area were conducted on December 12, 2003 and March 23, April 22 and 23, 2004. The focus of the field visits was to identify sensitive biotic resources within the Project area.

Specific tasks conducted for this study included:

- Characterizing the major plant communities within Project area;
- Identifying potential sensitive biotic resources, including plant and wildlife species of concern and native trees, within the proposed Project area; and
- Identifying potentially sensitive biotic resources on adjacent portions of the Armstrong Ranch that may provide off-site mitigation for sensitive areas located within the Project area.

METHODOLOGY

The biotic resources of the 320-acre Project area were assessed through reconnaissance-level field observations in December 2003, March and April 2004. A plant ecologist and wildlife biologist walked the Project area on December 12, 2003, March 23, April 22 and April 23, 2004. The plant communities on the site, based on the classification system developed by California Department of Fish and Game (CDFG, 2002b) (and amended to reflect site conditions) were identified during the field reconnaissance visits.

To assess the potential occurrence of special status biotic resources, two electronic databases were accessed to determine recorded occurrences of sensitive plant communities and sensitive species. Information was obtained from the California Native Plant Society's (CNPS) Electronic Inventory (2003) and California Department of Fish and Game's (CDFG) Rarefind database (CDFG 2004) for the U.S.G.S. Marina quadrangle and adjacent quadrangles: Salinas, Seaside, Spreckels, Prunedale, San Juan Bautista, Monterey and Moss Landing. A previous biological report for the expansion area was also reviewed (*Initial Site Reconnaissance and Continuing Work, Armstrong Ranch Project, Monterey, California*, Zander Associates 1998).

EXISTING BIOTIC RESOURCES

The Project area is located northeast of existing residential development in the City of Marina, California. The Project area spans the east and west sides of Del Monte Boulevard, and is located on the east side of Highway 1 (see Figure 1).

Four plant community types were documented within the Project area: coastal dune scrub, native grassland, California annual grassland and wet meadow. These community types are depicted on Figure 2.

The distribution of the vegetation by general habitat type area is depicted on Figure 2 Existing Biological Resources. These vegetation types can be further distinguished into plant associations. The plant associations on the Project site, as recognized by CDFG, that most closely resemble site conditions within the proposed expansion area are listed below in Table 1. Vegetation Types within Armstrong Ranch Project Area.

Table 1. Vegetation Types within Armstrong Ranch Project Area

CNDDDB Code	General Habitat Type	Plant Association
32.106.03	Coastal Dune Scrub	Dune Lupine – Heather Goldenbush Scrub * (<i>Lupinus chamissonis</i> – <i>Ericameria ericoides</i>)
41.290.00	Native Grassland	Wildflower Field *
42.026.03	California Annual Grassland	Slender Oat – Soft Chess Grassland (<i>Avena barbata</i> – <i>Bromus hordeaceus</i>)
45.565.00	Wet Meadow	Mexican Rush – Sand Dune Sedge Grassland (<i>Juncus mexicanus</i> – <i>Juncus pansa</i>)

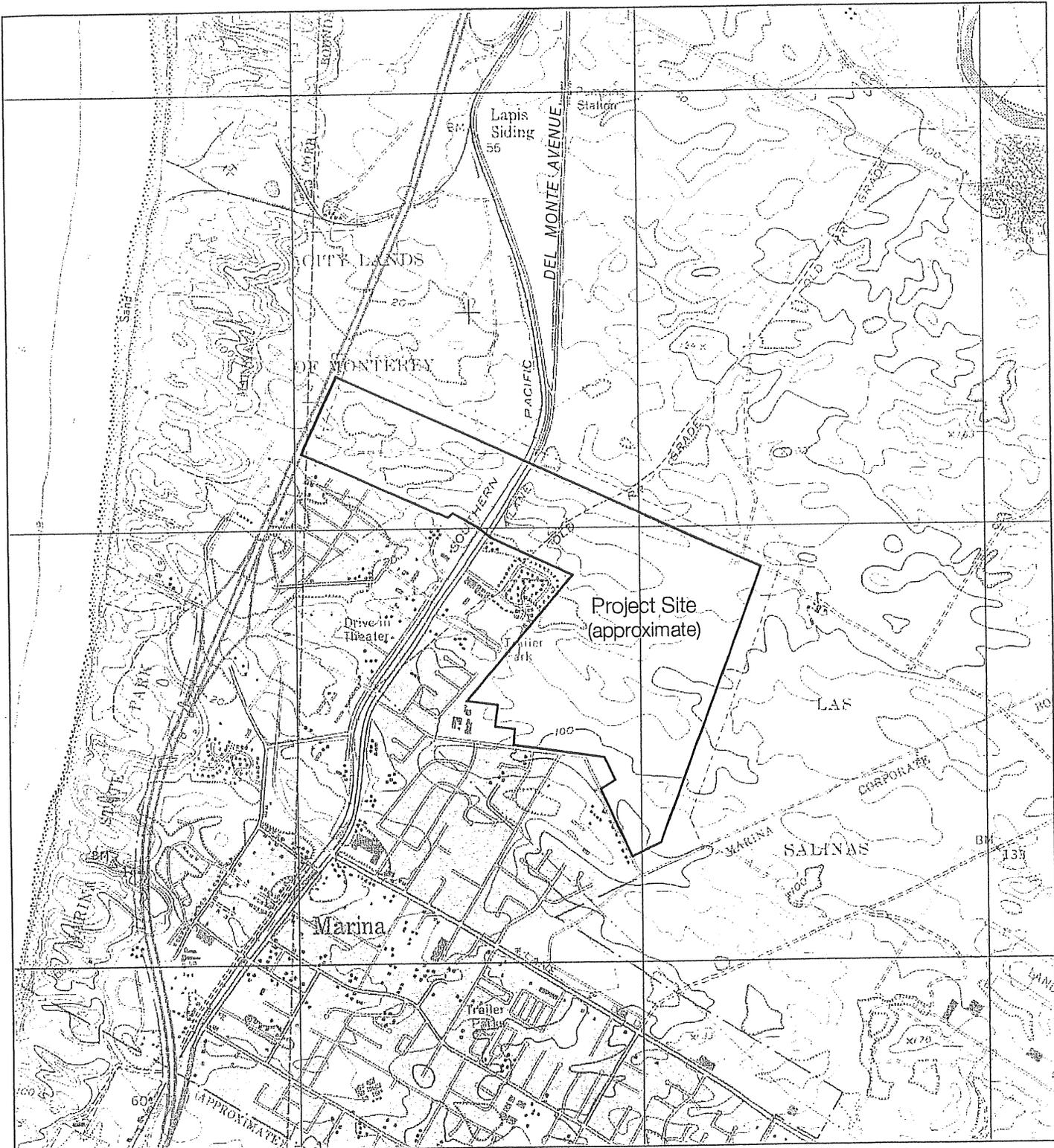
* Plant associations considered rare and worthy of consideration by CNDDDB, May 2002

Grasslands

Three grassland types were observed within the 320-acre Project area: native grassland, California annual grassland and wet meadow. As depicted on Figure 2, the California annual grassland, a grassland type dominated by annual, non-native plant species, is the dominant plant community, particularly east of Del Monte Avenue. Patches of native grassland, a grassland dominated by native plant species, is more prevalent west of Del Monte Avenue. Two depressions are considered wet meadows; both of these occur west of Del Monte Avenue.

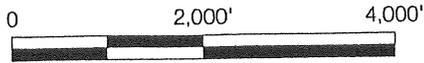
California Annual Grassland. This grassland type is characterized by the dominance of annual, non-native grasses. Within the Project area, wild oat (*Avena barbata*) and soft chess (*Bromus hordeaceus*) provide most of the plant cover. Associated grass species include rattail fescue (*Vulpia myuros*), foxtail barley (*Hordeum leporinum*), and riggut brome (*Bromus diandrus*). Forbs occurring in the grassland include California poppy (*Eschscholtzia californica*), red maids (*Calandrinia ciliata*), smooth cat's ear (*Hypochaeris glabra*), Lindley's annual lupine (*Lupinus bicolor*), pink owls clover (*Castilleja exserta*), dove's foot geranium (*Geranium molle*), red-stemmed filaree (*Erodium cicutarium*), seaside fiddleneck (*Amsinckia spectabilis*), and California plantain (*Plantago lanceolata*). In some locations (west of Del Monte Avenue), Monterey spineflower (*Chorizanthe pungens var. pungens*), a federally listed species, occurs within the California annual grassland.

Native Grassland. This plant community type is characterized by the dense growth of native wildflowers. Often referred to as "wildflower fields", these areas occur within sandy soil areas of the Project area. Most occurrences of the plant community type are located east of Del Monte Avenue, as depicted on Figure 2. The native grassland/wildflower field areas are noticeable in the spring by the dense growth of tidy tips (*Layia platyglossa*). This plant species, along with Lindley's annual lupine and common phacelia (*Phacelia distans*) dominate these areas. Associated species include California poppy, pink owls clover, California sandwort (*Minuartia californica*), smooth cat's ear, soft chess, fiddle dock (*Rumex acetosella*), long-beaked filaree (*Erodium botrys*), hairy California plantain (*Plantago ovata*), California plantain (*Plantago erecta*), red-stemmed filaree, coast tarweed (*Hemizonia corymbosa*), and variable-leaved nemophila (*Nemophila heterophylla*). Portions of the native grassland also support colonies of



Marina USGS Quadrangle

SCALE: 1" = 2,000'



Biotic Resources Group

2551 S. Rodeo Gulch # 12 ♦ Soquel, California 95073
 (831) 476-4803 ♦ Fax (831) 476-8038

Armstrong Ranch
 Location Map

Figure 1
 5/04
 436-01

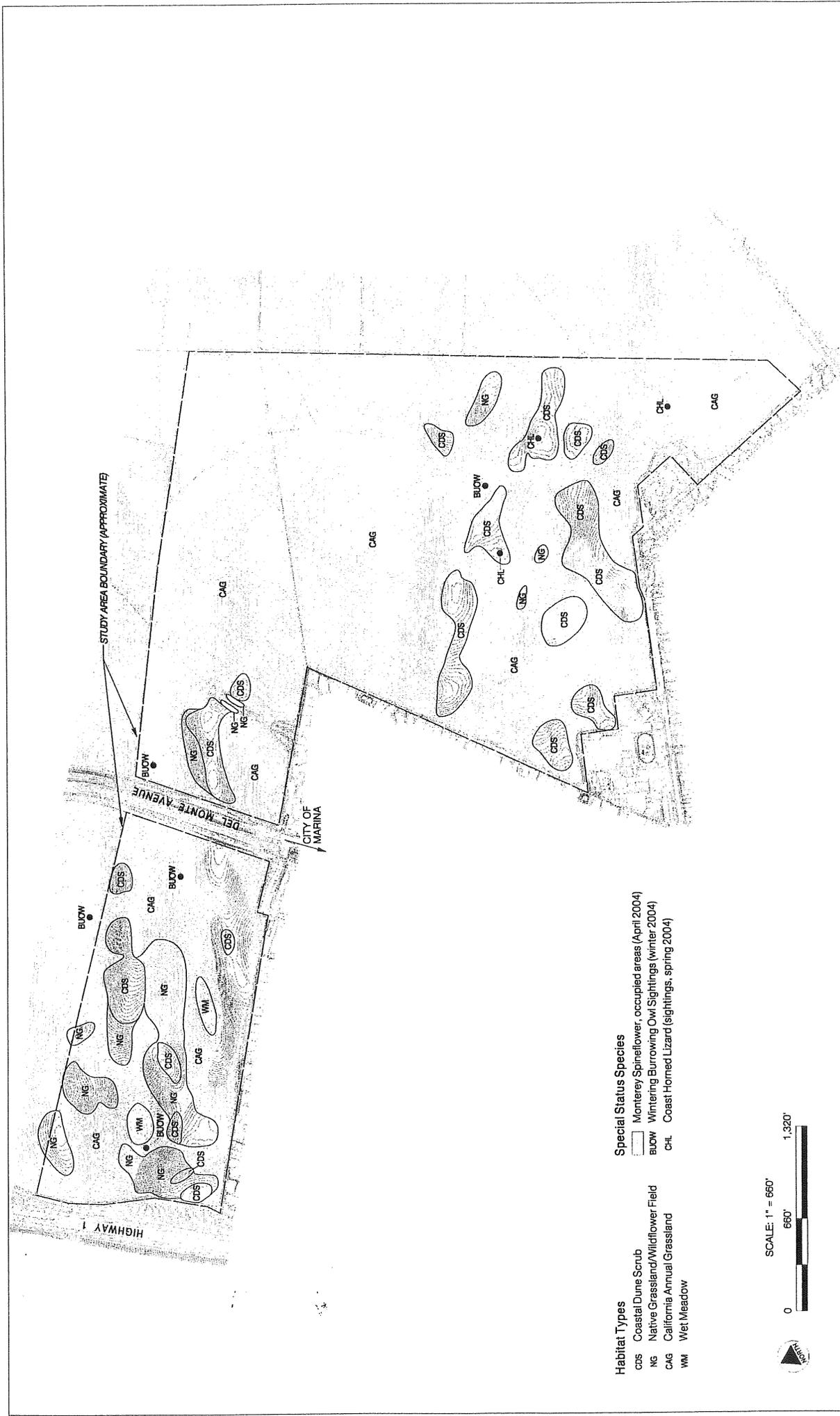


Figure 2
5/04
486-01

Armstrong Ranch Project Area
Existing Biological Resources

Biotic Resources Group

2551 S. Rodeo Gulch # 12 ♦ Soquel, California 95073
(831) 476-4803 ♦ Fax (831) 476-8038

Monterey spineflower, a federally listed species; the distribution of this species is depicted on Figure 2. The character of the native grassland/wildflower fields is depicted in Figures 3 and 4.

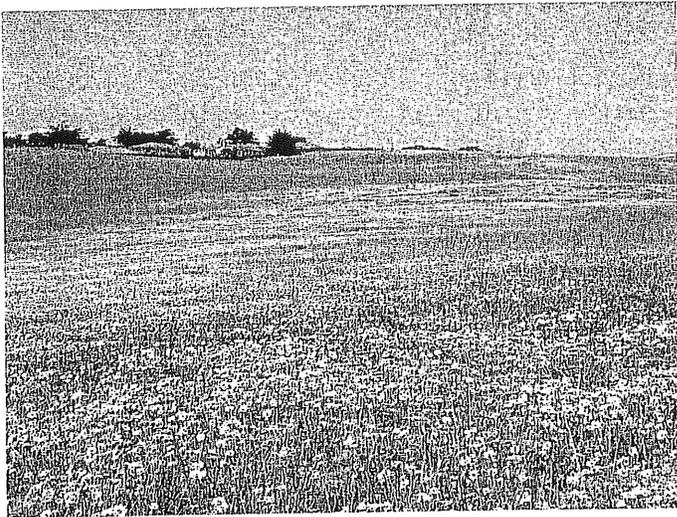


Figure 3. View of native grassland/wildflower field west of Del Monte Avenue, April 2004.



Figure 4. Close-up of native grassland/wildflower field vegetation west of Del Monte Avenue, April 2004.

Wet Meadow. The Project area supports two wet meadow areas, both are located west of Del Monte Avenue. The wet meadows inhabit depressions within the grassland where winter rainfall and surface runoff collects. Both wet meadow areas are densely vegetated with Mexican rush (*Juncus mexicanus*), and dune sedge (*Juncus pansa*), and meadow barley (*Hordeum brachyantherum*). Other plant species within these depressions include salt grass (*Distichlis spicata*), large-flowered sand spurry (*Spergularia macrotheca*), perfoliate peppergrass (*Lepidium perfoliatum*), common rush (*Juncus effusus*), yellow shamrock (*Trifolium dubium*), bur clover (*Medicago polymorpha*), bird's foot trefoil (*Lotus corniculatus*), cut-leaved plantain (*Plantago coronopus*), rabbitsfoot grass (*Polypogon monspeliensis*) and Italian ryegrass (*Lolium multiflorum*). Figure 5 displays one wet meadow area ponded any surface water during winter 2003-2004 (Dana Bland, pers. obs.).

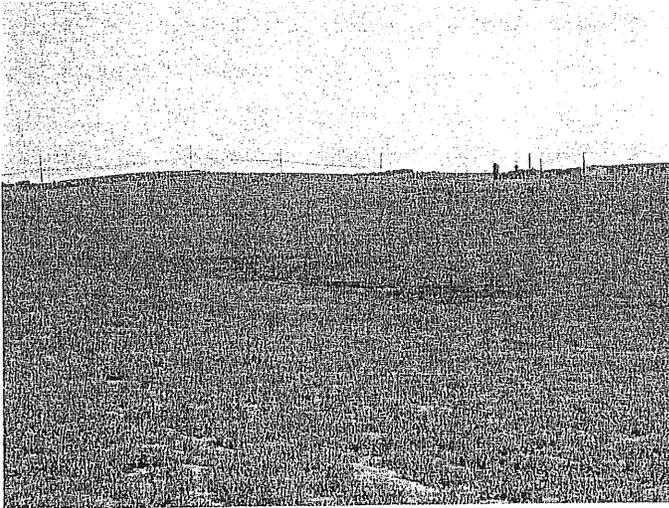


Figure 5. View of wet meadow grassland within a depression west of Del Monte Avenue, March 2004.

Wildlife Resources of Grasslands. In general, grasslands provide an important foraging resource for a wide variety of wildlife species. The invertebrate fauna of grasslands is diverse and abundant, and many species perform important functions such as pollinating the grasses and wildflowers. The tunneling action of insects such as some beetles, Jerusalem crickets and worms helps to aerate the soils. As described in more detail below, the invertebrates form the basis of the food web in grasslands.

The grasses and forbs in grasslands produce abundant seeds, roots, and leaves, providing food for many wildlife species. Common wildlife species that eat foliage and seeds and were observed during winter and spring surveys or are expected to occur in the grasslands within the Project area included mourning dove (*Zenaida macroura*), savannah sparrow (*Passerculus sandwichensis*), red-winged blackbird (*Agelaius phoeniceus*), tricolored blackbird (*Agelaius tricolor*), house finch (*Carpodacus mexicanus*), American goldfinch (*Carduelis tristis*), black-tailed jackrabbit (*Lepus californicus*), Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtus californicus*), and California ground squirrel (*Spermophilus beecheyi*). The numerous insects and invertebrates that thrive on grassland plants attract insectivorous vertebrate species such as western fence lizard (*Sceloporus occidentalis*), long-billed curlew (*Numenius americanus*), Say's phoebe (*Sayornis saya*), California horned lark (*Eremophila alpestris actia*), American robin (*Turdus migratorius*), grasshopper sparrow (*Ammodramus savannarum*), western meadowlark (*Sturnella neglecta*), Brewer's blackbird (*Euphagus cyanocephallus*), and ornate shrew (*Sorex ornatus*).

The openness of the grassland habitat and abundance of reptiles and small mammals in grasslands make this a favored hunting area for several raptors, including white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), Ferruginous hawk (*Buteo regalis*), and American kestrel (*Falco sparverius*). Turkey vultures (*Cathartes aura*) are commonly seen soaring in search of carrion. The western burrowing owl (*Athene cunicularia hypugea*) was observed wintering on the Project site. Larger mammalian predators associated with grasslands, such as coyote (*Canis latrans*), badger (*Taxidea taxus*), and the non-native red fox (*Vulpes vulpes*) also likely utilize these grasslands along the Project area for foraging on small mammals. Several burrows of suitable size for coyote and fox dens were observed there.

Snakes may lay eggs in grasslands with loose soils, talus, or small mammal burrows. The most common grassland snake is the gopher snake (*Pituophis melanoleucus*). Several small mammals dig burrows in grasslands where they breed (e.g., gophers, mice, and voles).

The wet meadow type of grasslands at the Project site are not expected to support aquatic invertebrate or vertebrate wildlife species. No surface water ponded in these wet meadows during winter 2003-2004, a normal rainfall year for this site.

Coastal Dune Scrub

The Project area supports several stands of coastal dune scrub. This scrub type occurs on inland sand dunes and supports a mosaic of shrub and herbaceous plant cover. The dominant shrub species are heather goldenbush (*Ericameria ericoides*) and Chamisso's bush lupine (*Lupinus chamissonis*). Other shrubs that were also observed include croton (*Croton californicus*), silver bush lupine (*Lupinus albifrons*), and prostrate deerweed (*Lotus scoparius* var. *prostratus*).

Herbaceous plant species are common between the shrubs, many of which are similar to that observed in the adjacent native grassland/wildflower fields. Common herbaceous species in the scrub include common phacelia, tidy tips, California beach aster (*Lessingia filaginifolia* var. *californica*), annual lupine (*Lupinus nanus*), woolly lotus (*Lotus heermanii* var. *orbicularis*), California plantain, Monterey spineflower, foxtail barley, red-stemmed filaree, Douglas' sandwort (*Minuartia douglasii*), owls clover (*Castilleja exserta* var. *latifolia*), and catchfly (*Silene gallica*).

Plant species seen only occasionally in the scrub include blue toad flax (*Linaria canadensis*), cobweb thistle (*Cirsium occidentale*), cream cups (*Platystemon californicus*), wild cucumber (*Marah fabaceous*), sand pygmy (*Crassula tillaea*), sandmat (*Cardionema ramosissimum*), and California acaena (*Acaena pinnatifida* var. *californica*). The character of the coastal dune scrub is depicted in Figure 6.

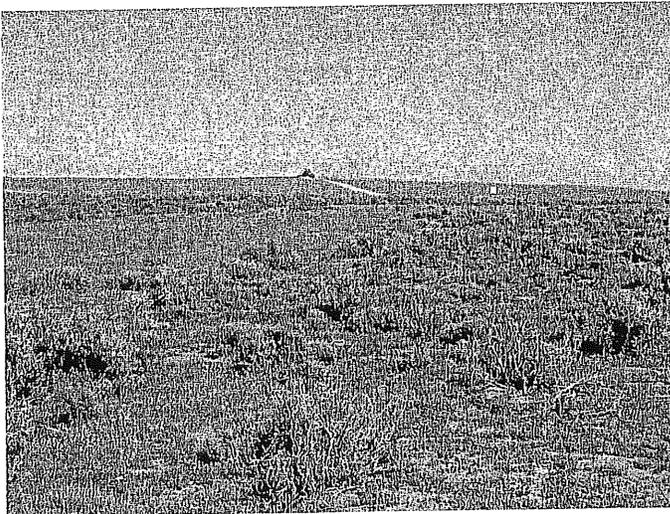


Figure 6. View of coastal dune scrub, interspersed with grassland, March 2004.

Wildlife Resources of Coastal Dune Scrub. The berries of shrubs and the seeds of herbaceous plants in the coastal dune scrub habitat provide important forage for wildlife. Wildlife may perch on the outer perimeter of mixed scrub to take advantage of hunting opportunities in adjacent openings, and take cover in the denser shrub patches as needed. Wildlife species observed during winter and spring surveys in coastal scrub on the Project site include western fence lizard, Coast horned lizard (*Phrynosoma coronatum frontale*), western bluebird (*Sialia mexicana*), white-crowned sparrow (*Zonotrichia leucophrys*), golden-crowned sparrow (*Zonotrichia atricapilla*), dark-eyed junco (*Junco hyemalis*), and coyote (*Canis latrans*).

SENSITIVE BIOTIC RESOURCES

Sensitive Habitats

Sensitive habitats are defined by local, state, or federal agencies as those habitats that support special status species, provide important habitat values for wildlife, represent areas of unusual or regionally restricted habitat types, and/or provide high biological diversity. Within the Project area, the coastal dune scrub (dune lupine-heather goldenbush scrub association) and the native grassland (wildflower fields) are considered rare by CNDDDB (CNDDDB, May 2002). Although a formal delineation of wetlands was not conducted as part of this study, the wet meadow grassland areas may meet the definition of coastal review wetlands and/or wetlands under U.S. Army Corps of Engineers criteria. This is due to the observed dominance of wetland plant species within the two depressions and the sites topography that suggests seasonal ponding and/or surface soil saturation during the growing season.

Special-Status Plant Species

Plant species of concern include those listed by either the federal or state resource agencies as well as those identified as rare by CNPS (2003). A list of such plant species with the potential to occur in the Project area is presented on Table 2, List of Special-Status Plant Species Evaluated as to their Potential to Occur in the Vicinity of the Project Area. Of the 12 plant species evaluated for presence within the Project area, only one species, Monterey spineflower, was observed. The Project area does, however, provide suitable habitat for several other species, yet none were observed during surveys in March and April 2004.

Monterey Spineflower (*Chorizanthe pungens* var. *pungens*). The U.S. Fish and Wildlife Service, under the Federal Endangered Species Act, list the Monterey spineflower as a threatened species. The species is also recognized as rare by the California Native Plant Society (List 1B). The species is also considered rare by the California Department of Fish and Game (CDFG), however the species is not currently listed as endangered or threatened under the California Endangered Species Act. This species is restricted to the Monterey Bay dune system. According to CNDDDB and USFWS records, the species occurs from the Monterey Peninsula northward along the coast to southern Santa Cruz County and inland to the Salinas Valley. The CNDDDB lists 21 populations; the largest population occurring on the former Ft. Ord lands. Monterey spineflower grows in coastal dunes, coastal scrub and further inland on sandy soils derived from ancient stabilized dunes. This species tends to occur more often on bare, sandy patches where there is little vegetation cover. Dispersal of seeds is facilitated by the spines that help attach the seed to passing animals. The preference of these species for sandy substrate allows seedlings to establish in areas that are relatively free from competing species. The blooming period is typically from April through June (USFWS, 1995).

Monterey spineflower is threatened by agricultural and residential development, land activities at Ft. Ord (i.e., ordnance clean-up) and invasion by non-native plant species. Hikers and equestrians trample these plants at various locations throughout its range. Habitat restoration activities have been implemented at the former Ft. Ord facility as well as at Marina State Beach and Asilomar State Park).

The Armstrong Ranch Project area supports approximately 59 acres of Monterey spineflower in approximately 21 patches; this distribution is depicted on Figure 2. Several hundred thousand individuals are expected to occur in the Project area, based on field observations in April 2004.

Table 2. List of Special-Status Plant Species Evaluated as to their Potential to Occur in the Vicinity of the Project Area

Species	CNPS	State Status	Federal Status	Habitat Type	Occurrence in Vicinity by CNDDDB? Likely Occurrence on Site?
Monterey spineflower (<i>Chorizanthe pungens</i> <i>var. pungens</i>)	List 1B	None	Threatened	Coastal dunes, chaparral, coastal scrub (in loose sandy soils)	Recorded from lands 1 mi. NNW, NW, SW, and W of Lapis Siding Observed within grassland and coastal dune scrub, occupying approx. 59 acres.
Robust spineflower (<i>Chorizanthe robusta</i> <i>var. robusta</i>)	List 1B	None	Endangered	Cismontane woodland, coastal dunes, coastal scrub (in loose sandy soils)	Recorded from Salinas Valley, west of Spreckels (1889) and W of Highway 1 between Marina and Seaside (Ft. Ord) Coastal dune scrub within project area provides suitable habitat, yet species was not observed in spring 2004.
Yadon's rein orchid (<i>Piperia yadonii</i>)	List 1B	None	Endangered	Closed cone coniferous forests, chaparral, coastal bluff scrub	Recorded from south of Marina (Ft. Ord) Coastal dune scrub within project area provides suitable habitat, yet species was not observed in spring 2004.
Kellogg's horkelia (<i>Horkelia cuneata</i> ssp. <i>sericea</i>)	List 1B	None	Species of Concern	Closed cone coniferous forests, chaparral, coastal scrub, old dunes	Recorded from 1 mi. N of Marina (1940) and Ft. Ord S of Marina Coastal dune scrub within project area provides suitable habitat, yet species was not observed in spring 2004.
Yadon's wallflower (<i>Erysimum menziesii</i> ssp. <i>yadonii</i>)	List 1B	Endangered	Endangered	Coastal dunes	Recorded from dunes west of Marina, S of Salinas River, W of Lapis Siding Project area does not provide suitable foredune habitat, species was not observed in spring 2004.
Seaside bird's beak (<i>Cordylanthus rigidus</i> <i>littoralis</i>)	List 1B	Endangered	None	Closed cone coniferous forest, chaparral, cismontane woodland, coastal scrub/dunes	Recorded from sand hills 1 mi. N of Seaside, along railroad tracks (1941) Coastal dune scrub within project area provides suitable habitat, yet species was not observed in spring 2004.
Sand gilia (<i>Gilia tenuiflora</i> ssp. <i>arenaria</i>)	List 1B	Threatened	Endangered	Coastal dunes, coastal scrub, maritime chaparral	Recorded from Marina State Beach, Ft. Ord, E of Del Monte and Reservation Rd., NW of Hwy 1 and Reservation Rd., Coastal dune scrub within project area provides suitable habitat, yet species was not observed in spring 2004.

Table 2. List of Special-Status Plant Species Evaluated as to their Potential to Occur in the Vicinity of the Project Area

Species	CNPS	State Status	Federal Status	Habitat Type	Occurrence in Vicinity by CNDDDB? Likely Occurrence on Site?
Coast wallflower (<i>Erysimum ammophilum</i>)	List 1B	None	Species of Concern	Maritime chaparral, coastal dunes, coastal scrub	Recorded from south of Ft. Ord, south of Marina along Highway 1 and E of Reservation Road, Marina State Beach Coastal dune scrub within project area provides suitable habitat, yet species was not observed in spring 2004.
Hooker's manzanita (<i>Arctostaphylos hookeri</i> ssp. <i>hookeri</i>)	List 1B	None	None	Closed-cone coniferous forest, maritime chaparral, coastal scrub	Recorded from Ft. Ord Coastal dune scrub within project area provides suitable habitat, yet species was not observed in spring 2004.
Monterey manzanita (<i>Arctostaphylos montereyensis</i>)	List 1B	None	None	Chaparral, coastal scrub	Recorded from Ft. Ord Coastal dune scrub within project area provides suitable habitat, yet species was not observed in spring 2004.
Dune manzanita (<i>Arctostaphylos pumila</i>)	List 1B	None	None	Closed-cone coniferous forest, maritime chaparral, coastal scrub, coastal dunes	Recorded from Ft. Ord, near Marina Coastal dune scrub within project area provides suitable habitat, yet species was not observed in spring 2004.
Eastwoods ericameria (<i>Ericameria fasciculata</i>)	List 1B	None	None	Closed-cone coniferous forest, maritime chaparral, coastal scrub, coastal dunes	Recorded along railroad tracks 2 mi. NE of Del Monte in Seaside (1906), Ft. Ord (1992), vicinity of Marina Coastal dune scrub within project area provides suitable habitat, yet species was not observed in spring 2004.

CNPS Status:

List 1B: These plants (predominately endemic) are rare through their range and are currently vulnerable or have a high potential for vulnerability due to limited or threatened habitat, few individuals per population, or a limited number of populations. List 1B plants meet the definitions of Section 1901, Chapter 10 of the CDFG Code.
List 4: Plants of limited distribution; a watch list.

The occurrence of this species in the Project area has not been previously recorded in the CNDDDB, although the CNDDDB has records of the species north of Marina, 0.5 W, 1 mile NNW and 1.2 miles SW of Lapis Siding (Occurrences 17, 18 and 25, CNDDDB, 2003). As the Monterey spineflower is an annual species, its population can vary from year to year, depending upon yearly weather conditions (e.g., rainfall, temperature) as well as human and natural disturbances within the species habitat. In poor weather years, such as when late season freezes/frosts occur or below average rainfall, seed germination may be lower or seedlings may not persist to maturity. Seeds may also persist in the soil seedbank and germinate under more favorable conditions. Based on the April 2004 observations, the Monterey spineflower occupies approximately 59 acres of the 320-acre study area. The species is depicted in Figure 7.

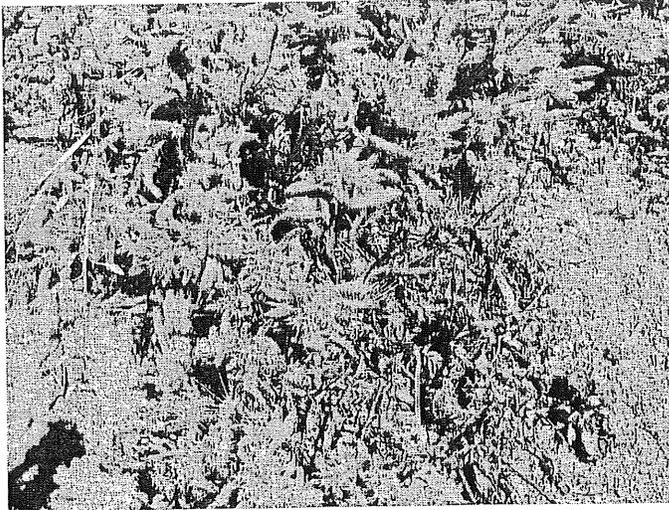


Figure 7. Monterey spineflower (*Chorizanthe pungens* var. *pungens*) observed in Project area, April 2004.

Special-Status Wildlife Species

Special-status wildlife species include those listed as candidates for listing as threatened or endangered, proposed for listing, or those currently listed by either the federal or the state resource agencies, as well as those identified as state species of special concern. In addition, the CDFG Code protects all raptor nests, and the Federal Migratory Bird Treaty Act protects all nesting migratory birds. Special-status wildlife species that occur within the general Project vicinity were evaluated for their potential presence in the Project area (Table 3). Those that were observed during winter and spring surveys, or that may occur on the Project site because suitable habitat is present, are described in more detail below.

Table 3. Special status wildlife species and their predicted occurrence on the Project Site, Armstrong Ranch 320-acre residential development site, Marina, CA April 2004.

Species	Status ¹	Habitat	Potential Occurrence On Site
Invertebrates			
Smith's blue butterfly <i>Euphilotes enoptes smithi</i>	FE	Coastal dunes and scrub with larval host plant of buckwheat present	Not likely; buckwheat not observed to-date on site
Amphibians			
California tiger salamander <i>Ambystoma californiense</i>	FPT, CSC	Ponds and vernal pools for breeding; grasslands for upland	None. No ponded water on site.

Table 3. Special status wildlife species and their predicted occurrence on the Project Site, Armstrong Ranch 320-acre residential development site, Marina, CA April 2004.

California red-legged frog <i>Rana aurora draytonii</i>	FT, CSC	Riparian, marshes, estuaries and ponds.	None; no suitable habitat on site or adjacent to site.
Reptiles			
Southwestern pond turtle <i>Clemmys marmorata pallida</i>	CSC	Creeks and ponds, grasslands for nesting.	None; no suitable habitat on site or adjacent to site.
Black legless lizard <i>Anniella pulchra nigra</i>	CSC	Sandy soil areas with mock heather and bush lupine	Possible in scrub habitats on Project site.
Coast horned lizard <i>Phrynosoma coronatum frontale</i>	CSC	Sandy, loose soils with open areas for basking, bushes for cover, and ants for forage	Observed on project site.
Birds			
White-tailed kite <i>Elanus leucurus</i>	FP	Nests in riparian and oak woodlands; forages in open areas	Possible foraging habitat on site; no suitable nesting on site or adjacent to site.
Northern harrier <i>Circus cyaneus</i>	CSC	Nests in tall grass or shrubs; forages in grasslands	Observed foraging on site in winter; may nest on site.
Cooper's hawk <i>Accipiter cooperii</i>	CSC	Nests in oak woodland or riparian woodland; forages widely	Observed foraging on site in winter; no nesting habitat on or adjacent to site.
Ferruginous hawk <i>Buteo regalis</i>	CSC	Winters in open habitats in California; does not nest here	Observed wintering on site.
Merlin <i>Falco columbarius</i>	CSC	Winters in a variety of habitats; feeds on smaller birds; does not nest in California	Observed foraging on site in winter; may roost in Eucalyptus or cypress trees along site perimeter.
Long-billed curlew (nesting) <i>Numenius americanus</i>	CSC	Winters in estuaries, grasslands and agricultural lands; nests in northeastern California	Observed foraging on site in winter; site outside known breeding range.
Western burrowing owl <i>Athene cunicularia hypugea</i>	CSC	Nests and winters in grasslands with burrows and short vegetation	Observed wintering on site. Unknown if breeds on site.
Loggerhead shrike <i>Lanius ludovicianus</i>	CSC	Nests in shrubs and trees adjacent to open foraging areas.	Observed wintering on site. May nest on site.
California horned lark <i>Eremophila alpestris actia</i>	CSC	Inhabits grasslands with very short vegetation.	Observed wintering on site. May nest on site.
Tricolored blackbird <i>Agelaius tricolor</i>	CSC	Breeds in cattail or tule marshes; forages commonly in agricultural fields and grasslands	Observed foraging during winter; no nesting habitat on or adjacent to site.

Notes on Status:

FPT	=	Federally proposed for listing as threatened
FE	=	Federally listed as endangered species
FT	=	Federally listed as threatened species
CSC	=	California species of special concern
FP	=	Fully protected species by CDFG

Smith's blue butterfly (*Euphilotes enoptes smithi*). The Smith's blue butterfly is federally listed as endangered, and is known only from Monterey County. Both the larval and adult stages of this butterfly are dependent on only two species of buckwheat (either *Eriogonum latifolium* or *E. parvifolium*). The eggs are laid on buckwheat flowers; the caterpillars that hatch from the eggs then feed on the flowers. In late summer, the caterpillars pupate either on the flower heads or in the litter

at the base of the plants. The following summer when the buckwheat again blooms in June to July, the adult butterflies emerge from the pupa. Individual adult Smith's blue butterflies live only about one week, and the flight season spans 4-6 weeks (Arnold 1983).

The project site has not been surveyed for Smith's blue butterfly; however, no buckwheat plants were observed on the site during the spring 2004 botanical survey. The CNDDDB (2004) lists several occurrences of Smith's blue butterfly from the dunes on the west side of Highway 1 from the Salinas River mouth south to Seaside.

Black legless lizard (*Anniella pulchra nigra*). The black legless lizard is a California species of special concern. It was proposed for federal listing as endangered in 1995 (USFWS 1995), but it was subsequently determined that listing was not warranted based primarily on the preservation of a large section of the former Fort Ord where this lizard occurs (USFWS 1998). The black legless lizard inhabits coastal dunes in Monterey County between the Salinas and Carmel Rivers (USFWS 1998). This lizard burrows into loose sand under plants including bush lupine, mock heather, mock aster (Jennings and Hayes 1994). It hunts for its insect prey while concealed in the leaf litter below the plants, and is rarely observed on the ground surface.

Surveys for the black legless lizard have not been conducted on this property. An observation of a legless lizard was described in the Zander 1998 report, but the individual was not identified to species. The CNDDDB (CDFG 2004) lists several occurrences of black legless lizards in dunes west of Highway 1 from Salinas River mouth south to Seaside. The project site appears to have suitable habitat for the species.

Coast horned lizard (*Phrynosoma coronatum frontale*) is a California Species of Special Concern. This lizard is active between April and October, with mating occurring during April (Jennings and Hayes 1994). The young hatch in July and August. Coast horned lizards primary prey on ants, in addition to other insects. This lizard occurs in areas with exposed loose soils and scattered shrubs, including riparian habitat (e.g., cobble areas along rivers), coastal dune scrub, chaparral, annual grasslands, and alkali flats. During hibernation, this lizard uses small mammal burrows or burrows into loose soils under rocks or surface debris (Jennings and Hayes 1994). Habitat loss is believed to be the primary cause for decline in this species numbers (Jennings and Hayes 1994).

Three coast horned lizards were observed on the Project site during the March and April 2004 surveys (see Figure 2). The scrub habitat throughout the Project site provides suitable habitat for this species.

The **white-tailed kite (*Elanus leucurus*)** does not have any special status, but is listed as a fully protected species by the CDFG for its nest sites. This bird usually nests in trees along riparian areas, willows and live oaks, and in oak savannah. The male parent does all the hunting while the female kite incubates the eggs and broods the nestlings. They prefer nest trees with adjacent open fields for hunting. They build their large stick nests atop large closed canopy trees such as live oak. The favored prey of white-tailed kites is voles and mice. Nesting occurs from April through July. During fall and winter, kites form communal roosts (Roberson and Tenney 1993).

White-tailed kites may occasionally forage in the grasslands on the Project site, but no nesting habitat is present.

The **northern harrier** (*Circus cyaneus*) is a California Species of Special Concern. This bird is an uncommon permanent resident in open grasslands, marshy areas, and edges of estuaries in Monterey County (Roberson and Tenney 1993). Nesting begins in late March with young fledged during June and July. They build nests of sticks and grass on the ground hidden by tall grass or reeds. Harriers hunt a wide variety of prey, including other birds and small mammals. Primary threats to this species include loss of habitat, egg predation by non-native red fox, and poisoning by rodenticides and pesticides (Roberson and Tenney 1993).

Northern harriers were observed foraging over the site during the winter surveys. They may nest in denser portions of scrub habitat on the site.

The **Cooper's hawk** (*Accipiter cooperii*) is a California species of special concern. Cooper's hawks prefer forested habitats in mountainous regions, but also use riparian woodlands. Cooper's hawks feed primarily on small birds, but also take small mammals, reptiles, and amphibians. Foraging occurs in both dense cover and open habitats. Nests are constructed in a variety of trees, but stands of live oaks may be preferred. Cooper's hawks build stick nests in similar situations as the sharp-shinned hawk and the adults vigorously defend the nest site. The local breeding season probably spans March/April through July (Suddjian 1990). Cooper's hawks are uncommon migrants and winter visitors. Migrant and wintering individuals occur in a variety of habitats, including oak woodland, conifer and mixed broadleaf forests, grasslands, residential areas and riparian woodland. Habitat destruction and falconry practices have been attributed to this species' decline in California (Remsen 1978).

One Cooper's hawk was observed foraging in the grasslands and perching on a fence post in January and February 2004. There is no suitable nesting habitat for this species on the site.

The **ferruginous hawk** (*Buteo regalis*) is a California Species of Special Concern for wintering populations. This species is a winter resident of grasslands and agricultural lands along the Central California Coast, and feeds primarily on small mammals (Zeiner et al. 1990). Ferruginous hawks breed from Oregon into Canada; no nesting records are known from California (Zeiner et al. 1990).

A maximum of four ferruginous hawks were observed on the Project site during winter and spring surveys in 2004. The Project site is outside the known breeding range of the species.

Merlin (*Falco columbarius*) Merlin is a California Species of Special Concern. This bird is a rare to uncommon spring and fall transient and winter visitor, occurring in California between late September to mid-April (Small 1994). They do not nest in California. Wintering individuals occur in a variety of habitats, including riparian, open woodlands, grasslands and agricultural fields, tidal estuaries, marshes, and developed areas. Merlins prey primarily on small birds, but also take small mammals and insects. Because they prey mostly on birds, merlins may be threatened by the use of pesticides (Remsen 1978).

One merlin was observed foraging on the site in the winter 2004 surveys. They may roost overnight in the Eucalyptus trees on the edge of the Project site. The Project site is outside the known breeding range of this species.

Burrowing owl (*Athene cunicularia hypugea*) Burrowing owls are a California species of special concern and are protected under the Migratory Bird Treaty Act. They inhabit annual or perennial grasslands or areas with less than 30 percent canopy coverage as a resting site during migration, as

feeding habitat, and as a breeding ground. The nesting season for burrowing owls occurs between February 1 and August 31 and peaks around April 15-July 15 (California Burrowing Owl Consortium 1993). Burrowing owls nest in single pairs, or more often, in small colonies and make their nests in burrows created by fossorial mammals, artificial burrows (i.e. pipes), or crevices in piles of rubble (CDFG 1995). They forage nocturnally and crepuscularly for insects and small rodents. During the daylight hours burrowing owls may perch conspicuously either at the entrance to their burrow or on a nearby post or shrub (Zeiner et al. 1990). Burrowing owls have declined in recent decades throughout California. The primary cause of decline is attributed to habitat loss due to development (CDFG 1995).

