Volume I

University Villages Specific Plan Environmental Impact Report

Prepared for:

City of Marina

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SUMMARY

Introduction

This Draft Environmental Impact Report (DEIR) has been prepared in conformance with the California Environmental Quality Act (CEQA) to evaluate the environmental impacts associated with the University Villages Specific Plan ("Proposed Project") and related implementing development approvals. This DEIR will be considered by the City of Marina and responsible agencies in their decision-making process and by interested parties as a public information source.

This summary section is intended to highlight major areas of importance in the environmental analysis and provides the information as required in CEQA Guidelines Section 15123 - *Summary*. This summary section includes a brief synopsis of the Proposed Project and project alternatives, areas of known controversy, and issues to be resolved. A summary table of the potential environmental impacts that could occur as result of the Proposed Project, their level of significance, mitigation measures, and level of significance after mitigation is included in this section.

Purpose of the EIR

An EIR analyzes the environmental effects of a Proposed Project, indicates ways to reduce or avoid potential environmental damage resulting from the Proposed Project, and identifies alternatives to the proposed action. An EIR must also disclose significant environmental effects that cannot be avoided; growth-inducing effects; effects found not to be significant; and significant cumulative impacts of the Proposed Project. The purpose of an EIR is not to recommend either approval or denial of the project, but to provide information to aid in the decision-making process.

Project Description

The University Villages Specific Plan area encompasses approximately 420 acres and is located on the former Fort Ord military base; see Figures 2-1, 2-2, and 2-3 for the Regional and Project Vicinity, University Villages Specific Plan and Existing Conditions. Of this 420 acres, 358 acres are subject to the current development application submitted to the City of Marina by the Marina Community Partners. The difference of 62 acres is because of the "Non-Application Parcels." The Proposed Project involves the development of residential, retail, office, multiple use, and park uses within the specific plan area in phases as shown in Figure 2-4. Please refer to Table 2-1 in Chapter 2, Project Description, for a breakdown of land uses included in the specific plan. This EIR addresses the University Villages Specific Plan at a project-specific level. The Proposed Project also includes deconstruction and demolition of approximately 943 military structures, removal of below- and above-ground infrastructure within the project site (Main Garrison area), and replacement with entirely new infrastructure to support the new Marina University Villages mixed-use development, which consists of

1,237 residential units, 750,000 sf of retial uses, 760,000 sf office/research, 500 hotel rooms (the developer is also proposing an option to building a hotel(s) that includes 160,000 sf of retail, or 277,042 sf of office), transit esplanade, and parks and recreation opportunities.

Summary of Issues Addressed in the DEIR

An Initial Study was prepared in conjunction with this EIR to focus only on potentially significant issues that require mitigation or for which more in-depth analysis is warranted. The Initial Study prepared for this DEIR is attached as Appendix A. This DEIR includes discussion, among others, of the following related environmental issues:

Significant and Unavoidable Impacts

Significant and unavoidable project specific impacts include the following:

- The Proposed Project would generate emissions of criteria air pollutants. (AQ-6)
- The Proposed Project would temporarily increase noise levels. (NE-1)
- Ten intersections would operate at an unacceptable LOS under background plus project phase 1 traffic conditions. (TR-1)
- Four of the study segments would operate at an unacceptable LOS under background plus project Phase 1 traffic conditions. (TR-2)
- Eight intersections would operate at unacceptable LOS under background plus Proposed Project buildout traffic conditions. (TR-3)
- Five road segments would operate at an unacceptable LOS under background plus Proposed Project buildout traffic conditions. (TR-4)

These impacts are discussed in detail in Sections 3.2, Air Quality; 3.8, Noise; 3.9, Public Utilities; and 3.10, Transportation and Circulation.

Significant Irreversible Impacts

The Proposed Project would include the demolition of existing structures (about 943 buildings) and the construction of new land uses. Approximately 420 acres of land, which was already developed in military base uses, would be committed to a more extensive civilian mixed-use development. In both the short term and long term, the project would involve a commitment of non-renewable resources, including building materials and fossil fuels. However, when measured against the availability of these resources, the commitment would not be large.

Accidents, such as the release of hazardous materials, may trigger irreversible environmental damage. As described in Section 3.5**,** there is the potential for the disturbance of hazardous materials during site demolition. Consequently, there exists a potential for an accidental release that could affect the

surrounding environment, although it is unlikely any damage would be irreversible. State safety requirements and the regulations adopted by the city would reduce the public health and safety risks to reasonably prudent levels, so that significant irreversible changes from accidental releases would not be anticipated.

Growth-Inducing Effects of the Proposed Project

As discussed above, a project can induce growth in an area either directly (by constructing new homes and businesses) or indirectly (through the extension of infrastructure).