Focused surveys for wintering burrowing owls were conducted by Dana Bland & Associates during December 2003 – February 2004 (Dana Bland & Assoc. 2004). Five burrowing owls were observed on the Project site between January and March 2004, and two other owls were observed in the grasslands on the adjacent property (see Figure 2). Portions of the developed City of Marina and adjacent Armstrong Ranch, possibly including the Project Site, were historically documented as breeding sites for burrowing owl by egg sets collected in 1897 (#894) and 1899 (#5955) and deposited at the Museum of Vertebrate Zoology in Berkeley (Don Roberson, pers. comm.). Pairs of burrowing owls were observed year-round on the Armstrong Ranch from the 1950s to at least the summer of 1984 (Don Roberson, pers. comm.). Other populations of burrowing owls in the general Project Site vicinity at Elkhorn Slough and Salinas River mouth were extirpated in the 1980s (at least temporarily) by predation from the non-native red fox; however, predator control methods were implemented at these areas in the early 1990s and wintering burrowing owls have since returned to these sites (Don Roberson, pers. comm.). The Project Site may still provide suitable nesting habitat for burrowing owls, as well as wintering habitat.

Loggerhead shrike (*Lanius ludovicianus*) The loggerhead shrike is a California species of special concern. Common residents of lowlands and foothills, this species prefers open habitats with scattered shrubs, trees, fences, or other lookout posts. Loggerhead shrikes occur only rarely in heavily urbanized areas. They hunt insects, snakes, small birds, and rodents that they often impale on thorns or barbed wire to hold it while they eat. Eggs are laid from April to May, with a clutch size of 4-7 eggs, in shrubs and trees with dense vegetation for concealment. The breeding season in Monterey County spans mid April to late June (Roberson and Tenney 1993).

Loggerhead shrike were observed on the site during the winter 2004 surveys and may nest on the site.

The **California horned lark (*Eremophila alpestris actia*)** is a California Species of Special Concern. These larks are common permanent residents of grasslands with short vegetation. They build a shallow cup nest in very short grass or on bare ground, and breeding takes place from mid-March to mid-May. The primary threat to this species is loss of habitat due to urbanization (Roberson and Tenney 1993).

Flocks of horned lark were observed on the site during the winter 2004 surveys, and horned larks were heard singing during the early spring 2004 surveys. This species may nest in the grasslands on site.

Tricolored blackbird (*Agelaius tricolor*) is a California Species of Special Concern. They nest in freshwater marshes, stock ponds, and willow thickets. They prefer dense cattails, tules and rushes where they build deep cup nests. They breed in large colonies of 50-100+ pairs, from April to mid-May. During fall and winter, tricolored blackbirds are nomadic and may be observed in

pastures, grasslands, cattle pens and marshes throughout the county (Roberson and Tenney 1993). Extensive alteration of the Salinas river floodplain, and drainage of marshes for agriculture and urban development are the main threats to this species (Roberson and Tenney 1993).

Flocks of tricolored blackbirds were observed foraging on the Project site during the winter 2004 surveys. The site does not contain any suitable nesting habitat for this species.

SUMMARY OF BIOLOGICAL RESOURCES AND RECOMMENDATIONS FOR THEIR CONSERVATION

The Project site encompasses approximately 320 acres of a larger, 2,000-acre Armstrong Ranch that supports a mosaic of grazed grasslands and coastal dune scrub. These habitat types and the plant and animal species they support have become increasingly rare on the Central Coast; many of the native habitat types have been converted to row crop agriculture and urban development. Ten special status wildlife species were observed foraging and inhabiting the Project site during winter and early spring 2004 surveys. In addition, the Project site provides potential nesting habitat for four special status bird species. The black legless lizard, a special status species rarely observed on the ground surface, is also a potential inhabitant of the scrub habitat on the Project site, and coast horned lizard were observed on the site. One special status plant species, Monterey spineflower, was observed within the Project area.

Because the mosaic of grasslands and coastal dune scrub are integral to the survival of several of the wildlife species and the one special status plant species that inhabit the site, and because many of the wildlife species that currently inhabit the site need large, contiguous habitat areas for foraging, breeding and escape cover, the entire 320 acres of the Project site are considered habitat for special status wildlife species.

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320-Acre Portion of Armstrong Ranch
Vascular Plant Checklist

March and April 2004

FERNS AND FERN ALLIES

DENNSTAEDTIACEAE

Pteridium aquilinum var. *pubescens* (bracken fern)

CONIFERS

CUPRESSACEAE

Cupressus macrocarpa (Monterey cypress)

PINACEAE

Pinus radiata (Monterey pine)

FLOWERING PLANTS-DICOTS

AIZOACEAE

*Carpobrotus edulis** (sea fig)

APIACEAE

Lomatium carvifolium (caraway-leaved lomatium)

Sanicula bipinnatifida (purple sanicle)

ASTERACEAE

Achillea millefolium (yarrow)

Achryachaena mollis (blow wives)

Agoseris sp. (agoseris)

Artemisia douglasiana (mugwort)

*Carduus pycnocephalus** (Italian thistle)

Cirsium occidentale (cobweb thistle)

*Cotula coronopifolia** (brass buttons)

Ericameria ericoides (heather goldenbush - mock heather)

*Filago gallica** (common filago)

Hemizonia corymbosa (coast tarweed)

*Hypochoeris glabra** (smooths cat's ear)

*Hypochoeris radicata** (rough cat's ear)

Layia platyglossa (tidy tips)

Lessingia filaginifolia var. *californica* (California beach aster)

Microseris douglasii (Douglas' microseris)

*Taraxacum officinale** (dandelion)

BORAGINACEAE

Amsinckia spectabilis (seaside fiddleneck)

Cryptantha sp. (cryptantha)

Plagiobothrys nothofulvus (popcorn flower)

BRASSICACEAE

Lepidium nitidum (common pepper-grass)

Lepidium perfoliatum (perfoliate pepper-grass)

Sisymbrium officinale (hedge mustard)

CARYOPHYLLACEAE

Cardionema ramosissimum (sandmat)

Minuartia californica (sandwort)

Minuartia douglasii (Douglas's sandwort)

*Silene gallica** (common catchfly)

Spergula arvensis ssp. *arvensis** (stickwort)

Spergularia macrotheca (large-flowered sand-spurry)

*Stellaria media** (common chickweed)

CRASSULACEAE

Crassula tillaea (sand pygmy-weed)

CUCURBITACEAE

Marah fabaceus (wild cucumber)

EUPHORBIACEAE

Croton californicus (croton)

Eremocarpus setigerus (dove weed)

FABACEAE

Lotus hermannii var. *orbicularis* (woolly lotus)

*Lotus corniculatus** (birdfoot trefoil)

Lotus scoparius var. *prostratus* (prostrate broom)

Lupinus albifrons var. *albifrons* (silver lupine)

Lupinus bicolor (miniature lupine)

Lupinus chamissonis (Chamisso's bush lupine)

Lupinus nanus (annual lupine)

*Medicago polymorpha** (California bur clover)

*Melilotus indica** (Indian melilot)

*Trifolium angustifolium** (Mediterranean clover)

*Trifolium dubium** (shamrock)

*Trifolium hirtum** (rose clover)

FAGACEAE

Quercus agrifolia (coast live oak)

GERANIACEAE

*Erodium botrys** (long-beaked filaree)

*Erodium cicutarium** (red-stemmed filaree)

*Geranium molle** (dove's-foot geranium)

HYDROPHYLLACEAE

Nemophila heterophylla (variable-leaved nemophila)

Nemophila menziesii (baby blue-eyes)

Phacelia distans (common phacelia)

LAMIACEAE

Salvia mellifera (black sage)

MALVACEAE

*Malva neglecta** (cheeseweed)

ONAGRACEAE

Camissonia ovata (sun cup)

PAPAVERACEAE

Eschscholtzia californica (California poppy)
Platystemon californicus (cream cups)

PLANTAGINACEAE

*Plantago coronopus** (cut-leaved plantain)
Plantago erecta (California plantain)
*Plantago lanceolata** (English plantain)
Plantago ovata (hairy California plantain)

POLYGONACEAE

Chorizanthe pungens var. *pungens* (Monterey spineflower)
*Rumex acetosella** (fiddle dock)

PORTULACACEAE

Calandrinia ciliata (red maids)
Claytonia parviflora (small-flowered claytonia)
Montia perfoliata (miner's lettuce)

PRIMULACEAE

*Anagallis arvensis** (scarlet pimpernel)

RANUNCULACEAE

Ranunculus californicus (California buttercup)

ROSACEAE

Acaena pinnatifida var. *californica* (California acaena)
Rubus ursinus (California blackberry)

SCROPHULARIACEAE

Castilleja exserta (pink owls clover)
Castilleja exserta var. *latifolia* (owls clover)
Linaria canadensis (blue toadflax)

FLOWERING PLANTS - MONOCOTS

CYPERACEAE

Carex pansa (sand dune sedge)
Eleocharis sp. (spikerush)

JUNCACEAE

Juncus effusus (common rush)
Juncus mexicanus (Mexican rush)

POACEAE

*Aira caryophylla** (silver European hairgrass)
*Avena barbata** (slender wild oat)
*Bromus diandrus** (ripgut brome)
*Bromus hordeaceus** (soft chess)
Desmazeria rigida (sickle-grass)
Distichlis spicata (salt grass)
*Gastridium ventricosum** (nitgrass)
Hordeum branchyantherum (meadow barley)
Hordeum murinum ssp. *leporinum** (foxtail barley)
*Lolium multiflorum** (Italian ryegrass)
Nassella pulchra (purple needlegrass)
*Polypogon monspeliensis** (rabbitsfoot grass)
Vulpia myuros var. *myuros** (rattail fescue)

NOTES:

special status plants (RTE's) appear in **bold type**

* = non-native species

nomenclature from Jepson Manual (Hickman 1993) and Flowering Plants of Monterey County (Matthews, 1997).

SPECIAL-STATUS WILDLIFE SPECIES KNOWN OR WITH THE POTENTIAL TO OCCUR IN THE PROJECT VICINITY			
Scientific and Common Name	Legal Status ¹ Federal/State	Habitat Requirements	Likelihood to Occur within the Project ²
Mammals			
<i>Reithrodontomys megalotis distichlis</i> Salinas harvest mouse	--/SH	Fresh and brackish water wetlands and adjacent grasslands.	Unlikely. No suitable habitat present within project site.
<i>Taxidea taxus</i> American badger	--/CSC	Grasslands, savannas, and mountain meadows near timberline are preferred. Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils, and relatively open, uncultivated ground.	Moderate. Although none were observed during the surveys, the project site contains appropriate habitat and the species is known to occur in the region.
Invertebrates			
<i>Coelus globosus</i> Globose dune beetle	--/S1	Foredune area of coastal sand dunes with scattered vegetation	Unlikely. No suitable habitat present within project site.
Monarch butterfly (wintering sites)	--/S3	Breeding habitat typically open fields and waterways with larval host, milkweed. Overwinter in eucalyptus groves along California coast and fir forest in Mexico.	Unlikely. No suitable habitat present within project site.
<i>Danaus plexippus</i>	E/--	Coastal dunes and hillsides that support dune or coast buckwheat plants, these plants are obligate host plants	Unlikely. Obligatory host plant (buckwheat) was not observed within project site.
<i>Lindertella occidentalis</i> California linderella	--/S2S3	Requires ephemeral pools with no flow. Generally associated with hardpans	Unlikely. No suitable habitat present within project site.
<i>Tryonia imitator</i> Mimic tryonia (=California brackishwater snail)	--/S2S3	Inhabits brackish coastal lagoons, estuaries, and saltwater marshes where it lives in permanently flooded areas.	Unlikely. No suitable habitat present within project site.
Fish			
<i>Encyclogobius newberryi</i> Tidewater goby	E//CSC	Coastal lagoons, estuaries, and marshes with relatively low salinities (approximately ten parts per thousand (ppt)). Its habitat is characterized by brackish shallow lagoons and lower stream reaches where the water is fairly still but not stagnant.	Unlikely. No suitable habitat present within project site.
<i>Oncorhynchus mykiss irideus</i> Steelhead - south/central California coast ESU	T/CSC	Cold headwaters, creeks, and small to large rivers and lakes; anadromous in coastal streams.	Unlikely. No suitable habitat present within project site.
Amphibians			
<i>Ambystoma californiense</i>	T/CSC	Small ponds, lakes, or vernal pools in grassland and oak woodlands for	Medium. The project site does not contain

SPECIAL-STATUS WILDLIFE SPECIES KNOWN OR WITH THE POTENTIAL TO OCCUR IN THE PROJECT VICINITY			
Scientific and Common Name	Legal Status ¹ Federal/State	Habitat Requirements	Likelihood to Occur within the Project ²
California tiger salamander		larvae, rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy	any suitable aquatic habitat; however, the project site does contain suitable upland habitat. Within two kilometers of the project boundaries, potential aquatic habitat may be present to the north within the vernal pool complex. No suitable aquatic habitat occurs east of Del Monte Boulevard.
<i>Ambystoma macrodactylum</i> Santa Cruz long-toed salamander	E/E, FP	Coastal woodlands and chaparral near ponds and freshwater marshes where they breed. Require rodent burrows in upland habitat.	Unlikely. The project site is not within the known geographic range for this species. The project site lacks suitable upland and aquatic habitat required to support this species. There are two vernal pools north of the project site; however, the project site and vicinity (the remaining Armstrong Ranch area) lacks suitable upland habitat (chaparral and wooded areas) required for this species. The CNDDDB documents the nearest occurrences of this species in the Moro Cojo Slough, north of Castroville
<i>Rana aurora draytonii</i> California red-legged frog	T/CSC	Lowlands and foothills in or near permanent of late-season sources of deep water with dense, shrubby or emergent vegetation. During late summer or fall adults are known to utilize a variety of upland habitats with leaf litter or mammal burrows	Unlikely. No suitable habitat present within project site. The CNDDDB reports the nearest occurrence approximately 6.75 miles northeast of the project site.
Reptiles			
<i>Anniella pulchra nigra</i> Black legless lizard	--/CSC	Coastal dunes with native vegetation or chaparral, pine-oak woodland, or riparian areas with loose soil for burrowing	Moderate. The coastal dune scrub habitat within project site provides suitable habitat.
<i>Emys (=Clemmys) marmorata pallida</i> Southwestern pond turtle	--/CSC	Inhabits permanent of nearly permanent bodies of water in many habitat types. Forages in leaf litter, under rock and woody debris	Unlikely. No suitable habitat present within project site.
<i>Phrynosoma coronatum frontale</i> California coast horned lizard	Sensitive (BLM)/CSC	Occurs in areas with sandy, loose soils with open areas for basking, bushes for cover, and ants for forage.	Known. Observed within project site.

SPECIAL-STATUS WILDLIFE SPECIES KNOWN OR WITH THE POTENTIAL TO OCCUR IN THE PROJECT VICINITY			
Scientific and Common Name	Legal Status ¹ Federal/State	Habitat Requirements	Likelihood to Occur within the Project ²
<i>Thamnophis hammondi</i> Two-striped garter snake	--/CSC	Perennial and intermittent stream having rocky beds bordered by willow thickets or other dense vegetation, large sandy riverbeds and stockpounds and other artificially-created aquatic habitat with dense emergent vegetation	Unlikely. No suitable habitat present within project site.
Birds			
<i>Accipiter cooperii</i> (nesting) Cooper's hawk	--/CSC	Forages widely; nests in oak woodland or riparian woodland.	Known. Observed foraging on project site; no suitable nesting habitat within or adjacent to project site.
<i>Agelaius tricolor</i> (nesting colony) Tricolored blackbird	--/CSC	Nest in colonies in dense riparian vegetation, along rivers, lagoons, lakes, and ponds. Forages over grasslands, agricultural fields, and aquatic habitats.	Known. Observed foraging during winter survey; no suitable nesting habitat within or adjacent to project site.
<i>Asio flammeus</i> (nesting) Short-eared owl	--/CSC	Open areas with few trees such as annual and perennial grasslands, prairies, meadows, dunes, irrigated lands, and saline and fresh emergent marshes. Requires dense vegetation; tall grasses, brush, ditches, and wetlands are used for resting and roosting cover. Nests on dry ground in a depression concealed with vegetation, and lined with grasses, forbs, stick and feathers; occasionally nests in a burrow.	Low. Only known nesting localities in the vicinity include the mouth of the Salinas River and possibly Moss Landing. May utilize the project site for foraging. However, the project site lacks the habitat required for cover and nesting.
<i>Athene cunicularia</i> (burrow sites) Western burrowing owl	--/CSC	Burrows are protected; require open grassland habitats with low-growing vegetation and abandoned burrows. Prefers these areas associated with some raised perches.	Known. Observed wintering on project site; unknown if breeds on project site.
<i>Buteo regalis</i> (wintering) Ferruginous hawk	--/CSC	Frequents open grasslands, sagebrush flats, desert scrub, low foothills with surrounding valleys, and fringes of pinyon-juniper habitats. Does not nest in California; uncommon winter resident and migrant at lower elevations and opens grasslands in the Coast Ranges, Central Valley, and Modoc Plateau.	Known. Observed wintering on project site; species is not known to nest in California.
<i>Circus cyaneus</i> (nesting) Northern harrier	--/CSC	Forages in grasslands, meadows, marshes, and seasonal and agricultural wetlands. Nests in tall grass or shrubs.	Known. Observed foraging on site; may nest on site due to presence of suitable habitat.
<i>Charadrius alexandrinus nivosus</i> (nesting) Western snowy plover	T/CSC	Sandy beaches on marine and estuarine shores, also salt-pond levees and the shores of large alkali lakes. Requires sandy, gravelly, or friable soil substrate for nesting.	Unlikely. No suitable habitat present within project site.

SPECIAL-STATUS WILDLIFE SPECIES KNOWN OR WITH THE POTENTIAL TO OCCUR IN THE PROJECT VICINITY			
Scientific and Common Name	Legal Status ¹ Federal/State	Habitat Requirements	Likelihood to Occur within the Project ²
<i>Cypseloides niger</i> (nesting) Black swift	--/CSC	Regularly nests in moist crevice or cave on sea cliff above the surf, or on cliffs behind, or adjacent to, waterfalls in deep canyons. Forages widely over many habitats.	Unlikely. No suitable nesting habitat present within project site; marginal foraging habitat present within project site.
<i>Elanus leucurus</i> (nesting) White-tailed kite	--/FP	Forages in open groves, river valleys, marshes and grasslands. Prefer areas with low roosts (fences). Nests in riparian and oak woodlands.	Low. Possible foraging habitat on project site; no suitable nesting habitat within or adjacent to project site.
<i>Eremophila alpestris actia</i> California horned lark	--/CSC	Common to abundant resident in a variety of open habitats with very short vegetation, usually where large trees and shrubs are absent. Builds grass-lined nest; cup-shaped in depression on ground in the open.	Known. Observed wintering on project site; may nest on project site.
<i>Falco columbarius</i> (wintering) Merlin	--/CSC	Frequents coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, edges, and early successional stages. Uncommon winter migrant in California from September to May; does not nest in California.	Known. Observed foraging on project site during winter survey. May roost in eucalyptus or cypress trees along project site perimeter.
<i>Falco mexicanus</i> (nesting) Prairie falcon	--/CSC	Distributed from annual grassland to alpine meadows, but associated primarily with perennial grasslands, savannahs, rangelands, some agricultural fields, and desert scrub areas. Requires sheltered cliff ledges for cover. Not found in the northern fog belt or along the coastline. Usually nests in a scrape on a sheltered ledge of a cliff overlooking a large, open area. Sometimes nest on old raven or eagle stick nests on cliff, bluff, or rock outcrop.	Low. May utilize the project site for foraging. However, the project site lacks the habitat required for cover and nesting.
<i>Lanius ludovicianus</i> (nesting) Loggerhead shrike	--/CSC	Residents of lowlands and foothills. Prefers open habitats with scattered shrubs, trees, fences, or other lookout posts for foraging. Nests in shrubs and trees adjacent to foraging habitat.	Known. Observed wintering on project site; may nest on project site.
<i>Nimenius americanus</i> (nesting) Long-billed curlew	--/CSC	Winters in estuaries, grasslands, and agricultural lands; nests in northeastern California.	Known. Observed foraging on project site during winter; site outside known breeding range.
<i>Pelecanus occidentalis californicus</i> California brown pelican	E/E, FP	Coastal bluffs, estuaries, offshore islands and nearshore ocean.	Unlikely. No suitable habitat present within project site.
<i>Rallus longirostris obsoletus</i> California clapper rail	E/E, FP	Tidal salt marshes.	Unlikely. No suitable habitat present within project site.

SPECIAL-STATUS WILDLIFE SPECIES KNOWN OR WITH THE POTENTIAL TO OCCUR IN THE PROJECT VICINITY			
Scientific and Common Name	Legal Status ¹ Federal/State	Habitat Requirements	Likelihood to Occur within the Project ²
<i>Riparia riparia</i> Bank swallow	--/T	Nest colonially in sand banks, found near water, fields, marshes, streams and lakes.	Unlikely. No suitable habitat present within project site.
<p>¹ Status Definitions</p> <p>Federal</p> <p>E = listed as Endangered under the federal Endangered Species Act</p> <p>T = listed as Threatened under the federal Endangered Species Act</p> <p>FSC = federal species of concern; species has no formal designation but is maintained on local USFWS office lists</p> <p>-- = no listing</p> <p><i>After careful consideration, the CDFG has removed the USFWS federal species of concern designation from the CNDDDB. The federal species of concern list was not maintained on a statewide basis. The Sacramento field office, with jurisdiction over the central portion of California, maintained a list, but the other USFWS offices did not. Therefore, species in the northern and southern parts of the state were not considered.</i></p> <p>State</p> <p>E = listed as Endangered under the California Endangered Species Act</p> <p>T = listed as Threatened under the California Endangered Species Act</p> <p>CSC = California Special Concern species</p> <p>FP = Fully Protected</p> <p>S = California State Rank (some ranks may be combined to show range of uncertainty, e.g, S2S3)</p> <p>SI = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals</p> <p>S2 = 6 – 20 EOs OR 1,000-3,000 individuals</p> <p>S3 = 21-80 EOs OR 3,000-10,000 individuals</p> <p>SH = All sites are historical; the element has not been seen for at least 20 years, but suitable habitat still exists</p> <p>-- = no listing</p> <p>² Definitions of Likelihood to Occur</p> <p>High = known occurrence of species in the region from the CNDDDB, or other documents in the vicinity, presence of suitable habitat conditions and suitable microhabitat; or observed during field surveys.</p> <p>Moderate = known occurrence of species in the region from the CNDDDB, or other documents in the vicinity, presence of suitable habitat conditions, but suitable microhabitat conditions are not present.</p>			

SPECIAL-STATUS WILDLIFE SPECIES KNOWN OR WITH THE POTENTIAL TO OCCUR IN THE PROJECT VICINITY		
Scientific and Common Name	Legal Status ¹ Federal/State	Habitat Requirements
		Likelihood to Occur within the Project ²
<p>Low = Species not known to occur in the region from the CNDDDB, or other documents in the vicinity; habitat conditions of poor quality; not observed during field surveys.</p> <p>None = Species not known to occur in the region from the CNDDDB, or other documents in the vicinity; no suitable habitat is present; not observed during field surveys.</p> <p>Known = known occurrence of species within Study Site; presence of suitable habitat conditions and suitable microhabitat; or observed during field surveys.</p> <p>Moderate = known occurrence of species in the vicinity from the CNDDDB, or other documents in the vicinity; presence of suitable habitat conditions exist within the site.</p> <p>Low = species known to occur in the vicinity from the CNDDDB, or other documents in the vicinity; habitat conditions of poor quality or only marginal microhabitat conditions are present.</p> <p>None = species not known to occur in the vicinity from the CNDDDB, or other documents in the vicinity; or no suitable habitat is present and species was not observed during species-specific surveys.</p>		

SPECIAL-STATUS PLANT SPECIES KNOWN OR WITH THE POTENTIAL TO OCCUR IN THE PROJECT VICINITY				
Scientific and Common Name	Legal Status ¹ Federal/State/CNPS	Habitat Requirements	Flowering Season	Likelihood to Occur within the Project Site ²
<i>Allium hickmanii</i> Hickman's onion	--/--/1B	Closed-cone coniferous forest, maritime chaparral, coastal prairie, coastal scrub, valley and foothill grassland	April – May	Unlikely. The coastal dune scrub and grassland habitats within the project site provide suitable habitat, but none were observed during the surveys in spring 2004.
<i>Arctostaphylos hookeri</i> spp. <i>hookeri</i> Hooker's manzanita	--/--/1B	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub on sandy substrate	February – May	Unlikely. The coastal dune scrub within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Arctostaphylos montereyensis</i> Toro manzanita	--/--/1B	Chaparral, cismontane woodland, coastal scrub, sandy soils	February – March	Unlikely. The coastal dune scrub within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Arctostaphylos pajaroensis</i> Pajaro manzanita	--/--/1B	Chaparral in sandy areas	December – March	Unlikely. The coastal dune scrub within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Arctostaphylos pumila</i> Sandmat manzanita	--/--/1B	Openings in closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub, in sandy areas	February – May	Unlikely. The coastal dune scrub within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Astragalus tener</i> var. <i>tener</i> Alkali milk-vetch	--/--/1B	Playas, valley and foothill grassland (adobe clay), vernal pools/alkaline	March – June	Unlikely. The grassland within the project site provides suitable habitat, but none were observed during surveys in spring 2004.
<i>Astragalus tener</i> var. <i>triti</i> Coastal dunes milk vetch	E/E/1B	Sandy soils of coastal bluff scrub, coastal dunes, coastal prairie on mesic or sandy depressions near the coast	March – May	Unlikely. The coastal dune scrub and wet meadow habitats within the project site provide suitable habitat, but none were observed during the surveys in spring 2004.
<i>Centromadia parryi</i> spp. <i>congdonii</i> Congdon's tarplant	--/--/1B	Valley and foothill grassland (alkaline)	June – November	Unlikely. The grassland within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Chorizanthe pungens</i> var. <i>pungens</i> Monterey spineflower	T/--/1B	Maritime chaparral, cismontane woodland, lower montane coniferous forest	April – June	Known. This species was observed in grassland and coastal dune scrub within the project site, occupying approximately 59 acres.

**SPECIAL-STATUS PLANT SPECIES KNOWN OR
WITH THE POTENTIAL TO OCCUR IN THE PROJECT VICINITY**

Scientific and Common Name	Legal Status¹ Federal/State/CNPS	Habitat Requirements	Flowering Season	Likelihood to Occur within the Project Site²
<i>Chorizanthe robusta</i> var. <i>robusta</i> Robust spineflower	E/--/1B	Coastal bluff scrub, coastal dunes, openings in cismontane woodland, on sandy soil	May – September	Unlikely. The coastal dune scrub within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Clarkia jolonensis</i> Jolon clarkia	--/--/1B	Chaparral, cismontane woodland, coastal scrub.	April - June	Unlikely. The project site lacks suitable habitat, and none were observed during the surveys in spring 2004.
<i>Collinsia multicolor</i> San Francisco collinsia	--/--/1B	Closed-cone coniferous forest, coastal scrub/sometimes serpentine	March – May	Unlikely. The project site lacks suitable habitat, and none were observed during the surveys in spring 2004.
<i>Cordylanthus rigidus</i> ssp. <i>littoralis</i> Seaside bird's beak	--/E/1B	Closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes, coastal scrub; on sandy soils, often disturbed sites	May - October	Unlikely. The coastal dune scrub within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Cupressus goveniana</i> ssp. <i>goveniana</i> Gowen cypress	T/--/1B	Closed-cone coniferous forest, maritime chaparral	All year	Unlikely. The project site lacks suitable habitat, and none were observed during the surveys in spring 2004.
<i>Cupressus macrocarpa</i> Monterey cypress	--/--/1B	Closed-cone coniferous forest	All year	Unlikely. The project site lacks suitable habitat, and none were observed during the surveys in spring 2004.
<i>Delphinium hutchinsoniae</i> Hutchinson's larkspur	--/--/1B	Broadleaved upland forest, chaparral, coastal prairie, coastal scrub	March – June	Unlikely. The coastal dune scrub and grassland habitats within the project site provide suitable habitat, but none were observed during the surveys in spring 2004.
<i>Ericameria fasciculata</i> Eastwood's goldenbush	--/--/1B	Sandy soils and openings in closed-cone coniferous forest, maritime chaparral, coastal dunes, coastal scrub	July – October	Unlikely. The coastal dune scrub within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Eriogonum noitonii</i> Pinnacles buckwheat	--/--/1B	Chaparral, valley and foothill grassland/sandy, often on recent burns	May - June	Unlikely. The grassland within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Erysimum ammphilum</i> Coast wallflower	--/--/1B	Sandy soils and openings in maritime chaparral, coastal dunes, coastal scrub	February – June	Unlikely. The coastal dune scrub within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.

**SPECIAL-STATUS PLANT SPECIES KNOWN OR
WITH THE POTENTIAL TO OCCUR IN THE PROJECT VICINITY**

Scientific and Common Name	Legal Status¹ Federal/State/CNPS	Habitat Requirements	Flowering Season	Likelihood to Occur within the Project Site²
<i>Erysimum menziesii</i> ssp. <i>menziesii</i> Menzies' s wallflower	E/E/1B	Localized on coastal dunes, on coastal strand areas in coastal scrub	March - June	Unlikely. The coastal dune scrub within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Erysimum menziesii</i> ssp. <i>yadonii</i> Yadon' s wallflower	E/E/1B	Coastal dunes	June – August	Unlikely. The coastal dune scrub within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Fritillaria liliacea</i> Fragrant fritillary	--/--/1B	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland,/often serpentine	February – April	Unlikely. The coastal dune scrub and grassland habitats within the project site provide suitable habitat, but none were observed during the surveys in spring 2004.
<i>Gilia tenuiflora</i> ssp. <i>arenaria</i> Sand gilia	E/T/1B	Sandy soils in maritime chaparral, cismontane woodland, coastal dunes, coastal scrub	April – June	Unlikely. The coastal dune scrub within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Holocarpus macradenia</i> Santa Cruz tarplant	T/E/1B	Coastal prairie, coastal scrub, valley and foothill grassland/often clay, sandy	June – October	Unlikely. The coastal dune scrub and grassland habitats within the project site provide suitable habitat, but none were observed during the surveys in spring 2004.
<i>Horakelia cuneata</i> ssp. <i>sericea</i> Kellogg' s horkelia	--/--/1B	Openings in closed-cone coniferous forest, coastal scrub, maritime chaparral, on sandy or gravelly soils	April – September	Unlikely. The coastal dune scrub within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Lasthenia conjugens</i> Contra Costa goldfields	E/--/1B	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools, mesic	March - June	Unlikely. The grassland and wet meadow habitats within the project provide suitable habitat, but none were observed during the surveys in spring 2004.
<i>Layia carmosa</i> Beach layia	E/E/1B	Coastal dunes, coastal scrub on sandy soils	April – July	Unlikely. The coastal dune scrub within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Lupinus tidestromii</i> Tidestrom' s lupine	E/E/1B	Coastal dunes, coastal dune scrub	May – June	Unlikely. The coastal dune scrub within the project site provides suitable habitat, but none were observed during the surveys in

**SPECIAL-STATUS PLANT SPECIES KNOWN OR
WITH THE POTENTIAL TO OCCUR IN THE PROJECT VICINITY**

Scientific and Common Name	Legal Status¹ Federal/State/CNPS	Habitat Requirements	Flowering Season	Likelihood to Occur within the Project Site²
<i>Malacothamnus palmieri</i> var. <i>involutus</i> Carmel Valley bush mallow	--/--/1B	Chaparral, cismontane woodland, coastal scrub	May – October	spring 2004. Unlikely. The project site lacks suitable habitat, and none were observed during the surveys in spring 2004.
<i>Malacothamnus palmieri</i> var. <i>palmieri</i> Santa Lucia bush mallow	--/--/1B	Chaparral (rocky)	May – June	Unlikely. The grassland and wet meadow habitats within the project site provide suitable habitat, but none were observed during the surveys in spring 2004.
<i>Malacothrix saxatilis</i> var. <i>arachnoidea</i> Carmel Valley malacothrix	--/--/1B	Chaparral (rocky)	March – December	Unlikely. The grassland and wet meadow habitats within the project site provide suitable habitat, but none were observed during the surveys in spring 2004.
<i>Microseris paludosa</i> Marsh microseris	--/--/1B	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland	April - June	Unlikely. The coastal dune scrub and grassland habitats within the project site provide suitable habitat, but none were observed during the surveys in spring 2004.
<i>Pinus radiata</i> Monterey pine	--/--/1B	Closed-cone coniferous forest, cismontane woodland	All year	Unlikely. The project site lacks suitable habitat, and none were observed during the surveys in spring 2004.
<i>Piperia yadonii</i> Yadon's piperia	E/--/1B	Coastal bluff scrub, closed-cone coniferous forest, chaparral (maritime)/sandy	May – August	Unlikely. The project site lacks suitable habitat, and none were observed during the surveys in spring 2004.
<i>Potentilla hickmanii</i> Hickman's cinquefoil	E/E/1B	Coastal bluff scrub, closed-cone coniferous forest, meadows and seeps (vernally mesic), marshes and swamps (freshwater)	April - August	Unlikely. The wet meadow habitat within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Rosa pinetorum</i> Pine rose	--/--/1B	Closed-cone coniferous forest	March – July	Unlikely. The project site lacks suitable habitat, and none were observed during the surveys in spring 2004.
<i>Sidaicea malachroides</i> Maple-leaved checkerbloom	--/--/1B	Broadleaved upland forest, coastal prairie, coastal scrub, North Coast coniferous forest/often in disturbed areas	April – August	Unlikely. The project site lacks suitable habitat, and none were observed during the surveys in spring 2004.
<i>Stebbinsoseris decipiens</i> Santa Cruz microseris	--/--/1B	Broadleaved upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill	April - May	Unlikely. The coastal dune scrub and grassland habitats within the project site provide suitable habitat, but none were

SPECIAL-STATUS PLANT SPECIES KNOWN OR WITH THE POTENTIAL TO OCCUR IN THE PROJECT VICINITY				
Scientific and Common Name	Legal Status ¹ Federal/State/CNPS	Habitat Requirements	Flowering Season	Likelihood to Occur within the Project Site ²
<i>Trifolium buckvestitorum</i> Santa Cruz clover	--/1B	grassland/open areas, sometimes serpentine		observed during the surveys in spring 2004.
<i>Trifolium depauperatum</i> var. <i>hydrophilum</i> Saline clover	--/1B	Broadleaved upland forest, cismontane woodland, coastal prairie	April – October	Unlikely. The grassland within the project site provides suitable habitat, but none were observed during the surveys in spring 2004.
<i>Trifolium polyodon</i> Pacific Grove clover	--/R/1B	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools	April – June	Unlikely. The grassland and wet meadow habitats within the project site provide suitable habitat, but none were observed during the surveys in spring 2004.
<i>Trifolium trichocalyx</i> Monterey clover	E/E/1B	Closed-cone coniferous forest, coastal prairie, meadows and seeps, valley and foothill grassland/mesic	April – June	Unlikely. The grassland and wet meadow habitats within the project site provide suitable habitat, but none were observed during the surveys in spring 2004.
		Closed-cone coniferous forest (sandy, openings, burned areas)	April - June	Unlikely. The project site lacks suitable habitat, and none were observed during the surveys in spring 2004.

¹ **Status Definitions**

Federal
E = listed as Endangered under the federal Endangered Species Act
T = listed as Threatened under the federal Endangered Species Act
-- = no listing

The designation "federal species of concern" has been removed from the CDFG Natural Diversity Database "Special Vascular Plants, Bryophytes, and Lichens List" (April 2005). The federal species of concern list was an internal USFWS list maintained by the Sacramento office comprised of taxa that were formerly designated C1 and C2 plus some other miscellaneous taxa. This list was seldom updated and generated only from Sacramento without review from other USFWS offices.

State
E = listed as Endangered under the California Endangered Species Act
T = listed as Threatened under the California Endangered Species Act
R = listed as Rare under the California Endangered Species Act
-- = no listing

SPECIAL-STATUS PLANT SPECIES KNOWN OR WITH THE POTENTIAL TO OCCUR IN THE PROJECT VICINITY			
Scientific and Common Name	Legal Status ¹ Federal/State/CNPS	Habitat Requirements	Flowering Season
<p>California Native Plant Society 1B = List 1B species; rare, threatened or endangered in California and elsewhere -- = no listing</p> <p>² Definitions of Likelihood to Occur</p> <p>Known = known occurrence of plant in the region from the CNDDDB, or other documents in the vicinity; presence of suitable habitat conditions and suitable microhabitat; or observed during field surveys.</p> <p>Moderate = known occurrence of plant in the region from the CNDDDB, or other documents in the vicinity; presence of suitable habitat conditions, but suitable microhabitat conditions are not present.</p> <p>Low = Plant not known to occur in the region from the CNDDDB, or other documents in the vicinity; habitat conditions of poor quality; not observed during field surveys within flowering period.</p> <p>Unlikely = Plant not known to occur in the region from the CNDDDB, or other documents in the vicinity; no suitable habitat is present; not observed during field surveys within flowering period</p>			
			Likelihood to Occur within the Project Site ²

**WETLAND DELINEATION REPORT
MARINA STATION PROJECT**

Prepared by:

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March 2006

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INTRODUCTION

At the request of the City of Marina, Denise Duffy and Associates, Inc. (DD&A) conducted a routine wetland delineation at the Marina Station Project site (project site) to determine the presence of wetlands and other waters of the U.S. (waters) subject to federal jurisdiction under the Section 404 of the Clean Water Act. In the *Baseline Study of Wildlife and Plants at 320-acres Portion of Armstrong Ranch* (Baseline Study) prepared by Biotic Resources Group and Dana Bland & Associates (July 2004), two wet meadow depressions were observed in the western portion of the project site. Although no formal wetland delineation was conducted for that study, it was determined in the report that the wet meadow areas may meet the definition of wetlands due to the observed dominance of wetland plant species and the site topography, which suggests seasonal ponding and/or surface soil saturation during the growing season.

DD&A performed a formal wetland delineation on March 7, 2006. Precipitation had been heavy in the previous week and ponding was present on the roads. It was determined during the study that potential jurisdictional waters and vegetated wetlands do not exist within the project site boundaries. This report presents the results of the delineation.

Scope

The U.S. Army Corps of Engineers (Corps) is the primary federal agency responsible for regulating wetlands. The delineation studies determined the presence or absence of wetland indicators used by the Corps in making a jurisdictional determination. The three criteria used to delineate wetlands are the presence of: (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. According to the Corps of Engineers Wetlands Delineation Manual (1987):

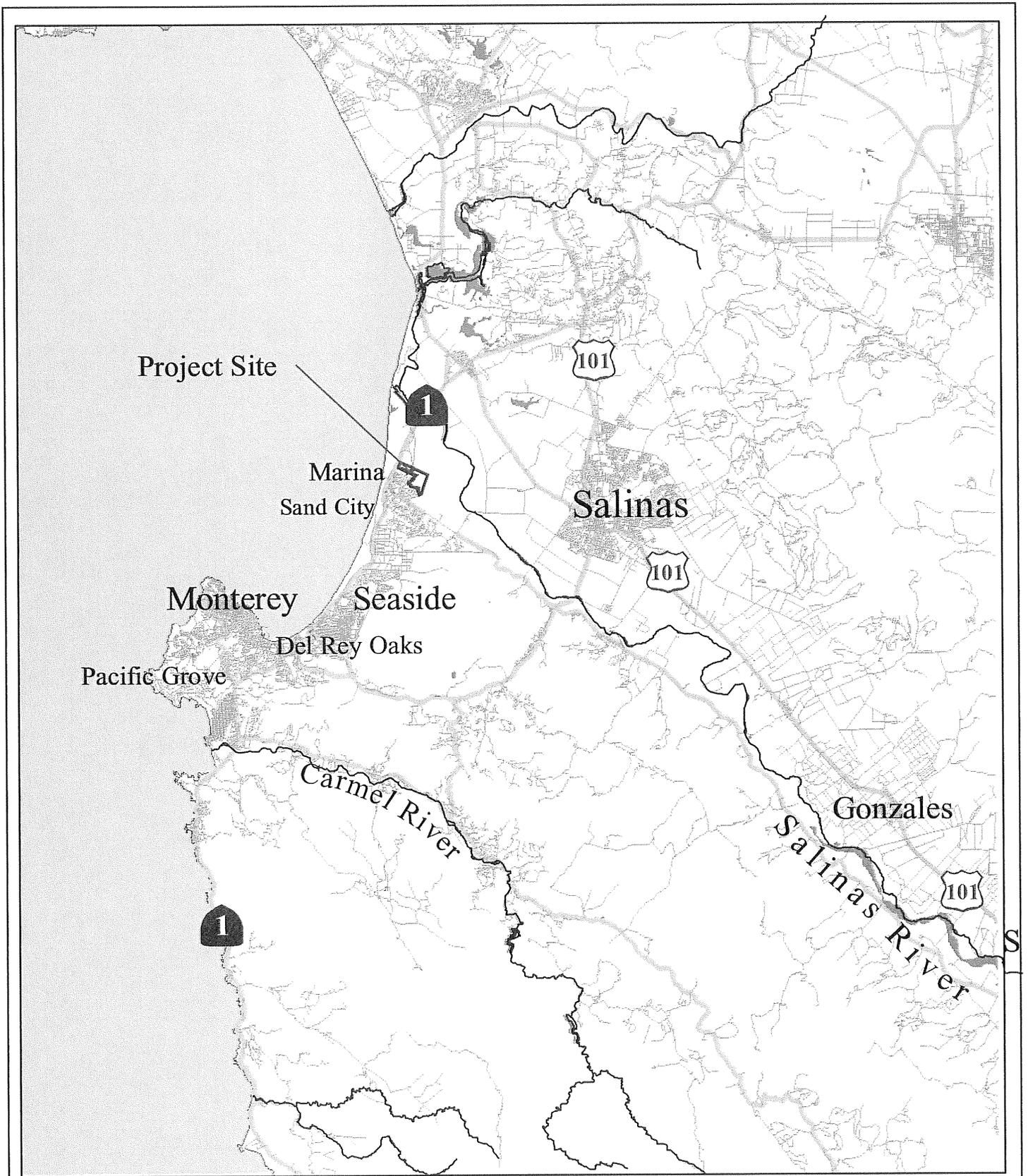
“...[E]vidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland delineation.”

As stated in the federal regulations for the Clean Water Act, wetlands are defined as:

“Those areas that are inundated or saturated by surface or ground waters at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” (EPA, 40 CFR 230.3 and CE, 33 CFR 328.3)

Location

The project is located in the City of Marina, approximately 15 miles north of Monterey and 65 miles southwest of the San Francisco Bay Area, in Monterey County (refer to Figure 1). The project site is located on a 320-acre portion of the Armstrong Ranch property, situated within the City's corporate limits. The project site is located on three parcels east and west of Del Monte Boulevard at the north end of Marina. The Assessor's Parcel Numbers for the site are 175-011-038, -045, and -046.



Regional Map

Figure
1

METHODS

The methods used in this study to assess wetlands are based on the U.S. Army Corps of Engineers Wetlands Delineation Manual (Corps Manual) (Environmental Laboratory 1987). The Corps requires that data on vegetation, hydrology, and soil be recorded on standard forms. Locations within the wet meadow depressions were selected in and around the areas identified as potentially being jurisdictional based on the previous delineation and field observations. Data associated with all three parameters was collected at plot points within the evaluation area. The vegetation, hydrology, and soil criteria used to make wetland determinations are summarized below.

Vegetation Community

Plant species identified on the project site were assigned a wetland status according to the U.S. Fish and Wildlife Service list of plant species that occur in wetlands (Reed 1988). This wetland classification system is based on the expected frequency of occurrence in wetlands as follows:

OBL	Always found in wetlands	>90% frequency
FACW	Usually found in wetlands	67-99%
FAC	Equal in wetlands or non-wetlands	34-66%
FACU	Usually found in non-wetlands	1-33%
NL	Not listed (upland)	<1%

Plants with OBL, FACW, and FAC classifications are classified as hydrophytic vegetation in the Corps Manual methodology. If more than 50 percent of the dominant plant species (dominant is 20 percent of the cover) are hydrophytic, the area is considered to have met the wetland vegetation criterion.

Hydrology

The wetland hydrology criterion is satisfied if the area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season. Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, surface sediment deposits, and drift lines, or indirect indicators (secondary indicators), such as oxidized root channels and alga mats. If indirect or secondary indicators are used, at least two secondary indicators must be present to conclude that an area has wetland hydrology.

Soils

Soils formed under wetland (anaerobic) conditions have a characteristic low chroma value, designated 0, 1, or 2, used to identify them as hydric soils. Chroma designations are determined by comparing a soil sample with a standard Munsell soil color chart (Kollmorgen 1990). Soils with a chroma of 0 or 1 are considered hydric; soils with a chroma of 2 must also have redoximorphic features (mottles) to be considered hydric.

EVALUATION AREA DESCRIPTION

The evaluation area encompasses the two wet meadow areas located west of Del Monte Boulevard, as shown on Figure 2. The wet meadow areas occupy depressions within the grassland where winter rainfall and surface runoff collect. The soils consist of silty sand and fine grained poorly graded sand. The site has have been subject to regular and substantial disturbance due to grazing; both wet meadow areas have been historically, and are currently, grazed. The evaluation area is bordered by the highway and agriculture (ranchland). All four plot points were taken in the lowest points in the depressions (Figure 2).

Vegetation

Both wet meadow areas are densely vegetated with Mexican rush (*Juncus mexicanus*), dune sedge (*Carex pansa*), and a grass species unidentified at the time of the survey. Other plant species within these depressions include salt grass (*Distichlis spicata*), large-flowered sand spurry (*Spergularia macrotheca*), perfoliate peppergrass (*Lepidium perfoliatum*), common rush (*Juncus effuses*), yellow shamrock (*Trifolium dubium*), bur clover (*Medicago polymorpha*), bird's foot trefoil (*Lotus corniculatus*), cut-leaved plantain (*Plantago coronopus*), rabbitsfoot grass (*Polypogon monspeliensis*), and Italian ryegrass (*Lolium multiflorum*). The wet meadow areas are approximately 2.0 acres.

Hydrology

The principle natural hydrologic source for the evaluation area is precipitation.

Soils

The Natural Resources Conservation Service Web Soil Survey indicates one soil series within the evaluation area:

OaD, Oceano loamy sand, 2 to 15 % slopes

This mapping unit consists of deep, excessively drained soils that formed in material weathered from sandy eolian deposits. Oceano soils are on rolling, dune-like topography, near the ocean and have slopes of 0 to 50 %; 2 to 15 % within the study area. The runoff is very slow; drainage pattern is very poorly developed; rapid permeability.

RESULTS

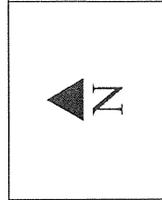
Vegetation

Plot points 1 and 3 were dominated by hydrophytic vegetation and satisfied the Corps criteria for wetland vegetation. However, there were multiple co-dominant grass species that could not be identified due to a combination of the time of year and current grazing activity. Plot points 2 and 4 were not dominated by hydrophytic vegetation.



Figure
2

Marina Station Wetland Delineation Points



Hydrology

None of the plot points contained free water or saturated soils, or any other hydrologic indicators. The delineation study was conducted after recent heavy rains, and there was noted ponding on the roads. Site visits for the Baseline Study were conducted on December 12, 2003, March 23, April 22, and April 23, 2004. Neither wet meadow area ponded any surface water during winter 2003-2004 (Dana Bland, pers. obs., Baseline Study) or winter 2005-2006 (Josh Harwayne, pers. obs., Denise Duffy & Associates, Inc.); both winters were normal rainfall years.

Soils

Only plot point 4 had the low chroma typical of wetland soils. Excessively drained soils may not present the typical indicators normally associated with wetland soils. However, no other hydric soil indicators were observed.

POTENTIAL CORPS OF ENGINEERS JURISDICTION

The evaluation area does not contain wetlands that satisfy the Corps three parameter delineation methodology. Although the depressions contain the moisture required to support the Mexican rush (*Juncus mexicanus*), a facultative wetland (FACW) plant species (a species usually found in wetlands), there were no hydrologic indicators observed even after recent heavy rains. In addition, three of the four plot points lacked hydric soils even in the lowest points in the depressions.

REFERENCES

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APPENDIX A

Corps Data Forms

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Marina Station (North Depression)</u> Applicant/Owner: <u>Armstrong Ranch / Clark Bridge</u> Investigator: <u>M. Johnson, J. Harwayne, E. Harwayne</u>	Date: <u>3-7-06</u> County: <u>Monterey</u> State: <u>CA</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>NA</u> Transect ID: <u>NA</u> Plot ID: <u>1</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Juncus mexicanus</u>	<u>herb</u>	<u>FACW</u>	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Co-dominant plant species could not be identified (grass sp.)

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>NA</u> (in.) Depth to Free Water in Pit: <u>NA</u> (in.) Depth to Saturated Soil: <u>NA</u> (in.)	Remarks: <u>Heavy recent rainfall; noted ponding on roads.</u>

SOILS

Map Unit Name
(Series and Phase): Oceanic loamy sand

Drainage Class: excessively drained
Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup): Mixed, thermic lamellic
xeropsammments

Profile Description:		Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
Depth (inches)	Horizon				
0-18	A	2.5YR-2.5/2			Sand

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: No hydric soil indicators

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	Is this Sampling Point Within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Wetland Hydrology Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	
Hydric Soils Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	

Remarks: The project site has been historically grazed and is grazed currently.

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Minna Station (North depression)</u> Applicant/Owner: <u>Armstrong Ranch / Creek Bridge</u> Investigator: <u>M. Johnson, J. Harwayne, E. Harwayne</u>	Date: <u>3-7-06</u> County: <u>Monterey</u> State: <u>CA</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>NA</u> Transect ID: <u>NA</u> Plot ID: <u>2</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Juncus roemerianus</u>	<u>herb</u>	<u>FACW</u>	9. _____	_____	_____
2. <u>Carex pansa</u>	<u>herb</u>	<u>FACU</u>	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50%

Remarks:

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>NA</u> (in.) Depth to Free Water in Pit: <u>NA</u> (in.) Depth to Saturated Soil: <u>NA</u> (in.)	Remarks: <u>Recent heavy rains; no indicators.</u>

SOILS

Map Unit Name (Series and Phase): Oceano loamy sand Drainage Class: excessively drained
 Field Observations
 Taxonomy (Subgroup): Mixed, thermic lamellic xeropsamment Confirm Mapped Type? Yes No

Profile Description:		Matrix Color	Mottle Colors	Mottle	Texture, Concretions,
Depth (inches)	Horizon	(Munsell Moist)	(Munsell Moist)	Abundance/Contrast	Structure, etc.
0-18	A	2.5YR-2.5/a			sand

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: no hydric soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> (Circle)	(Circle)
Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/> (Circle)	Is this Sampling Point Within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/> (Circle)
Hydric Soils Present? Yes <input type="radio"/> No <input checked="" type="radio"/> (Circle)	
Remarks:	

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Manna Station (south depression)</u> Applicant/Owner: <u>Armstrong Ranch / Creek Bridge</u> Investigator: <u>M. Johnson, K. Harbwayne, E. Harbwayne</u>	Date: <u>3-7-06</u> County: <u>Monterey</u> State: <u>CA</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="radio"/> No <input type="radio"/> Yes Is the area a potential Problem Area? Yes <input checked="" type="radio"/> No <input type="radio"/> Yes (If needed, explain on reverse.)	Community ID: <u>NA</u> Transect ID: <u>NA</u> Plot ID: <u>3</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Juncus mexicanus</u>	<u>herb</u>	<u>FACW</u>	9. _____	_____	_____
2. _____	_____	_____	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Codominant plant species (grass) couldn't be identified

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>NA</u> (in.) Depth to Free Water in Pit: <u>NA</u> (in.) Depth to Saturated Soil: <u>NA</u> (in.)	
Remarks: <u>no hydrologic indicators</u>	

SOILS

Map Unit Name (Series and Phase): Oceanic loamy sand Drainage Class: excessively drained
 Field Observations
 Taxonomy (Subgroup): Mixed, thermic (mollic, xerochrepts) Confirm Mapped Type? Yes No

Profile Description:		Matrix Color	Mottle Colors	Mottle	Texture, Concretions,
Depth	Horizon	(Munsell Moist)	(Munsell Moist)	Abundance/Contrast	Structure, etc.
(inches)					
<u>0-18</u>	<u>A</u>	<u>2.5 YR-2.5/2</u>			<u>sand</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Hydric Soil Indicators:

<input type="checkbox"/> Histosol	<input type="checkbox"/> Concretions
<input type="checkbox"/> Histic Epipedon	<input type="checkbox"/> High Organic Content in Surface Layer Sandy Soils
<input type="checkbox"/> Sulfidic Odor	<input type="checkbox"/> Organic Streaking in Sandy Soils
<input type="checkbox"/> Aquic Moisture Regime	<input type="checkbox"/> Listed on Local Hydric Soils List
<input type="checkbox"/> Reducing Conditions	<input type="checkbox"/> Listed on National Hydric Soils List
<input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Other (Explain in Remarks)

Remarks: no hydric soil

WETLAND DETERMINATION

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (Circle)	(Circle)
Wetland Hydrology Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	Is this Sampling Point Within a Wetland? Yes <input checked="" type="radio"/> No
Hydric Soils Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	
Remarks:	

DATA FORM
ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>Marina Station (South depression)</u> Applicant/Owner: <u>Armstrong Ranch / Chuck Buder</u> Investigator: <u>M. Johnson, J. Harwayne, E. Harwayne</u>	Date: <u>3-7-06</u> County: <u>Maricopa</u> State: <u>CA</u>
Do Normal Circumstances Exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Community ID: <u>A/A</u> Transect ID: <u>A/A</u> Plot ID: <u>4</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Juncus mexicanus</u>	<u>herb</u>	<u>FACW</u>	9. _____	_____	_____
2. <u>Carex pansa</u>	<u>herb</u>	<u>FACU</u>	10. _____	_____	_____
3. _____	_____	_____	11. _____	_____	_____
4. _____	_____	_____	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50%

Remarks: no hydric veg.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input checked="" type="checkbox"/> No Recorded Data Available	Wetland hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12" <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>NA</u> (in.) Depth to Free Water in Pit: <u>NA</u> (in.) Depth to Saturated Soil: <u>NA</u> (in.)	Remarks: <u>No hydrologic indicators; wetter than other three points</u>

APPENDIX E

Geotechnical Study



ENGINEERS, INC.

ENGINEERING - LANDPLANNING
SURVEYING - ENVIRONMENTAL CONSULTING

**SOIL ENGINEERING FEASIBILITY INVESTIGATION
FOR
ARMSTRONG RANCH
MARINA, CALIFORNIA
PROJECT LSS-0272-02**

Prepared for

CREEKBRIDGE HOMES
1611 BUNKER HILL WAY, SUITE 250
SALINAS, CALIFORNIA 93906

Prepared by

LANDSET ENGINEERS, INC.
520B CRAZY HORSE CANYON ROAD
SALINAS, CALIFORNIA 93907
(831) 443-6970

DECEMBER 2003



ENGINEERS, INC.

ENGINEERING - LANDPLANNING
SURVEYING - ENVIRONMENTAL CONSULTING

December 31, 2003

File No.: LSS-0272-02

Mr. Matthew K. Lewis
Creekbridge Homes
1611 Bunker Hill Way, Suite 250
Salinas, California 93906

Subject: **SOIL ENGINEERING FEASIBILITY INVESTIGATION**
Armstrong Ranch
Del Monte Boulevard
Marina, California

Dear Mr. Lewis:

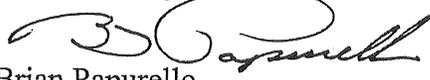
In accordance with your authorization, Landset Engineers, Inc has completed a soil engineering feasibility investigation on an approximate 320-acre site located off of Del Monte Boulevard in the City of Marina, California. This report presents the results of our field investigation and laboratory testing, along with our preliminary conclusions and recommendations for proposed residential/commercial site development.

It is our opinion that the proposed development is feasible from a soil engineering standpoint provided the recommendations included in this report are incorporated into the project plans and specifications, and are implemented during construction. The conclusions and recommendations included herein are preliminary in nature with regards to the construction of structures. We should provide design level grading and foundation design criteria based on a site specific soil engineering investigation(s). The design level investigation(s) should be performed once preliminary development plans have been completed and proposed land use, types of structures, and anticipated loads are known.

It has been a pleasure to be of service to you on this project. If you have any questions regarding the attached report, please contact the undersigned at (831) 443-6970

Respectfully submitted,

LandSet Engineers, Inc.


Brian Papurello
Project Geologist

Distribution: Creekbridge Homes, Attn: Mr. Matthew K. Lewis (20)

Doc. No.: 0312-123.SER


Charles E. Potter
RCE 25705

12/31/03



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INTRODUCTION

This report summarizes the findings, conclusions and recommendations for our soil engineering feasibility investigation for the Armstrong Ranch mixed-use residential/commercial development (hereafter referred to as the site) located in the City of Marina, California (see Vicinity Map, Figure 1).

PURPOSE AND SCOPE OF SERVICES

This soil engineering feasibility investigation has been prepared to explore surface and subsurface soil and groundwater conditions at the site, and provide preliminary soil-engineering criteria for construction of the project.

The conclusions and recommendations of this report were accomplished in general conformance with the standards noted, as modified by standard soil engineering practice in this area. Our scope of services included:

1. A visual site reconnaissance;
2. Review of available soil engineering data in our files pertinent to the site;
3. Exploration, sampling and classification of the surface and subsurface soils by means of drilling thirty exploratory borings to depths ranging from 15.0 to 51.5 feet below the ground surface;
4. Laboratory testing of selected soil samples collected from the exploratory borings and surface locations to determine their pertinent engineering and index properties;
5. Engineering analysis of the information collected based on the results of the field exploration including a laboratory testing program and review of published and unpublished studies in the general area of the site.
6. Preparation of this report summarizing our findings, soil engineering conclusions, and recommendations for site preparations, grading and compaction, foundations, utility trenches, slabs-on-grade, general site drainage, and erosion control.

SITE DESCRIPTION AND PROPOSED DEVELOPMENT

The site is located near the northern terminus of the Salinas River Valley in the north central portion of the Marina 7.5-minute quadrangle. The site is unsectionalized and is within the corporate boundaries of the City Marina, California. The site is vacant and current land use consists of open range cattle grazing (Figure 1, Vicinity Map).

The site is composed of three separate but contiguous parcels (APN's 175-011-038, 045, & 046) that form an "L" shaped area totaling about 320 combined acres (Figure 2). The site consists of an undulating northwest-southeast trending older stabilized dune and drift sand field that often forms small closed drainage basins. The site is typically characterized by gentle, soft rolling

slopes ranging from about 5:1 to 10:1 (horizontal to vertical). Locally steeper slopes up to 2:1 (horizontal to vertical) exist in the northwestern panhandle area. The overall site slopes in a northwesterly direction towards the Pacific Ocean. Overall topographic relief is about 95 feet, with elevations ranging from about 105 feet above sea level at the southeast property corner, down to 9 feet above sea level in two closed basin areas in the northwest panhandle. Del Monte Boulevard roughly bisects the site in a northeast southwest direction. The site is bounded by residential, commercial, & school properties to the south, agricultural lands to the north and east, and California State Highway 1 to the west. Vegetation consists of a light growth of grass with isolated areas of scrub brush. Site drainage is directed towards the northwest. However, storm runoff rarely occurs due to rapid infiltration of precipitation into the sandy sediments underlying the.

No grading plans were available for review at the time of this report. However, based on discussions with Mr. Matthew Lewis of Creekbridge Homes, we understand that site development will likely consist of the phased construction of single family, multi-family, schools, and commercial/retail structures with associated roadway and underground utility infrastructure improvements. Based on review of the existing site topography, it is assumed that site grading will consist of conventional cut/fill construction methods.

FIELD EXPLORATION

A total of thirty exploratory borings were drilled on November 25, and December 2 & 3, 2003 at the approximate locations shown on the Site Map, Figure 2. The borings were drilled using a truck mounted Mobile Drill rig, Model B-53, equipped with a 6-inch outside diameter solid stem auger. The exploratory borings were drilled to depths ranging from 15.0 to 51.5 feet below the ground surface. Seven bulk soil samples were collected at depth intervals ranging from 0 to 5 feet below the ground surface. The exploratory borings were logged in the field under the supervision of or by a Certified Engineering Geologist from our office. Upon completion of drilling, the holes were backfilled with native soil cuttings.

Soils encountered in each exploratory boring were visually classified in the field and a continuous log was recorded. Visual classifications were made in general accordance with the Unified Soil Classification System and ASTM D2487. Logs of the borings can be found in Appendix A (Figures A4 through A33). Appendix A also contains a Key to the Unified Soil Classification System, Key to Log of Borings and Soil Terminology (Figures A1 through A3).

Soil samples were obtained by drilling to the desired depth and then driving a 3-inch OD Modified California Sampler or a 2-inch OD Standard Penetration Test sampler. The samplers were driven into the ground using force generated by a 140-pound hammer dropping freely through a distance of 30-inches. The number of blows required to drive the last 12-inches of an 18-inch sampler were recorded as penetration resistance (blows/foot) on the exploratory boring logs. The penetration resistance values were used to describe the consistency/density of the subsurface materials. In addition to the collection of driven samples, bulk soil samples were obtained and collected from the auger cuttings.

LABORATORY TESTING

Laboratory tests were performed to determine some of the physical and engineering characteristics on selected soil samples of the various soil materials encountered in the exploratory borings considered pertinent to the design of the project. The tests performed were selected on the basis of the probable design requirements as correlated to the site subsurface profile. A summary of the laboratory test results is presented in Appendix B. A brief generalized description of the tests performed is presented below.

- * Moisture-Density Determinations: This test was conducted on brass liner samples to measure their in-situ moisture contents and dry unit weights. The test results are used to assess the distribution of subsurface pressures and to calculate degrees of in-situ relative compaction.
- * Compaction Curve (ASTM D 1557-91): This test is used to determine the maximum dry density and optimum moisture content based upon a standard compactive effort. When compared to the insitu moistures and densities, degrees of relative compaction can be obtained.
- * Grain Size Distribution (Gradation) Analysis: A grain size distribution analysis was performed on a selected disturbed bulk soil sample. The distribution of particle sizes larger than 0.075 mm is determined by sieving, while the distribution of particle sizes smaller than 0.075 mm is determined by a sedimentation process using a hydrometer. The grain size distribution is used to determine the classification of the site soils. This information is used for foundation design analysis.

SUBSURFACE CONDITIONS

Subsurface constituents were fairly uniform to the depths explored in each of the 30 exploratory borings. The site soils are composed of aeolian sediments consisting of silty SAND and fine grained poorly graded SAND. Rare, thin CLAY layers (<12 inches) were noted to occur at various depths and were associated with the phreatic ground water interface. Consistencies for the upper five feet of soil were variable ranging from very loose to medium dense. Medium dense to dense consistencies were typically encountered below depths of ten feet.

GROUNDWATER

Groundwater was encountered in exploratory borings B-1 through B-8 at depths ranging from 6.5 to 45.0 feet below the ground surface. Based on the conditions encountered in the exploratory borings, the depth to ground water is at or near sea level. Groundwater levels can fluctuate over time depending on but not limited to factors such as tidal influence, seasonal rainfall, site elevation, groundwater withdrawal, and construction activities at neighboring sites. The influence of these time dependent factors could not be assessed at the time of our investigation.

SUMMARIZED CONCLUSIONS

The following conclusions are drawn from the data acquired and evaluated during this feasibility investigation for the proposed project. Soil and groundwater conditions can deviate from the conditions encountered at the boring locations. If significant variations in the subsurface conditions are encountered during construction, it may be necessary for Landset Engineers, Inc. to review the recommendations presented herein, and recommend adjustments as necessary.

Site Suitability: In our opinion, the site is suitable from a soil engineering standpoint for the proposed development provided that the recommendations contained herein are implemented in the design and construction. The following conclusions and recommendations are presented as guidelines to be used by project planners and designers for the soil engineering aspects of the project design and construction. These conclusions and recommendations are preliminary and have been prepared assuming that Landset Engineers, Inc. will be commissioned to perform a site specific design level investigation(s) in the future once site development plans have been prepared.

Soil Expansion: Based on visual observations and laboratory testing the site soils are classified as silty SAND and poorly graded SAND, and are considered to be non-plastic. Review of the Soil Survey of Monterey County (USDA, 1978) shows the site to be underlain by Baywood and Oceano Series Soils. Review of Table 6, "Engineering properties and classifications" indicate that these soil types are non-plastic, confirming this firm's field & laboratory observations. No special measures are required to mitigate the effect of soil expansion on foundations, and interior or exterior concrete slabs-on-grade.

Grading: As the surficial soils that will be supporting the foundations and structural fill are loose to very loose, remedial grading and subexcavation is considered necessary to improve the soils for foundation and structural fill support. Therefore, it is recommended that the top 1 to 4-feet of native soil be removed and recompacted.

Foundations: Conventional footings or post-tensioned slabs will suitably support typical construction loads ranging from 1,000 to 3,000ft². The actual foundation design for the proposed development will be determined by a site specific, design level, soil engineering investigation(s), once the type and actual locations of the proposed structures are known.

Liquefaction Potential: Liquefaction is the transformation of soil from a solid to a liquid state as a consequence of increased pore-water pressures, usually in response to strong ground shaking, such as those generated during a seismic event (earthquake). Liquefaction is most commonly associated with Holocene age deposits where the groundwater is less than 30 feet below the surface and the anticipated peak ground acceleration (PGA) having a 10% probability of being exceeded in 50 years is greater than 0.2g, **or**, areas of latest Pleistocene age deposits where groundwater is less than 20 feet below the ground surface and the PGA is greater than 0.3g. Liquefaction most often occurs in loose saturated silts, and saturated poorly graded fine-grained sands. However, some cohesive clay soils can be subject to strength loss even under relatively minor strains.

Review of published maps and reports indicates that substantial structural damage and historical liquefaction occurred near the area of the site along the banks of the Salinas River at Neponset as a result of San Francisco Earthquake of April 18, 1906 (Kilbourne and Mualchin, 1980). Review

of the Relative Liquefaction Susceptibility Map contained in the County of Monterey Draft General Plan shows that the site is located in an area of low susceptibility for liquefaction.

Review of published maps (Dupre' & Tinsley, 1980) and the findings of our investigation indicate the following. The site is typically underlain by medium dense Pleistocene age sediments, the depth to groundwater is at or near sea level elevation, and the site peak ground acceleration having a 10% probability of being exceeded in 50 years is greater than 0.3g. Based on these natural physical conditions, it is our opinion that the potential for liquefaction to effect the majority of the site where the depth to groundwater is deeper than 25 feet is *low*. However, three isolated areas on the site where the depth to groundwater is less than 25 feet have been classified as having a *moderate* potential for liquefaction susceptibility.

Collapse Potential: Isolated and discontinuous loose and dry sands were encountered at various depths across the site. These sands are weak and potentially compressible. Collapsible soils tend to experience significant settlement when saturated even under light loads. In order to reduce the effects of differential settlement from potentially collapsible soils foundations should be design to resist differential movements ranging from 1 to 2 inches.

Seismic Design Parameters: Based on our literature review, subsurface exploration, and comparisons with published data, we have classified the site soil profile type as Stiff Soil Profile (S_D) as defined by the guidelines in the 1997 edition of the Uniform Building Code (UBC). We have determined the appropriate seismic coefficients to be used for the design of the structures according to the 1997 UBC. The site is located in Seismic Hazard Zone 4, as defined by the 1997 UBC, Figure 16-2 and Section 1629.4.1. The following table indicates the near source factors and seismic coefficients for the faults likely to effect the site. Because of its closer proximity to the site, the Rinconada fault is considered capable of generating stronger ground motions at the site than the San Andreas fault, despite the greater activity of the latter.

TABLE 1
Near Source Factors & Seismic Coefficients

Seismic Source	Fault Type	Distance	N_a	N_v	C_a	C_v
San Andreas Fault (Pajaro Segment)	A	27 km NE	1.0	1.0	0.44	0.64
Rinconada Fault	B	0.5 km NE	1.3	1.6	0.57	1.02

RECOMMENDATIONS

Site Preparation and Grading

1. The soil engineer should be notified **at least two (2) working days prior to any site clearing or grading** so that the work in the field can be coordinated with the grading contractor, and arrangements for testing and observation services can be made. The recommendations contained in this report are based on the assumption that Landset Engineers, Inc. will perform the required testing and observation services during grading and construction. It is the owner's responsibility to make the necessary arrangements for these required services.
2. Prior to grading, construction areas should be cleared of obstructions, buried structures & utilities, and other deleterious materials. Site clearing should be observed by a field representative of Landset Engineers, Inc. Voids created by removal of material as described above should be called to the attention of the soil engineer. No fill should be placed unless a representative of this firm has observed the underlying soil.
3. Following site clearing, the upper 1 to 4-feet of native soil should be overexcavated from the building areas. Building areas are defined as the soils within and extending a minimum of 5 feet beyond the foundation perimeters and structural fill areas.
4. The soils exposed by overexcavation should be scarified 8 inches; moisture conditioned to above optimum moisture content, and compacted to at least 90% of maximum dry density. Where referenced in this report, percent relative compaction and optimum moisture content shall be based on ASTM test D1557-91. Areas to receive structural fill outside the building pad should be scarified and recompacted in a similar manner.
5. In order to limit the potential for differential settlement of conventional footings, foundations should not be supported on both fill and cut. Therefore, we recommend that the cut side of the building area should be overexcavated (undercut). The proposed grading within the building area should be designed so that no more than 5 feet of differential fill thickness exists below foundations. The portion of the building foundations bearing on cut should be undercut at least 3 feet below the proposed building pad so that the entire foundation is bearing on a uniform layer of compacted fill. Deeper overexcavation may be necessary in order to satisfy the differential fill thickness

recommendations. The use of post-tensioned slabs may reduce or eliminate the need to undercut cut/fill pads

6. If fill over cut slopes are to be constructed, keyways should be established at the cut/fill daylight lines. The keyways should have minimum widths of 10-feet and should be sloped approximately 2% back into the hillsides. The keyways and subsequent upslope benches should penetrate into sufficiently stable material as determined by the soil engineer at the time of grading.
7. The soil engineer should also observe keyways and benches to assess the need for subsurface drains (subdrains). Subdrains in other areas may also be recommended depending on the grading plan and site conditions observed at the time of grading.
8. Fill slopes should be constructed at a maximum finished slope inclination of 2:1 (horizontal to vertical). Fill slopes should be overfilled and trimmed back to competent material. Further compaction of exposed fill slope faces using sheepsfoot rollers or tracked equipment may be recommended by the soil engineer. Cut slopes should be constructed at an inclination of 2:1.
9. Fill, material should be placed in thin lifts, moisture conditioned to a level above optimum moisture content, and compacted to a minimum of 90 percent of maximum dry density. Prior to compaction, the soil should be cleaned of any rock, debris, and irreducible material larger than 3-inches in diameter.
10. Fill material should consist of non-expansive Select Structural Fill. Select Structural Fill is defined herein as a native or import fill material which, when properly compacted, will support foundations, pavements, and other fills without detrimental settlement or expansion. Select Structural Fill is specified as follows:

Select Structural Fill

- * Clean native soil may be utilized, but import fill shall have a Plasticity Index of less than 12;
- * Be free of debris, vegetation, and other deleterious material;
- * Have a maximum particle size of 3-inches in diameter;
- * Contain no more than 15% by weight of rocks larger than 2 1/2-inches in diameter;

- * Have sufficient binder to allow foundation and unshored excavation stand without caving;
- * Prior to delivery to the site, a representative sample of proposed import should be provided to Landset Engineers, Inc. for laboratory evaluation.

11. In areas to be paved, the upper 12-inches of subgrade soils and all aggregate base should be compacted to a minimum of 95 percent of maximum dry density. Aggregate base and subgrade should be firm and unyielding when proofrolled by heavy rubber-tired equipment prior to paving.

Foundations

12. The buildings should be supported by conventional continuous and spread (pad) footings or be supported by post-tensioned slab foundations.

Conventional Footings

13. The buildings may be supported by conventional continuous and spread (pad) footings supported on recompacted soil. Footings should have minimum depths of 12-inches below lowest adjacent grade for single story structures, and 18-inches below lowest adjacent grade for two story structures. For the above conditions, the footings for a proposed structure may be designed for an allowable bearing pressure range of 1,000 to 3,000ft² for dead plus live loads. Footings should be reinforced as directed by the architect/structural engineer.
14. Post construction total and differential settlements of foundations are expected to be about ½ to 1½-inch from static loading. Estimated foundation movements due to seismically induced settlement as a result of earthquakes could be higher.
15. Footing excavations should be observed by a representative of this firm prior to placement of formwork or reinforcement. Concrete should be placed only in foundation excavations that have been kept moist, and contain no loose or soft soil debris.
16. Footings located adjacent to other footings or utility trenches should have their bearing surfaces founded below an imaginary 1:1 (horizontal to vertical) plane projected upward from the bottom edge of the adjacent footings or utility trenches.

Post-Tensioned Slab Foundations

17. As an alternative to conventional footings, post-tensioned slabs may be utilized to resist differential settlement of the fill material and/or collapsible soils. Post-tensioned slabs should be designed in accordance with the 1997 edition of the Uniform Building Code and the latest design recommendations by the Post-Tensioning Institute utilizing the following design criteria:
18. For the above conditions, the post-tensioned slabs may be designed for an allowable bearing pressure range of 1,500 to 2,500 pounds per square foot for dead plus live loads. A qualified structural engineer should design post-tensioned slabs.
19. A minimum of 4 inches of clean sand should be provided beneath the post-tensioned slabs. The building pad subgrade should be pre-moistened to a level at or slightly above optimum moisture content prior to the placement of the clean sand cushion. Clean sand is defined as a sand (ASTM D 2488-93) of which less than 3 percent passes the No. 200 sieve.
20. To minimize floor dampness, such as where moisture sensitive floorings will be present, a membrane vapor barrier should be placed at the midsection of the clean sand cushion. The membrane vapor barrier should be a minimum 10 mil in thickness, and care should be taken to properly lap and seal the vapor barrier, particularly around utilities.
21. To limit the potential for subsurface moisture to enter the underlying sand cushion, the perimeters of the post-tensioned slabs should be thickened to penetrate below the bottom of the sand cushion layer.
22. Post-tensioned slabs should be constructed and maintained in accordance with the latest procedures as specified by the Post-Tensioning Institute. Plumbing through the slabs, utility connections, exterior flatwork, and drainage systems should be designed to accommodate the specified differential settlement conditions.

Conventional Slabs-on-Grade and Exterior Flatwork

23. For buildings utilizing conventional footings, interior slabs-on-grade should have minimum thickness of 4 full inches. It should be noted that the project structural engineer might require thicker slab sections to provide the necessary support for the anticipated

structural loads. Conventional concrete slabs-on-grade should be reinforced with steel as specified by the structural engineer.

24. To minimize floor dampness, such as where moisture sensitive floorings will be present, a section of capillary break material at least 4-inches thick covered with a membrane vapor barrier should be placed between the floor slab and the compacted soil subgrade. The capillary break should consist of a clean, free draining material such as ½ to ¾-inch drainrock with not more than 10 percent of the material passing a No. 4 sieve. The drainrock should be free of sharp edges that might damage the membrane vapor barrier. The membrane vapor barrier should be a minimum 10 mil in thickness, and care should be taken to properly lap and seal the vapor barrier, particularly around utilities. To protect the vapor barrier from damage during concrete placement, it should be covered with a minimum of 2 inches of clean sand as defined in paragraph 19 of this report. The sand cushion should be lightly moistened immediately prior to concrete placement.
25. Exterior concrete flatwork such as driveways, patios and sidewalks should be designed to act independently of building foundations. Exterior flatwork should be constructed on compacted soil subgrade moisture conditioned to over optimum moisture content. Reinforcement and joint spacing should be at the direction of the architect/structural engineer.

Utility Trenches

26. On-site soils should be properly shored and braced during construction to prevent sloughing and caving of trench sidewalls. Due to the cohesionless nature of the site soils deep cuts will require the slope excavation side walls to be laid back. The contractor should comply with the Cal/OSHA and local safety requirements and codes dealing with excavations and trenches.
27. A select non-corrosive, granular, material should be used as bedding and shading immediately around underground utility pipes and conduits. Native soils may be used for trench backfill above the select material.
28. Trench backfill in landscaped or unimproved areas should be compacted to a minimum of 85 percent of maximum dry density. Trench backfill beneath asphalt and concrete

pavements should be compacted to a minimum of 95 percent of maximum dry density. Trench backfill in other areas should be compacted to a minimum of 90 percent of maximum dry density.

29. The bottoms of utility trenches that are parallel to foundations should not extend below an imaginary plane sloping downward at a 1:1 (horizontal to vertical) angle from the bottom outside edges of foundations.

Site Drainage

30. The site soils are composed of older dune sand that lacks binding fines making them *extremely erodible*. At this time, the site sediments are currently stable due to the presence of a thin vegetative mat. Any disturbance to the existing vegetative cover will result in excessive and potentially catastrophic erosion. Areas disturbed by grading should be stabilized with adequate landscaping vegetative cover. The re-vegetation and landscaping plan should be designed by a landscape architect who has experience in working with the type of soils that are characteristic of the site. Landscaping irrigation should be minimized, using only what is necessary to sustain plant life. Site runoff will be substantially increased due to the large paved areas. A comprehensive drainage & erosion control plan is essential to the project.
31. Surface drainage should provide for positive drainage so that runoff is not permitted to pond adjacent to foundations, concrete slabs-on-grade, and pavements. Surface drainage should be directed away from site improvements at a minimum 2 percent grade for a minimum distance of 5-feet. Surface drainage facilities should be armored or hard-scaped to limit erosion potential. If this is not practicable due to the terrain or other site features, swales with improved surfaces should be provided to divert drainage away from improvements.
32. Roof gutters should be utilized around the building eaves. Roof gutters should be connected to downspouts, which in turn should be connected to pipes leading to the site storm drain system. Runoff from downspouts, planter drains and other improvements should discharge in a non-erosive manner away from site improvements in accordance with the requirements of the governing agencies.

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33. The migration of water or spread of root systems below foundations, slabs, or pavements may cause differential movement and subsequent damage. Landscaping runoff collection facilities should be incorporated in the project design.
34. Cut-off drainage swales should be constructed at the top of all cut and fill slopes. These drainage swales should be of adequate size to collect surface runoff and flow to an approved point of discharge in a non-erosive manner. Proper drainage and re-vegetation of graded slopes is essential to ensure stability.

QUALITY CONTROL

The conclusions and recommendations contained in this soil engineering feasibility investigation are preliminary in nature. We recommend that Landset Engineers, Inc. be retained to review preliminary plans once they are available. Additionally, we should provide final grading and foundation design criteria based on a site specific soil engineering investigation once the proposed site usage, construction type, and anticipated loads are known. These services are beyond the scope of this soil engineering feasibility investigation.

The following items should be performed, reviewed, tested, or observed by this firm:

- Design level soil engineering investigation(s)
- Final grading and foundation plans
- Site stripping and clearing
- Overexcavation
- Scarification and recompaction
- Fill placement and compaction
- Foundation excavations
- Underground utility backfill and compaction.
- Compaction of subgrade and Class 2 A.B. in areas to be paved.

If Landset Engineers, Inc. is not retained to provide design level soil engineering services or construction observation and compaction testing, we shall not be responsible for the interpretation of the information by others or any consequences arising therefrom.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

The preliminary recommendations contained in this report are based, in part, on certain plans, information, and data that has been provided to us. Any changes in those plans, information, and data will render our recommendations invalid unless we are commissioned to review the changes and to make any necessary modifications and/or additions to our recommendations. The criteria in this report are considered preliminary until such time as they are modified or verified by the soil engineer in the field during construction. No representation, warranty, or guarantee is either expressed or implied. This report is intended for the exclusive use by the client and the client's architect/engineer. Application beyond the stated intent is strictly at the user's risk.

The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the borings. If any variations or undesirable conditions are encountered during construction, Landset Engineers, Inc. should be notified so that supplemental recommendations can be given.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information and recommendations contained herein are called to the attention of the Architects and Engineers for the project and incorporated into the plans, and that the necessary steps are taken to ensure that the Contractor and Subcontractors carry out such recommendations. The conclusions and recommendations contained herein are professional opinions derived in accordance with current and local standards of professional practice.

The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes outside of our control. Therefore, this report should not be relied upon after a period of three years, without being reviewed by Landset Engineers, Inc. from the date of issuance of this report.

This report does not address issues in the domain of the contractor such as, but not limited to, loss of volume due to stripping of the site, shrinkage of fill soils during compaction, excavatability, and construction methods. The scope of our services did not include any determination or evaluation of site geology, environmental assessment of wetlands, radioisotopes, hydrocarbons, hazardous or toxic materials, or other chemical properties in the soil, surface water, groundwater or air, on or below or around the site.

December 31, 2003

File No.: LSS-0272-02

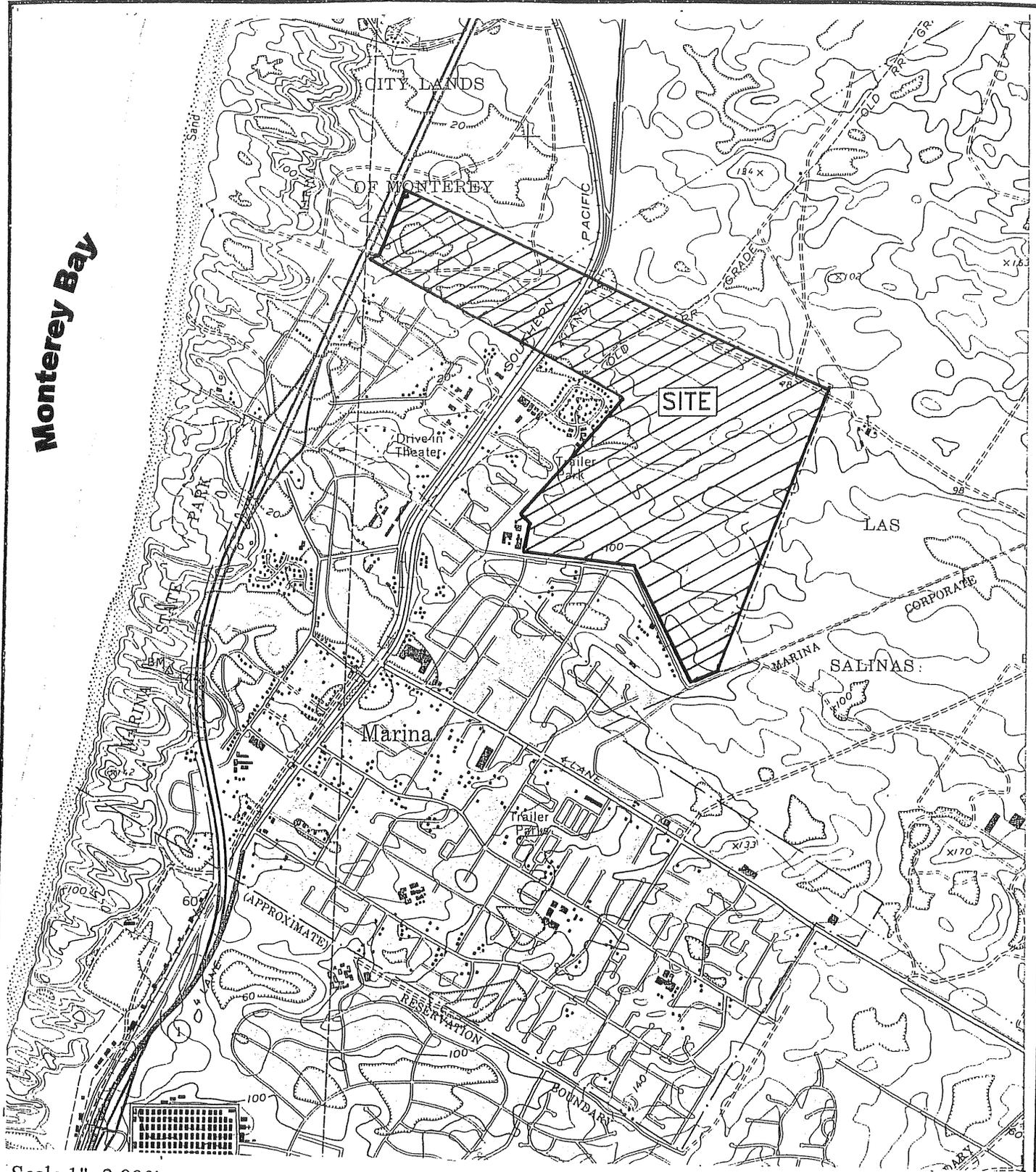
REFERENCES

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- Kilbourne, R.T., and Maulchin, L., 1980, Geology for planning: Marina and Salinas 7.5-minute quadrangles, Monterey County, California: California Division of Mines & Geology Open File Report 80-07, 59p., 2 map sheets, scale 1:24,000.