Elimination of Obstacles to Growth. Reuse of Fort Ord is not anticipated to eliminate any existing obstacles to growth outside of the Specific Plan area. The development of Fort Ord into a civilian urban area is considered "in-fill" in that the property is currently developed with vacant military structures. The Proposed Project would not result in the extension of existing sewer and water lines to the site. Lines are already present on the site from its previous use, but they would have to be replaced to accommodate the civilian standards and the different demands associated with civilian use. Providing this infrastructure to the site is not considered growth inducing but is part of the planned development of this area of the City as allowed in the existing General Plan.

Increased Demand on Secondary Markets. Future residents who would reside in Fort Ord would require secondary support uses, including neighborhood commercial and personal services. In general, an additional dollar spent in the City for these goods and services is re-spent on additional goods and services (due to the "multiplier" effect). Therefore, the anticipated increase in spending on secondary and support services could increase growth pressures in the region. However, because the project site is in an urbanized area, and includes large retail facilities, most goods and services will be available on-site, thus absorbing most of the secondary spending on-site.

Increased Pressure on Land Use Intensification. In the case of the Fort Ord reuse, the Proposed Project is considered both "in-fill" and "reuse" because of the existing urban footprint and extensive infrastructure left behind by the military.

Development of the Proposed Project would result in the construction of new residences, regional and neighborhood commercial uses, and substantial employment generating uses, such as retail, office and visitor serving uses. Adjacent properties are and will be developed with institutional, residential and commercial uses, and would not be subject to increased development pressures as they are already planned. Vacant properties to the south are currently proposed for commercial uses. Therefore, the development of the Proposed Project site would not increase pressure on the City to intensify the land use designations and zoning on adjacent or nearby properties. However, the Proposed Project is expected to encourage population growth as the residential and commercial development would create employment and housing opportunities. This would ultimately fulfill development as allowed in the City's General Plan.

Economic Effects

Increased Demand on Secondary Markets. Development (residential or employment-generating uses) typically generates a secondary or indirect demand for other goods and services. The secondary or economic change can be quantified by an economic multiplier, which is an economic term used to describe inter-relationships among various sectors of the economy. One aspect of the multiplier effect is the potential catalytic force a project can have on satellite or follow-up development because it creates a demand or market to be served (e.g., neighborhood commercial development around residential development).

Increased Pressure on Land Use Intensification. Unforeseen future development can be spurred by the construction of certain projects that have the effect of creating unique and currently unmet market demands, or by creating economic incentive for future projects by substantially increasing surrounding property values. These types of impacts are most often identified for projects developed in areas that are currently lacking a full spectrum of economic activity. For example, newly developing office areas may be lacking in a full range of support commercial uses; this support commercial demand can cause increased pressure for rezones or general plan amendments aimed at providing adequate land to accommodate businesses seeking to serve the unmet demand.

Demographics

CEQA Guidelines Appendix G is an Environmental Checklist form, which, among other issues, discusses population in the context of inducing population growth, and as this falls under growth inducement category of discussion, the population and housing issue is contained in the growth inducement section in Chapter 4 of this EIR. Appendix G also references displacement of housing and people and it is determined that there would be no impact in this regard. (Refer to the Initial Study checklist in Appendix A.)

Cumulative Impacts

CEQA requires that an EIR contain an assessment of the cumulative impacts that could be associated with the Proposed Project. This assessment involves examining project-related effects on the environment in the context of similar effects that have been caused by past or existing projects, and the anticipated effects of future projects. Even when project-related impacts are individually minor, the cumulative effects of these impacts, in combination with the impacts of other projects, could be significant under CEQA and must be addressed [CEQA Guidelines, Section 15130 and 15355(b)].

An EIR must discuss the "cumulative impacts" of a project when its incremental effect will be cumulatively considerable. This means that the incremental effects of the individual project would be considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (Section 15065(c)).

Cumulative Impact Assessment. The basis of the cumulative analysis or the "cumulative context" varies by technical area.

An impact of a project is considered cumulatively significant when the incremental impact of that project is considerable when viewed in light of impacts from similar past, present, and foreseeable future projects. Significant cumulative impacts would occur for the following:

- An eligible State Scenic Highway (AE-4),
- PM_{10} emissions (AQ-9),
- On-site noise levels (NE-4),
- Intersection LOS (TR-5),
- Road segment LOS (TR-6), and
- Intersection LOS (with 2nd Avenue extension) (TR-7).

Alternatives to the Proposed Project

Chapter 5 of this DEIR provides a description of the alternatives to the Proposed Project analyzed in this DEIR and presents how specific impacts differ in severity from those associated with the project. For the most part, significant impacts of the alternatives can be mitigated by measures identified in Chapter 3, which contains the environmental analysis of the Proposed Project.