FIGURES

Figure 1, Vicinity Map
Figure 2, Site Map

Monterey Bay



Scale 1"=2,000'
 BASE MAP: Marina, Monterey County, California
 U.S.G.S. 7 1/2' Topographic
 Quadrangle Map

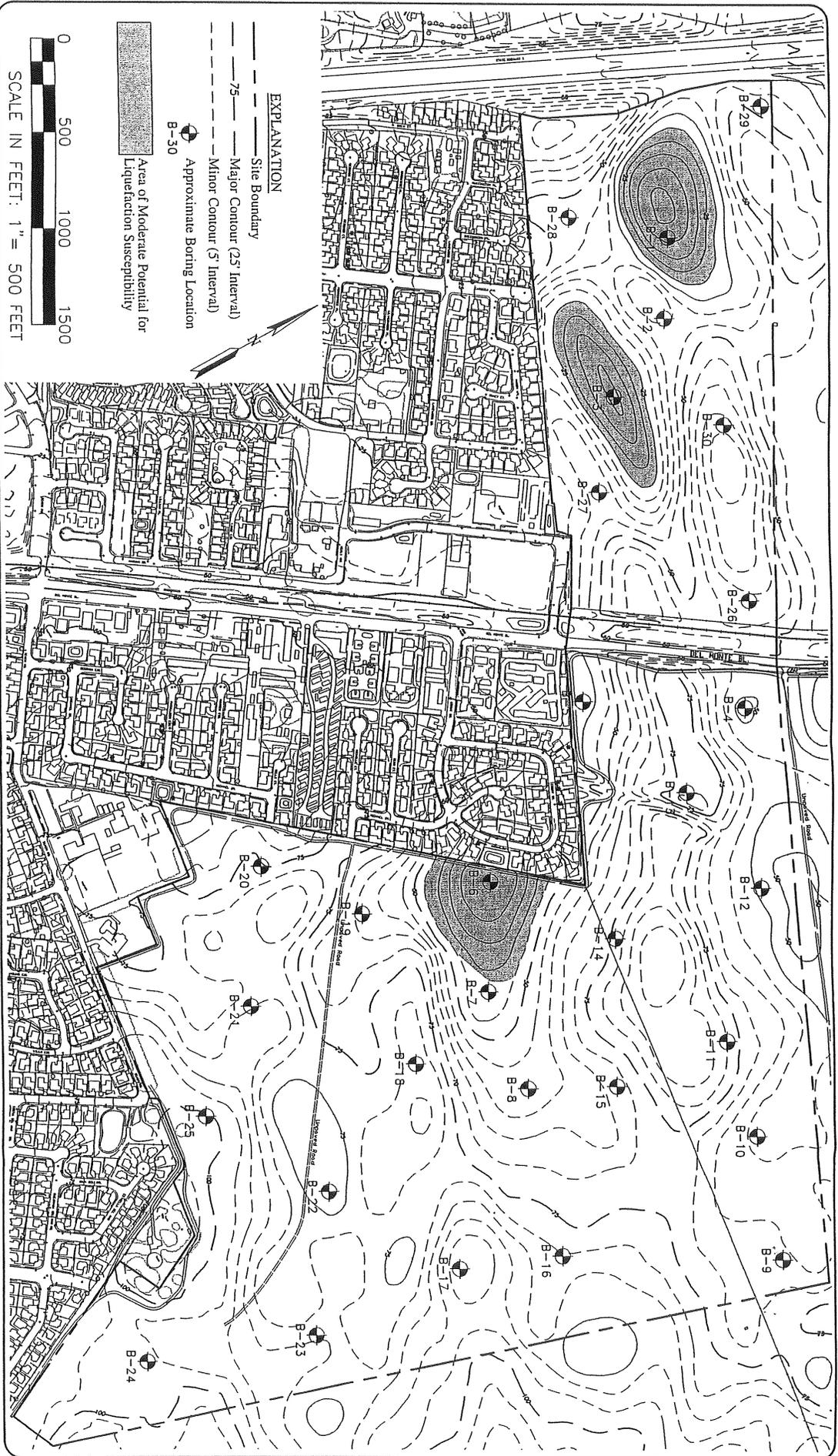


LANDSET
ENGINEERS, INC.

520B CRAZY HORSE CANYON ROAD, SALINAS, CA 93907
 (831) 443-6970 FAX (831) 443-3801

Vicinity Map
 Armstrong Ranch
 Del Monte Boulevard
 Marina, California

FIGURE
1
 PROJECT
 LSS-0272-01



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S I T E M A P
 ARMSTRONG RANCH
 DEL MONTE BLVD.
 MARINA, CALIFORNIA

FIGURE
 2
PROJECT
 LSS-0272-02

APPENDIX F

Drainage Calculations



1 of 8

JOB NO: 032044 Storm Drain
 JOB NAME: Marina Station
 DATE: 1/31/05
 PREPARED BY: _____
 SHEET NO. _____ OF _____

Determine the detention required assuming the entire site drains to a single basin.

$$i = 5.68 / \sqrt{t} \quad (\text{inches/hr})$$

$t =$ time in minutes

Find Runoff $\rightarrow R = KiAt$

$K =$ runoff coefficient (0.60) (single family)

$A =$ Area (AC) = 293 AC

$t =$ Time (min)

$i =$ Intensity (in/hr)

$$R = (0.60)(5.68/\sqrt{t})(293)(60t)$$

$$R = (59912.6)\sqrt{t}$$

Find infiltration $\rightarrow I = \bar{A}pt$

$$\bar{A} = \text{contour area @ } 1/2 \text{ depth of pond (ft}^2\text{)} = \frac{105,826}{78,590}$$

$p =$ Infiltration rate (1 ft/hr)

$t =$ time (min)

$$I = \left(\frac{105,826}{78,590}\right) (1 \text{ ft/hr}) (t) \left(\frac{1}{60}\right)$$

$$I = 1309.83t \quad 1763.77 (t)$$



2 of 8

JOB NO: _____
 JOB NAME: _____
 DATE: _____
 PREPARED BY: _____
 SHEET NO. _____ OF _____

Find Pond Storage PS → PS = R - I

$$PS = (59912.6 \sqrt{t}) - (1763.77(t) - 1309.83t) =$$

$$\text{solve for } t: t = \frac{1153.86}{2092.21} \text{ min}$$

$$PS = 59912.6 (33.97) - 1763.77 (1153.86) - 1309.83 (2092.21) = 87.37 \text{ ft}^3$$

~~Infiltration exceeds runoff rate~~

3 of 8

DESIGN OF STORM WATER DRAINAGE FACILITIES IN MARINA, CALIFORNIA

HYDRAULIC DESIGN FACTORS:

A. The 10-YR design storm shall be a rainfall expressed by the following formula:

$$i = \frac{5.68}{\sqrt{t}}$$

Where i = intensity of rainfall in inches per hour
t = Duration of storm in minutes

B. Runoff Coefficients (for estimation purposes only):

<u>Residential</u>	<u>K</u>
Single Family Areas	0.30 - 0.60
Multi-Family/Apt. Areas	0.50 - 0.80
<u>Industrial</u>	
Light	0.50 - 0.80
Heavy	0.60 - 0.90
Parks	0.10 - 0.25
Playgrounds	0.20 - 0.35
Streets	0.70 - 0.95
Roofs	0.75 - 0.95
Landscaped areas	0.05 - 0.10
Undeveloped areas	0.05 - 0.30

NOTES:

- The area to be used in runoff calculations shall include the proposed development and all developed and undeveloped areas draining into the proposed development.
 - Runoff coefficients shall be calculated based on actual pervious and impervious areas.
- C. Infiltration rate for percolation pond is 12 inches per hour.

4 of 8

SAMPLE CALCULATIONGIVEN:

POND STORAGE CAPACITY CALCULATED AS FOLLOWS:

DEPTH (FT.)	CONTOUR AREA (SQ. FT.)	CONTOUR AVG. AREA (SQ. FT.)	STORAGE VOLUME (CUBIC FT.)
7 FT.	4,810		
		FREEBOARD	
6 FT.	4,010		
		3,645	12,755
5 FT.	3,280		
		2,850	9,110
4 FT.	2,620		
		2,325	6,260
3 FT.	2,030		
		1,770	3,935
2 FT.	1,510		
		1,285	2,165
1 FT.	1,060		
		880	880
0 FT.	700		

WATERSHED AREA:A₁ = Single Family Residential, 5.8 acres; K₁ = 0.35A₂ = Undeveloped Area, 4.0 acres; K₂ = 0.05DETERMINE:

PERCENT OF TOTAL POND STORAGE NEEDED.

SOLUTION:

POND STORAGE = RUNOFF - INFILTRATION

5 of 8

3

FIND RUNOFF:

$$R = K i A t \quad R = \frac{ft^3}{Sec} \times 60 \frac{Sec}{Min} \times min = ft^3$$

K = Runoff Coefficient

A = Area in Acres

t = Time in minutes

i = inches per hour

$$R = K_1 i A_1 60 t + K_2 i A_2 60 t$$

$$R = 0.35(5.68 t^{1/2}) 5.8 (60) t = 0.05 (5.68 t^{1/2}) 4.0(60) t$$

$$R = 759.98 t^{1/2}$$

FIND INFILTRATION:

$$I = \bar{A} p t \quad \bar{A} = \text{Contour Area at } \frac{1}{2} \text{ depth}$$

$$p = \text{Infiltration Rate}$$

$$I = 2030 ft^2 \times 1 \frac{ft}{hr} \times t \text{ min} \times 1 \frac{hr}{60} \text{ min}$$

$$I = 33.83 t$$

POND STORAGE:

$$PS = R - I$$

$$PS = 759.98 t^{1/2} - 33.83 t$$

$$\text{Max. PS} = \frac{dPS}{dt} = \frac{759.98}{2} t^{-1/2} - 33.83 = 0$$

$$t = \left[\frac{759.98}{2(33.83)} \right]^2$$

$$t = (11.23)^2 = 126.11 \text{ min.}$$

$$\text{Max. PS} = 759.98 (11.23) - 33.83 (126.11)$$

$$\text{Max. PS} = 4,268 \text{ ft}^3$$

$$4,268 \text{ ft}^3 = 33.5\% \text{ of Total Pond Storage}$$

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4

STANDARDS

OPEN PONDS:

- Pond shall be excavated below natural ground with no levees.
- Excavation slopes shall be 3:1 or flatter. If retaining walls are proposed, the design shall be approved by the City Engineer.
- Ponds maintained by the City shall be enclosed with a 6 foot high chain link fence. The fence shall be located in conformance with subdivision setback lines.
- A six foot wide access path shall be provided around the pond perimeter within the fenced area.
- A 16 foot wide access gate and paved driveway shall be provided.
- An equipment access ramp 8 feet wide and not steeper than 5:1 shall be provided for access to bottom of pond.
- Pond design shall incorporate erosion control measures.

7 of 8

STORM WATER DRAINAGE POND DESIGN IN MARINA, CALIFORNIACITY OF MARINA STANDARDS

1. Pond shall be excavated below natural ground with no levees.
2. Excavation slopes to be 3:1. If retaining walls are constructed, the design shall be approved by the City Engineer.
3. Entire area shall be enclosed with a 6 foot high chain link fence conforming to City of Marina Standard Design. The fence shall be located in conformance with subdivision setback lines and shall provide a six foot wide access path around the pond perimeter. A 16 ft. wide access gate shall be provided. Cut slopes shall be sprigged with ice plant; sprigs shall be 10" long planted on 6" centers in both directions.
4. Hydraulic design factors shall be as follows:
 - (a) The design storm shall be a rainfall expressed by the following formula:

$$i = \frac{5.68}{\sqrt{t}}$$

Where i = Intensity of rainfall in inches per hour
 t = Duration of storm in minutes
 - (b) Runoff factors are: (for rough calculation only) || Runoff coef:

1. Residential areas R-1	35% -60%	1. Roof & paved areas	90%
2. Undeveloped areas	5% -20%	2. Landscaped areas	10%
3. Apartment or Condominium	60-85%		
 - (c) Infiltration rate for percolation pond is 12" per hour.
5. The area to be used in runoff calculations shall include the proposed subdivision and all developed and undeveloped areas draining into the proposed subdivision.
6. Public service district to take over maintenance of ponds.
7. For drainage trenches, infiltration area is calculated the same way as for open pond. Allowable void ratio is ^{25%} and wrap around filter fabric is required. One-foot freeboard is also required and designer should provide grease trap in the catch-basin. Drainage rock shall conform to Class 3 permeable material of the City of Marina Standards. Construction of drainage trenches require inspection by Public Works staff.

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PERCOLATION POND CAPABILITY

POND STORAGE CAPACITY

<u>DEPTH</u>	<u>CONTOUR AREA</u>	<u>CONTOUR AVERAGE</u>	<u>STORAGE VOLUME</u>
7 ft.	4,810 ft. ²	Free Board	12,755 ft. ³
6	4,010	3,645	9,110
5	3,280	2,850	6,260
4	2,620	2,325	3,935
3	2,030	1,770	2,165
2	1,510	1,285	880
1	1,060	880	
0	700		

WATERSHED AREA

Developed Area A₁ = 5.8 acres

Coef. of runoff: K₁ = 35%

Undeveloped Area A₂ = 4.0 acres

K₂ = 5%

RAINFALL INTENSITY

$$i = 5.68 \times \frac{1}{t^{1/2}} \text{ inches/hr.} \quad t = \text{time in minutes}$$

$$R_{uncorr} = kiat = \% \left(\frac{\text{cfs}}{\text{inches/hr.} \times \text{acres}} \right) \text{ min.} \times 60 \text{ sec./min.} = \text{ft.}^3$$

$$R = 0.35 (5.68 t^{-1/2}) 5.8 (60) t + 0.05 (5.68 t^{-1/2}) 4.0 (60) t = 759.98 t^{1/2}$$

Infiltration = \bar{A} pt \bar{A} = infiltration area at 1/2 depth = 2030

P = rate of infiltration = 1 ft./hr.

$$I = 2030 \times \frac{1 \text{ ft/hr}}{60 \text{ min/hr}} \times t = 33.83t$$

$$\text{Pond Storage} = R - I = 759.98 t^{1/2} - 33.83 t$$

$$PS \text{ max.} = \frac{dPS}{dt} = \frac{759.98 t^{-1/2}}{2} - 33.83 = 0$$

$$t = \left[\frac{759.98}{2 \times 33.83} \right]^2 = (11.23)^2 = 126.11 \text{ min.}$$

$$PS \text{ max.} = 759.98 (11.23) - 33.83 (126.11) = 4,268 \text{ ft.}^3$$

% of total pond storage 33.5%

APPENDIX G

Noise Assessment

***MARINA STATION SPECIFIC PLAN
ENVIRONMENTAL NOISE ASSESSMENT
MARINA, CALIFORNIA***

February 9, 2007



Prepared for:

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Introduction

The Marina Station Specific Plan project proposes a mixed-use development consisting of approximately 1,400 residential units, approximately 142,000 square feet of commercial space, and approximately 830,000 square feet of business park/industrial space in Marina, California. This report evaluates the potential significance of noise impacts that could result from the Project, including the noise and land use compatibility of proposed uses, as well as, the potential for temporary or permanent noise level increases at nearby sensitive receptors. The Setting Section of this report presents the fundamentals of environmental noise, describes regulatory criteria that would be applicable in the project's assessment, and summarizes the results of a noise monitoring survey made in and around the project site. The Impacts and Mitigation Measures Section describes the significance criteria used to evaluate project impacts, provides a discussion of each project impact, and presents measures designed to provide a compatible project in relation to surrounding noise sources and land uses.

Fundamentals of Environmental Noise

Noise is defined as unwanted sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB) with 0 dB corresponding roughly to the threshold of hearing. Decibels and other technical terms are defined in Table 1.

Most of the sounds that we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound in accordance with a weighting that reflects the facts that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency mid-range. This is called "A" weighting, and the decibel level so measured is called the A-weighted sound level (dBA). In practice, the level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. Typical A-weighted levels measured in the environment and in industry are shown in Table 2 for different types of noise.

Although the A-weighted noise level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources, which create a relatively steady background noise in which no particular source is identifiable. To describe the time-varying character of environmental noise, the statistical noise descriptors, L_{01} , L_{10} , L_{50} , and L_{90} , are commonly used. They are the A-weighted noise levels equaled or exceeded during 1%, 10%, 50%, and 90% of a stated time period. A single number descriptor called the L_{eq} is also widely used. The L_{eq} is the average A-weighted noise level during a stated period of time.

In determining the daily level of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. Most people sleep at night and are very sensitive to noise intrusion. To account for human sensitivity to nighttime noise levels, a descriptor, L_{dn} (day/night average sound level), was developed. The L_{dn} (or DNL) divides the 24-hour day into the daytime of 7:00 AM to 10:00 PM and the nighttime of 10:00 PM to 7:00 AM. The nighttime noise level is weighted 10 dB higher than the daytime noise level.

Table 1 - Definitions of Acoustical Terms Used in this Report

Term	Definitions
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, Leq	The average A-weighted noise level during the measurement period. The hourly Leq used for this report is denoted as dBA $L_{eq[h]}$.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 pm to 10:00 pm and after addition of 10 decibels to sound levels in the night between 10:00 pm and 7:00 am.
Day/Night Noise Level, Ldn or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
Ln Values $L_{01}, L_{10}, L_{50}, L_{90}$	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Table 2 - Typical Noise Levels in the Environment

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
Jet fly-over at 300 meters	120 dBA	Rock concert
Pile driver at 20 meters	110 dBA	
Large truck pass by at 15 meters	100 dBA	Night club with live music
Gas lawn mower at 30 meters	90 dBA	
Commercial/Urban area daytime	80 dBA	Noisy restaurant
Suburban expressway at 90 meters	70 dBA	Garbage disposal at 1 meter
Suburban daytime	60 dBA	Vacuum cleaner at 3 meters
Urban area nighttime	50 dBA	Normal speech at 1 meter
Suburban nighttime	40 dBA	Active office environment
Quiet rural areas	30 dBA	Quiet office environment
Wilderness area	20 dBA	Library
Most quiet remote areas	10 dBA	Quiet bedroom at night
Threshold of human hearing	0 dBA	Threshold of human hearing

Regulatory Background

The State of California and the City of Marina have regulations, plans and policies designed to limit noise exposure at existing and proposed noise sensitive land uses. These plans and policies are established in the following documents: (1) the State CEQA Guidelines, Appendix G, (2) the California Building Code, (3) the City of Marina Community Design and Development Element of the General Plan, and (4) the City of Marina Municipal Code.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires an evaluation of the significance of potential project noise impacts. Potential noise effects from a project are considered significant if any of the following occur:

- a) exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- b) exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;
- c) a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- d) a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- e) for a project located within an airport land use plan or where such a plan has not been adopted within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels;
- f) for a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

California Building Code

New multi-family housing in the State of California is subject to the environmental noise limits set forth in Appendix Chapter 1208A.8.2 of the California Building Code. The noise limit is a maximum interior noise level of 45 dBA L_{dn} . Where exterior noise levels exceed 60 dBA L_{dn} , a report must be submitted with the building plans describing the noise control measures that have been incorporated into the design of the project to meet the interior noise limit.

City of Marina Community Design and Development Element

The City of Marina has established policies in the Community Design and Development Element of the General Plan to guide the development of new land uses. The following policies are applicable in the assessment of impacts resulting from the proposed development:

Noise Protection

4.109 The land use policies contained in the Community Land Use Element are designed to avoid conflicts between noise-sensitive uses (in particular, residences and schools) and major noise sources. Accordingly, land designated for such noise-sensitive purposes has been limited to locations which are unlikely to be exposed to excessive noise. At such time that future development of residences, schools and parks is proposed, more site-specific noise analysis shall be conducted for parcels that are in close proximity to major roadways or that lie in areas affected by aircraft-generated noise. If specific uses are found to be affected by noise levels greater than the standards set forth in Table 4.1 (Table 3) of this plan or, within the Airport Planning Area, Table 4.1 (see Appendix C) of the Airport Comprehensive Land Use Plan (CLUP), the mitigation measures identified in the following sections shall be required.

Table 3 - Allowable Noise Standards Measured in L_{dn} (dBA)

Land Use Category	Maximum Exterior		Maximum Interior*
	Acceptable	Conditionally Acceptable	
Residential	60	70	45
Live/Work	65	75	50
Hotel/Motel	65	75	50
Office	67	77	55
Other Commercial	70	80	60
Industrial/Agriculture	70	80	60
Schools, Libraries, Theaters, Churches, Nursing Homes	60	70	45
Parks and Playfields	65	70	NA
Golf Courses, Riding Stables, Cemeteries	70	75	NA

*It is preferred that the interior noise standards be attained with open windows. However, where the interior noise standard is attainable only with closed windows and doors, mechanical ventilation shall be required.

4.110 The maximum allowable exterior noise exposure, as measured in L_{dn} (dBA) or CNEL for the Airport CLUP noise standards shall not exceed the “acceptable use” standards shown in Table 4.1 of this plan, or, where applicable, the “permitted use” standards of Table 4.1 of the Airport CLUP. In the Airport Planning Area, the noise standards of Table 4.1 of the Airport CLUP shall apply where such standards are more stringent than those of this

plan. Where existing or projected exterior noise levels exceed the acceptable limit, construction shall be conditionally permitted only when appropriate mitigation measures are employed, including measures to attenuate exterior noise levels where development of schools, parks and playgrounds is proposed, and, within the Airport Planning Area, as conditionally allowed by Table 4.1 of the Airport CLUP.

- 4.110.3** These measures must reduce interior noise to the maximum allowable limits shown in Table 4.1 and, within the Airport Planning Area, to CNEL 45 dB for all uses which are conditionally permitted as indicated by Table 4.1 of the Airport CLUP. In such instances, the developer of a new building shall provide the City with proof from a professional acoustical consultant that exterior noise levels have been mitigated such that building occupants will not be subject to interior noise levels greater than those in Table 4.1, and, within the Airport Planning Area, in Table 4.1 of the CLUP. Except in the Airport Planning Area, if the City finds the project to be in the public interest, the City may approve a project where the exterior noise level exceeds the conditionally acceptable level. Such approval shall be contingent upon a detailed analysis by a qualified acoustical engineer showing that specific measures included in the project will reduce interior noise to the maximum interior levels shown in Table 4.1.
- 4.111** The construction of new or the improvement of existing arterials and collectors as identified in this plan shall require discretionary approval. A cumulative noise impact analysis shall be undertaken prior to approval of all new major new roads or improvements of existing arterials and collectors which would result in significant increases in traffic volumes. If projected cumulative traffic increases in traffic volumes would result in a substantial increase in ambient noise levels which would adversely affect existing noise-sensitive uses or subject future receptors to exterior noise levels in excess of the "acceptable" exterior noise standards of Table 4.1, appropriate noise abatement measures shall be identified and implemented, including increased setbacks for any new sensitive receptors, appropriate architectural design and construction techniques and the use of landscaped earth berms.
- 4.112** Site-planning measures such as sound walls along roadways shall be the mitigation measure of last resort so as to avoid the adverse visual impacts of such structures. Where they are necessary, sound walls shall include landscaped earth berms at their bases to minimize visible wall height. Sound wall designs shall also incorporate provisions for screening landscaping and for coverage of walls by plant materials. Sound walls shall be built of attractive, durable materials.
- 4.113** New and modified stationary noise sources adjoining or in close proximity to residential and other noise-sensitive uses shall adhere to the standards in Table 4.2 (Table 4) of this plan.

Table 4 - Noise Standards for Stationary Noise Sources

Duration	Maximum Allowable Noise	
	Day (7:00 AM to 10:00 PM)	Night (10:00 PM to 7:00 AM)
Hourly L_{eq} in dB ^{1,2}	50	45
Maximum Level in dB ^{1,2}	70	65
Maximum Impulsive Noise in dB ^{1,3}	65	60

¹ As determined at the property line of the receiver. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures.
² Sound level measurement shall be made with slow meter response.
³ Sound level measurements shall be made with fast meter response.

City of Marina Municipal Code

The City of Marina has also established noise regulations in Chapters 9.24, 15.04, and 17.30 of the Municipal Code. Chapter 9.24 addresses general noise regulations and prohibits excessive or loud noises that result in a public nuisance. Chapter 15.04 regulates construction hours to the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday, and 10:00 a.m. to 7:00 p.m. on Sundays or holidays including New Year’s Day, July 4th, Thanksgiving, and Christmas (standard time). During daylight savings time, the hours of construction may be extended one hour to 8:00 p.m. During the hours of construction, no construction, tools or equipment shall produce a decibel level of more than 60 decibels for twenty-five percent (15 minutes) of an hour at any receiving property line. Chapter 17.30 establishes the following specific noise performance standards that apply to industrial uses:

H. Noise.

1. *At the lot or property line, the noise generated by any use or operation (other than transportation facilities or temporary construction work) shall not exceed:*
 - a. *The noise standard for that land use as specified in Table 17.30.040 for a cumulative period of more than thirty minutes in any hour;*
 - b. *The noise standard plus five decibels for a cumulative period of more than five minutes in any hour;*
 - c. *The noise standard plus ten decibels for a cumulative period of more than five minutes in any hour;*
 - d. *The noise standard plus fifteen decibels for a cumulative period of more than one minute in any hour;*
 - e. *The noise standard plus twenty decibels or the maximum measured ambient level, for any period of time.*

- 2. The noise measurements shall be performed using a sound level meter which meets or exceeds the requirements for type S2A meters in American National Standards Institute specifications for sound level meters, S1.4-1971, or the most recent revision thereof.*
- 3. If the measured ambient level differs from that permissible within any of the first four noise limit categories above, the allowable noise exposure standard shall be adjusted in five-decibel increments in each category as appropriate to encompass or reflect said ambient noise level.*
- 4. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.*
- 5. If possible, the ambient noise level shall be measured at the same location along the property line with the alleged offending noise source inoperative. If for any reason the alleged offending noise source cannot be shut down, the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance such that the noise from the source is at least ten decibels below the ambient in order that only the ambient level be measured.*
- 6. In the event the alleged offensive noise contains a steady, audible tone such as whine, screech or hum, or is a repetitive noise such as hammering or riveting, or contains music or speech conveying information content, the standard limits set forth in Table 17.30.040 shall be reduced by five decibels.*

Table 17.30.040
 EXTERIOR NOISE LIMITS

Levels Not to Be Exceeded More Than
 Thirty Minutes in Any Hour

Receiving Land Use Category	Time Period	Noise Level (dB)
One- and two-family residential	10 p.m. -- 7 a.m.	45
	7 a.m. -- 10 p.m.	55
Multiple-dwelling residential	10 p.m. -- 7 a.m.	50
	7 a.m. -- 10 p.m.	55
Limited commercial, some multiple dwellings	10 p.m. -- 7 a.m.	55
	7 a.m. -- 10 p.m.	60
Commercial	10 p.m. -- 7 a.m.	60
	7 a.m. -- 10 p.m.	65
Light industrial	Anytime	70
Heavy industrial	Anytime	75

(Zoning ordinance dated 7/94 (part), 1994)

Existing Noise Environment

A noise monitoring survey was made at the site and in surrounding areas between November 13, 2005 and November 15, 2005. The focus of this survey was to document the existing noise environment in the project vicinity. The primary noise sources affecting the project site and vicinity include local and distant vehicular traffic, intermittent operations associated with Marina Municipal Airport, existing commercial land uses and educational facilities, and existing neighborhood parks. Three long-term noise measurements and nine short-term noise measurements were made at representative locations of existing and proposed receivers. Noise measurement locations are shown on Figure 1.

Noise measurements were made using Larson-Davis Model 700 and 820 integrating sound level meters fitted with precision microphones and windscreens. The sound level measuring assemblies were calibrated before and after the noise monitoring survey, and the response of the systems were always found to be within 0.2 dB of the calibrated level. No calibration adjustments were made to the measured noise levels.

Long-term noise measurement LT-1 was located at the north end of Drew Court near existing single-family residential uses. The purpose of this measurement was to quantify ambient noise

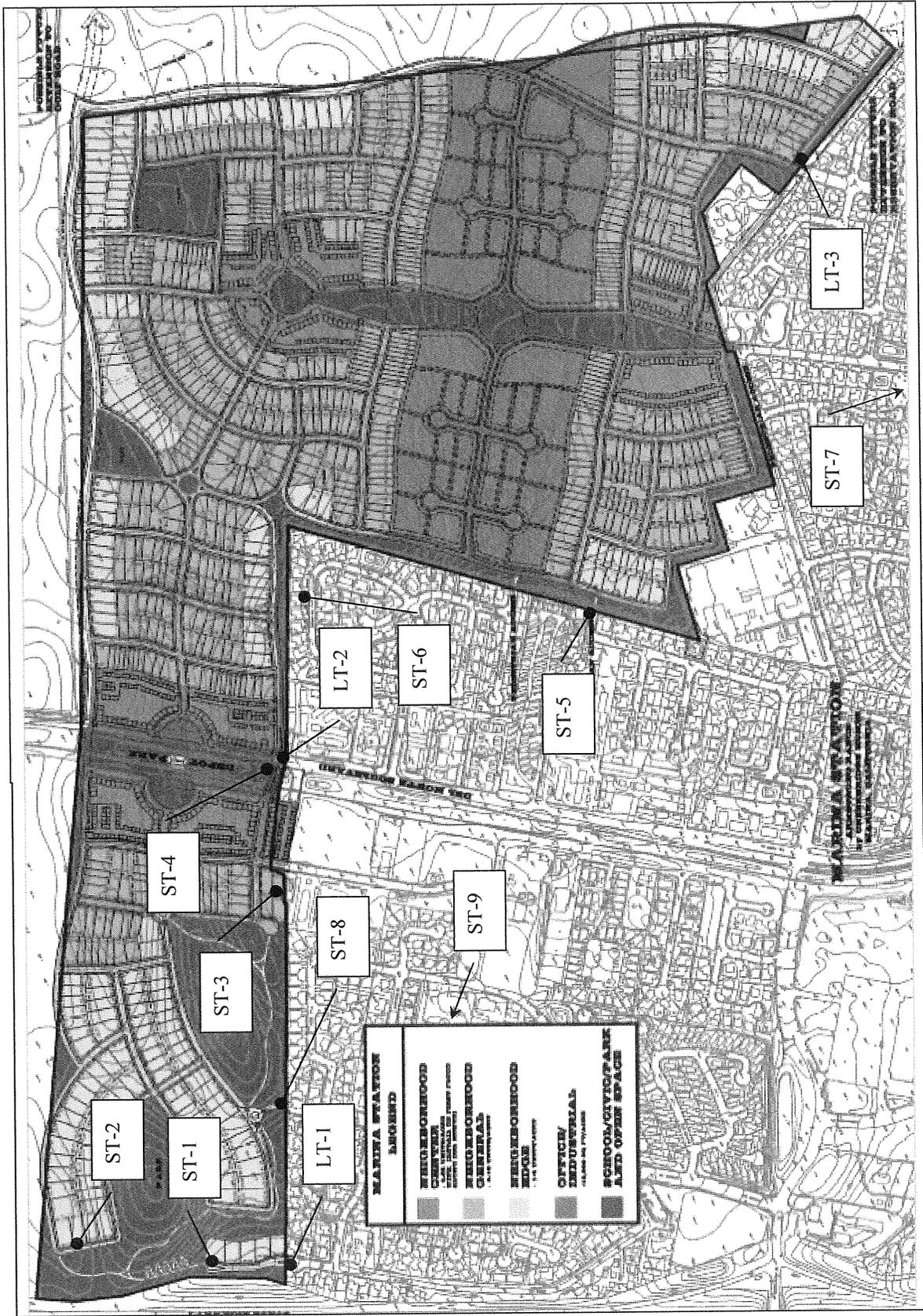
levels at existing residential receivers that could potentially be affected by increased vehicular traffic resulting from the project, as well as, to provide the hourly distribution in noise levels resulting from Highway 1. The noise environment at this location was primarily the result of vehicular traffic along Highway 1 and the daily distribution of noise levels at Site LT-1 is summarized in Figure 2. Hourly-equivalent daytime noise levels ranged from 58 dBA to 64 dBA L_{eq} and dropped to a low of 54 dBA L_{eq} at night. The calculated L_{dn} noise level (day-night average) at LT-1 ranged from 65 to 67 dBA.

A second long-term measurement, LT-2, was made 50 feet from the center of Del Monte Boulevard at the Marina city limit. This measurement position was selected to quantify ambient noise levels generated by traffic along Del Monte Boulevard at a location representative of existing and proposed residential land uses. Hourly average noise levels at Site LT-2 ranged from 59 dBA to 69 dBA L_{eq} during the day and from 54 dBA to 68 dBA L_{eq} at night. The L_{dn} noise level was 69 dBA. The data collected at Site LT-2 are summarized in Figure 3.

Long-term measurement LT-3 was made near the end of Crescent Avenue at the southernmost portion of the project site. Noise measurement site LT-3 was selected to quantify noise levels generated by distant traffic and operations associated with Marina Municipal Airport. Hourly average noise levels at Site LT-3 were lower as this area is not exposed to through traffic. The L_{dn} noise level was approximately 55 dBA. The data collected at Site LT-3 are summarized in Figure 4.

Short-term noise measurements were made at nine additional locations throughout the project area (ST-1 to ST-9). Noise measurement locations were selected to quantify ambient noise levels at locations representative of existing and proposed noise sensitive receptors. Table 5 summarizes the results of the short-term noise measurements. The L_{dn} is estimated by correlating the short-term measurement to a corresponding time period at the nearby the long-term, reference, site.

Figure 1 – Noise Measurement Locations



**Noise Levels at Measurement Location LT-1
End of Drew Court
November 13 - 15, 2005**

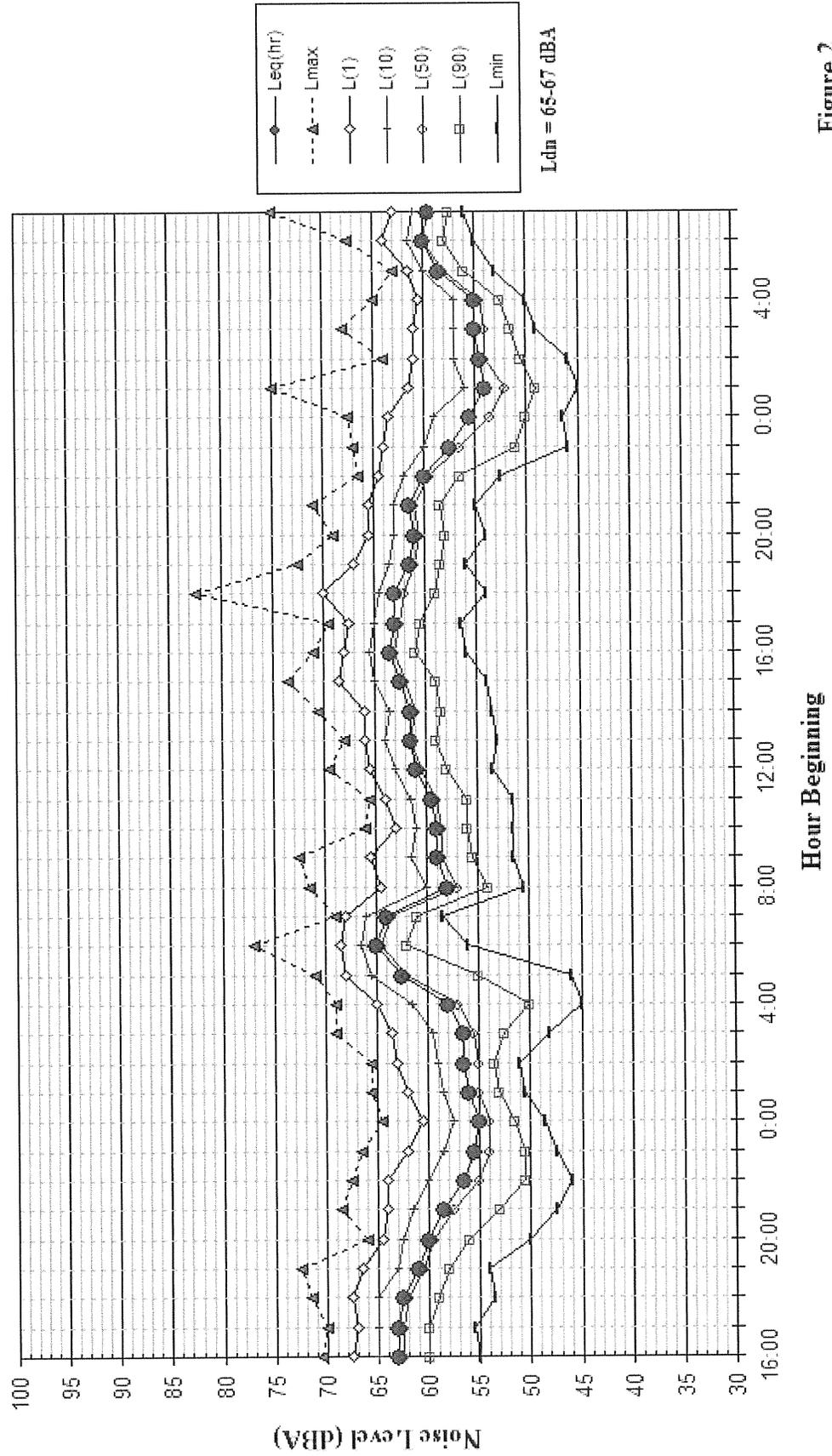


Figure 2

**Noise Levels at Measurement Location LT-2
 ~ 50 feet from the Center of Del Monte Boulevard
 November 14, 2005**

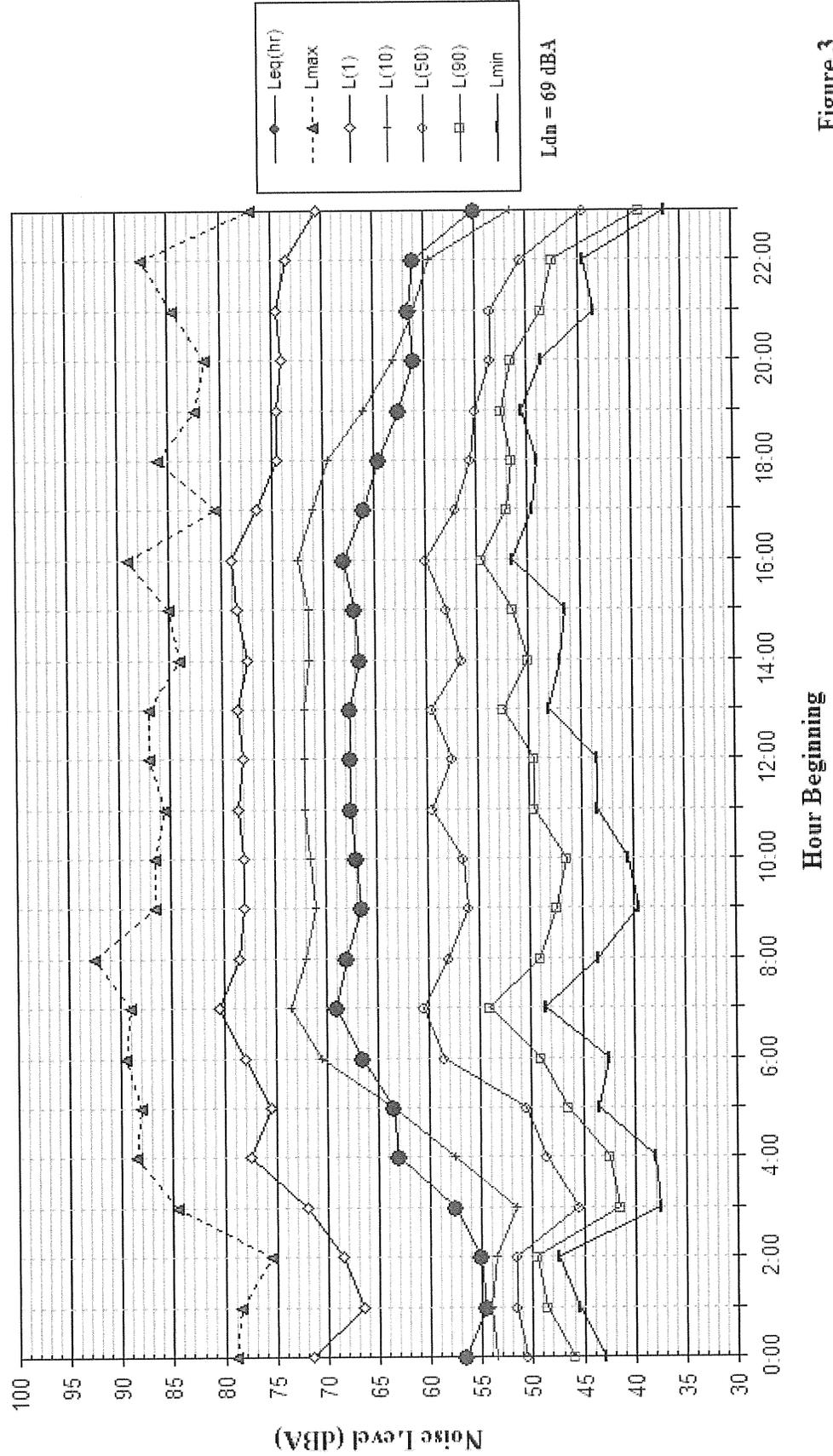


Figure 3

**Noise Levels at Measurement Location LT-3
End of Crescent Avenue
November 14, 2005**

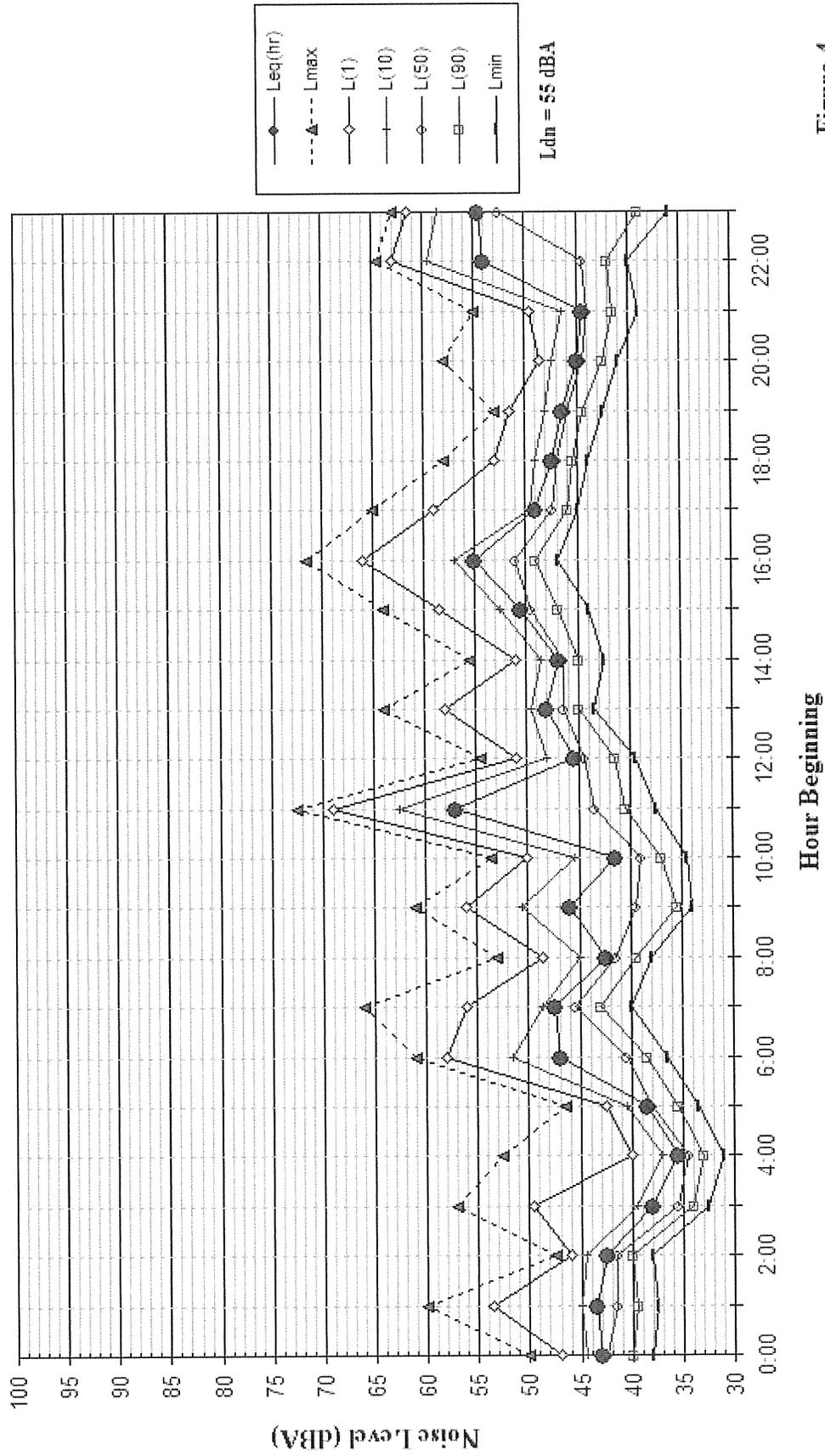


Figure 4

Table 5 – Summary of Short-Term Noise Measurement Data on November 14, 2005

Noise Measurement Location	Time	L _{max}	L ₍₁₎	L ₍₁₀₎	L ₍₅₀₎	L ₍₉₀₎	L _{eq}	L _{dn}
ST-1: ~ 100 ft. east of the Highway 1 right-of-way line at setback of proposed residential receivers.	12:40	60	58	56	54	52	54	61
	12:50	61	58	57	55	53	55	
	13:00	60	58	56	54	53	55	
ST-2: ~ 140 ft. east of the Highway 1 right-of-way line at setback of proposed residential receivers.	12:40	67	67	63	59	55	60	67
	12:50	68	67	64	59	55	60	
ST-3: ~ 90 ft. north of commercial uses along Paul Davis Drive.	13:30	62	61	55	50	49	52	54-57
	13:40	54	53	50	49	48	49	
	13:50	56	53	50	48	47	49	
ST-4: ~ 50 ft. west of centerline of Del Monte Road.	13:50	75	72	66	55	50	62	61
ST-5: ~ End of Sellis Court adjacent to project site.	14:30	59	52	50	48	46	48	<55
ST-6: ~ Front of 252 Cosky Drive.	14:50	60	56	47	43	41	46	<55
ST-7: ~ Northeast corner of De Forest Road and Oak Circle ~ 50 ft. from the center of De Forest Road.	15:20	80	70	63	52	48	60	58-60
ST-8: End of Cardoza Avenue adjacent to project site.	15:40	63	59	55	53	52	54	58
ST-9: ~ Northwest corner of Cardoza Avenue and Brookside Place ~ 50 ft. from the center of Cardoza Avenue.	15:40	79	70	60	53	50	59	58-60
Note: L _{dn} approximated by correlating to corresponding period at long-term site.								

NOISE IMPACTS AND MITIGATION MEASURES

Significance Criteria

Appendix G of the CEQA Guidelines states that a project would normally be considered to have a significant impact on the environment if noise levels conflict with adopted environmental standards or plans, if persons are exposed to excessive groundborne vibration, or if noise levels generated by the project would substantially increase existing noise levels on a permanent or temporary basis. The following criteria were used to evaluate the significance of impacts:

Noise and Land Use Compatibility. A noise impact would be identified where noise-sensitive land uses are proposed in exterior noise environments exceeding 60 dBA L_{dn} . A noise impact would also be identified if the Project generated noise levels in excess of the General Plan noise standards or the noise level limits established in the City's Municipal Code

Vibration Compatibility. An impact would be identified where noise-sensitive land uses are exposed to excessive vibration levels. Although there are no local standards that control the allowable vibration in a new residential development, the U.S. Department of Transportation has developed vibration impact assessment criteria for evaluating vibration impacts associated with transit projects. The Federal Transit Administration (FTA) has proposed vibration impact criteria, based on maximum overall levels for a single event. The criterion for "infrequent" vibration events is 80 VdB.

Substantial Increase to Noise Levels. A noise impact would be identified where the project results in a noise level increase of 3 dBA L_{dn} or more in noise environments of 60 dBA L_{dn} or greater or 5 dBA L_{dn} in noise environments where noise levels would remain below 60 dBA L_{dn} .

Construction Noise. Construction activities generate temporary noise level increases in the vicinity of project sites. Since noise generated by construction would be short-term and vary considerably day-to-day, construction noise is evaluated somewhat differently than operational noise. When construction activities are predicted to cause prolonged interference with normal activities at noise-sensitive receiver locations, generate noise levels in excess of 60 dBA L_{eq} , and exceed ambient noise levels by 5 dBA or more, the impact would be considered significant. Prolonged interference is defined as a substantial noise level increase that occurs for one year or more.

Impact 1: **Noise and Land Use Compatibility.** Residential uses developed at portions of the project site would be exposed to exterior noise levels greater than 60 dBA L_{dn} , which exceeds the "acceptable" noise and land use compatibility standards presented in the City of Marina's General Plan. **This is a potentially significant impact.**

The noise environment at portions of the Marina Station project site planned for residential development would exceed the City's noise level goal for exterior noise (60 dBA L_{dn}) as a result of the project's proximity to existing transportation noise sources in the site vicinity (e.g., Highway 1 and Del Monte Boulevard). Future roadways constructed with the project would also generate noise levels that would exceed 60 dBA L_{dn} . Active parks, commercial land uses, or industrial land uses facilitated by the project could also generate noise levels in excess of General Plan noise standards or the noise standards presented in the Municipal Code. Mitigation would be required to be included in the design of the project to provide an acceptable exterior noise environment for existing and proposed noise-sensitive uses.

Exterior Noise Levels – Vehicular Traffic

The project proposes residential land uses in close proximity to Highway 1. Lots 1-5 as designated on the proposed vesting tentative map are proposed north of Drew Court on a bluff that is somewhat shielded from Highway 1 traffic noise by terrain. Future noise levels at Lots 1-5 are calculated to be 62 dBA L_{dn} at the first floor and approximately 68 dBA L_{dn} at the second story. The rear yards of Lots 1-5 would be shielded from Highway 1 by the proposed units. Exterior noise levels are calculated to be less than 60 dBA L_{dn} at these rear yard areas assuming the shielding provided by the residential units. Residential units proposed on Lots 6-9 would be exposed to exterior noise levels of approximately 68 dBA L_{dn} at the westernmost façades of these buildings. Future noise levels are calculated to be less than 60 dBA L_{dn} in the rear yards of these units as a result of the attenuation provided by the housing row. Similarly shielded rear yards proposed farther from Highway 1 (Lots 10-144) would also be less than 60 dBA L_{dn} . Additional noise barriers would not be required to shield the rear yards of proposed single-family residential units between Highway 1 and Del Monte Boulevard.

Neighborhood centers that include multi-family residential uses are proposed west and east of Del Monte Boulevard. The residential common outdoor use areas for these multi-family uses would be located as approximately 100 feet east of the roadway center or 280 feet west of the roadway center. Del Monte Boulevard is anticipated to generate noise levels exceeding 60 dBA L_{dn} within approximately 160 feet of the roadway center. Any unshielded exterior use areas proposed within 160 feet of the roadway centerline could be subject to exterior noise levels greater than 60 dBA L_{dn} . The exterior use areas would, however, be largely shielded from Del Monte Boulevard by the mixed use structures intervening between that street and the exterior use areas. A significant impact could, however, occur at the residential common outdoor area east of Del Monte Boulevard. Appropriate noise barriers could mitigate this impact.

De Forest Road and Crescent Avenue would provide access to the project site from the south. Residential receivers proposed within 100 feet of the centerline of De Forest Road would be exposed to exterior noise levels of 60 dBA L_{dn} or more. Similarly, exterior noise levels within 80 feet of the centerline of Crescent Avenue would exceed 60 dBA L_{dn} . Where residential outdoor use areas are located adjacent to these roadways and not shielded by structures, additional noise

barriers would be required. Solid six-foot noise barriers would be required to shield private rear yard areas of Lots 556, 557, 638, and 639, which adjoin De Forest Road. Solid six-foot noise barriers would be required to shield the private rear yard areas of Lots 531, 663, 664, 771, 772, 777, and 794, which adjoin Crescent Avenue.

Marina Greens Drive and North-South Road, north of Marina Greens Drive, would generate exterior noise levels exceeding 60 dBA L_{dn} within 65 - 80 feet and 65 feet of the roadway center, respectively. Adjacent to Cosky Drive and Michael Drive, North-South Road would generate noise levels of about 59 dBA L_{dn} at a distance of 50 feet from the roadway center. The rear yard area of Lot 145 would adjoin Marina Greens Drive. A solid six-foot noise barrier would be required to shield this rear yard if the rear yard is not be shielded by the residential unit and garage. The remaining residential land uses along these roadways would have private outdoor use areas that are shielded from traffic noise by the residential units themselves or would be located at a sufficient distance from the roadway that exterior noise levels in private use areas would be 60 dBA L_{dn} or less.

Exterior Noise Levels –Industrial Uses

The Marina Station site plan shows office and industrial uses in the southeast portion of the project site. These land uses would be bordered by existing single-family uses to the west and proposed residential uses to the north and south. Allowable industrial uses are presented in Appendix B, and include some potentially noisy industrial uses such as manufacturing, contractor's yards, and truck terminals. Noise sources at industrial sites could include truck movement, loading docks, outdoor mechanical equipment, use of public address systems, and operations (depending on the user). Noise sources such as loading docks would be expected to generate noise levels of about 50 to 60 dBA L_{eq} at 150 feet depending on the number of trucks accessing the loading dock and frequency of other extraneous noise sources associated with receiving areas (e.g., forklifts, etc.).

The Marina Station Specific Plan indicates that an eight-foot noise barrier would be constructed around the perimeter of the industrial uses abutting all residential uses and noise levels will be required to comply with City standards. As described above, chapter 17.30 of the City's Zoning Code prescribes detailed standards and requirements for noise emanating from industrial land uses. Compliance with these requirements, and the General Plan's Stationary noise source standards, would avoid any significant noise impact from the industrial uses at the Marina Station project.

Exterior Noise Levels - Commercial Uses

Commercial uses are proposed within the three Neighborhood Center (NC) zones on the project site; the NC zones allow the development of commercial retail, residential, office, and entertainment uses in one location. Noise sources at these commercial uses could include loading

docks, outdoor mechanical equipment (e.g., heating and cooling equipment, etc.), and parking lots. Restaurants, bars, and other entertainment-oriented uses could also generate noise from music and patrons.

Noise associated with the use of parking lots would include vehicular circulation, loud engines, car alarms, squealing tires, door slams, and human voices. The maximum sound (L_{max}) of a passing car at 15 mph typically ranges from 43 dBA to 53 dBA at 150 feet. The noise generated during an engine start is similar. Door slams create lower noise levels. Hourly average noise level resulting from all of these noise-generating activities in a busy parking lot could range from 35 dBA to 45 dBA L_{eq} at a distance of 150 feet from the parking area.

Heating, ventilation, and cooling equipment could generate noise levels in the range of 50 dBA to 70 dBA L_{eq} at 150 feet depending on the number, type, and size of the proposed equipment. Trash compactors typically generate maximum noise levels of 40 to 50 dBA at 150 feet, depending on the power rating and enclosure characteristics.

Noise levels exceeding City standards for stationary noise sources could occur at the nearest receivers within and around the Neighborhood Center zones, depending on the ultimate commercial uses on the project site, if the noise generated by such uses are not regulated or adequately mitigated. This represents a potentially significant impact.

Exterior Noise Levels – Public Parks

Neighborhood parks are also sources of community noise. Parks proposed by the project could contain one or more of the following amenities that are often part of neighborhood parks: playfields, tot lot/playground, open turf area, picnic tables with barbeques, trails, etc. Noise generated by a particular park is a function of the amenities provided, groups which use the facilities, and the timing and duration of use. Active parks could be a potentially significant source of community noise. Maximum noise levels from such uses could exceed 50 dBA L_{eq} or 70 dBA L_{max} at residential land uses adjoining the park. For normal active park events such as soccer games, baseball games, dog parks, etc., average noise levels of about 55 to 60 dBA L_{eq} could be expected at a distance of 150 feet from the center of activities. Noise generated by such active parks could exceed City standards, thereby requiring further study. Noise from passive parks is not anticipated to cause any adverse noise impacts upon either existing or future noise sensitive receptors in the area.

Mitigation Measures:

The following mitigation measures shall be included in the project to reduce the impact to a less-than-significant level:

- Project level acoustical analyses shall be required where residential exterior use areas are located in noise environments exceeding 60 dBA L_{dn} , or where residential land uses interface active parks, commercial land uses, or industrial land uses proposed as part of the project. Exterior noise levels at residential land uses in the vicinity shall be maintained in accordance with the standards presented in the General Plan and Municipal Code.
- Solid six-foot noise barriers shall be constructed to interrupt the transmission path between the roadway and private outdoor use areas of lots adjoining De Forest Avenue, Crescent Avenue, and Marina Greens Drive. The noise barriers shall generally be located between the residential unit and detached garage. Solid six-foot noise barriers would be required to shield private rear yard areas of Lots 556, 557, 638, and 639, which adjoin De Forest Road. Solid six-foot noise barriers would be required to shield the private rear yard areas of Lots 531, 663, 664, 771, 772, 777, and 794, which adjoin Crescent Avenue. A solid six-foot barrier would also be required at Lot 145, adjacent to Marina Greens Drive.
- Noise barriers shall be airtight over the surface and at the base. The minimum surface weight of the proposed noise barrier materials shall be 3 lbs./ft.². Suitable construction materials include masonry block, concrete, and minimum one-inch thick wood boards.
- Prior to issuance of building permits for the Neighborhood Center structures east of Del Monte Boulevard, prepare an acoustical analysis to determine whether the eastern residential outdoor common area would experience average noise levels exceeding 60 dBA L_{dn} . If the analysis shows that the 60 dBA L_{dn} level would be exceeded, implement sound barriers if the City deems such barriers appropriate, in accordance with the City's General Plan.
- Parking lot cleaning activities in commercial and industrial areas shall be limited to daytime and evening hours (7 a.m. to 10 p.m.).
- Trash compactors in commercial and industrial areas shall be located away from adjacent residential receivers or shielded with noise barriers.
- Loading dock hours of operation shall be limited to daytime and evening hours (7 a.m. to 10 p.m.).

Significance After Mitigation:

With the implementation of the above measures, the impact would be less-than-significant.

Impact 2: Noise and Land Use Compatibility. Interior noise levels would be expected to exceed 45 dBA L_{dn} at portions of the project site exposed to exterior noise levels greater than 60 dBA L_{dn} without the incorporation of noise insulation features into the project's design. **This is a potentially significant impact.**

Interior noise levels within proposed residential units are required to be maintained at or below 45 dBA L_{dn} . In residential units of standard construction, interior noise levels are approximately 15 decibels lower than exterior noise levels with the windows partially open. Where exterior noise levels exceed 60 dBA L_{dn} , a report must be submitted with the building plans identifying the noise attenuation features included in the project's design to maintain interior noise levels at or below 45 dBA L_{dn} .

Typically, standard construction with forced air ventilation (allowing the occupant to control noise by maintaining the windows shut) provides approximately 20 to 25 dBA of noise reduction in interior spaces. This method of reducing interior noise levels is normally used in noise environments ranging from 60 to 65 dBA L_{dn} . Where noise levels exceed 65 dBA L_{dn} , forced-air mechanical ventilation systems and sound-rated construction methods are normally required. The exact specifications of window and wall systems cannot be accurately predicted at this time, but once building elevations and floor plans are developed during project design, the specifications can be made. Such methods or materials may include a combination of smaller window and door sizes as a percentage of the total building façade facing the noise source, sound-rated windows and doors, sound rated exterior wall assemblies, and mechanical ventilation so windows may be kept closed at the occupants discretion.

Mitigation Measures:

The following mitigation measures shall be included in the project to reduce the impact to a less-than-significant level:

- The California Building Code and the City of Marina require project-specific acoustical analyses to achieve interior noise levels of 45 dBA L_{dn} or lower in residential units exposed to exterior noise levels greater than 60 dBA L_{dn} . Building sound insulation requirements would need to include the provision of forced-air mechanical ventilation in noise environments exceeding 60 dBA L_{dn} , so that windows could be kept closed at the occupant's discretion to control noise. Special building construction techniques (e.g., sound-rated windows and building facade treatments) may be required where exterior noise levels exceed 65 dBA L_{dn} . These treatments include, but are not limited to sound rated windows and doors, sound rated exterior wall assemblies, acoustical caulking, etc. The specific determination of what treatments are necessary will be conducted on a unit-by-unit basis during project design. Results of the analysis, including the description of the necessary noise control treatments, will be submitted to the City along with the building plans and approved prior to issuance of a building permit. Feasible construction

techniques such as these would adequately reduce interior noise levels to 45 dBA L_{dn} or lower.

Significance After Mitigation:

With the implementation of the above measures, the impact would be less-than-significant.

Impact 3: Noise and Land Use Compatibility. Parks and playfields developed on the project site would be exposed to noise levels less than 65 dBA L_{dn} . **This is a less than significant impact.**

A series of neighborhood parks would be located throughout the Marina Station project site. The proposed locations of the active and passive parks would be in areas where the future noise environment would be less than 60 dBA L_{dn} . The park proposed nearest Highway 1 would be subject to the highest noise levels. This park would be located in a basin that is partially shielded by terrain and residential land uses. Exterior noise levels at this park are calculated to be less than 60 dBA L_{dn} . Noise levels at the remaining public parks proposed by the project would also be less than 60 dBA L_{dn} . The City of Marina considers parks and playfields compatible in noise environments of 65 dBA L_{dn} or less.

Mitigation Measures:

None.

Impact 4: Groundborne Vibration. There are currently no active sources of groundborne vibration or groundborne noise in the project vicinity. **This is not an impact.**

Abandoned railroad tracks that bisect the project site were observed just west of Del Monte Avenue. Signs clearly state that these railroad tracks are no longer in service. With the development of the project, vibration-sensitive residential structures would be constructed within approximately 150 to 200 feet from these tracks. If at some point in the future the railroad tracks became active again, the distance separating the proposed sensitive uses from the railroad would normally be sufficient to yield vibration levels that would be compatible with the proposed residential land uses.

Mitigation Measures:

None.

Impact 5: Project-Generated Traffic Noise. Traffic volume increases in the project vicinity will result with the development of the project area, and will generate an increase in traffic noise along the local roadway network. In some locations, there would be a

substantial permanent increase in environmental noise at noise sensitive receptors.
This is a potentially significant impact.

The project vicinity contains a variety of land uses with varying sensitivities to noise. Residential land uses would be most affected by traffic noise level increases. Office and commercial uses are not typically affected by traffic noise increases along the local roadway network. Industrial land uses would not generally be affected by an increase in traffic noise. A noise impact would be identified at noise-sensitive land uses where the project would result in a noise level increase of 3 dBA L_{dn} or more in noise environments of 60 dBA L_{dn} or greater; or, 5 dBA L_{dn} or more in noise environments where noise levels would remain below 60 dBA L_{dn} .

Traffic volume information¹ was reviewed at study area intersections in and around the Marina Station project site. Comparisons of “Existing”, “Existing Plus Project”, “Background”, and “Background Plus Project” traffic volumes were made at the 25 project study intersections, and the relative changes in traffic noise along identified roadway segments were calculated. Roadway segments experiencing a traffic noise level increase less than 3 dBA L_{dn} were excluded from further analysis, because the noise level increase would not be substantial. Table 7 shows the roadway links that are calculated to experience a substantial noise increase (3 dBA L_{dn} or more) as a result of the project. The noise level along these roadways would exceed 60 dBA L_{dn} so a 3 dBA L_{dn} increase is substantial. The development of the project would increase traffic noise levels substantially at noise-sensitive residential receivers along identified roadway segments of Beach Road, Crescent Avenue, De Forest Road, and Del Monte Boulevard. Substantial noise level increases along affected roadway segments would range from 3 dBA L_{dn} to 5 dBA L_{dn} . Table 8 presents noise contour information for area roadways experiencing a substantial noise level increase as a result of the project. Noise levels were calculated at a reference distance of 50 feet from the centerline of the roadway to represent the approximate setback of residential land uses affected by the project. The noise contours do not account for additional attenuation provided by existing noise barriers, structures, or topography. As shown in the table, the L_{dn} noise contours will shift farther into established neighborhoods as a result of project-generated traffic.

¹ Marina Station Traffic Impact Analysis, Higgins Associates, March 2006.

Table 7 - Traffic Noise Level Increases Above Existing Levels Resulting from Project

Roadway	Segment	Noise Level Increase (dBA, L _{dn})
Beach Road	Del Monte Blvd. to Michael Dr.	3
Beach Road	Michael Dr. to De Forest Rd.	4
Crescent Avenue	Reservation Rd. to Quebrada Del Mar Rd.	4
De Forest Road	Reservation Rd. to Beach Rd.	5
Del Monte Boulevard	Reservation Rd. to Beach Rd.	4
Del Monte Boulevard	Beach Rd. to Cosky Dr.	5
Del Monte Boulevard	Cosky Dr. to Project Entrance	5

Table 8 – Noise Contour Distances for Roadways Experiencing Substantial Project-Generated Noise Level Increases

Affected Roadway Segment	Traffic Scenario	Ldn, dBA at 50 feet	Noise Contour Distance (feet)		
			70 Ldn	65 Ldn	60 Ldn
Beach Road Del Monte Blvd. to Michael Dr.	Existing	59	--	--	40
	Project	62	--	30	80
Beach Road Michael Dr. to De Forest Rd.	Existing	58	--	--	30
	Project	62	--	30	80
Crescent Avenue Reservation Rd. to Quebrada Del Mar Rd.	Existing	58	--	--	30
	Project	62	--	30	80
De Forest Road Reservation Rd. to Beach Rd.	Existing	58	--	--	30
	Project	63	--	30	100
Del Monte Boulevard Reservation Rd. to Beach Rd.	Existing	66	--	60	130
	Project	70	50	110	230
Del Monte Boulevard Beach Rd. to Cosky Dr.	Existing	65	--	50	110
	Project	70	50	110	230
Del Monte Boulevard Cosky Dr. to Project Entrance	Existing	65	--	50	110
	Project	70	50	110	230

The project would also construct new roadways where roadways do not currently exist, introducing new noise sources to the noise environment. Marina Greens Drive, east of Del Monte Boulevard, would generate exterior noise levels exceeding 60 dBA L_{dn} within 65 feet of the roadway centerline. Exterior noise levels at adjacent residential receivers would be substantially increased over existing conditions and would exceed 60 dBA L_{dn} without mitigation. North-South Road, adjacent to Cosky Drive and Michael Drive, would generate exterior noise levels exceeding 60 dBA L_{dn} within 65 feet of the roadway center. Again, the noise environment at residential receivers to the west would exceed 60 dBA L_{dn} and be substantially increased over existing conditions without mitigation.

Where the project would connect to existing subdivisions (i.e., Drew Court, north end of Cardoza Avenue, and north end of Crescent Avenue), traffic from the project would pass existing residential uses where traffic did not pass before. The character of the noise environment at these residences would change. The change in noise levels would vary depending on the existing noise environment and the amount of traffic expected to access the project site via these points. For example, residential receivers along Crescent Avenue would be exposed to exterior noise levels approximately 4 decibels higher than existing conditions as a result of project traffic. In higher ambient noise environments such as Cardoza Avenue (58 dBA L_{dn}) and Drew Court (69 dBA L_{dn}), project traffic noise level increases would range from about 0 to 2 dBA L_{dn} . Calculations of peak-hour average noise levels resulting from the relatively low traffic volumes passing on these connections would be about 55 dBA L_{eq} along Cardoza Avenue (109 peak hour trips) and about 39 dBA L_{eq} along Drew Court (5 peak hour trips). During the majority of the day, however, average noise levels resulting from project-generated traffic through these connections would be less. Daily average noise levels would not substantially increase at residential land uses in the vicinity of Drew Court or Cardoza Avenue as a result of project-generated traffic, but substantial noise level increases would be expected at residential receivers along Crescent Avenue north of Quebrada Del Mar Road.

Mitigation Measures:

Noise reduction methods include the following:

Paving streets with "quieter" pavement types such as Open-Grade Rubberized Asphaltic Concrete would reduce noise levels by 2 to 3 dBA depending on the existing pavement type, traffic speed, traffic volumes, and other factors.

New or larger noise barriers could reduce noise levels by 5 dBA L_{dn} . Final design of such barriers, including an assessment of their feasibility and reasonableness, should be completed during project level review.

Installing traffic calming measures to slow traffic along Del Monte Boulevard could provide qualitative improvement by smoothing out the rise and fall in noise levels caused by speeding vehicles.

Sound insulation treatments to the buildings, such as sound rated windows and doors, could reduce noise levels in interior spaces.

Mitigation Discussion:

A combination of mitigation measures such as the repaving of area roadways, the replacement or construction of noise barriers, traffic calming, and sound insulation could be implemented to reduce the effects of project generated traffic noise at affected residential units along identified segments of Beach Road, Crescent Avenue, De Forest Road, and Del Monte Boulevard.

Case studies have shown that the replacement of dense grade asphalt (standard type) with open-grade or rubberized asphalt can reduce traffic noise levels along residential-type streets by 2 to 3 dBA. A possible noise reduction of 2 dBA would be expected using conservative engineering assumptions. Table 9 shows the expected project noise level increases assuming the replacement of existing pavement with open-grade or rubberized asphalt. Project-generated traffic noise increases could be mitigated to a less-than-significant level along Beach Road, Crescent Avenue, and along Del Monte Boulevard between Reservation Road and Beach Road. Additional mitigation would be required along De Forest Road and Del Monte Boulevard north of Beach Road. To be a permanent mitigation, subsequent repaving would also have to be “quieter” pavements.

Table 9 - Traffic Noise Level Increases Assuming Repavement of Affected Roadways with “Quieter” Pavement

Roadway	Segment	Noise Level Increase after Mitigation (dBA, L _{dn})
Beach Road	Del Monte Blvd. to Michael Dr.	1
Beach Road	Michael Dr. to De Forest Rd.	2
Crescent Avenue	Reservation Rd. to Quebrada Del Mar Rd.	2
De Forest Road	Reservation Rd. to Beach Rd.	3
Del Monte Boulevard	Reservation Rd. to Beach Rd.	2
Del Monte Boulevard	Beach Rd. to Cosky Dr.	3
Del Monte Boulevard	Cosky Dr. to Project Entrance	3

Single-family residential receivers along De Forest Road primarily front the roadway. Noise barriers would not be feasible due to access requirements. In some situations, such as corner lots where outdoor use areas are located adjacent to the roadway, new or larger noise barriers could

be constructed to provide the additional necessary noise attenuation in private outdoor use areas. Typically, increasing the height of an existing barrier results in about 1 dBA of attenuation per 1 foot of additional barrier height.

Single- and multi-family residential land uses are located along Del Monte Boulevard north of Beach Road. The locations of private and common outdoor use areas varies along the roadway segment, but are generally in areas where noise barriers could be constructed or replaced to provide the additional necessary noise attenuation. The design of such noise barriers would require additional analysis. Traffic calming could also be implemented along Del Monte Boulevard to reduce noise levels expected with the project. Each 5 mph reduction in average speed provides approximately 1 dBA of noise reduction on an average basis (L_{eq}/L_{dn}). Traffic calming measures that regulate speed improve the noise environment by smoothing out noise levels.

Affected residential receivers along De Forest Road and Del Monte Boulevard north of Beach Road could be provided sound insulation treatments if further study finds that interior noise levels within the affected residential units would exceed 45 dBA L_{dn} assuming future plus project traffic conditions. Treatments to the home may include the replacement of existing windows and doors with sound-rated windows and doors and the provision of a suitable form of forced-air mechanical ventilation to allow the occupants the option of controlling noise to by closing the windows. The specific treatments for each affected residential unit would be identified on a case-by-case basis.

Significance After Mitigation:

Each of these mitigation measures involves other non-acoustical considerations. Other engineering issues may dictate continued use of dense grade asphalt. Noise barriers and sound insulation treatments must be done on private property necessitating agreements with each property owner. Therefore, it may not be reasonable or feasible to reduce project-generated traffic noise at all affected receivers. The impact would be considered significant and unavoidable.

Impact 6: Cumulative Traffic Noise. Traffic volume increases in Marina will result with the development of the project area and other planned developments in and around Marina. In some locations, these increases would be substantial, and the project would contribute to the overall cumulative impact. **This is a potentially significant impact.**

Traffic noise levels along Beach Road, Crescent Avenue, De Forest Road, Del Monte Boulevard, and Reservation Road will be substantially increased over existing conditions assuming cumulative traffic projections. Substantial cumulative noise level increases along affected roadway segments would range from 3 dBA L_{dn} to 6 dBA L_{dn} . The project would contribute at least 1 decibel to the cumulative noise level increase and would be “cumulatively considerable”.

Table 11 summarizes the noise level increases attributable to the project and cumulative noise level increases anticipated in the project vicinity. Table 12 presents noise contour information for area roadways experiencing a substantial cumulative noise level increase.

Table 11 - Traffic Noise Level Increases Above Existing Levels

Roadway	Segment	Noise Level Increase (dBA, L _{dn})	
		Project	Cumulative
Beach Road	Reservation Rd. to Del Monte Blvd.	2	6
Beach Road	Del Monte Blvd. to Michael Dr.	3	4
Beach Road	Michael Dr. to De Forest Rd.	4	5
Crescent Avenue	Reservation Rd. to Quebrada Del Mar Rd.	4	5
De Forest Road	Reservation Rd. to Beach Rd.	5	5
Del Monte Boulevard	Reservation Rd. to Beach Rd.	4	6
Del Monte Boulevard	Beach Rd. to Cosky Dr.	5	6
Del Monte Boulevard	Cosky Dr. to Project Entrance	5	6
Reservation Road	Cardoza Ave. to Reservation Rd./Beach Rd.	1	3

Table 12 – Noise Contour Distances for Roadways Experiencing Substantial Cumulative Noise Level Increases

Affected Roadway Segment	Traffic Scenario	Ldn, dBA at 50 feet	Noise Contour Distance (feet)		
			70 Ldn	65 Ldn	60 Ldn
Beach Road Reservation Rd. to Del Monte Blvd.	Existing	60	--	--	50
	Project	62	--	30	80
	Cumulative	66	--	60	130
Beach Road Del Monte Blvd. to Michael Dr.	Existing	59	--	--	40
	Project	62	--	30	80
	Cumulative	63	--	30	100
Beach Road Michael Dr. to De Forest Rd.	Existing	58	--	--	30
	Project	62	--	30	80
	Cumulative	63	--	30	100
Crescent Avenue Reservation Rd. to Quebrada Del Mar Rd.	Existing	58	--	--	30
	Project	62	--	30	80
	Cumulative	63	--	30	100
De Forest Road Reservation Rd. to Beach Rd.	Existing	58	--	--	30
	Project	63	--	30	100
	Cumulative	63	--	30	100
Del Monte Boulevard Reservation Rd. to Beach Rd.	Existing	66	--	60	130
	Project	70	50	110	230
	Cumulative	71	60	130	270
Del Monte Boulevard Beach Rd. to Cosky Dr.	Existing	65	--	50	110
	Project	70	50	110	230
	Cumulative	71	60	130	270
Del Monte Boulevard Cosky Dr. to Project Entrance	Existing	65	--	50	110
	Project	70	50	110	230
	Cumulative	71	60	130	270
Reservation Road Cardoza Ave. to Reservation Rd./Beach Rd.	Existing	64	--	40	90
	Project	65	--	50	110
	Cumulative	67	30	80	150

Mitigation Measures:

See mitigation presented for Impact 3 and mitigation feasibility discussion.

Significance After Mitigation:

Similar to Impact 3, it may not be reasonable or feasible to reduce cumulative traffic noise levels at all affected receivers. The increase in development density would increase noise levels noticeably at receivers. Measures available to reduce the cumulative noise level increases would not likely be reasonable or feasible in all areas, therefore, the impact would be considered significant and unavoidable.

Impact 7: Construction Noise. The project site is bordered by existing residential land uses to the west and south. Noise generated by construction on the site would substantially increase noise levels at residential land uses in the vicinity of the site. **This is a potentially significant impact.**

Future construction on portions of the site would temporarily increase noise levels at adjacent land uses. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receptors. Where noise from construction activities exceeds 60 dBA L_{eq} and exceeds the ambient noise environment by at least 5 dBA at noise-sensitive uses in the project vicinity for a period of more than one construction season, the impact would be considered significant.

Table 13 depicts the range of A-weighted noise levels generated by specific pieces of construction equipment at a distance of 50 feet. Table 14 presents typical ranges in hourly average noise levels at a distance of 50 feet generated different phases of construction. Construction activities generate considerable amounts of noise, especially during the demolition phase and the construction of project infrastructure when heavy equipment is used. Typical hourly average construction generated noise levels are about 81 dBA to 88 dBA measured at a distance of 50 feet from the center of the site during busy construction periods (e.g., earth moving equipment, impact tools, etc.). Construction generated noise levels drop off at a rate of about 6 dBA per doubling of distance between the source and receptor.

Construction projects of this type are typically built out over more than one construction season, and some construction methods generate higher noise levels and noise that would be considered impulsive. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise sensitive land uses, or when construction durations last over extended periods of time. Limiting the hours when construction can occur to daytime hours is often a simple method to reduce the potential for noise impacts. In areas immediately

adjacent to construction, controls such as constructing temporary noise barriers and utilizing “quiet” construction equipment can also reduce the potential for noise impacts.

Construction noise levels are anticipated to exceed 60 dBA L_{eq} and the ambient by 5 dBA or more over extended periods of time. It is conceivable that a particular receiver or group of receivers would be subject to construction noise levels in excess of 60 dBA L_{eq} and the ambient by 5 dBA for durations exceeding one construction season. Construction activities would also generate noise levels in excess of 60 dBA for more than 15 minutes in one hour as regulated in the Marina Municipal Code, Chapter 15.04. Meeting the current requirements of the Municipal Code would be infeasible and unreasonable for a project of this scope. The noise standards presented in the Municipal Code, if actively enforced, would be violated daily by individual construction projects throughout the community. The construction of the project would result in a significant temporary noise level increase at neighboring noise-sensitive properties and would exceed the City’s ordinance regarding construction noise.

To reduce noise levels generated by construction, the following standard construction noise control measures shall be included in all construction projects within the Marina Station plan area:

- Pursuant to the City’s Noise Ordinance, restrict noise-generating activities at the construction site or in areas adjacent to the construction site to the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday, and 10:00 a.m. to 7:00 p.m. on Sundays or holidays including New Year’s Day, July 4th, Thanksgiving, and Christmas (standard time). During daylight savings time, the hours of construction may be extended one hour to 8:00 p.m.
- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Unnecessary idling of internal combustion engines should be strictly prohibited.
- Locate stationary noise generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary noise barriers to screen stationary noise generating equipment when located near adjoining sensitive land uses. Temporary noise barriers could reduce construction noise levels by 5 dBA.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- Route all construction traffic to and from the project site via designated truck routes where possible. Prohibit construction related heavy truck traffic in residential areas where feasible.

- Control noise from construction workers' radios to a point that they are not audible at existing residences bordering the project site.
- The contractor shall prepare and submit to the City for approval a detailed construction plan identifying the schedule for major noise-generating construction activities.
- Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

Significance After Mitigation:

Although the above measures would reduce noise generated by the construction of the project, the impact would remain significant and unavoidable as a result of the extended period of time that adjacent receivers would be exposed to construction noise.

Impact 8: Noise and Land Use Compatibility (Aircraft).

Residential uses developed at the site would be exposed to noise levels from aircraft associated with the Marina Airport. The noise environment at the project site would be considered compatible with the proposed residential uses. **This is a less-than-significant impact.**

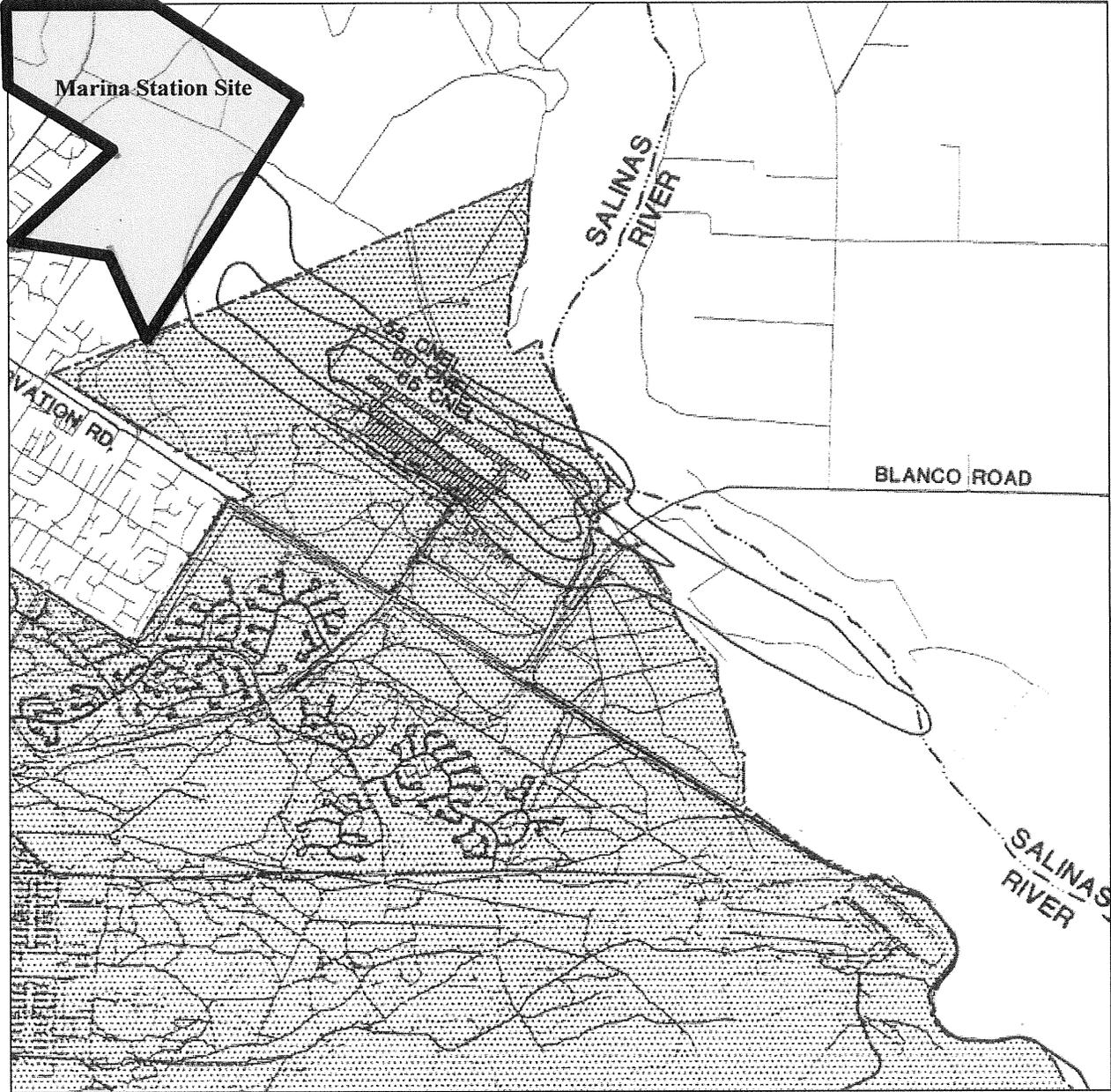
Future noise contours for the Marina Airport are shown in Figure 5². The project site is located outside of the future 60 CNEL noise contour projected for operations at the Marina Airport. A small portion of the site (primarily office and industrial uses along the easternmost limit) would be located within the Airport's future 55 CNEL noise contour. Where exterior noise levels are less than 60 CNEL, residential land uses are considered compatible with the exterior noise environment resulting from aircraft, and interior noise levels would be expected to be less than 45 CNEL assuming standard residential construction methods. This is a less-than-significant impact.

Mitigation Measures:

None.

2 Fort Ord Reuse Plan, Forecast Year 2015 Airport Noise Contours, Jones & Stokes 1995.

Figure 5 – Forecast Year 2015 Airport Noise Contours in Relation to Project Site



	A-Weighted Noise Level (dB) at 50 Feet					
	60	70	80	90	100	110
Earth Moving:						
Compactors (Rollers)			██████████			
Front Loaders			██████████	██████████		
Backhoes			██████████	██████████		
Bulldozers			██████████	██████████		
Scrapers, Graders			██████████	██████████		
Pavers				██████████		
Trucks			██████████	██████████		
Materials Handling:						
Concrete Mixers			██████████	██████████		
Concrete Pumps			██████████			
Cranes (Movable)			██████████	██████████		
Cranes (Derrick)				██████████		
Stationary:						
Pumps			██████████			
Generators			██████████			
Compressors			██████████	██████████		
Impact Equipment:						
Pneumatic Wrenches				██████████		
Jackhammers & Rock Drill			██████████	██████████		
Pile Drivers (Peak)				██████████	██████████	
Others:						
Vibrators			██████████			
Saws			██████████	██████████		

Source: Handbook of Noise Control, Cyril M. Harris, 1979

Construction Equipment Noise Level Range	Table 13
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**Typical Ranges of Energy Equivalent Noise Levels at 50 Feet,
 L_{eq} in dBA, at Construction Sites**

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I - All pertinent equipment present at site.
 II - Minimum required equipment present at site.

Source: U.S.E.P.A., Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

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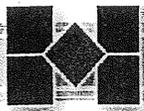
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APPENDIX H

Traffic Analysis



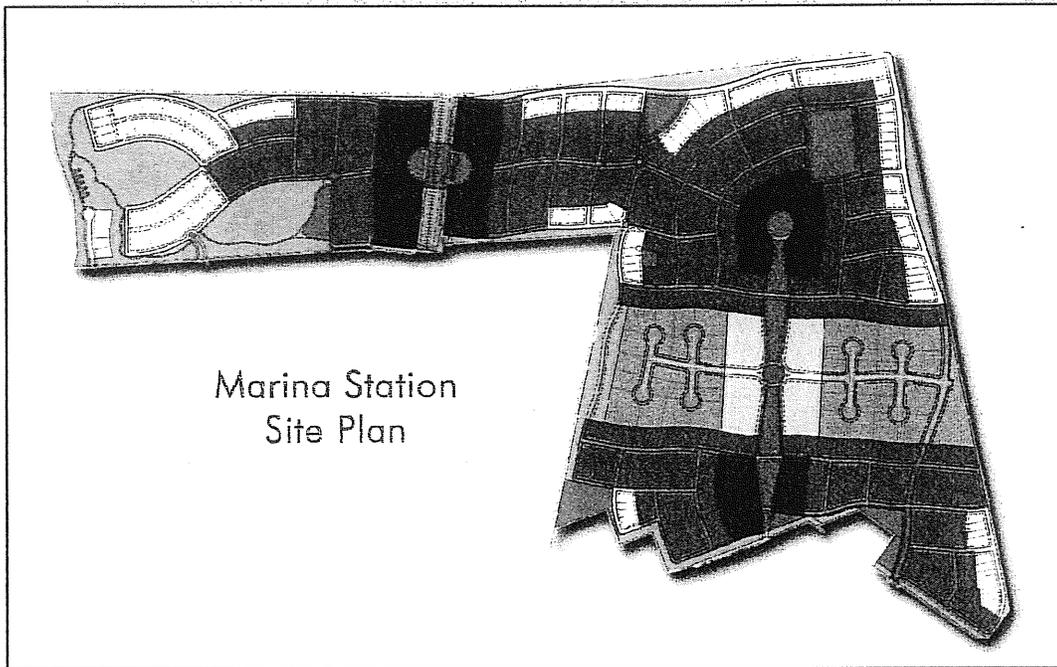
HIGGINS ASSOCIATES

CIVIL & TRAFFIC ENGINEERS

Marina Station Mixed Use Development

Marina, California

Traffic Impact Analysis



Final Report

Prepared for

City of Marina
Monterey County, CA

December 5, 2006

-TEXT ONLY-

Full report with exhibits is available
for review at the City of Marina



**MARINA STATION
MARINA, CALIFORNIA**

TRAFFIC IMPACT ANALYSIS

Final Report

Prepared For
City of Marina
Monterey County, CA

December 5, 2006

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1 INTRODUCTION

The proposed Marina Station project is located north of the Monterey Peninsula in the City of Marina, Monterey County, California. The project site is located on a 320-acre portion of the Armstrong Ranch property, both to the east and west of Del Monte Boulevard within the northern boundaries of the City of Marina. The project consists of the development of residential neighborhoods, three clusters of commercial development, and a centralized business park consisting of office and industrial space. *Exhibit 1A* shows the location of the Marina Station project in the context of the Monterey Peninsula, while *Exhibit 1B* shows the proposed land use plan.