The City of Marina may adopt an alternative in lieu of the Proposed Project, and this chapter is intended to assist decision-makers in their assessment of appropriate use of the project site. As such, the two alternatives that are analyzed in this EIR provide policy options for development of the project site in addition to fulfilling the requirements of CEQA. The alternatives are:

Alternative 1: No Project Alternative - No Development. In this scenario, "No Project" means that no development would occur on the 420 acre project site.

Alternative 2: Reduced Housing Alternative. In this scenario, the project site would be developed according to the existing City of Marina General Plan only and would not include the 400 additional units as allowed by General Plan Section 2.35.5. Therefore, 837 residential units would be constructed as well as 750,000 square feet (sf) of retail and 760,000 sf of office/research. All other components of the Proposed Project would remain the same.

Alternative 3: Reduced Commercial Alternative. In this scenario the 500 hotel rooms and 200,000 square feet of retail space would not be developed. This alternative would leave approximately 550,000 square feet of retail, 760,000 sf of office/research, and all the residential units allowed by the General Plan for the University Villages project site (i.e., 1,237 units).

Environmentally Superior Alternative. An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. CEQA Guidelines Section 15126.6(e)(2) of the CEQA Guidelines requires that an environmentally superior alternative be designated and states that "if the environmentally superior alternative is

the 'no project' alternative (in this case the "No Development" alternative), the EIR shall also identify an environmentally superior alternative among the other alternatives."

Based on the alternatives analysis herein, it appears that the "Alternative 3: Reduced Commercial Component Alternative" would result in less severe impacts. Associated with this alternative are reduced visual impacts to the Highway 1 corridor due to the absence of the hotel and 200,000 square feet of commercial (cumulative impacts relating to light and glare and an eligible State Scenic Highway are approximately the same), reduced construction and project-related vehicle emissions, reduced light and glare, reductions in water use, sewer flow, solid waste flow, lower vehicle emissions, and 20,500 fewer vehicle trips per day.

Summary Table

The following summary table provides an overview of the analysis contained in Chapter 3, Environmental Analysis. The summary includes: discussions of effects found to be less than significant; significant impacts; unavoidable significant impacts; and mitigation measures to avoid or reduce identified significant impacts and unavoidable significant impacts.

Information in Summary Table has been organized to correspond with environmental issues discussed in Chapter 3. The summary table is arranged in four columns:

- Impact;
- Level of Significance Prior to Mitigation;
- Mitigation Measure(s); and
- Level of Significance After Mitigation.

Table S-1
Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	3.1 Aesthetics and Visual Resources			
AE-1	The Proposed Project could reduce visual quality as seen from Highway 1 resulting in an adverse effect on a scenic vista or resource.	S	*AE-1.1* *Revegetation Along Highway 1. Where demolition or new construction has resulted in the loss of existing vegetation along the Highway 1 corridor, especially in areas where greater visibility of the project site has occurred, new vegetation shall be installed to create a visual buffer between new construction and Highway 1. All replacement vegetation shall be native and consistent with existing, native vegetation at the site.* *AE-1.2* *Protection of the Highway 1 Design Corridor and Views of the Santa Lucia Range. Visual simulations shall be prepared and reviewed as part of the Design Review process for buildings that exceed 40 feet in height, within the Highway 1 design corridor. The visual simulations shall demonstrate that the buildings visually complement the natural landscape and topography. Visual simulations for buildings in the vicinity of Highway 1 and Imjin Parkway shall demonstrate that views of the Santa Lucia Range will not be eliminated or substantially impacted.* *AE-1.3* *Signage along the Highway 1 Corridor. All signage shall be in compliance with the Highway 1 Design Corridor Guidelines.*	LTS
AE-2	The Proposed Project could substantially degrade the existing visual character or quality of the site and its surroundings.	LTS	None required.	NA

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Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation
AE-3	The Proposed Project could create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.	S	*AE 3.1*	*Implement light reduction and screening measures to reduce nighttime ambient light increases in the Fort Ord Dunes State Park.* *(a) Keep lighting levels (i.e., intensity/foot-candles) in commercial areas as low as feasible. Install light sources so that there is no light radiation above the horizontal plane (i.e. "dark sky"). Focus lighting downward and prevent the splay of ambient light to other areas. Whenever feasible, use path-level or bollard-type fixtures that keep the light source closer to the ground. Use color-tinted and lower wattage lamps to help reduce lighting-related disturbance.* *(b) Control lighting systems in commercial areas to minimize operating time. Employ an appropriate combination of time scheduling, photo switching, and motion sensors. It is reasonable and feasible that lighting be controlled in the above manner commencing two hours after sunset and two hours before sunrise.*	LTS
AE-4	The Proposed Project, in combination with other cumulative development, could have a substantial adverse effect on an eligible State Scenic Highway.	CC	*AE 4.1*	*Implement Mitigation Measure AE-1.1 through AE-1.3.*	SU
AE-5	The Proposed Project, in combination with other development, could contribute to new sources of light or glare that would adversely affect day or nighttime views.	CC	*AE 5.1*	*Implement Mitigation Measure AE-3.1.*	LTS