This Traffic Impact Analysis (TIA) is based on the project description specified in the Notice of Preparation for the Draft Environmental Impact Report provided by the City of Marina. Furthermore, additional information used in this traffic analysis regarding access and circulation was provided by the Marina Station project team.

The purpose of this TIA was to determine both the potential direct and cumulative traffic impacts from the buildout of the proposed Marina Station Project. The TIA presents the results from a series of analyses performed to determine the existing traffic conditions, how traffic conditions would change with the implementation of other projects in the area that have already been approved, as well as the potential traffic impacts from the Marina Station at project buildout level.

1.1 Project Description

The proposed project is a mixed-use development including 1,504 residential units (816 single family, 648 apartments, and 40 auxiliary carriage units), 60,000 square feet of specialty retail, 143,808 square feet of general office, and 651,624 square feet of industrial uses. The project would include three mixed-use village centers, which would provide shopping, service businesses, and civic uses. In addition, approximately 30 acres of open space, parks, playgrounds, recreation areas, and a 100-foot buffer between the proposed project and existing neighborhoods would be provided. The residential uses would consist of apartments, small and large single family homes, and accessory dwelling units.

1.2 Project Access

The Marina Station site is located east of Highway 1, which runs in a north-south direction on the shore of Monterey Bay. There would be three primary regional access points to the site off of Highway 1 – via the northern Del Monte Boulevard interchange (from the north), Reservation Road interchange (from the north and south), and the southern Del Monte Boulevard interchange (from the south). Other regionally important highways are Highway 101, the main north-south highway through Santa Clara and Monterey Counties, and the two east-west highways, linking Highway 101 to Highway 1; Highway 156 is to the north and Highway 68 is to the south of the project site. Local access to the project site would be provided via Del Monte Boulevard, Reservation Road, Beach Road, and Marina Green Drive, as well as extensions of Drew Street, Cardoza



Avenue, De Forest Road, and Crescent Avenue. Refer to *Exhibit 2A* for details of the local access road network serving the Marina Station project site.

1.3 Traffic Operation Evaluation Methodologies

Intersection traffic operations were evaluated based on the Level of Service (LOS) concept. LOS is a qualitative description of an intersection and roadway's operation, ranging from LOS A to LOS F. Level of service "A" represents free flow un-congested traffic conditions. Level of service "F" represents highly congested traffic conditions with what is commonly considered unacceptable delay to vehicles on the road segments and at intersections. The intermediate levels of service represent incremental levels of congestion and delay between these two extremes.

Intersection operations were evaluated using technical procedures documented in the *2000 Highway Capacity Manual (HCM)*. For signalized intersections, average control delay per vehicle is utilized to define intersection level of service. Delay is dependent on a number of factors including the signal cycle length, the roadway capacity (number of travel lanes) provided on each intersection approach and the traffic demand. *Appendix A1* shows the relationship between vehicle delay and the signalized intersection level of service categories. The TRAFFIX software program (versions 7.7 and 7.8) was utilized to model the traffic impact of the different development scenarios and to calculate signalized and un-signalized intersection levels of service.

For all-way (or four-way) stop intersections, average control delay per vehicle is utilized to define intersection level of service. Delay is dependent on a number of factors including the roadway capacity (number of travel lanes) provided on each intersection approach and the traffic demand. *Appendix A2* shows the relationship between vehicle delay and the all-way stop intersection level of service categories.

At one- and two-way stop controlled intersections, the operating efficiency of vehicle movements that must yield to through movements are analyzed. The level of service for vehicle movement on the controlled approaches is based on the distribution of gaps in the major street traffic stream and driver judgment in selecting gaps. *Appendix A3* shows the relationship between the vehicle delay and level of service for two-way stop controlled intersections. The 2000 HCM calculates the level of service of the minor street approaches. Using this data, an overall intersection level of service was calculated. Both are reported in this study because traffic on the minor street approaches has the lowest priority of right-of-way at the intersection and are the most critical in terms of delay. Generally, LOS E/F operations on the side street approach are the thresholds that warrant improvements.



Peak hour signal warrants were analyzed for the unsignalized intersections, as taken from the *Manual of Uniform Traffic Control Devices* (MUTCD 2003, Section 4C.04, Warrant 3, Peak Hour), and as amended for use in the State of California by the *MUTCD 2003 California Supplement*, California Department of Transportation, May 2004. In this study, the only signal warrant evaluated was the peak hour signal warrant. The decision to install a traffic signal should not be based purely on the warrants alone. Engineering judgment should be exercised on a case-by-case basis to evaluate the effect a traffic signal would have on certain types of accidents and traffic conditions at the subject intersection, as well as at adjacent intersections. Warrant worksheets can be found in *Appendix I*.

The operational analysis of the study freeway segments was based upon the 2000 HCM methodologies, which uses vehicle density as the criteria for rating level of service. Vehicle densities defined as passenger cars per mile, per lane and is the ratio of the traffic volume on a freeway segment over a one-hour period, divided by the product of the number of lanes on the segment and the travel speed.

The volume threshold planning methodology based on HCM 2000 was used in the evaluation of operating conditions on roadway segments and ramps. A description of levels of service thresholds for the roadway segments and ramps is included as *Appendix A5*.

The weaving analysis performed on the Highway 1 freeway between the Del Monte Boulevard (South) and the 12th Street (Imjin Parkway) interchanges was based on the methodologies identified within the Caltrans Highway Design Manual (5th Edition). This procedure for evaluating weaving segment levels of service was developed by Jack E. Leisch & Associates in 1985, and uses weaving volumes and nomographs in the evaluation. The analysis presented within this report utilizes spreadsheets developed and provided by Caltrans District 5 staff. *Appendix O* contains the weaving level of service calculation sheets.

The evaluation of the combined effect of the Marina Station traffic as well as the traffic generated by buildout of Marina and all surrounding jurisdictions on the regional road network was based on the TAMC Nexus Study, completed in May of 2004. The Study was prepared in connection with a proposed traffic impact fee, which fee is intended to fund identified regional traffic improvements that would be required to accommodate the anticipated growth in the region. Specific traffic impact fees for each different land use were developed to provide the funding mechanism for the implementation of the regional improvements. However, these traffic impact fees have not yet been adopted by all the necessary agencies, the system of collecting the impact fees from new developments is not yet functional, and even if implemented, the TAMC fees would not be sufficient, without funds from other sources, to complete all of the regional improvement projects identified by the TAMC Nexus Study. If implemented prior to the construction of this project, the applicant would be required to pay the applicable TAMC fees, but these fees cannot be relied upon to mitigate significant cumulative regional traffic impacts. See *Appendix R* for more detail regarding the TAMC Nexus Study.)



The traffic volume forecasts presented in this analysis represent conservative traffic projections throughout the study street network. These forecasts include conservatively high land use assumptions and trip generation estimates for many of the future development projects within the study area, and do not fully take into account possible shifts in travel patterns of existing and future trips that could occur with some of the larger employment and retail developments that have been approved and proposed in the greater Monterey Peninsula area. Therefore, these traffic volume projections represent higher traffic volumes than projected in either the AMBAG regional traffic demand model, or other regional traffic forecasts in reports such as the TAMC Nexus Study, and represent conservative projections as to the project's local and regional impacts.

1.4 Modeling of Right Turns

All of the signalized study intersections allow right turns on red (RTOR), and these right turns can have an effect on the intersection LOS calculations. However, for this study no allowance was made for RTOR, as insufficient information was available regarding the percentage of vehicles turning right on red. The results of the intersection analyses can thus be seen as reflecting a "worst case" scenario, as the effect of vehicles turning right on red on the intersection operations were not accounted for.

Right turn overlap signal phasing, whereby right turns are allowed to move unimpeded during a complementary left turn movement, is currently in operation at some of the study intersections that facilitate right turns, principally the Del Monte Boulevard/Reservation Road and Imjin Road/Reservation Road intersections. The analysis for these intersections incorporates the right turn overlap signal phasing.

Free right turns, whereby right turn movements are free flowing and not controlled by the adjacent traffic signal or stop sign, are also present at one study intersection, the Blanco Road/Reservation Road intersection. Since these movements are unimpeded by either conflicting traffic or traffic control devices, there are no delays associated with these movements. The analysis for this intersection incorporates the lack of delay for this movement.

Level of Service Standards and Criteria for Significant Impact

The study area selected covers the jurisdiction of multiple public agencies; they are the City of Marina, Monterey County, and the California Department of Transportation (Caltrans), a state agency. The local and state agencies have different level of service standards. The jurisdictions of the study intersections and roadway segments are identified on *Exhibits 2A and 2C*, and are described in the following paragraphs.



The City of Marina has established LOS D as the general threshold for acceptable overall traffic operations for both signalized and unsignalized intersections. The City of Marina has jurisdiction over the following study intersections and roadway segments:

Intersections

3. Del Monte Boulevard / North Project Access 1 (future intersection);
4. Del Monte Boulevard / North Loop (future intersection);
5. Del Monte Boulevard / South Loop (future intersection);
6. Del Monte Boulevard / Marina Green Drive;
7. Del Monte Boulevard / Cosky Drive;
10. Cardoza Avenue / Reservation Road;
11. Reservation Road / Reservation Road – Beach Road;
12. Del Monte Boulevard / Beach Road;
13. Michael Drive / Beach Road;
14. De Forest Road / Beach Road;
15. Del Monte Boulevard / Reservation Road;
16. Seacrest Avenue / Reservation Road;
17. De Forest Road / Reservation Road;
18. Crescent Avenue / Reservation Road;
19. California Avenue / Reservation Road;
20. Salinas Avenue / Reservation Road;
21. Imjin Road / Reservation Road;
23. Del Monte Boulevard / Reindollar Avenue;

Road Segments

1. Beach Road, between Reservation Road and Marina Drive;
2. Beach Road, between Marina Drive and Del Monte Boulevard;
3. Beach Road, between Del Monte Boulevard and Michael Drive;
4. Beach Road, between Michael Drive and De Forest Road;
5. Cardoza Avenue, between Reservation Road and Abdy Way;
6. Crescent Avenue, north of Reservation Road;
7. De Forest Road, south of Beach Road;
8. De Forest Road, north of Reservation Road;
9. Del Monte Boulevard, south of Reservation Road;
10. Del Monte Boulevard, between Reservation Road and Beach Road;
11. Del Monte Boulevard, between Beach Road and Marina Green Drive;
12. Del Monte Boulevard, between Marina Green Drive and Marina City Limits;
13. Reservation Road, between Highway 1 northbound ramps and Cardoza Avenue; and,
14. Reservation Road between Cardoza Avenue and Beach Road.
15. Second Avenue, south of Del Monte Boulevard (future street);



The County of Monterey has established LOS C as its level of service standard. The County of Monterey has jurisdiction over the following study intersections and roadway segments:

Intersections

22. Blanco Road / Reservation Road.

Road Segments

16. Del Monte Boulevard, between Highway 1 NB ramps and Marina City Limits.

The Caltrans level of service goal is the transition between LOS C and LOS D. Caltrans has jurisdiction over improvements to the following study intersections and roadway segments:

Intersections

1. Highway 1 SB Ramps / Del Monte Boulevard (North);
2. Highway 1 NB Ramps / Del Monte Boulevard (North);
8. Highway 1 SB Ramps / Reservation Road;
9. Highway 1 NB Ramps / Reservation Road;
24. Westbound Highway 68 Ramps / Reservation Road; and
25. Eastbound Highway 68 Ramps / Reservation Road – River Road.

Freeway Segments

1. Highway 1, north of Del Monte Boulevard (North);
2. Highway 1, between Del Monte Boulevard (North) and Reservation Road;
3. Highway 1, between Reservation Road and Del Monte Boulevard (South); and
4. Highway 1, between Del Monte Boulevard (South) and Imjin Parkway (Twelfth Street).

Freeway Ramps

1. Highway 1 northbound and southbound on- and off-ramps, at Del Monte Boulevard (North) interchange;
2. Highway 1 northbound and southbound on- and off-ramps; at Reservation Road interchange; and,
3. Highway 1 northbound off- and southbound on-ramps, at Del Monte Boulevard (South) interchange.

Road Segments

17. Del Monte Boulevard, between Highway 1 southbound and northbound ramps; and
18. Reservation Road, between Highway 1 southbound and northbound ramps.



Although Caltrans has stated a goal of attempting to maintain freeway operations at the cusp between LOS C and LOS D, TAMC, the congestion management agency for Monterey County, has stated that LOS D should be used to determine where the regional roadway network would be operating at unacceptable LOS. The regional road network includes all of the State highways and the Marina to Salinas corridor, which includes Reservation Road and Blanco Road. Objective 2 of Goal 1.1 Road and Highway Transportation of the 2005 Monterey County Regional Transportation Plan states the following:

“Design facilities included in TAMC’s expenditure plan program of regional transportation projects to operate at LOS C, achieve at least LOS D on the regional roadway network by 2020, and maintain at least LOS D on regional roadways thereafter.”

Therefore, LOS D was used in this study as the minimum acceptable level of service for all State facilities, and for the Blanco Road/Reservation Road intersection.

It should also be noted that the LOS D standard is consistent with Caltrans’ long-range goals, as described in the Transportation Concept Report (TCR) for Highway 1¹. The TCR states the following:

“The ability to provide capacity to accommodate rising volumes has become increasingly difficult in California. Historically, District 5 targeted a peak hour concept of LOS C or better for state highways. However, in each county, current operations, existing development patterns, environmental values, local plans, and/or projected growth are such that achieving even LOS D will require major improvements and concerted efforts to manage demand. In some segments, the California Coastal Act prohibits additional capacity.”

According to Appendix G of the State CEQA Guidelines, a project would have a significant effect on the environment if it would: a) cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system; or b) exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways. In accordance with the California Environmental Quality Act (CEQA) and agency and professional standards, specific impact criteria have been applied to the study intersections and road segments to determine if the project specific increase in traffic is substantial in relation to the existing traffic load and capacity of the street system and if the TAMC level of service standard for regional roads and highways would be exceeded. The significance criteria incorporate the LOS D standards described above, but also establish criteria for evaluating significance when pre-project operations exceed the LOS D standard. The analysis contained in this traffic study is based upon the significance criteria listed below.

¹Transportation Concept Report for State Route 1 in District 5, California Department of Transportation, April 2006



A significant impact at a **signalized study intersection** is defined to occur under the following conditions:

- The addition of project traffic causes pre-project operations to deteriorate from acceptable level (LOS D or better) to an unacceptable level (LOS E, or LOS F), or
- The addition of project traffic increases the pre-project average delay by more than 1.0 second at intersections operating at LOS E or LOS F.

A significant impact at an **unsignalized study intersection** is defined to occur under the following scenarios:

- The addition of project traffic causes operations to deteriorate from an acceptable level (LOS E or better on side street for two-way stop control, LOS D or better for all-way stop control) to an unacceptable level (LOS F on side street for two-way stop control, LOS E for all-way stop control), or
- Two-way or one-way stop controlled intersection: the project adds traffic to any intersection movement that results in an increase to the delay for any approach operating at LOS F pre-project;
- All-way stop control: the project adds traffic to an all-way stop controlled intersection operating at LOS E or worse pre-project that results in an increase to the overall intersection delay, or
- The Caltrans peak-hour volume signal warrant is met, or
- The left-turn peak hour volume warrant is met.

A significant impact on a **study roadway/highway segment** is defined to occur under the following scenarios:

- The addition of project traffic causes a roadway segment operating at an acceptable level (LOS D or better) to degrade to an unacceptable level (LOS E, or LOS F), or
- The addition of project traffic causes a roadway segment operating at LOS E to degrade one service level, or
- The addition of one project trip to a segment operating at LOS F pre-project.

1.6 Scope of Work

The scope of work for this traffic study was developed to identify the potential traffic impacts that may be associated with the development of the Marina Station project at Buildout level. Intersections and segments were selected for analysis collaboratively with City staff based on the potential for the project to impact the facility. An initial trip distribution analysis for the project determined that project trips would be oriented to Highway 1, the Reservation Road/Blanco Road/Davis Road corridors, as well as the local Marina street network. A principal study area was identified, bounded by Blanco Road on the east, Highway 1 on the west, the Salinas River on the north, and the former Fort Ord on the south. In addition, per the request of Caltrans District 5, the Highway 68/Reservation Road-River Road interchange, located southwest of Salinas and southeast of Marina, was also added to the principal study area.



Within the study area, the intersections and segments that would potentially be impacted by the project were identified and included in the analysis. The scope of work analyzed within this traffic study, as well as the analysis scenarios, were then finalized after additional consultation with Caltrans, AMBAG, and TAMC. The study intersections and segments are shown on *Exhibits 2A* and *2C*.

The local streets and intersections included in this analysis were identified as potentially having the greatest impact from the project based on preliminary analysis of project trip generation and trip distribution. The boundaries of the study have been selected to include intersections and segments that presently experience some congestion and/or may be measurably affected during the peak commute hours. Beyond the limits of the study area, the project trips disperse onto numerous local streets. As the distance from the project increases the number of trips considered reduces and the distribution assumptions are less reliable.

In total, this traffic study includes a traffic impact analysis of operations at 25 intersections, as well as freeway segment and ramp analyses, and road segment analyses during typical weekday AM and PM peak hours; a total of 35 freeway, ramp, weaving, and road segments were evaluated. Where required, mitigation measures were recommended to fully mitigate the impacts due to the development of the Marina Station project. Traffic control warrant and channelization warrant assessments were performed at the study intersections for all traffic scenarios evaluated. The following intersections, freeway segments, freeway on- and off-ramps, and road segments were analyzed in this study:

Intersections

1. Highway 1 SB Ramps / Del Monte Boulevard (North);
2. Highway 1 NB Ramps / Del Monte Boulevard (North);
3. Del Monte Boulevard / Project Access 1 (future intersection);
4. Del Monte Boulevard / Project Access 2 (future intersection);
5. Del Monte Boulevard / Project Access 3 (future intersection);
6. Del Monte Boulevard / Marina Green Drive;
7. Del Monte Boulevard / Cosky Drive;
8. Highway 1 SB Ramps / Reservation Road;
9. Highway 1 NB Ramps / Reservation Road;
10. Cardoza Avenue / Reservation Road;
11. Reservation Road / Reservation Road – Beach Road;
12. Del Monte Boulevard / Beach Road;
13. Michael Drive / Beach Road;
14. De Forest Road / Beach Road;
15. Del Monte Boulevard / Reservation Road;
16. Seacrest Avenue / Reservation Road;
17. De Forest Road / Reservation Road;
18. Crescent Avenue / Reservation Road;
19. California Avenue / Reservation Road;
20. Salinas Avenue / Reservation Road;



21. Imjin Road / Reservation Road;
22. Blanco Road / Reservation Road;
23. Del Monte Boulevard / Reindollar Avenue;
24. Westbound Highway 68 Ramps / Reservation Road; and
25. Eastbound Highway 68 Ramps / Reservation Road – River Road.

Freeway Segments

1. Highway 1, north of Del Monte Boulevard (North);
2. Highway 1, between Del Monte Boulevard (North) and Reservation Road;
3. Highway 1, between Reservation Road and Del Monte Boulevard (South); and
4. Highway 1, between Del Monte Boulevard (South) and Imjin Parkway (Twelfth Street).

Freeway Ramps

1. Highway 1 northbound and southbound on- and off-ramps, at Del Monte Boulevard (North) interchange;
2. Highway 1 northbound and southbound on- and off-ramps; at Reservation Road interchange; and,
3. Highway 1 northbound off- and southbound on-ramps, at Del Monte Boulevard (South) interchange.

Road Segments

19. Beach Road, between Reservation Road and Marina Drive;
20. Beach Road, between Marina Drive and Del Monte Boulevard;
21. Beach Road, between Del Monte Boulevard and Michael Drive;
22. Beach Road, between Michael Drive and De Forest Road;
23. Cardoza Avenue, between Reservation Road and Abdy Way;
24. Crescent Avenue, north of Reservation Road;
25. De Forest Road, south of Beach Road;
26. De Forest Road, north of Reservation Road;
27. Del Monte Boulevard, south of Reservation Road;
28. Del Monte Boulevard, between Reservation Road and Beach Road;
29. Del Monte Boulevard, between Beach Road and Marina Green Drive;
30. Del Monte Boulevard, between Marina Green Drive and Marina City Limits;
31. Del Monte Boulevard, between Marina City Limits and Highway 1 NB ramps;
32. Del Monte Boulevard, between Highway 1 northbound and southbound ramps;
33. Reservation Road, between Highway 1 southbound and northbound ramps;
34. Reservation Road, between Highway 1 northbound ramps and Cardoza Avenue;
35. Reservation Road between Cardoza Avenue and Beach Road; and,
36. Second Avenue, south of Del Monte Boulevard (future street).

Exhibit 2A shows the study intersections and road network under existing traffic conditions, while *Exhibit 2B* shows the existing traffic control at the study intersections and *Exhibit 2C* shows the study road segments.



The area in which the Marina Station Project site is located is undeveloped at this point in time. Therefore, the traffic scenarios evaluated in this traffic study were selected to comprehensively test the traffic impacts from the project itself, as well as from other approved and known future projects proposed in the surrounding area.

This traffic study thus analyzed the traffic impacts of the approved projects in the area, as well as buildout of the proposed project. It also evaluated the anticipated traffic impacts that could be expected by the cumulative projects in Marina, Seaside, Monterey County, and the former Fort Ord, as part of the cumulative (beyond 2025) traffic scenarios.

The traffic scenarios evaluated as part of this traffic study are:

- Existing Traffic Conditions
- Existing Plus Marina Station Project Buildout Traffic Conditions
- Background (Existing Plus Approved Projects) Traffic Conditions
- Background Plus Marina Station Project Buildout Traffic Conditions
- Cumulative Without Project Traffic Conditions
- Cumulative Plus Project Traffic Conditions

Traffic forecasts for this study were developed using a TRAFFIX model for the Marina/FORA area. The model includes approved and planned projects in the Marina/Seaside/FORA area. Peak hour trips generated by each of the projects are estimated using trip generation rates published by the Institute of Transportation Engineers (ITE), 7th Edition, or San Diego Association of Governments (SANDAG). The SANDAG rates were used where ITE does not provide a rate. For example, SANDAG trip rates were used for the City Park land use and SANDAG AM peak hour trip rates were used for the Specialty Retail land use.

The trips are assigned to the local road network using trip distribution patterns developed by the AMBAG traffic forecasting model. The trip assignments developed for individual development projects are combined with existing traffic volumes to obtain traffic forecasts for the various study scenarios. The process provides an intersection level analysis, which is required for the environmental evaluation of project impacts. The AMBAG model itself does not provide intersection level turning movement traffic forecasts.

The approved and pending projects modeled in the study include commercial retail uses. Not all of the trips generated by these uses will be new trips added to the road network. Some of the trips generated by the commercial retail uses will be captured from the existing or background traffic traveling past the site. The trip generation for some of the commercial retail uses modeled in this study was adjusted to account for the pass-by capture. Projects such as the Marina University Villages development include commercial retail uses. Traffic impact study guidelines published by Caltrans recommend a pass-by reduction factor of 15%. For this study, pass-by factors greater than 15% were used for some of the land uses. For example, a 25% pass-by rate was used for fast food restaurants and a 30% pass-by rate was used for convenience stores in the study project trip generation. A pass-by rate of 20% was used for the PM peak hour trips generated by the Marina University Villages commercial retail uses located adjacent



to Imjin Parkway. While these rates exceed the pass-by rate recommended by Caltrans, the rates used for this study are lower than rates published by ITE. For example, the PM peak hour ITE pass-by rate for shopping centers is 34%, the pass-by rate for fast food restaurants is 50% and the pass-by capture rate for convenience markets is 61%. The pass-by rates used for this study are less than rates documented by ITE and provide a reasonable worst-case evaluation of the trip generation associated with new development in the area.

1.7 Road Network Assumptions

Exhibit 2C shows the road network configuration assumed for each analysis scenario. A description of the configuration changes incorporated into this traffic analysis under both the Background and Cumulative traffic scenarios follows, below.

1.7.1 Road Network Assumptions – Background Conditions

Starting under Background Conditions, this analysis assumes completion of roadway improvements that are planned to be installed in conjunction with the development of the approved Marina Heights project and first phase of the approved University Villages project. This includes the internal street systems and new access points to the existing street network from both projects, as well as the extension of Salinas Avenue south to Abrams Road. In addition, the proposed California Avenue extension, between Reindollar Avenue and Carmel Avenue, is assumed to be completed. This latter segment is now open, but was constructed after the traffic counts were performed at the study intersections, and thus was not considered as part of the based street network under Existing conditions.) All of the trip assignments for the background projects, as well as other proposed projects in the area (including the study project) in later scenarios, incorporate this opening. The analysis also includes reassignment of existing trips that would likely occur with the roadway's opening. The California Avenue extension improvement is included within the City's CIP and TIF, while the Salinas Avenue extension is included within the Fort Ord Reuse Authority (FORA) CIP program.

1.7.2 Road Network Assumptions – Cumulative Conditions

The Cumulative Condition road network with and without the project assumes implementation of those improvements currently included in and fully funded through both the Marina Transportation Facilities Impact Fee (TIF) and the Fort Ord Reuse Plan Capital Improvement Program.

The FORA CIP sets forth the FORA Base Reuse Plan required improvements. The current FORA CIP has been structured to cover costs of four regional improvements, five "off-site" improvements (located outside of the former Fort Ord boundaries) and eleven on-site improvements (located within the former base boundaries), and two transit capital improvements. In total, FORA is responsible for \$115,315,212 of traffic- and transit-related improvements, of which \$63,943,867 will be fully funded by FORA. The primary sources of revenue expected to cover these costs are Development Fees and Land



Sale/Lease proceeds. (As the study project site is not located in the former Fort Ord properties governed by FORA, it is not required to pay any of the FORA fees.)

The cumulative traffic scenario street network included improvements as identified in the FORA CIP for Financial Year 2006/07 through 2021/22. The roadway network in the FORA CIP includes the following new or upgraded facilities that would affect operations within the study street network, all of which would be fully funded by FORA:

- 8th Street “Cutoff”: Upgrading/construction of a 2-lane arterial from Hwy 1 Overpass to Intergarrison Road;
- Upgrading of Intergarrison Road to a 4-lane arterial from Eastside Road easterly to Reservation Road;
- Gigling Road: Upgrading/construction of a new 4-lane arterial from General Jim Moore Blvd. easterly to Eastside Road;
- Widening of General Jim Moore Blvd. from 2 lanes to 4 lanes from Normandy Road to Coe Avenue. Upgrading and reconstruction as 4-lane arterial from Coe Avenue to South Boundary Road (widening between Normandy and just north of Coe is currently under construction);
- Extension of Salinas Avenue south to Abrams Drive (already assumed in place starting under Background conditions);
- Extension of Crescent Court south to Abrams Drive (Patton Parkway);
- Abrams Drive (Patton Parkway): Construct new roadway between Second Avenue Extension and Crescent Court;
- Upgrading of Eucalyptus Road to a 2-lane collector from General Jim Moore Boulevard to Parker Flats cut-off; and
- Construction of a new 2-lane arterial (Eastside Road) from intersection with Gigling Road northeasterly to intersection with Intergarrison Road.

All of the above improvements are assumed in place, under Cumulative Without Project conditions.

It should be recognized that the FORA CIP focused more on specific improvements required on the higher order access and mobility routes as listed above. The specific local network improvements will be identified with each of the FORA project developments.

The City of Marina also has a Capital Improvement Program (CIP), which includes a series of planned intersection and road segment improvements throughout the city limits. A subset of the CIP improvements are funded through a citywide TIF. This TIF Program was officially adopted by the City in 2005.



The following improvements at the study intersections and along the study roadway segments are included within the City of Marina Transportation Facilities Impact Fees:

- Del Monte Boulevard/Marina Green Drive – Signalize intersection (TI 4);
- Southbound Highway 1 Ramps/Reservation Road – Signalize intersection (TI 15);
- Northbound Highway 1 Ramps/Reservation Road – Signalize intersection (TI 15);
- Del Monte Boulevard/Beach Road – Signalize intersection, add eastbound left turn channelization (TI 29);
- California Avenue/Reservation Road – Signalize intersection (TI 13);
- Salinas Avenue/Reservation Road – Signalize intersection (TI 17);
- Imjin Road/Reservation Road – Widen and restripe northbound Imjin as one left turn lane, one through lane, and three right lanes, add third eastbound Reservation through lane, add third westbound Reservation through lane, add third westbound Reservation left turn lane and associated southbound Imjin Parkway receiving lanes. (TI 32);
- Widen Reservation Road to four lanes between northbound Highway 1 ramps and Beach Road (R 55);
- Extend 2nd Avenue from Imjin Parkway to Del Monte Boulevard (R 5);
- Widening of Imjin Parkway from 2 to 4 lanes between Imjin Road and Reservation Road (R 46);
- Extension of California Avenue from Reindollar to Carmel Avenue, creating a two-lane arterial from Reservation Road to the California State University Monterey Bay (CSUMB) campus (this improvement is now complete, but was not constructed at the time of the traffic counts) (R 3); and
- Del Monte Boulevard/Reservation Road – Restripe northbound Del Monte Boulevard as one left turn lane, two through lanes, and one right turn lane. (Although this item is not specifically listed within the City’s CIP, the City of Marina plans to implement this improvement as part of a proposed restriping of northbound Del Monte Boulevard south of this intersection to provide a Class II bicycle lane.) (R 38)

All of the above improvements are assumed in place, under Cumulative Without Project conditions.

2 EXISTING TRAFFIC CONDITIONS

This chapter presents a description of the existing road network, existing traffic volumes, intersection levels of service, and an overview of traffic flow conditions within the study area under existing traffic conditions.

2.1 Existing Traffic Network

The primary Regional access to the Marina Station project site is provided by Highway 1. Other significant regional highways are, Highway 101, Highway 156 and Highway 68. Important arterial and collector streets relevant to the Marina Station study are Reservation Road, Blanco Road, Del Monte Boulevard, Imjin Parkway, Imjin Road, Beach Road, De Forest Road, Crescent Road, Cardoza Avenue, and Marina Green Drive. Other relevant local roadways in the area include Cosky Drive, Michael Drive, Seacrest Avenue, California Avenue, Salinas Avenue, and Reindollar Avenue. *Exhibit 2A* shows the study intersections and road network under existing traffic conditions and *Exhibit 2B* shows the existing traffic control at the study intersections. A brief description of the most important streets in the study road network follows:

Highway 1 is a state highway within Monterey County providing access to Watsonville and Santa Cruz to the north via Castroville, and Marina, and San Luis Obispo to the south, via Seaside, Monterey, and Carmel. Through its connection to Highway 156 in Castroville, it also provides access to Highway 101 and the greater San Francisco Bay Area. In the vicinity of the project, it is a four-lane freeway north of the southern Del Monte Boulevard interchange and south of Fremont Boulevard, and a six-lane freeway between the southern Del Monte Boulevard and Fremont Boulevard interchanges.

Del Monte Boulevard is a major arterial on the western side of the City of Marina, extending from a partial interchange (SB on- and NB off ramps only) with Highway 1 north of Imjin Parkway (Twelfth Street) to Highway 1 north of Marina. In the project vicinity, Del Monte Boulevard is a four-lane divided roadway between the southern Del Monte Boulevard / Highway 1 interchange and just north of Beach Road, and a two-lane roadway with left turn channelization north of Beach Road to the Marina city limits, and a two-lane rural highway between the Marina City Limits and the northern Del Monte Boulevard / Highway 1 interchange.

Reservation Road is a major arterial extending from Marina State Park to the west of Dunes Drive, through the City of Marina, connecting to Highway 68 south of Salinas. Between Marina State Park and Del Monte Boulevard, Reservation Road is two lanes wide with left turn channelization at key intersections. Between Del Monte Boulevard and Blanco Road, Reservation Road is a four-lane roadway, some places it is divided and other places it has a two way left turn lane (TWLT); it provides access to the primary commercial district within Marina. East of Blanco Road, it narrows to a two-lane rural highway. Reservation Road is under the jurisdiction of the City of Marina west of Blanco Road and the County of Monterey east of Blanco Road.



Blanco Road is a major arterial extending from Reservation Road to the City of Salinas. Between Reservation Road and the Salinas River Bridge, Blanco Road is four-lanes wide with left turn channelization at key intersections. The remainder of its length to Salinas, it is a two-lane rural highway.

Imjin Parkway is an arterial roadway within the City of Marina city limits. Imjin Parkway is a four-lane divided roadway with left turn channelization east of the Highway 1 interchange to the intersection with Imjin Road.

Imjin Road is a two-lane arterial between Reservation Road and Eighth Street. Imjin Road provides access to the Marina Municipal Airport and the UC-MBEST development located north of Reservation Road, the Marina University Villages project and CSUMB located in southern Marina, and residential developments in between.

Beach Road is a two-lane roadway within the City of Marina. Beach Road provides access to residential neighborhoods in northern Marina, as well as provides a connection to Highway 1 via Reservation Road. Beach Road is classified as an arterial roadway between Reservation Road and Del Monte Boulevard, and as a collector roadway between Del Monte Boulevard and De Forest Road.

De Forest Road is a two-lane collector roadway within the City of Marina. De Forest Road provides access to neighborhoods in north central Marina.

Crescent Avenue is a two-lane collector roadway within central Marina. Crescent Avenue provides access to neighborhoods both north and south of Reservation Road.

Cardoza Avenue is a two-lane collector roadway in northwestern Marina. It provides access to neighborhoods north of Reservation and Beach Roads, east of Highway 1, and west of Del Monte Boulevard.

Marina Green Drive is a two-lane local street in northwestern Marina. It serves as access to both neighborhoods and industrial areas west of Del Monte Boulevard and north of Reservation and Beach Roads.

California Avenue is a two-lane collector street connecting the former Fort Ord area with central City of Marina. When the intersection traffic volumes were counted in 2004-2005, there was a disconnected portion of California Avenue between Carmel Avenue and Reindollar Avenue. This missing connection has since been constructed. However, since it was not open at the time of the traffic counts, it was not considered as being open under existing conditions; instead, it is considered open starting under Background conditions. See Section 1.7 for more information regarding completion of California Avenue.



Reindollar Avenue is a two-lane collector street within the southern portion of central City of Marina, providing access to adjacent businesses and residential neighborhoods.

2.2 Existing Transit Systems

The largest single public transit provider in Monterey County is the Monterey-Salinas Transit (MST). The Monterey-Salinas Transit operates from five key transit centers, the Monterey Transit Plaza, Salinas Transit Center, Watsonville Transit Center, Edgewater Transit Exchange in Seaside/Sand City, and Marina Transit Exchange. Each of these centers operates on a time-transfer "pulse" schedule providing easy connections and quick transfers to multiple routings.

MST currently operates four public bus routes that service the greater Marina Station area. Those routes are Routes 16 and 17 between Sand City and Marina, Route 20 between Monterey and Salinas via Marina, and Route 27 between Monterey and Watsonville via Marina and Castroville. Route 16 traverses through many roadways immediately adjacent to the project site, including Cardoza Avenue, Abdy Way, Healy Avenue, Paul Davis Drive, Marina Green Drive, Del Monte Boulevard, Beach Road, and De Forest Road. Route 17 services the neighborhoods east of Del Monte Boulevard and south of Reservation Road. Route 20 travels along Del Monte and Reservation between Monterey and Salinas. Route 27 travels also travels along Del Monte Boulevard, including directly adjacent to the project site in northern Marina, as well as along Reservation Road via a short spur. All four routes also service the Marina Transit Station, a bus stop and informal park-and-ride facility at the corner of De Forest Road and Reservation Road, about one-half mile south of the project site. Refer to *Exhibit 3A* for the existing MST routes in the project vicinity.

2.3 Existing Bikeway and Pedestrian Facilities

Exhibit 3B depicts the locations of bicycle and pedestrian facilities in the vicinity of the project site. Further description of the locations and types of facilities follows below.

➤ Bikeways

There are three basic types of bicycle facilities in the Monterey Peninsula; the first two have been included in the City of Marina's General Plan. Each type is described below:

- Bike path (Class I) - A completely separate right-of-way designed for the exclusive use of cyclists and pedestrians, with minimal crossings for motorists. These paths should have a minimum width of 9 feet when two-way travel is required and 6 feet in width to accommodate one-way movement.
- Bike lane (Class II) - A lane on a regular roadway, separated from the motorized vehicle right-of-way by paint striping, designated for the exclusive or semi-exclusive use of bicycles. Bike lanes allow one-way bike travel. A minimum width of 5 feet should be provided and adjacent curbside parking avoided where feasible; where curbside parking is allowed adjoining a bike lane, the combined width of the parking and adjacent bike lane should be not less than 13 feet.



- Bike route (Class III) - Provides shared use of the roadway, designated by signs or permanent markings and shared with motorists.

Existing Bike facilities in project vicinity

The majority of the roadways adjacent to the Marina Station project site do not currently have dedicated bicycle lanes, nor do they allow enough room for vehicles and bicycles to comfortably share the roadway. In the project vicinity there is a Class I bikeway along located along Del Monte Boulevard as can be seen on *Exhibit 3B*, and a Class II bike lane along Reservation Road between the Highway 1 and Beach Road.

➤ **Pedestrian facilities**

The City of Marina's General Plan clearly specifies the requirements to ensure safe, direct and pleasant pedestrian circulation. All new local residential and commercial streets shall comply with the following standard:

- Sidewalks with a minimum of 5 feet shall be provided on each side of residential streets, or on one side of cul-de-sacs and auto courts serving less than 7 units.
- All new streets shall provide sidewalk separated from the residential roadway by a planting strip with a minimum width of 6 feet.
- Along commercial-serving and other non-residential streets a minimum of 10 to 12 feet shall be provided from the back of the curb to the front lot line.

Existing Pedestrian facilities in the project vicinity

The road width of Del Monte Boulevard varies significantly along its length as it goes through the City of Marina. Sidewalks are currently only provided along the eastern side of Del Monte Boulevard and in some places it is discontinuous. In some locations along the eastern side of Del Monte Boulevard, north of Beach Road, areas lacking sidewalks do have either formal or informal pedestrian walkways, although it is likely that these walkways have not been officially sanctioned by the City of Marina, and may not be within the public right-of-way.

Along Reservation Road, sidewalks are provided on both sides of the street through the commercial district between Del Monte Boulevard and east of Crescent Avenue. Sidewalks are also present along Reservation Road from south of Beach Road to west of Highway 1, although they are discontinuous at the corner of Reservation Road and Beach Road.

Sidewalks are mostly provided along all the local collector and residential streets in the project vicinity, but in some cases they are only on one side or discontinuous. The latter situation is the case along Beach Road, where sidewalks are lacking immediately east of Reservation Road, near Michael Drive, and between east of Melanie Road and De Forest Road.



2.4 Existing Traffic Data

To establish existing traffic flow conditions, new traffic counts were conducted at most of the study intersections during the weekday AM (i.e. 7:00 – 9:00 am) and PM (i.e. 4:00 – 6:00 pm) peak hours. All but four intersection traffic volumes used in this traffic study were based on new traffic data collected during 2005. The intersection traffic data for the four study intersections not counted during 2005, were obtained from the *Marina University Village Traffic Impact Analysis* (Higgins Associates, December 17, 2004), and were counted in June and September 2004. A table summarizing the dates and sources of obtaining the existing traffic volumes are presented in *Appendix B*.

From the peak period traffic counts, the AM and PM peak hour turning movement volumes were identified. Each intersection was analyzed at its individual peak hour. Because all of the counts were not collected on the same day, and in some instances were collected in different years, the counts did not necessarily balance between intersections. The intersection traffic volumes were therefore balanced between adjacent intersections along the arterial corridors, to account for variations in the counts. Along each corridor, the intersection with the highest approach volume was selected as the controlling volume and volumes at the other intersections along the corridor were balanced between intersections to the controlling volume, regardless of the year that the count was collected. This provides a reasonable worst-case analysis as the highest volume of traffic observed over the last two years was used for the study. The existing peak hour traffic volumes are presented on *Exhibits 4A and 4B*.

The following discussion provides an evaluation of operating conditions for the study intersections, freeway segments and ramps under existing traffic conditions.

2.5 Existing Conditions Intersection Operations

Existing conditions AM and PM intersection levels of service are summarized on *Exhibits 5A and 5B*. The LOS calculation sheets for existing traffic conditions can be found in *Appendix C*. The traffic control warrant and channelization warrant worksheets are included as *Appendix I*.

Eleven of the twenty five study intersections are currently signalized, one is all-way stop controlled, nine are one-way or two-way stop-controlled, one has no traffic controls, and three do not currently exist but would be constructed as part of the proposed project (please reference *Exhibit 2A* for the study intersections and *2B* for detail of the traffic control at intersections).

All of the study intersections operate at or better than the acceptable LOS standards utilized in this study. However, at one two-way stop controlled intersection, the side street at the California Avenue / Reservation Road intersection operates at LOS F, which represents unacceptable operations.



2.6 Existing Traffic Conditions - Roadway Segment Operations

Existing morning and evening peak hour level of service results on the study street segments are tabulated on the LOS Table in *Exhibit 5C*.

The volumes utilized in the roadway segment analyses are from two different sources. Ramp, weaving, and non-freeway roadway segment volumes are based upon the intersection turning volumes; for example, the existing segment volumes are taken from the existing intersection volumes illustrated on *Exhibits 4A and 4B*. Freeway volumes are taken from AM and PM peak period counts of Highway 1 traffic performed in January of 2005. Peak period traffic counts, collected at the ramp intersections at the Highway 1/Reservation Road and Highway 1/Del Monte Boulevard (North) interchanges in January and February of 2005 for this study, were used with peak hour volumes also collected at the Highway 1/Imjin Parkway interchange by Higgins Associates, in order to establish Highway 1 segment volumes from north of the Imjin Parkway interchange to north of the Del Monte Boulevard (North) interchange.

Threshold volumes to determine the level of service on specific types of roads as provided in *Appendix A4* were used in the evaluation of the non-freeway road segments and ramps; these serve primarily as a general guide as to whether major roadway widening is required. However, other factors may affect traffic flow conditions on roadway segments including intersection channelization design, type of traffic control devices, bicycle and pedestrian volume, driveway activities, average travel speed, and on-street parking activities.

A discussion of the traffic operations for the road and freeway segments and ramps with existing operational deficiencies follows. For a reference of the location of each of the study road segments please see *Exhibit 2C*.

All of the study road segments, freeway segments and ramps evaluated currently operate at acceptable levels of service.

The weaving analyses of the Highway 1 freeway section between the Imjin Parkway and Del Monte Boulevard interchanges (road segment numbers 15 & 16 on *Exhibit 5C*) showed that the weaving operating conditions are acceptable.

3 EXISTING PLUS PROJECT TRAFFIC CONDITIONS

This chapter presents a description of the traffic network, traffic volumes, and intersection levels of service within the study area under Existing Plus Project (existing plus full buildout of the study project) traffic conditions.

3.1 Project Traffic Scenario Description

The proposed Marina Station project is located on the northern boundaries of the City of Marina, on a 320-acre portion of the Armstrong Ranch property. The proposed project is a mixed-use development to the east and west of Del Monte Boulevard and includes 1,504 residential units (816 single family, 648 apartments, and 40 auxiliary carriage units), 60,000 square feet of specialty retail, 143,808 square feet of general office, and 651,624 square feet of industrial uses. The project would include three mixed-use village centers, which would provide shopping, service businesses, and civic uses. In addition, approximately 30 acres of open space, parks, playgrounds, recreation areas, and a 100-foot buffer between the proposed project and existing neighborhoods would be provided. The residential uses would consist of apartments and small and large single family homes. *Exhibit 1A* shows the location of the Marina Station project in the context of the Monterey Peninsula while *Exhibit 1B* shows the proposed land use plan.

3.2 Project Trip Generation

Exhibit 6A contains the trip generation estimate for Project Buildout, which is based upon trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation*, 7th Edition, 2003. These rates were supplemented with addition rates compiled by the San Diego Association of Governments (SANDAG). The SANDAG rates were used where ITE does not provide a rate. For example, SANDAG rates were used for the AM peak hour trip generation estimate for the Specialty Retail land use. The trip generation for the project is a compilation of the trip generation potential for all of the individual uses proposed as part of the project definition.

Regarding the 40 auxiliary carriage units, these are to be accessory dwelling units, interspersed throughout the project site adjacent to a single-family dwelling unit. Also known as "granny units," these units are smaller than their associated single-family dwelling unit, and therefore generate fewer trips than a standard home. There is no ITE or SANDAG trip rate for an accessory dwelling unit; therefore, the trip generation for this unit type is estimated as that for a standard apartment unit.

Based on the Caltrans *Guide for the Preparation of Traffic Impact Studies*, a 5% reduction was applied to the number of trips that would be generated by the proposed Marina Station project to account for captured trips. Captured trips are trips that do not enter or leave the driveways of a project's boundary within a mixed-use development such as the proposed Marina Station project, and would be characterized by direct trips between the residential, commercial, industrial, and office areas. Furthermore, additional 25% and 30% diverted-linked trip reductions were applied for the fast food and convenience market components of the retail to account for the vision for this new



neighborhood as a fully integrated, sustainable, pedestrian friendly place, incorporating residential, employment, shopping and recreational opportunities, as well as the anticipated provision for and use of other modes of transit. Due to the integration of much of the commercial areas into the neighborhoods on the project site plan, it is anticipated that as much as 75% of these diverted-link trips would be made by the future residents of the project site, en route out of or returning back into the project site. The remaining diverted-link trips would occur on the existing street system surrounding the project site, such as along Del Monte Boulevard, DeForest Road, and Beach Road. No diverted-link trips would travel off of or onto Highway 1.

The proposed Marina Station Project at Buildout level would generate a net 25,837 daily trips; 2,276 trips (1,201 in, and 1,075 out) during the AM Peak hour and 2,606 trips (1,179 in, and 1,426 out) during the PM Peak hour. Please refer to *Exhibit 6A* for the detail of the trip generation for each of the different land use components of the project.

3.3 Project Trip Distribution and Assignment

The distribution of the estimated project trips from the Marina Station project site to the Monterey Peninsula and the surrounding region was based on the origin / destination matrices provided by AMBAG, from its TransCAD regional traffic model. Furthermore, the locations and proximity of future FORA projects and CSUMB campus activities, and other existing and future land uses adjacent to and in proximity of the Marina Station project site were considered in the project trip distribution.

Exhibits 6B and 6C show the local and regional project trip distribution graphically, while the origin/destination matrices and other information provided by AMBAG are included in *Appendix P & Q*.

Exhibits 7A and 7B represent the project trips assigned to the 25 study intersections. The project trips in *Exhibits 7A and 7B* were added to the existing traffic volumes to create Existing Plus Project traffic volumes. These traffic volumes are shown on *Exhibits 8A and 8B*.

3.4 Project Access and Circulation

The Regional and Local access roads described in section 1.1 and 1.2 are relevant to this project.

> Regional Access

There would be three primary regional access points to the site off of Highway 1 –via the Del Monte Boulevard (North) interchange (from the north), the Reservation Road interchange (from the north and south), and the Del Monte Boulevard (South) interchange (from the south). Other regionally important highways are Highway 101, the main north-south highway through Santa Clara and Monterey Counties, and the two east-west highways, linking Highway 101 to Highway 1; Highway 156 to the north and Highway 68 to the south of the project site. Refer to *Exhibit 2B* for details of the regional access to the project site.

➤ Local Access

Local access to the project site would be provided via Del Monte Boulevard, Reservation Road, Beach Road, Drew Street, Cardoza Avenue, Paul Davis Drive, De Forest Road, Crescent Avenue as well as through three new project access points off Del Monte Boulevard (intersections numbers 3, 4 and 5). Direct access into the site would be via the aforementioned three new access points off of Del Monte Boulevard, plus northerly extensions of De Forest Road and Crescent Avenue. Neither Michael Drive nor Cosky Drive would have direct connections into the project site, although the City of Marina has proposed an emergency access out of the project that would connect with both ends of Michael Drive. Refer to *Exhibit 2A* for details of the local access road network serving the Marina Station project site, and Chapter 8 regarding the issues surrounding project access to Michael Drive.

3.5 Project Level Transit Systems

The Monterey-Salinas Transit would continue to provide transit opportunities in the project area. As part of the City of Marina's General Plan, Del Monte Boulevard, Reservation Road and the Imjin Parkway/Blanco Road corridors would serve as the primary routes for intra-city bus service.

Furthermore, MST has plans to upgrade and expand the existing transit center located on the corner of Reservation Road and De Forest Drive, although no proposals have been formalized. This transit center is in close proximity to the eastern part of the project site. However, to date no specific discussions regarding possible new MST transit routes to serve the Marina Station project have taken place. The project team will meet with MST at a later stage to determine if any of the routes serving the areas adjacent to the project site should be rerouted to improve the transit service to the Marina Station project.

TAMC is exploring long term plans to reinstate the intra-regional passenger rail service to Monterey on the Union Pacific rail line that runs through the City of Marina. The City supports this long-term vision. One of the proposed rail station locations is along Del Monte Boulevard, right in the middle of the project site. In the layout of the Marina Station project site, cognizance was given to this fact; provision was made for the future location of the rail station in the Marina Station project site plan and land use designation. Land uses that will encourage the use of transit have been included at the specific future rail station location. However, the train station is not proposed as part of this project, and is not anticipated to be opened within the next 20 years; therefore, operations of the proposed train station are not included within this analysis.

3.6 Project Level Bikeway and Pedestrian Facilities

The Marina Station project endeavored to encourage the use of alternative modes of transportation through including bicycle and pedestrian friendly designs through an integrated system of roads, transit, footpaths and bikeways. Detail of the Marina Station Pedestrian and Bicycle network is shown in *Exhibit 7C*. All pedestrian walkways and bicycle routes will be constructed to the City of Marina's requirements as specified in the General Plan and discussed in section 2.3 of this report. The Marina Station Specific Plan



provides more specific information of the proposed pedestrian walkway and bikeway network.

3.7 Existing Plus Project Traffic Conditions - Intersection Operations

The traffic that will be generated by the study project was combined with the existing traffic to provide Existing Plus Project traffic volumes. Existing Plus Project morning and evening peak hour turning volumes are illustrated on *Exhibit 8A and 8B. Exhibits 5A and 5B* tabulate corresponding levels of service during the AM and PM peak hours; the details of which are presented in *Appendix D*.

Six of the study intersections would fail to operate at or better than LOS D under Existing Plus Project traffic conditions, and at two additional intersections left turn channelization would be required. A discussion of the traffic operations for each individual intersection with operational deficiencies follows. For a reference of the location of each of the intersections please see *Exhibit 2A*. The recommended mitigation measure to mitigate the incremental impact of the study project follows below, and is displayed in *italics* following the discussion.

NB Highway 1 Ramps / Del Monte Boulevard North, Intersection # 2 (unsignalized), would operate at LOS B and LOS A during the weekday AM and PM peak hour (average delay of 11.4 and 8.7 seconds, respectively). The worst movement SB would operate at LOS D during the AM and PM peak hours, with an average approach delay of 34.5 and 28.1 seconds respectively. The left-turn peak hour volume warrant is met at this intersection, therefore the project would represent a significant impact at this intersection.

This intersection would operate at acceptable levels of service during both peak hours and would thus not require mitigation improvements based on poor operating conditions. However, the left turn channelization warrants are met for the WB approach. *It is thus recommended that a left turn pocket be constructed on the WB approach to facilitate the left turn movement. This improvement is not included within the City of Marina Capital Improvement Program (CIP), the City's TIF, or the Fort Ord Reuse Authority (FORA) Capital Improvement Program (CIP).* Funding of the construction of this improvement is the responsibility of the study project, to be paid to Monterey County if Monterey County (and, if necessary, Caltrans) approves implementation of this mitigation.

Del Monte Boulevard / North Project Access, Intersection # 3 (unsignalized), would operate at LOS A during both the weekday AM and PM peak hour (average delay of 0.8 and 0.9 seconds, respectively). The worst movement would operate at LOS B during both peak hours with an average approach delay of 10.7 and 11.1 seconds respectively. The left-turn peak hour volume warrant is met at this intersection, therefore the project would represent a significant impact at this intersection.

This intersection would operate at acceptable levels of service during both peak hours and would thus not require mitigation improvements based on poor operating conditions. However, left turn channelization warrants are met for the SB approach. *It is thus recommended that a left turn pocket be constructed on the SB approach to facilitate the*



left turn movement. This improvement is not included within the City's CIP, the City's TIF, or the FORA's CIP. Implementation of this improvement is the responsibility of the study project.

Del Monte Boulevard / Marina Green Drive, Intersection # 6 (unsignalized), would operate at LOS C during the weekday AM and LOS F during the PM peak hour (average delay of 23.1 and 95.9 seconds, respectively). The worst movement would operate at LOS F during both peak hours with an average approach delay of 141.2 seconds during the AM and 529.1 seconds during the PM peak hours. The addition of project traffic would cause operations to deteriorate from an acceptable level (worst approach of LOS A) to an unacceptable level (LOS F), thereby representing a significant impact at this intersection.

Both the southbound left turn lane and intersection all-way stop control warrants are met at this intersection under Existing Plus Project conditions. *Therefore, the addition of a SB left turn lane, an EB right turn lane and a WB right turn lane at this intersection, in combination with a conversion to all-way stop control, are recommended to fully mitigate the study project's impacts at this location under Existing Plus Project conditions. None of these improvements are included within the City of Marina CIP, City of Marina TIF, or the FORA CIP. Implementation of these improvements is the responsibility of the study project.*

It should be noted that this analysis assumes that the Marina Green approaches to the intersection will not be offset from each other. If neither of the two legs (the existing eastbound leg nor the project-access westbound leg) is realigned to connect opposite each other, the driveway into an existing apartment complex would be located in between the two intersection legs. If the two legs are not oriented opposing each other, it is recommended that the intersection containing the westbound leg be converted to all-way stop control, due to its heavier traffic demand and the potential for sight distance deficiencies caused by the adjacent apartment complex. Conversion of just the existing eastbound leg intersection, or both the eastbound and westbound legged intersections, is not recommended, for the same reasons.

SB Highway 1 Ramps / Reservation Road, Intersection # 8 (unsignalized), would operate at LOS F during the weekday AM and LOS C during the PM peak hour (average delay of 80.4 and 23.1 seconds, respectively). The worst movement would operate at LOS F during both peak hours with an average approach delay of 284.4 seconds during the AM and 60.7 seconds during the PM peak hours. The addition of project traffic would cause operations to deteriorate from an acceptable level (worst approach of LOS E) to an unacceptable level (LOS F), thereby representing a significant impact at this intersection.

The all-way stop warrant is met at this intersection under Existing Plus Project conditions. *Therefore, the conversion of the existing intersection operations to all-way stop control is recommended to fully mitigate the study project's impacts at this location under Existing Plus Project conditions during both peak hours. The project would be responsible for the full cost of this improvement, to be paid to the City of Marina.*



Del Monte Boulevard / Beach Road, Intersection # 12 (unsignalized), would operate at LOS F during the weekday AM and LOS E during the PM peak hour (average delay of 77.3 and 40.8 seconds, respectively). The addition of project traffic would cause operations to deteriorate from an acceptable level (LOS B) to an unacceptable level (LOS E during the AM, and LOS F during the PM), thereby representing a significant impact at this intersection.

The signalization of this intersection and the addition of an EB left turn lane would be required to fully mitigate the study project's impacts at this location under Existing Plus Project conditions during both peak hours. This improvement will also require the reconstruction of the adjacent Beach Road rail crossing, and rail crossing signal preemption. This improvement has been included in the City's CIP and City's TIF as measure TI 29. The project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

De Forest Road / Beach Road, Intersection # 14 (unsignalized), would operate at LOS C during the AM and LOS B during the PM peak hours (average delay of 19.1 and 10.2 seconds, respectively). The worst movement would operate at LOS F during the AM and LOS E during the PM peak hours, with an average approach delay of 56.1 and 35.2 seconds respectively. The addition of project traffic would cause operations to deteriorate from an acceptable level (worst approach of LOS A) to an unacceptable level (LOS F), thereby representing a significant impact at this intersection.

Both northbound left turn channelization and intersection all-way stop control warrants are met at this intersection under Existing Plus Project conditions. *Therefore, the conversion of this intersection to all-way stop control and the addition of a NB left turn lane and a SB right turn lane are recommended at this intersection.* These improvements are not included within the City's CIP, the City's TIF, or the FORA's CIP. Implementation of these improvements would be the responsibility of the study project.

California Avenue /Reservation Road, Intersection # 19 (unsignalized), would operate at LOS A during the weekday AM and LOS B during the PM peak hour (average delay of 2.2 and 13.9 seconds, respectively). The worst movement would operate at LOS E during the weekday AM and LOS F during the PM peak hour with an average approach delay of 42.1 seconds during the AM and 437.4 seconds during the PM peak hours. The addition of project traffic to this intersection would result in an increase to the delay for the approach operating at LOS F pre-project; the project would thereby represent a significant impact at this intersection.

Although the peak hour signal warrant is not met at this intersection, signalization would be the preferred choice of mitigation. Alternative mitigations such as all-way stop control would unduly delay traffic on Reservation Road, and, with the high speeds on Reservation Road, could create a safety hazard. In addition, signalization of the California/Reservation intersection would likely shift traffic to and from Reservation Road away from parallel local streets, such as Lynscott Avenue, to California Avenue, as drivers would perceive traffic movements to and from Reservation at the California



signal to be easier and safer than at other intersections with Reservation Road. Therefore, signalization of the California/Reservation intersection is recommended to fully mitigate the study project's impacts at this location under Existing Plus Project conditions. This improvement has been included in the City's CIP and City's TIF as TI 13. The project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

Imjin Road / Reservation Road, Intersection # 21 (signalized), would operate at LOS D during the weekday AM and LOS E during the PM peak hours (average delay of 48.3 and 61.9 seconds, respectively). The addition of project traffic causes pre-project operations to deteriorate from an acceptable level (LOS D or better) to an unacceptable level (LOS E), and therefore represents a significant impact.

The widening and re-striping of this intersection to accommodate one NB left, one NB through, and three NB right turn lanes is recommended to fully mitigate the study project's impacts at this location under Existing Plus Project conditions during both peak hours. This improvement has already been identified as part of previous traffic studies and has been included in the City's CIP and City's TIF as TI 32; the project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

Based on the significance impact criteria discussed in section 1.5 of this report, the implementation of the Marina Station Project will have a significant impact on study intersections number 2, 3, 6, 8, 12, 14, 19, and 21 before mitigation.

If the mitigation improvements numbers I-1 to I-9 are implemented, full mitigation of the incremental impact of the study project would be achieved at all study intersections under Existing Plus Project traffic conditions. The traffic impact from the Marina Station Project would be reduced to insignificant levels at all study intersections .

3.8 Existing Plus Project Traffic Conditions - Road Segments

Existing Plus Project conditions morning and evening peak hour level of service results on the study street segments are tabulated on the LOS Table in *Exhibit 5C*. These are based upon the Existing Plus Project conditions intersection turning volumes illustrated on *Exhibits 8A and 8B*.

As was the case under existing conditions, all of the study road segments, freeway segments and ramps evaluated would operate at acceptable levels of service under Existing Plus Project conditions.

The weaving analyses of the Highway 1 freeway section between the Imjin Parkway and Del Monte Boulevard interchanges (road segment numbers 15 & 16 on *Exhibit 5C*) showed that the weaving operating conditions would be acceptable.

Based on the significance impact criteria discussed in section 1.5 of this report, the implementation of the Marina Station project will not have a significant impact on any of the study road segments.

3.9 Existing Plus Project Traffic Conditions - Regional Traffic Beyond Study Area Boundaries

As explained in Chapter 1 above, the City identified the study area for the proposed project in consultation with Caltrans, AMBAG and TAMC. The study area encompasses 25 intersections, for Highway 1 segments, 10 freeway ramps, 2 weaving segments, and 19 road segments – the transportation facilities where significant traffic impacts attributable to the proposed project are most likely to occur.

Vehicles traveling to or from the proposed project would also use regional transportation facilities that are outside the study area. The 2004 TAMC “Nexus Study for a Regional Development Impact Fee” indicates that some of these facilities – particularly along Highways 1, 156, and 68 – currently operate at LOS E and F. A copy of the TAMC Nexus Study is Appendix R to this EIR. The proposed project would not be expected to cause the level of service at any of these facilities to fall from LOS D to LOS E or LOS E to LOS F. The project would, however, contribute one or more trips to transportation facilities outside the project study areas that are currently operating at LOS F. Therefore, the project would be deemed to cause a significant impact at these locations.

As any improvements to these facilities would be regional improvements, funding of the necessary mitigations (other than funding from state and federal sources) should be the responsibility of TAMC. Funding for improvements along Highway 1 in Seaside, Highway 68 east of Monterey, Highway 101 through Prunedale, and Highway 156 between Castroville and Prunedale, and for right-of-way acquisition along Del Monte Avenue, are all included within the current TAMC fee program. The remaining regional improvements along these highways should also be included by TAMC within its traffic impact fee. If they were included, the project’s payment of the TAMC fee would mitigate the study project’s impacts on these regional highways. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact will remain significant.

3.10 Existing Plus Project Traffic Conditions - Mitigation Measures

The following improvements are recommended under Existing Plus Project conditions. Please refer to Tables 5D, 5E and 5F for a complete summary of the recommended mitigation measures under each project-level development scenario. Mitigated level of service calculations are contained within *Appendix L*.

Mitigation measure # I-1 – The addition of a WB left turn lane at the NB Highway 1 Ramps / Del Monte Boulevard (North) intersection (intersection #2) to accommodate left turning traffic at this location would be required. Funding of the construction of this improvement is the responsibility of the study project, to be paid to Monterey County if Monterey County (and, if necessary, Caltrans) approves implementation of this mitigation.

Mitigation measure # I-2 – The addition of a SB left turn lane at the Del Monte Boulevard / North Project Access Road intersection (intersection #3) to accommodate the left turning traffic into the project site would be required. Implementation of this improvement is the responsibility of the study project.

Mitigation measure # I-3 – The addition of a SB left turn lane, EB right turn lane, and a WB right turn lane would be required at the Del Monte Boulevard/Marina Green Drive intersection (intersection #6). Implementation of this improvement is the responsibility of the study project.

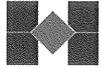
Mitigation measure # I-4 – Conversion of the traffic control to all-way stop control would be required at the Del Monte Boulevard / Marina Green Drive intersection (intersection #6) in addition to Mitigation measure #I-3, above. If the intersection legs are to be offset, it is recommended that only the intersection with the westbound leg be converted to all-way stop control. Implementation of this improvement is the responsibility of the study project.

Mitigation measure # I-5 – The conversion of the SB Highway 1 Ramps / Reservation Road intersection (intersection #8) to all-way stop control would be required. Implementation of this improvement is the responsibility of the study project.

Mitigation measure # I-6 – The signalization and the addition of an EB left turn lane at the Del Monte Boulevard / Beach Road intersection (intersection #12) would be required. This improvement will also require the reconstruction of the adjacent Beach Road rail crossing, and rail crossing signal preemption. This improvement has been included in the City of Marina Capital Improvement Program and the City's TIF as measure TI 29; the project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

Mitigation measure # I-7 – The conversion of the traffic control to all-way stop and addition of a NB left turn lane and a SB right turn lane of the De Forest Road / Beach Road intersection (intersection #14) would be required. Implementation of this improvement is the responsibility of the study project.

Mitigation measure # I-8 – The signalization of the California Avenue / Reservation Road intersection (intersection #19) would be required. This improvement has been included in the City of Marina Capital Improvement Program and the City's TIF as measure TI 13; the project's payment of the City's TIF will fully mitigate the study project's impacts at this location.



Mitigation measure # I-9 – The widening and re-striping of the Imjin Road / Reservation Road intersection (intersection #21) to accommodate one NB left, one NB through and three NB right turn lanes would be required. This improvement has been included in the City of Marina Capital Improvement Program and the City's TIF as measure TI 32; the project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

4 BACKGROUND TRAFFIC CONDITIONS

This chapter presents a description of the traffic network, traffic volumes, and intersection levels of service within the study area under background (existing plus approved projects) traffic conditions. This traffic scenario is defined as traffic conditions roughly ten to fifteen years beyond existing conditions.

4.1 *Approved Projects Description, Trip Generation and Distribution*

A number of projects have already been approved by the City of Marina and other agencies within or in close proximity to the study area; these approved projects have not yet been fully constructed and occupied. *Appendix E1* includes a trip generation table of those projects and *Appendix E2* shows their location.

It should be noted that three of the larger approved projects have been analyzed based upon the currently proposed construction schedules. First, the University Villages development will be built in phases, with only the first phase, which includes retail and housing, to be constructed over roughly the next five years, and the latter phase to be built further into the future. Second, the East Garrison development proposes to also be built in two phases, both of which would be roughly equal to each other in size, at about 1,400 homes for each phase. This analysis assumes that only the first phases of these developments are constructed and occupied under Background and Background Plus Project conditions. Finally, the University of California Monterey Bay Education, Science, and Technology (UCMBEST) Center business park campus on Reservation Road has historically grown slowly since its founding in the 1990s. This analysis assumes that 25% of the remaining development of the campus is constructed and occupied under Background and Background Plus Project conditions, and full buildout not occurring until cumulative conditions.

Also included in the approved projects in the background traffic scenario is an account for the number of trips that would be generated by the anticipated growth of the California State University at Monterey Bay (CSUMB) that is located close by. An estimation of the CSUMB trip generation under background conditions was based on the phased student and staff growth provided by the university in its Master Plan update in 2004-2005.

All of the remaining approved projects, including the Marina Heights development, were included in their entirety under Background conditions.

The approved projects, as well as CSUMB at the background timeframe, would generate a total of 122,805 daily trips; 6,884 trips (3,327 in, 3,557 out) during the AM peak hour, and 11,287 trips (5,893 in, 5,394 out) during the PM peak hour. These trips were assigned to the study area road network and subsequently added to the existing traffic volumes to create the background traffic volumes depicted on *Exhibits 9A and 9B*.



The study intersections and road network as shown in *Exhibits 2A, B, and C* remain roughly the same for background traffic conditions as they were under Existing and Existing Plus Project traffic conditions. (Further discussion of the network changes under this scenario can be found in the following section.) The approved project's trips were distributed onto the study road network based on the specific distribution patterns identified in their respective traffic studies.

4.2 Background Traffic Conditions – Roadway Network

Starting under Background Conditions, this analysis assumes completion of roadway improvements that are planned to be installed in conjunction with the development of the approved Marina Heights project and first phase of the approved University Villages project. This includes the internal street systems and new access points to the existing street network from both projects, as well as the extension of Salinas Avenue south to Abrams Road. In addition, the proposed California Avenue extension, between Reindollar Avenue and Carmel Avenue, is assumed to be completed. This latter segment is now open, but was constructed after the traffic counts were performed at the study intersections, and thus was not considered as part of the based street network under Existing conditions.) All of the trip assignments for the background projects, as well as other proposed projects in the area (including the study project) in later scenarios, incorporate this opening. The analysis also includes reassignment of existing trips that would likely occur with the roadway's opening. The California Avenue extension improvement is included within the City's CIP and TIF, while the Salinas Avenue extension is included within the Fort Ord Reuse Authority (FORA) CIP program.

The analysis also includes the conversion of the traffic control at the California Avenue/Reservation Road intersection into a traffic signal. The City anticipates that the signal will also be constructed and fully operational within two years. This improvement is included within the City's CIP and TIF.

4.3 Background Traffic Conditions - Intersection Operations

The traffic that will be generated by the approved projects was combined with the existing traffic to provide background traffic volumes. Background morning and evening peak hour turning volumes are illustrated on *Exhibit 9A and 9B. Exhibits 5A and 5B* tabulate corresponding levels of service during the AM and PM peak hours; the details of which are presented in *Appendix F*.

Three of the study intersections would fail to operate at or better than LOS D under background traffic conditions. The Southbound Highway 1 / Reservation Road intersection would operate at an overall LOS E and LOS F during the AM and PM peak hours, respectively, with worst approaches operating at LOS F during both peak hours. The Imjin Road / Reservation Road intersection would operate at LOS F during the weekday AM and PM peak hours. The Blanco Road / Reservation Road intersection would operate at LOS E during the AM and LOS F during the PM peak hours.



4.4 Background Traffic Conditions - Road Segments

Background conditions morning and evening peak hour level of service results on the study street segments are tabulated on the LOS Table in *Exhibit 5C*. These are based upon the background conditions intersection turning volumes illustrated on *Exhibits 9A & 9B*.

Nearly all of the study road segments, freeway segments and ramps evaluated would operate at acceptable levels of service under background conditions. The sole exception would be Reservation Road, between the northbound Highway 1 ramps and Cardoza Avenue. This segment would operate at LOS B during the AM peak hour and LOS E during the PM peak hour.

The weaving analyses of the Highway 1 freeway section between the Imjin Parkway and Del Monte Boulevard interchanges (road segment numbers 15 & 16 on *Exhibit 5C*) showed that the weaving operating conditions would be acceptable.

5 BACKGROUND PLUS PROJECT TRAFFIC CONDITIONS

This section describes the analysis results of the study intersection and roadway segment operations under Background Plus Project Buildout traffic conditions. This traffic scenario is defined as traffic conditions roughly ten to fifteen years beyond existing conditions.

5.1 Background Plus Project Traffic Scenario Description

The Background Plus Project scenario analyzes traffic conditions with implementation of all of the approved projects in the area, as well as buildout of the study project. This scenario utilizes the same project analysis assumptions as under Existing Plus Project conditions, and the same approved projects and street network assumptions as under Background conditions.

It is anticipated that there would be linked trips between the residential and commercial uses within the Marina Station project site and the surrounding future residential and commercial developments (both approved and cumulative), as well as the CSUMB campus. The linked trips have been taken into consideration in the project trip distribution, as well as the analyzed trip generation for the approved projects, in order to avoid double counting of trips on the study intersections and road network.

5.2 Background Plus Project Traffic Conditions - Intersection Operations

The traffic that would be generated by the Project was combined with the background traffic to provide Background Plus Project traffic conditions. Background Plus Project morning and evening peak hour turning volumes are illustrated on *Exhibit 10A and 10B*. *Exhibits 5A & 5B* tabulate corresponding morning and evening peak hour levels of service, the details of which are presented in *Appendix G*.

Eight of the study intersections would fail to operate at or better than LOS D under Background Plus Project traffic conditions, and at four intersections channelization would be required. A discussion of the traffic operations for each individual intersection with operational deficiencies follows. For a reference of the location of each of the intersections please see *Exhibit 2A*. The recommended mitigation measure to mitigate the incremental impact of the study project follows below, and is displayed in *italics* following the discussion.

NB Highway 1 Ramps / Del Monte Boulevard North, Intersection # 2 (unsignalized), would operate at LOS B during the weekday AM and LOS A during the PM peak hours (average delay of 11.5 and 8.7 seconds, respectively). The worst movement SB operates at LOS D during both peak hours with an average approach delay of 34.8 and 28.2 seconds respectively. The left-turn peak hour volume warrant is met at this intersection, therefore the project would represent a significant impact at this intersection.

This intersection would operate at acceptable levels of service during both peak hours and would thus not require mitigation improvements based on poor operating conditions. However, as already identified under Existing Plus Project conditions, the left turn channelization warrants are met for the WB approach. *It is thus recommended that a left turn pocket be constructed on the WB approach to facilitate the left turn movement to fully mitigate the study project's impacts at this location under Background Plus Project conditions.* This improvement is not included within the City's CIP, the City's TIF, or the FORA CIP. Funding of the construction of this improvement is the responsibility of the study project, to be paid to Monterey County if Monterey County (and, if necessary, Caltrans) approves implementation of this mitigation.

Del Monte Boulevard / North Project Access, Intersection # 3 (unsignalized), would operate at LOS A during both the weekday AM and PM peak hour (average delay of 0.8 and 0.9 seconds, respectively). The worst movement would operate at LOS B during both peak hours with an average approach delay of 10.7 and 11.1 seconds respectively. The left-turn peak hour volume warrant is met at this intersection, therefore the project would represent a significant impact at this intersection.

This intersection would operate at acceptable levels of service during both peak hours and would thus not require mitigation improvements based on poor operating conditions. However, left turn channelization warrants are met for the SB approach. *It is thus recommended that a left turn pocket be constructed on the SB approach to facilitate the left turn movement, in order to fully mitigate the study project's impacts at this location under Background Plus Project conditions.* This improvement is not included within the City's CIP, the City's TIF, or the FORA CIP. Implementation of this improvement is the responsibility of the study project.

Del Monte Boulevard / Marina Green Drive, Intersection # 6 (unsignalized), would operate at LOS C during the weekday AM and LOS F during the PM peak hour (average delay of 23.1 and 96.2 seconds, respectively). The worst movement would operate at LOS F during both peak hours with an average approach delay of 141.2 seconds during the AM 531.3 seconds during the PM peak hours. The addition of project traffic would cause operations to deteriorate from an acceptable level (worst approach of LOS A) to an unacceptable level (LOS F), thereby representing a significant impact at this intersection.

The addition of a SB left turn lane, an EB right turn lane, and a WB right turn lane at this intersection, in combination with a conversion to all-way stop, would be required to fully mitigate the project's impacts under Background Plus Project conditions. None of these improvements are included within the City of Marina CIP, City of Marina TIF, or the FORA CIP. Implementation of these improvements is the responsibility of the study project.

It should be noted that this analysis assumes that the Marina Green approaches to the intersection will not be offset from each other. If neither of the two legs (the existing eastbound leg nor the project-access westbound leg) is realigned to connect opposite each other, the driveway into an existing apartment complex would be located in between the two intersection legs. If the two legs are not oriented opposing each other, it is recommended that the intersection containing the westbound leg be converted to all-way stop control, due to its heavier traffic demand and the potential for sight distance deficiencies caused by the adjacent apartment complex. Conversion of just the existing eastbound leg intersection, or both the eastbound and westbound legged intersections, is not recommended, for the same reasons.

SB Highway 1 Ramps / Reservation Road, Intersection # 8 (unsignalized), would operate at LOS F during the weekday AM and PM peak hours (average delay of 172.9 and 243.6 seconds, respectively). The worst movement would operate at LOS F during both peak hours with an average approach delay of 572.7 seconds during the AM and 682.5 seconds during the PM peak hours. The addition of project traffic to this intersection would result in an increase to the delay for the approach operating at LOS F pre-project; the project would thereby represent a significant impact at this intersection.

The signalization of this intersection would be required to fully mitigate the project's impacts under Background Plus Project conditions during both peak hours. This improvement has been included in the City's CIP and City's TIF as measure TI 15; the project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

NB Highway 1 Ramps / Reservation Road, Intersection # 9 (unsignalized), would operate at LOS A during the weekday AM and LOS D during the PM peak hours (average delay of 3.0 and 33.1 seconds, respectively). The worst movement would operate at LOS C during the AM and LOS F during the PM peak hours, with an average approach delay of 15.4 seconds during the AM and 104.7 seconds during the PM peak hours. The addition of project traffic would cause operations to deteriorate from an acceptable level (worst approach of LOS D) to an unacceptable level (LOS F), thereby representing a significant impact at this intersection.

The signalization of the intersection would be required to fully mitigate the project's impacts under Background Plus Project conditions during both peak hours. This improvement has been included in the City's CIP and City's TIF as measure TI 15; the project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

Del Monte Boulevard / Beach Road, Intersection # 12 (unsignalized), would operate at LOS F during both peak hours (average delay of 100.8 and 97.3 seconds, respectively). The addition of project traffic would cause operations to deteriorate from an acceptable level (LOS B during the AM, LOS C during the PM) to an unacceptable level (LOS F), thereby representing a significant impact at this intersection.

The signalization of this intersection and the addition of an EB left turn lane would be required to fully mitigate the project's impacts under Background Plus Project conditions during both peak hours. This improvement will also require the reconstruction of the adjacent Beach Road rail crossing, and rail crossing signal preemption. This improvement has been included in the City's CIP and City's TIF as measure TI 29; the project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

De Forest Road / Beach Road, Intersection # 14 (unsignalized), would operate at LOS C during the AM and LOS B during the PM peak hours (average delay of 19.1 and 10.2 seconds, respectively). The worst movement would operate at LOS F during the AM and LOS E during the PM peak hours, with an average approach delay of 56.1 and 35.2 seconds respectively. The addition of project traffic would cause operations to deteriorate from an acceptable level (worst approach of LOS A) to an unacceptable level (LOS F), thereby representing a significant impact at this intersection.

The conversion of this intersection to all-way stop control and the addition of a NB left turn would be required to fully mitigate the project's impacts under Background Plus Project conditions during both peak hours. This improvement is not included within the City's CIP, the City's TIF, or the FORA CIP. Implementation of these improvements would be the responsibility of the study project.

Salinas Avenue / Reservation Road, Intersection # 20 (unsignalized), would operate at LOS A during both peak hours (average delay of 1.5 and 1.6 seconds, respectively). The worst movement would operate at LOS E during the AM and LOS F during the PM peak hours, with an average approach delay of 37.2 seconds and 56.1 seconds during both peak hours, respectively. The addition of project traffic would cause operations to deteriorate from an acceptable level (worst approach of LOS D) to an unacceptable level (LOS F), thereby representing a significant impact at this intersection.

Although the peak hour signal warrant is not met at this intersection, signalization would be the preferred choice of mitigation. Alternative mitigations such as all-way stop control would unduly delay traffic on Reservation Road, and, with the high speeds on Reservation Road, could create a safety hazard. In addition, signalization of the Salinas/Reservation intersection would likely shift traffic to and from Reservation Road away from parallel local streets, such as Bayer Avenue, to Salinas Avenue, as drivers would perceive traffic movements to and from Reservation at the Salinas signal to be easier and safer than at other intersections with Reservation Road. Therefore, the signalization of the Salinas Avenue/Reservation Road intersection is recommended to fully mitigate the project's impacts under Background Plus Project conditions during both peak hours. This improvement has been included in the City's CIP and City's TIF as measure TI 18; the project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

Imjin Road / Reservation Road, Intersection # 21 (signalized) would operate at LOS F during the weekday AM and PM peak hours (average delay of 143.2 and 229.7 seconds, respectively). The addition of project traffic increases the pre-project average delay by more than 1.0 second at an intersection operating at LOS F, and therefore represents a significant impact.

The previously recommended improvement at this intersection, namely the widening and re-striping of this intersection to accommodate one NB left, one NB through and a third NB right turn lane, would again be required to fully mitigate the project's impacts under Background Plus Project conditions during both peak hours. This improvement has already been identified as part of previous traffic studies and has been included in the City's CIP and City's TIF as measure TI 32; the project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

Blanco Road / Reservation Road, Intersection # 22 (signalized), would operate at LOS E during the AM and LOS F during the PM peak hours (average delay of 67.3 and 149.4 seconds, respectively). The addition of project traffic increases the pre-project average delay by more than 1.0 second at an intersection operating at LOS F, and therefore represents a significant impact.

The addition of a second WB through lane on Reservation Road at this intersection would fully mitigate the project's impacts under Background Plus Project conditions. This improvement is not included within the City's CIP, the City's TIF, or the FORA CIP. If the City of Marina adds this project to its CIP and TIF prior to the project's payment of the TIF, the project's payment of the TIF would fully mitigate the project's impacts at this location. If the City does not add this improvement to its CIP and TIF prior to the project's payment of the TIF, the project would implement this improvement, subject to reimbursement from third parties, as and when available, for all but its proportional share of the cost of implementation.

Based on the significance impact criteria discussed in section 1.5 of this report, the implementation of the Marina Station Project will have a significant impact on study intersections number 2, 3, 6, 8, 9, 12, 14, 20, 21, and 22 before mitigation.

If the mitigation improvements numbers I-1 to I-13 are implemented, the study project's incremental impacts would be fully mitigated at all study intersections under Background Plus Project traffic conditions. The traffic impact from the Marina Station Project would be reduced to insignificant levels at all study intersections and segments.

5.3 Background Plus Project Traffic Conditions – Road Segment Operations

Background Plus Project conditions morning and evening peak hour level of service results on the study street segments are tabulated on the LOS Table in *Exhibit 5C*. These are based upon the background plus project conditions intersection turning volumes illustrated on *Exhibits 10A and 10B*.

A discussion of the traffic operations for the road and freeway segments and ramps with operational deficiencies under background plus project conditions follows. For a reference of the location of each of the study road segments please see *Exhibit 2C*. The recommended mitigation measure to mitigate the incremental impact of the study project follows below, and is displayed in *italics* following the discussion.

Nearly all of the study road segments, freeway segments and ramps evaluated would operate at acceptable levels of service under background conditions. The exceptions are the two study segments of Reservation Road between Highway 1 and Beach Road.

Reservation Road, between Highway 1 NB Ramps and Cardoza Avenue, Segment #33 (segment), would operate at LOS D during the AM and LOS F during the PM peak periods. The addition of project traffic would cause the roadway segment operations to degrade one service level, from LOS E to LOS F, thereby representing a significant impact.

Reservation Road, between Cardoza Avenue and Beach Road, Segment #34 (segment), would operate at LOS C during the AM and LOS F during the PM peak periods. The addition of project traffic would cause the roadway segment operations to degrade from an acceptable level pre-project (LOS D) to an unacceptable level (LOS F), thereby representing a significant impact.

The mitigation for these two segments are tied together and discussed as one improvement. *The widening of the section of Reservation Road between Cardoza Avenue and the Highway 1 NB Ramps to two lanes to facilitate one right turn lane and one through lane would be required. The WB section of Reservation Road between Beach Road and Cardoza Avenue is already two lanes and only re-striping would be required at the Reservation Road/Cardoza Avenue intersection to provide 1 WB through and right and 1 WB through lane.* This improvement fully mitigates the project's impacts under Background Plus Project conditions during both peak hours. These improvements have already been included within the City's CIP and City's TIF as measure R 55; the project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

The weaving analyses of the Highway 1 freeway section between the Imjin Parkway and Del Monte Boulevard interchanges (road segment numbers 15 & 16 on *Exhibit 5C-2*) showed that the weaving operating conditions would be acceptable.

Based on the significance impact criteria discussed in section 1.5 of this report, the implementation of the Marina Station Project will have a significant impact on study road segments numbers 33 and 34 before mitigation.

If the mitigation improvement numbers S-1 through S-2 are implemented, the study project's significant impacts would be fully mitigated at all road segments under Background Plus Project traffic conditions. The traffic impact from the Marina Station Project would be reduced to insignificant levels along all study roadway segments.

5.4 Background Plus Project Traffic Conditions - Regional Traffic Beyond Study Area Boundaries

As explained in Chapter 1 above, the City identified the study area for the proposed project in consultation with Caltrans, AMBAG and TAMC. The study area encompasses 25 intersections, for Highway 1 segments, 10 freeway ramps, 2 weaving segments, and 19 road segments – the transportation facilities where significant traffic impacts attributable to the proposed project are most likely to occur.

Vehicles traveling to or from the proposed project would also use regional transportation facilities that are outside the study area. The 2004 TAMC “Nexus Study for a Regional Development Impact Fee” indicates that some of these facilities – particularly along Highways 1, 156, and 68 – currently operate at LOS E and F. A copy of the TAMC Nexus Study is *Appendix R* to this EIR. The proposed project would not be expected to cause the level of service at any of these facilities to fall from LOS D to LOS E or LOS E to LOS F. The project would, however, contribute one or more trips to transportation facilities outside the project study areas that are currently operating at LOS F. Therefore, the project would be deemed to cause a significant impact at these locations.

As any improvements to these facilities would be regional improvements, funding of the necessary mitigations (other than funding from state and federal sources) should be the responsibility of TAMC. Funding for improvements along Highway 1 in Seaside, Highway 68 east of Monterey, Highway 101 through Prunedale, and Highway 156 between Castroville and Prunedale, and for right-of-way acquisition along Del Monte Avenue, are all included within the current TAMC fee program. The remaining regional improvements along these highways should also be included by TAMC within its traffic impact fee. If they were included, the project's payment of the TAMC fee would mitigate the study project's impacts on these regional highways. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact will remain significant.

As any improvements to these highways would be regional improvements, funding of at least part of the necessary mitigations along these highway segments should be the responsibility of TAMC. Funding for improvements along Highway 1 in Seaside, Highway 68 east of Monterey, Highway 101 through Prunedale, and Highway 156 between Castroville and Prunedale, are all included within the current TAMC fee program. The remaining regional improvements along these highways should also be included by TAMC within its traffic impact fee; in which case, the project's payment of the TAMC fee would mitigate the study project's impacts on these regional highways. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact will remain significant.

5.5 *Background Plus Project Traffic Conditions - Mitigation Measures*

The following improvements are recommended under Background Plus Project conditions. Traffic mitigation improvement measures already listed under previous traffic scenarios will not be repeated here to avoid confusion and duplication. Please refer to *Exhibits 5D, 5E and 5F* for a complete summary of the recommended mitigation measures under each project-level development scenario. Mitigated level of service calculations are contained within *Appendix M*.

Mitigation measure # I-10 – Signalization of the SB Highway 1 Ramps / Reservation Road intersection (intersection #8) would be required. The project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

Mitigation measure # I-11 – The signalization of the NB Highway 1 Ramps / Reservation Road intersection (intersection #9) would be required. The project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

Mitigation measure # I-12 – Signalization of the Salinas Avenue / Reservation Road intersection (intersection #20) would be required. The project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

Mitigation measure # I-13 – The addition of a second westbound through lane at the Blanco Road / Reservation Road intersection (intersection #22) would be required. If the City of Marina adds this project to its CIP and TIF prior to the project's payment of the TIF, the project's payment of the TIF would fully mitigate the project's impacts at this location. If the City does not add this improvement to its CIP and TIF prior to the project's payment of the TIF, the project would implement this improvement, subject to reimbursement from third parties, as and when available, for all but its proportional share of the cost of implementation.

Mitigation measure # S-1 – The widening of the section of Reservation Road between Cardoza Avenue and the Highway 1 NB Ramps (segment #34) to two lanes to facilitate one right turn lane and one through lane would be required. The WB section of Reservation Road between Beach Road and Cardoza Avenue (segment #33) is already two lanes and only re-striping would be required. The project's payment of the City's TIF will fully mitigate the study project's impacts at this location.

Mitigation Measure # S-2 – Contribute funding towards the improvement of deficient operations along Highway 1 through the greater Monterey Peninsula, Highway 1 north of Castroville, Highway 68 through the Del Monte Forest, Highway 68 between Monterey and Salinas, Highway 101 through Prunedale, Highway 101 south of Salinas, and Highway 156 between Castroville and Prunedale, through the payment of the TAMC regional traffic impact fee. Funding for improvements along Highway 1 in Seaside, Highway 68 east of Monterey, Highway 101 through Prunedale, and Highway 156 between Castroville and Prunedale, and for right-of-way acquisition along Del Monte Avenue, are all included within the current TAMC fee program. The remaining regional improvements along these highways should also be included by TAMC within its traffic

impact fee. If they were included, the project's payment of the TAMC fee would mitigate the study project's impacts on these regional highways. However, if this fee structure is not adopted, or if all of the necessary improvements to improve operations are not added to the fee program, the cumulative impact will remain significant.

6 CUMULATIVE WITHOUT PROJECT TRAFFIC CONDITIONS

This section describes the analysis results of the study intersection and roadway segment operations under cumulative traffic conditions without the project developed. Traffic projections for the Cumulative Without Project Condition were developed by modeling the traffic generated by several additional proposed and anticipated developments in the Marina/Seaside area. The TRAFFIX software program was used to model the traffic generated by these projects and assign the traffic to the road network. The traffic from cumulative projects was added to Background traffic volumes to obtain Cumulative Without Project traffic volumes. The cumulative traffic condition is defined as traffic conditions roughly twenty years beyond existing conditions. However, it is uncertain when or if the projects modeled for the Cumulative Condition will be fully developed and occupied. The horizon year for the Cumulative Condition is approximately the Year 2030.

6.1 Cumulative Projects Trip Generation

Various approved and proposed projects throughout the Cities of Marina and Seaside, Monterey County, and in the surrounding FORA areas are anticipated to be developed, or at least partially developed within approximately the next twenty-five years. The list of cumulative projects includes projects that have been approved for development, such as build out of the East Garrison and University Villages projects, and projects that are currently under environmental review, such as Cypress Knolls. Projects have also been included that have previously been proposed in other planning documents, but that have not completed environmental review. These projects include UCMBEST in Marina, Del Rey Oaks Resort, Monterey Peninsula College, and the FORA office building.

For this traffic scenario it was assumed that most of the surrounding projects would be fully built out. Furthermore, the expected number of students at the nearby CSUMB at Master Plan level was used to determine the anticipated number of trips that would be generated by CSUMB staff and students. Where the specific phased implementation plans were not available for the adjacent developments, assumptions were made to estimate the percentage at Buildout. It should be noted that these assumptions for Buildout are based on a conservative approach for the Buildout of these cumulative projects and will likely change over time due to market conditions, development decisions and other conditions beyond the scope of this traffic study.

Appendix H1 lists the trip generation for approved and cumulative projects, and *Appendix H2* depicts the locations of the cumulative projects evaluated under this traffic scenario. The cumulative projects, (i.e. probable future projects, including those undergoing environmental review, not yet approved and excluding the approved projects and Marina Station project) would generate a total of 213,582 daily trips, with 13,567 trips (8,156 in, 5,411 out) during the AM peak hour, and 20,520 trips (9,623 in, 10,897 out) during the PM peak hour.

For the evaluation of the Cumulative Without Project traffic scenario, all approved projects and other known cumulative projects are added together to determine the anticipated cumulative traffic impact on the area without buildout of the study project. In total, buildout of the approved and cumulative projects would generate a total of 336,387 daily trips, with 20,451 trips (11,483 in, 8,968 out) during the AM peak hour, and 31,807 trips (15,516 in, 16,291 out) during the PM peak hour. Cumulative condition traffic volumes are depicted on *Exhibits 11A and 11B*.

6.2 Cumulative Project Trip Distribution and Assignment

For the purpose of this traffic scenario, the distribution of the estimated project trips to and from the FORA traffic zones (in which most of the cumulative projects listed in *Appendices H1 and H2* fall) to the Monterey Peninsula and the surrounding region was based on the origin / destination matrices provided by AMBAG. Furthermore, the locations and proximity of campus activities, other future FORA projects and other existing and future land uses adjacent to the Marina Station project site boundaries were considered in the project trip distribution. *Appendix H3* shows a table of the cumulative projects trip distribution, while the information provided by AMBAG is included in *Appendices P & Q*.

6.3 Cumulative Traffic Conditions – Road Network

Under this traffic scenario, it was assumed that some changes to the study road network would be in place, based on the City's CIP improvements, and the FORA CIP network. Each set of improvements is summarized below.

6.3.1 FORA Capital Improvement Program Projects

The FORA CIP sets forth the FORA Base Reuse Plan required improvements. The current FORA CIP has been structured to cover costs of four regional improvements, five "off-site" improvements (located outside of the former Fort Ord boundaries) and eleven on-site improvements (located within the former base boundaries), and two transit capital improvements. In total, FORA is responsible for \$115,315,212 of traffic- and transit-related improvements, of which \$63,943,867 will be fully funded by FORA. The primary sources of revenue expected to cover these costs are Development Fees and Land Sale/Lease proceeds. (As the study project site is not located in the former Fort Ord properties governed by FORA, it is not required to pay any of the FORA fees.)

The cumulative traffic scenario street network included improvements as identified in the FORA CIP for Financial Year 2006/07 through 2021/22. The roadway network in the FORA CIP includes the following new or upgraded facilities that would affect operations within the study street network, all of which would be fully funded by FORA:

- 8th Street "Cutoff": Upgrading/construction of a 2-lane arterial from Hwy 1 Overpass to Intergarrison Road;
- Upgrading of Intergarrison Road to a 4-lane arterial from Eastside Road easterly to Reservation Road;



- Widen Reservation Road to four lanes between northbound Highway 1 ramps and Beach Road (R 55);
- Extend 2nd Avenue from Imjin Parkway to Del Monte Boulevard (R 5);
- Widening of Imjin Parkway from 2 to 4 lanes between Imjin Road and Reservation Road (R 46);
- Extension of California Avenue from Reindollar to Carmel Avenue, creating a two-lane arterial from Reservation Road to the California State University Monterey Bay (CSUMB) campus (this improvement is now complete, but was not constructed at the time of the traffic counts) (R 3); and
- Del Monte Boulevard/Reservation Road – Restripe northbound Del Monte Boulevard as one left turn lane, two through lanes, and one right turn lane. (Although this item is not specifically listed within the City’s CIP, the City of Marina plans to implement this improvement as part of a proposed restriping of northbound Del Monte Boulevard south of this intersection to provide a Class II bicycle lane.) (R 38)

All of the above improvements are assumed in place, under Cumulative Without Project conditions.

6.4 Cumulative Without Project Traffic Conditions - Intersection Operations

The traffic that would be generated by the approved projects and all other probable future projects in the area was combined with the existing traffic to provide cumulative traffic conditions. Cumulative morning and evening peak hour turning volumes are illustrated on *Exhibit 11A & 11B. Exhibits 5A and 5B* tabulate corresponding morning and evening peak hour levels of service, the details of which are presented in *Appendix J*.

If all of the TIF-funded improvements are implemented, three of the study intersections would fail to operate at or better than their jurisdiction’s operational LOS standard under cumulative traffic conditions. The Imjin Road / Reservation Road intersection, Intersection #21 (signalized), would operate at LOS D during the AM peak hour, and LOS F during PM peak hour (average delay of 47.8 and 191.8 seconds, respectively).

The Blanco Road / Reservation Road intersection, Intersection #22 (signalized), would operate at LOS F during both peak hours (average delay of 233.7 and 257.6 seconds, respectively). The Highway 68 WB Ramps / Reservation Road intersection, Intersection # 24 (signalized), would operate at LOS C during the AM and LOS E during the PM peak hours (average delay of 28.2 and 58.5 seconds, respectively).

6.5 Cumulative Without Project Traffic Conditions – Road Segment Operations

Cumulative conditions morning and evening peak hour level of service results on the study street segments are tabulated on the LOS Table in *Exhibit 5C*). These are based upon the Cumulative Without Project conditions intersection turning volumes illustrated on *Exhibits 11A and 11B*.

- Widen Reservation Road to four lanes between northbound Highway 1 ramps and Beach Road (R 55);
- Extend 2nd Avenue from Imjin Parkway to Del Monte Boulevard (R 5);
- Widening of Imjin Parkway from 2 to 4 lanes between Imjin Road and Reservation Road (R 46);
- Extension of California Avenue from Reindollar to Carmel Avenue, creating a two-lane arterial from Reservation Road to the California State University Monterey Bay (CSUMB) campus (this improvement is now complete, but was not constructed at the time of the traffic counts) (R 3); and
- Del Monte Boulevard/Reservation Road – Restripe northbound Del Monte Boulevard as one left turn lane, two through lanes, and one right turn lane. (Although this item is not specifically listed within the City’s CIP, the City of Marina plans to implement this improvement as part of a proposed restriping of northbound Del Monte Boulevard south of this intersection to provide a Class II bicycle lane.) (R 38)

All of the above improvements are assumed in place, under Cumulative Without Project conditions.

6.4 Cumulative Without Project Traffic Conditions - Intersection Operations

The traffic that would be generated by the approved projects and all other probable future projects in the area was combined with the existing traffic to provide cumulative traffic conditions. Cumulative morning and evening peak hour turning volumes are illustrated on *Exhibit 11A & 11B. Exhibits 5A and 5B* tabulate corresponding morning and evening peak hour levels of service, the details of which are presented in *Appendix J*.

If all of the TIF-funded improvements are implemented, three of the study intersections would fail to operate at or better than their jurisdiction’s operational LOS standard under cumulative traffic conditions. The Imjin Road / Reservation Road intersection, Intersection #21 (signalized), would operate at LOS D during the AM peak hour, and LOS F during PM peak hour (average delay of 47.8 and 191.8 seconds, respectively).

The Blanco Road / Reservation Road intersection, Intersection #22 (signalized), would operate at LOS F during both peak hours (average delay of 233.7 and 257.6 seconds, respectively). The Highway 68 WB Ramps / Reservation Road intersection, Intersection # 24 (signalized), would operate at LOS C during the AM and LOS E during the PM peak hours (average delay of 28.2 and 58.5 seconds, respectively).

6.5 Cumulative Without Project Traffic Conditions – Road Segment Operations

Cumulative conditions morning and evening peak hour level of service results on the study street segments are tabulated on the LOS Table in *Exhibit 5C*). These are based upon the Cumulative Without Project conditions intersection turning volumes illustrated on *Exhibits 11A and 11B*.

Four of the study road segments, freeway segments and ramps evaluated would operate at unacceptable levels of service under cumulative conditions. Highway 1 would experience deficient freeway operations in the northbound direction during the PM peak hour on three segments – 1) between Nashua / Molera Roads and Del Monte Boulevard (North), 2) between Del Monte Boulevard (North) and Reservation Road, and 3) between Reservation Road and Del Monte Boulevard (South). All three segments would operate at LOS E in the northbound direction during the PM peak hour.

The weaving analyses of the Highway 1 freeway section between the Imjin Parkway and Del Monte Boulevard interchanges would be acceptable, both in the northbound and southbound directions, during AM and PM peak hours.

7 CUMULATIVE PLUS PROJECT TRAFFIC CONDITIONS

This section describes the analysis results of the study intersection and roadway segment operations under Cumulative Plus Project traffic conditions. The Cumulative Plus Project traffic condition is defined as traffic conditions roughly twenty years and beyond existing conditions, or the Year 2025 and beyond, and include trips from the study project. This section also discusses the regional analysis in the TAMC Nexus Study.

The project trip assignments utilized for the Cumulative Plus Project analysis were adjusted to account for the completion of the 2nd Avenue Extension between Imjin Parkway and Del Monte Boulevard and the extension of Patton Parkway from Crescent Avenue to the 2nd Avenue extension. These assignment adjustments reassigned some project trips bound for portions of Marina within the former Fort Ord off of Highway 1 and the Imjin Parkway interchange, and onto the 2nd Avenue extension. Some trips from the approved and cumulative projects were also reassigned onto 2nd Avenue and Patton Parkway in a similar manner, starting under Cumulative Without Project conditions. These links are included in the Cumulative Condition road network, but are not elements of the Existing Condition or Background Condition road networks, because construction of the links is not a condition of development for any new development project, but they are included in the Marina TIF and FORA CIP.

In order to facilitate an analysis of cumulative with and without the proposed project, all of the cumulative projects shown within *Appendix H1* were assumed for purposes of this report to be fully built out. This assumption may be unrealistic, however, given that applications for the proposed project are actually currently under review, whereas applications for some of the cumulative projects have not been filed yet. This approach to the analysis presents the worst-case view of the proposed project's cumulative traffic impacts.

7.1 Derivation of Cumulative Plus Project Traffic Volumes

Cumulative Plus Project volumes include both the future growth projected under Cumulative Without Project conditions, plus the trips generated by the study project. For the evaluation of Cumulative Plus Project conditions, all approved projects, the Marina Station project and other known cumulative projects are added together to determine the anticipated cumulative traffic impact on the area. In the cumulative traffic scenario a total of 362,224 daily trips would be generated, with 22,727 trips (12,684 in, 10,043 out) during the AM peak hour, and 34,412 trips (16,695 in, 17,717 out) during the PM peak hour. Cumulative Plus Project condition traffic volumes are depicted on *Exhibits 12A and 12B*.

Furthermore, it is anticipated that a considerable number of linked trips will occur between the residential and commercial uses within the Marina Station, Marina University Villages project, the CSUMB campus, and existing and planned surrounding residential developments as part of the FORA Reuse Plan. The linked trips have been taken into consideration in the cumulative project trip distribution to avoid double counting of trips on the study intersections and road network. *Exhibits 12A and 12B* represent the Cumulative projects trips assigned to the 25 study intersections.

It should also be noted that the project trip assignment under Cumulative Plus Project conditions has been adjusted slightly, based upon the additional street network improvements that are a part of the FORA CIP; this specifically including the Second Avenue extension between Imjin Parkway and Del Monte Boulevard. Most trips that were previously assigned onto Highway 1 at the southern Del Monte Boulevard interchange in Marina en route to areas on the former Fort Ord, such as the University Villages development, were instead reassigned to use the Second Avenue extension.

7.2 Cumulative Plus Traffic Conditions – Road Network

As alluded to above, Cumulative Plus Project conditions assume the same sets of improvements are constructed and open as under Cumulative Without Project conditions, including the Second Avenue extension between Imjin Parkway and Del Monte Boulevard.

7.3 Cumulative Plus Project Traffic Conditions - Intersection Operations

The traffic that would be generated by the approved projects, the Marina Station Project and all other future known projects in the areas was combined with the existing traffic to provide cumulative traffic conditions. Cumulative Plus Project morning and evening peak hour turning volumes are illustrated on *Exhibit 12A & 12B. Exhibits 5A and 5B* tabulate corresponding morning and evening peak hour levels of service, the details of which are presented in *Appendix K*.

If all of the TIF-funded improvements are implemented, six of the study intersections would fail to operate at or better than their jurisdiction's operational LOS standard under Cumulative Plus Project traffic conditions. At one intersection channelization warrants are met and at another signalization warrants would be met, but not based on poor operating conditions. A discussion of the traffic operations for each individual intersection with operational deficiencies follows. For a reference of the location of each of the intersections please see *Exhibit 2A*. The recommended mitigation measure to mitigate the incremental impact of the study project follows below, and is displayed in *italics* following the discussion

NB Highway 1 Ramps / Del Monte Boulevard North, Intersection # 2 (unsignalized), would operate at LOS D and LOS C during the weekday AM and PM peak hours (average delay of 27.4 and 18.6 seconds, respectively). The worst approach, southbound, operates at LOS F during both the AM and PM peak hours, with an average approach delay of 121.9 seconds and 112.6 seconds respectively. The project would make a cumulatively considerable contribution to this significant cumulative impact.

The previously recommended improvement, a westbound left turn pocket, would not improve operations at the intersection to the point that the cumulative impact would be mitigated to a level of less-than-significant. In addition to the westbound left turn lane, it is recommended that the intersection control be converted to all-way stop control. Funding of the construction of the westbound left turn lane improvement is the responsibility of the study project (see Mitigation measure # I-2 above), assuming the County (and, if necessary, Caltrans) approve implementation of this mitigation. The study

project would only be responsible for a proportional share of the costs of the conversion to all-way stop control, based upon the number of trips it adds to the intersection. This improvement is not included within the City's CIP, the City's TIF, or the FORA CIP. The project's funding contribution for the all-way stop would be paid to Monterey County if Monterey County (and, if necessary, Caltrans) approves implementation of this improvement and if the County establishes a mechanism to collect sufficient funds for the improvement from all responsible parties.

Del Monte Boulevard / North Project Access, Intersection # 3 (unsignalized), would operate at LOS A during both the weekday AM and PM peak hour (average delay of 0.8 and 0.9 seconds, respectively). The worst movement would operate at LOS B during both peak hours with an average approach delay of 10.9 and 11.4 seconds respectively. The left-turn peak hour volume warrant is met at this intersection under Existing Plus Project, Background Plus Project and Cumulative Plus Project conditions, and, absent the mitigation previously identified, the project would make a cumulatively considerable contribution to this significant cumulative impact.

This intersection would operate at acceptable levels of service during both peak hours and would thus not require mitigation improvements based on poor operating conditions. However, left turn channelization warrants are met for the SB approach. It is thus recommended that a left turn pocket be constructed on the SB approach to facilitate the left turn movement. This improvement (identified above as Mitigation measure # I-2) fully mitigates the project's contribution to the impacts under Cumulative Plus Project conditions during both peak hours. This improvement is not included within the City's CIP, the City's TIF, or the FORA's CIP. Implementation of this improvement is the responsibility of the study project.

Del Monte Boulevard / Marina Green Drive, intersection # 6 (unsignalized), would operate at LOS B during the weekday AM and PM peak hours (average delay of 15.3 and 18.8 seconds, respectively). The left-turn peak hour volume warrant is met at this intersection under Existing Plus Project, Background Plus Project and Cumulative Plus Project conditions and, absent the mitigation previously identified, the project would make a cumulatively considerable contribution to this significant cumulative impact.

Although the intersection would operate at an acceptable level of service with the addition of the CIP improvement for the intersection (signalization), other improvements have been recommended at the intersection to address the fact that the intersection would meet its southbound left turn signal warrant. See Mitigation measure # I-3 above (addition of a southbound left turn lane, an eastbound right turn lane, and a westbound right turn lane). Implementation of the recommended lane improvements is the responsibility of the study project, as noted under previous scenario; these improvements, are not included within the City's CIP, the City's TIF, or the FORA CIP. Implementation of Mitigation measure # I-3 will mitigate the study project's contribution to the significant cumulative impact at this location.



As described above for the Existing Plus Project and Background Plus Project scenarios, this analysis assumes that the Marina Green approaches to the intersection will not be offset from each other. If neither of the two legs (the existing eastbound leg nor the project-access westbound leg) is realigned to connect opposite each other, the driveway into an existing apartment complex would be located in between the two intersection legs. If the two legs are not oriented opposing each other, it would be required to also signalize the existing apartment driveway approach to Del Monte Boulevard, thereby creating a five-legged signalized intersection.

Del Monte Boulevard / Cosky Drive, Intersection # 7 (unsignalized), would operate at LOS A during the weekday AM and PM peak hours (average overall delay of 3.5 and 2.2 seconds, respectively). The worst movement would operate at LOS E during the AM and LOS F during the PM peak hour with an average approach delay of 48.7 seconds during the AM and 59.8 seconds during the PM peak hours. The project would make a cumulatively considerable contribution to this significant cumulative impact.

The addition of a southbound median left turn acceleration lane on Del Monte Boulevard south of Cosky Drive would be required for this intersection to fully mitigate the significant cumulative impact. This improvement is not included within the City's CIP, the City's TIF, or the FORA CIP. If the City of Marina adds this project to its CIP and TIF prior to the study project's payment of the TIF, said study project payment of the TIF would fully mitigate the project's impacts at this location. If the City does not add this improvement to its CIP and TIF prior to the study project's payment of the TIF, the study project would be solely responsible for implementation of this improvement, and would be eligible for reimbursement (for all but its proportional share of the cost of implementation) via any future payments received by the City of Marina from other future projects towards their individual proportional shares of the cost of implementing this improvement.

De Forest Road / Beach Road, Intersection # 14 (unsignalized), would operate at LOS C during the AM and LOS B during the PM peak hours (average delay of 19.1 and 10.2 seconds, respectively). The worst movement would operate at LOS F during the AM and LOS E during the PM peak hours, with an average approach delay of 56.1 and 35.2 seconds respectively. Operations would deteriorate from an acceptable level (worst approach of LOS A) to an unacceptable level (LOS F) at this intersection under Existing Plus Project, Background Plus Project and Cumulative Plus Project conditions, and, absent the mitigation previously identified, the project would make a cumulatively considerable contribution to this significant cumulative impact.

The conversion of this intersection to all-way stop control and the addition of a NB left turn lane and a SB right turn lane would be required to improve the operating conditions to acceptable levels of service during both peak hours. This improvement, described above as Mitigation measure # I-7, would mitigate the project's contribution to the significant cumulative impact. Mitigation measure # I-7 is not included within the City's CIP, the City's TIF, or the FORA's CIP. Implementation of these improvements would be the responsibility of the study project.

Imjin Road / Reservation Road Intersection #21 (signalized) would operate at LOS E during the AM peak hour and LOS F during the PM peak hour (average delay of 56.6 and 208.3 seconds, respectively). The project would make a cumulatively considerable contribution to this significant cumulative impact.

In addition to City TIF improvements at this intersection, the addition of a second northbound through lane and a second southbound through lane on Imjin Parkway would mitigate the significant cumulative impact to a level of less-than-significant. The City of Marina's TIF and CIP improvements at this intersection represent the City's share towards mitigation of this interchange of regional importance. Therefore, funding of the remainder of the necessary mitigations at this intersection should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee; in which case, the project's payment of the TAMC fee would mitigate the study project's impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact will remain significant.

Blanco Road / Reservation Road Intersection # 22 (signalized) would operate at LOS F during both peak hours (average delay of 261.3 and 280.7 seconds, respectively). The project would make a cumulatively considerable contribution to this significant cumulative impact.

As previously recommended under Background Plus Project conditions, the addition of a second WB through lane would be required to mitigate the significant cumulative impact to a level of less-than-significant. This improvement is not included within the City's CIP, the City's TIF, or the FORA CIP. If the City of Marina adds this project to its CIP and TIF prior to the project's payment of the TIF, the project's payment of the TIF would fully mitigate the project's impacts at this location. If the City does not add this improvement to its CIP and TIF prior to the project's payment of the TIF, the project would implement this improvement, subject to reimbursement from third parties, as and when available, for all but its proportional share of the cost of implementation.

Highway 68 WB Ramps / Reservation Road Intersection # 24 (signalized) would operate at LOS C during the AM and LOS E during the PM peak hours (average delay of 27.4 and 57.2 seconds, respectively). The project would make a cumulatively considerable contribution to this significant cumulative impact.

The addition of an EB right turn lane would be required to mitigate the significant cumulative impact to a level of less-than-significant. This improvement is not included within the City's CIP, the City's TIF, the FORA CIP, or the TAMC Nexus study. Improvements to this corridor should be added to the TAMC Nexus Study and payment of the TAMC fee would mitigate the impact at this intersection. However, if either this fee structure is not adopted or this improvement is not added to the TAMC fee program, and if the County establishes no alternative mechanism for the collection and disbursement of improvement contributions from all responsible parties, the impact will remain significant.



If the mitigation improvements numbers I-1 to I-17 are implemented, the significant cumulative impacts would be mitigated at all study intersections. The cumulative traffic impact from the Marina Station Project and other approved and cumulative projects would be reduced to less than significant levels.

7.4 Cumulative Plus Project Traffic Conditions – Road Segment Operations

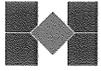
Cumulative Plus Project conditions morning and evening peak hour level of service results on the study street segments are tabulated on the LOS Table in *Exhibit 5C*. These are based upon the Cumulative Plus Project conditions intersection turning volumes illustrated on *Exhibits 12A and 12B*.

A discussion of the traffic operations for the road and freeway segments and ramps with operational deficiencies under cumulative conditions follows. For a reference of the location of each of the study road segments please see *Exhibit 2C*. The recommended mitigation measure to mitigate the incremental impact of the study project follows below, and is displayed in *italics* following the discussion.

If all of the TIF-funded improvements are implemented, five of the study road segments, freeway segments and ramps evaluated would operate at unacceptable levels of service under Cumulative Plus Project conditions.

Highway 1 would experience deficient freeway operations in the northbound direction during the PM peak hour on all four study freeway segments – 1) between Nashua / Molera Roads and Del Monte Boulevard (North), 2) between Del Monte Boulevard (North) and Reservation Road, 3) between Reservation Road and Del Monte Boulevard (South), and 4) between Del Monte Boulevard (South) and Imjin Parkway (12th Street). Northbound operations between Nashua / Molera Roads and Del Monte Boulevard (North) would be LOS F during the PM peak hour, while the other three segments would operate at LOS E in the northbound direction during the PM peak hour. Operations on segments 1) and 4), would represent changes in the levels of service from those under Cumulative Without Project conditions (LOS E to LOS F, and LOS D to LOS E, respectively), and thus would represent significant cumulative impacts. Operations on segments 2) and 3) would represent the same levels of service as under Cumulative Plus Project conditions; however, since these freeway segments operate at deficient levels of service, the project would make a cumulatively considerable contribution to these significant cumulative impacts.

The widening of northbound Highway 1 between Nashua / Molera Roads and Del Monte Boulevard (North) from two to three lanes would be required. This improvement is not included within the City's CIP, the City's TIF, the FORA CIP, or the TAMC Nexus study. This improvement is also not currently included in long-range improvement plans for Highway 1. The Caltrans Route Concept Report for Highway 1 includes widening four lane segments of Highway 1 to six lanes. However, there is currently no funded improvement that would widen this segment of Highway 1. As this is a regional improvement, funding of at least part of the necessary mitigations along this roadway segment should be the responsibility of TAMC, and TAMC should include these



improvements within its traffic impact fee; in which case, the project's payment of the TAMC fee would mitigate the study project's impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact will remain significant.

The widening of northbound Highway 1 between Del Monte Boulevard (North) and Reservation Road from two to three lanes would be required. This improvement is not included within the City's CIP, the City's TIF, the FORA CIP, or the TAMC Nexus study. This improvement is also not currently included in long-range improvement plans for Highway 1. The Caltrans Route Concept Report for Highway 1 includes widening four lane segments of Highway 1 to six lanes. However, there is currently no funded improvement that would widen this segment of Highway 1. As this is a regional improvement, funding of at least part of the necessary mitigations along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee; in which case, the project's payment of the TAMC fee would mitigate the study project's impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact will remain significant.

The widening of northbound Highway 1 between Reservation Road and Del Monte Boulevard (South) from two to three lanes would be required. This improvement is not included within the City's CIP, the City's TIF, the FORA CIP, or the TAMC Nexus study. This improvement is also not currently included in long-range improvement plans for Highway 1. The Caltrans Route Concept Report for Highway 1 includes widening four lane segments of Highway 1 to six lanes. However, there is currently no funded improvement that would widen this segment of Highway 1. As this is a regional improvement, funding of at least part of the necessary mitigations along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee; in which case, the project's payment of the TAMC fee would mitigate the study project's impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact will remain significant.

The widening of northbound Highway 1 between Del Monte Boulevard (South) and Imjin Parkway (12th Street) from three to four lanes would be required. This improvement is not included within the City's CIP, the City's TIF, the FORA CIP, or the TAMC Nexus study. This improvement is not currently included in long-range improvement plans for Highway 1. Widening Highway 1 beyond the existing 6-lane section south of Imjin Parkway is not anticipated in the Caltrans Route Concept Report for Highway 1. As this is a regional improvement, funding of at least part of the necessary mitigations along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee; in which case, the project's payment of the TAMC fee would mitigate the study project's impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact will remain significant.



The weaving analyses of the Highway 1 freeway section between the Imjin Parkway and Del Monte Boulevard interchanges (road segment numbers 15 & 16 on *Exhibit 5C*) showed that the weaving operating conditions would be acceptable in the northbound direction, but would be deficient during both the AM and PM peak hours in the SB travel direction, when the operating conditions would be LOS E. The project would make a cumulatively considerable contribution to this significant cumulative impact.

Multiple improvement options are possible to improve the operations of this weaving segment, including grade-separating the ramps and increasing the weaving distance between the ramps. The latter improvement option, an increase of the weaving distance, could be accomplished through a proposed reconfiguration of the southbound on- and off-ramps at the Highway 1/Imjin Parkway interchange. This would be the preferred improvement option for the weaving section, both in terms of minimizing improvement cost and ability to be implemented. A Project Study Report (PSR) is currently underway that would study the possible ramp reconfiguration options at the Highway 1/Imjin Parkway interchange that report will make the final determination of the ultimate weaving improvement. Funding for the Highway 1/Imjin Parkway Project Study Report has already been included within the City's CIP and City's TIF, as measure R 58, Through payment of the City's TIF, the project will contribute its fair share towards the development of a long-range improvement plan for the Highway 1/Imjin Parkway interchange; the intersection improvements would, in turn, be expected to improve the operation of weaving segment.

Funding for construction of the interchange modification is identified in the City's TIF as measure R 49; however, funding has not been identified and interchange improvements at this location are not included in the TAMC Nexus Study or the City's TIF. As this is a regional improvement, funding of at least part of the necessary mitigations along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee. If they were included the project's payment of the TAMC fee, in combination with payment of the City of Marina TIF, would mitigate the study project's impact in this location. If the City, TAMC, or other enacted fee structures for improvements that would address the weaving segment are in place prior to the issuance of the building permits for this project, the project would pay its fair share of the costs of the improvements and its cumulative impact would be mitigated. However, if such a fee structure is not adopted, the cumulative impact would remain significant.

If the mitigation improvements numbers S-1 to S-8 are implemented, the cumulative impacts would be mitigated at all study roadway segments. To the extent these measures are not implemented, the incremental impacts to the roadway segments would remain significant.

7.5 Cumulative Plus Project Traffic Conditions - Mitigation Measures

As explained in Chapter 1 above, the City identified the study area for the proposed project in consultation with Caltrans, AMBAG and TAMC. The study area encompasses 25 intersections, for Highway 1 segments, 10 freeway ramps, 2 weaving segments, and 19 road segments – the transportation facilities where significant traffic impacts attributable to the proposed project are most likely to occur.

Vehicles traveling to or from the proposed project would also use regional transportation facilities that are outside the study area. The 2004 TAMC “Nexus Study for a Regional Development Impact Fee” indicates that some of these facilities – particularly along Highways 1, 156, and 68 – currently operate at LOS E and F. A copy of the TAMC Nexus Study is Appendix R to this report. The proposed project would not be expected to cause the level of service at any of these facilities to fall from LOS D to LOS E or LOS E to LOS F. The project would, however, contribute one or more trips to transportation facilities outside the project study areas that are currently operating at LOS F. Therefore, the project would be deemed to cause a significant impact at these locations.

In 2025, assuming buildout of anticipated projects in the County, including the proposed project, the Nexus Study indicates that more regional transportation facilities would, absent physical improvements, operate at LOS F. The proposed project would contribute to some of these deficiencies, and along Highway 1, the project’s contribution would be cumulatively considerable. Therefore, the project would be deemed to contribute considerably to a significant cumulative impact at regional transportation facilities outside the project study area.

As indicated on Exhibit 6C, the study project would add trips to many regional roadways outside of the study area, such as Highway 1 through the greater Monterey Peninsula, Highway 1 north of Castroville, Highway 68 through the Del Monte Forest, Highway 68 between Monterey and Salinas, Highway 101 through Prunedale, Highway 101 south of Salinas, and Highway 156 between Castroville and Prunedale. Recent traffic analyses, such as the TAMC Nexus Study in 2004 and the City of Monterey General Plan update in 2004, note that traffic volumes along some of these highways currently operate at deficient levels of service LOS E and LOS F, and project that many of these segments will also operate at deficient levels of service LOS E and LOS F by the Year 2030. Since these regional highway segments collectively operate at deficient levels of service under either existing or future conditions, the project would represent both a project specific and a cumulatively significant impact in these locations.

As any improvements to these highways would be regional improvements, funding of at least part of the necessary mitigations along these highway segments should be the responsibility of TAMC. Funding for improvements along Highway 1 in Seaside, Highway 68 east of Monterey, Highway 101 through Prunedale, and Highway 156 between Castroville and Prunedale, are all included within the current TAMC fee program. The remaining regional improvements along these highways should also be included by TAMC within its traffic impact fee; in which case, the project's payment of the TAMC fee would mitigate the study project's impacts on these regional highways. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact will remain significant.

7.6 Cumulative Plus Project Traffic Conditions - Mitigation Measures

Traffic mitigation improvement measures already listed under previous traffic scenarios will not be repeated here to avoid confusion and duplication. Please refer to Tables 5D, 5E and 5F for a complete summary of the recommended mitigation measures under each development scenario. Mitigated level of service calculations are contained within Appendix N.

Mitigation measure # I-14 – *The addition of all-way stop control is recommended at the Northbound Highway 1 Ramps / Del Monte Boulevard intersection (intersection #2). The project would be responsible for a proportional share the cost of this improvement, to be paid to Monterey County if Monterey County (and, if necessary, Caltrans) approves implementation of the improvement and if the County establishes a mechanism to collect sufficient funds for the improvement from all responsible parties.*

Mitigation measure # I-15 – *The addition of a southbound median left turn acceleration lane on Del Monte Boulevard south of Cosky Drive would be required at the Del Monte Boulevard / Cosky Drive intersection (intersection #7). . If the City of Marina adds this project to its CIP and TIF prior to the study project's payment of the TIF, said study project payment of the TIF would fully mitigate the project's impacts at this location. If the City does not add this improvement to its CIP and TIF prior to the study project's payment of the TIF, the study project would be solely responsible for implementation of this improvement, and would be eligible for reimbursement (for all but its proportional share of the cost of implementation) via any future payments received by the City of Marina from other future projects towards their individual proportional shares of the cost of implementing this improvement.*

Mitigation measure # I-16 – *The addition of a second northbound through lane and a second southbound through lane on Imjin Road at Reservation Road would be required at the Imjin Road / Reservation Road intersection (intersection #21). The City of Marina's TIF and CIP improvements at this intersection represent the City's share towards mitigation of this interchange of regional importance. Therefore, funding of the remainder of the necessary mitigations at this intersection should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee; in which case, the project's payment of the TAMC fee would mitigate the study project's impact at this intersection. However, if this fee structure is not adopted, or if the*

improvement is not added to the fee program, the cumulative impact will remain significant.

Mitigation measure # I-17 – *The widening of the Highway 68 WB Ramps / Reservation Road intersection (intersection #24) to facilitate an EB right turn lane would be required. Improvements to this corridor should be added to the TAMC Nexus Study and payment of the TAMC fee would mitigate the impact at this intersection. However, if either this fee structure is not adopted or this improvement is not added to the TAMC fee program, and if the County establishes no alternative mechanism for the collection and disbursement of improvement contributions from all responsible parties, the impact will remain significant.*

Mitigation measure # S-3 – *The widening of northbound Highway 1 between Nashua / Molera Roads and Del Monte Boulevard (North) from two to three lanes would be required. This improvement is not included within the City's CIP, the City's TIF, the FORA CIP, or the TAMC Nexus study. This improvement is also not currently included in long-range improvement plans for Highway 1. The Caltrans Route Concept Report for Highway 1 includes widening four lane segments of Highway 1 to six lanes. However, there is currently no funded improvement that would widen this segment of Highway 1. As this is a regional improvement, funding of at least part of the necessary mitigations along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee; in which case, the project's payment of the TAMC fee would mitigate the study project's impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact will remain significant.*

Mitigation measure # S-4 – *The widening of northbound Highway 1 between Del Monte Boulevard (North) and Reservation Road from two to three lanes would be required. This improvement is not included within the City's CIP, the City's TIF, the FORA CIP, or the TAMC Nexus study. This improvement is also not currently included in long-range improvement plans for Highway 1. The Caltrans Route Concept Report for Highway 1 includes widening four lane segments of Highway 1 to six lanes. However, there is currently no funded improvement that would widen this segment of Highway 1. As this is a regional improvement, funding of at least part of the necessary mitigations along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee; in which case, the project's payment of the TAMC fee would mitigate the study project's impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact will remain significant.*

Mitigation measure # S-5 – *The widening of northbound Highway 1 between Reservation Road and Del Monte Boulevard (South) from two to three lanes would be required. This improvement is not included within the City's CIP, the City's TIF, the FORA CIP, or the TAMC Nexus study. This improvement is also not currently included in long-range improvement plans for Highway 1. The Caltrans Route Concept Report for Highway 1 includes widening four lane segments of Highway 1 to six lanes. However,*

there is currently no funded improvement that would widen this segment of Highway 1. As this is a regional improvement, funding of at least part of the necessary mitigations along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee; in which case, the project's payment of the TAMC fee would mitigate the study project's impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact will remain significant.

Mitigation measure # S-6 – *The widening of northbound Highway 1 between Del Monte Boulevard (South) and Imjin Parkway (12th Street) from three to four lanes would be required. This improvement is not included within the City's CIP, the City's TIF, the FORA CIP, or the TAMC Nexus study. This improvement is not currently included in long-range improvement plans for Highway 1. Widening Highway 1 beyond the existing 6-lane section south of Imjin Parkway is not anticipated in the Caltrans Route Concept Report for Highway 1. As this is a regional improvement, funding of at least part of the necessary mitigations along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee; in which case, the project's payment of the TAMC fee would mitigate the study project's impact at this intersection. However, if this fee structure is not adopted, or if the improvement is not added to the fee program, the cumulative impact will remain significant.*

Mitigation measure # S-7 – *Implement improvements to southbound Highway 1 between Del Monte Boulevard (South) and Imjin Parkway, in order to improve weaving operations. Multiple improvement options are possible, including grade-separating the ramps and increasing the weaving distance between the ramps (the preferred improvement). The results of the on-going Project Study Report for the Highway 1/Imjin Parkway interchange improvements will make the final determination of the ultimate weaving improvement; the intersection improvements would, in turn, be expected to improve the operation of weaving segment.*

Funding for construction of the interchange modification is identified in the City's CIP as measure R 49; however funding has not been identified and interchange improvements at this location are not included in the TAMC Nexus study or the City's TIF. As this is a regional improvement, funding of at least part of the necessary mitigations along this roadway segment should be the responsibility of TAMC, and TAMC should include these improvements within its traffic impact fee. If they were included the project's payment of the TAMC fee, in combination with payment of the City of Marina TIF, would mitigate the study project's impact in this location. If the City, TAMC, or other enacted fee structures for improvements that would address the weaving segment are in place prior to the issuance of the building permits for this project, the project would pay its fair share of the costs of the improvements and its cumulative impact would be mitigated. However, if such a fee structure is not adopted, the cumulative impact would remain significant.



Mitigation Measure # S-8 – Contribute funding towards the improvement of deficient operations along Highway 1 through the greater Monterey Peninsula, Highway 1 north of Castroville, Highway 68 through the Del Monte Forest, Highway 68 between Monterey and Salinas, Highway 101 through Prunedale, Highway 101 south of Salinas, and Highway 156 between Castroville and Prunedale, through the payment of the TAMC regional traffic impact fee. Funding for improvements along Highway 1 in Seaside, Highway 68 east of Monterey, Highway 101 through Prunedale, and Highway 156 between Castroville and Prunedale, and for right-of-way acquisition along Del Monte Avenue, are all included within the current TAMC fee program. The remaining regional improvements along these highways should also be included by TAMC within its traffic impact fee. If they were included, the project's payment of the TAMC fee would mitigate the study project's impacts on these regional highways. However, if this fee structure is not adopted, or if all of the necessary improvements to improve operations are not added to the fee program, the cumulative impact will remain significant.



8 ADDITIONAL MICHAEL DRIVE ACCESS

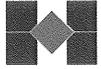
8.1 Introduction

As stated in the Project Description, Michael Drive is currently a discontinuous street through residential neighborhoods in northern Marina. The southern section of Michael Drive only has one access, off of Beach Road immediately east of Del Monte Boulevard. The northern section of Michael Drive connects to Cosky Drive, both of which are only accessible via the Cosky Drive intersection with Del Monte Boulevard, located between Marina Green Drive and Beach Road. The City's current General Plan calls for second access routes at the discontinuous ends of Michael Drive, connecting to a roadway on the site of the proposed project. Although the project sponsor's original project application did not include creating new vehicular access routes from Michael Drive to the project roadway, the City requested, and the project sponsor agreed, to include such access routes in the proposed project. Because this traffic study was begun prior to the decision to include Michael Drive access in the project, this section addresses the traffic implications of the Michael Drive access routes. *Exhibit 13* graphically depicts the approximate locations where the connections to Michael Drive would be located on the study project site plan.

8.2 Impact of Michael Drive Access

If both segments of Michael Drive were to become public access points to the Marina Station site, some project traffic would use both segments as alternatives to the other project access roads. Few, if any, industrial- or office-based trips would be expected to use either segment of Michael Drive en route to the project site. This is due in part to the fact that the Michael Drive connections to the project site would be a less direct and more circuitous route to the industrial and office areas than other routes. Also, no truck traffic would use the Michael Drive accesses, as truck traffic to the site would be restricted to Crescent Avenue and the project roads that border the eastern and northern edges of the project site. Some residential project trips would likely use the Michael Drive connections to access Del Monte Boulevard, primarily from the residential areas closest to this access point. Also, some residents from the Michael Drive and Cosky Drive neighborhoods would use the Michael Drive connections to the commercial areas of the study project.

The circuitousness of the street network in the Michael and Cosky Drive neighborhoods would limit the number of trips that would shift away from the other access roadways to the project site, which provide a more direct access to the project site than Michael Drive. Overall, the number of trips that would shift from other access routes to Michael Drive would be relatively small, representing less than 5% of the total project trip generation. As the other access points would not have a substantial change in traffic volumes, the addition of the Michael Drive access points would not lead to any changes in the recommended improvements at those other locations. At the Del Monte/Cosky intersection, the previously recommended improvement of a median acceleration lane should adequately handle the additional traffic that would use Michael Drive under Cumulative Plus Project conditions. However, with the addition of the Michael Drive



accesses, implementation of the Del Monte/Cosky improvement would likely need to be sped up to Background Plus Project conditions, as the new project trips on Cosky Drive would likely cause deficient operations on that approach to the intersection. No additional improvements would be required at the Michael/Beach intersection with the addition of the Michael Drive connection.