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	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
			3.2 Air Quality	
AQ-1	Demolition of existing buildings would create PM_{10} emissions.	PS	*AQ 1.1 Reduction of PM_{10} during demolition. The following shall be implemented during demolition activities.* • *Material to be demolished shall be wetted during demolition and kept wet until the material is removed. Material shall also be wetted during any subsequent disturbance or removal of the material.* • *Water all active construction areas at least three times daily. Frequency should be based on the type of operation, soil, and wind exposure.* • *Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).* • *Haul trucks shall maintain at least 2'0" of freeboards.* • *Cover all trucks hauling dirt, sand, or loose materials.* • *Cover inactive storage piles.* • *Install wheel washers at the entrance to construction sites for all exiting trucks.*	LTS
AQ-2	Trucks used for hauling of demolished material off-site would contribute diesel particulate emissions.	LTS	None required.	NA
AQ-3	Demolition of existing buildings could release friable asbestos to the air.	LTS	None required.	NA

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	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
AQ-4	Demolition of existing buildings could release unhealthy amounts of lead to the air.	PS	*AQ 4.1* *The applicant and the MBUAPCD will monitor one building demolition for airborne lead levels before any additional demolition occurs. The monitoring shall be designed in conference with the MBUAPCD.* *AQ 4.2* *The demolition contractor shall be certified by the ARB to remove structures containing lead.* *AQ 4.3* *All buildings to be demolished shall be wetted during demolition and the demolished material shall be wetted during subsequent transport off-site. The demolished material shall be transported off-site expeditiously after demolition of the structure.* *AQ 4.4* *All truck loads containing demolished materials and that travel city, county or state roads shall be covered.*	LTS
AQ-5	Construction would contribute emissions of criteria air pollutants.	S	*AQ-5.1* *Reduction of Particulate Matter. The following mitigation measure will be implemented during construction site grading of the Proposed Project.* • *Soil stabilizers shall be applied to all inactive areas.* • *Active exposed surfaces shall be watered three times daily.* • *All stock piles shall be covered with tarps when not in use.* • *All haul roads shall be watered twice daily.* • *Traffic on unpaved roads shall be limited to 15 mph or less.*	LTS
AQ-6	Operation of the Proposed Project would generate emissions of criteria air pollutants.	S	None feasible.	SU

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	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
AQ-7	Operation of the Proposed Project would contribute CO emissions.	LTS	None required.	NA
AQ-8	The Proposed Project could include land uses that would be a source of TAC emissions.	LTS	None required.	NA
AQ-9	The Proposed Project, in combination with other cumulative development, could contribute emissions of PM_{10} that would produce cumulative impacts.	CC	None feasible.	SU
AQ-10	The Proposed Project, in combination with other cumulative development could contribute emissions of CO that may produce cumulative impacts.	LTS	None required.	NA
AQ-11	The Proposed Project, in combination with other cumulative development in the NCCAB, would create emissions of ozone precursors that could affect cumulative ozone conditions.	LTS	None required.	NA
AQ-12	Cumulative development would generate diesel particulate TAC emissions.	LTS	None required.	NA
AQ-13	Cumulative development would generate TAC emissions.	LTS	None required.	NA

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	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
	3.3 Biological Resources			
BR-1	The Proposed Project would result in the loss of special-status plant populations.	PS	Option 1 (If the Installation-wide HCP and IA are executed prior to the Proposed Project): *BR-1.1 The project applicant shall comply with the provisions of the HCP and IA for the loss of sand gilia populations and no further mitigation would be required.* Option 2 (If the Installation-wide HCP and IA are not executed prior to the Proposed Project) the following mitigation measure shall apply to the loss of at least 782 sand gilia plants and approximately 0.2 acre of occupied habitat. *BR-1.2 Project applicant shall avoid areas containing sand gilia during construction of the Proposed Project and preserve these populations in place in perpetuity; or* *BR-1.3 Project applicant shall acquire a California Fish & Game Code, Section 2081 Incidental Take Permit from the CDFG. Required mitigation for the loss of this species and its habitat will be indicated as a condition of the permit. Mitigation could be accomplished through seed and seedbank salvage, and restoration or creation of habitat of an appropriate size and character at a suitable location on former Fort Ord (e.g. the landfill or Parker Flats).*	LTS
BR-2	The Proposed Project could result in the loss of special-status wildlife habitat.	PS	*BR-2.1 Implement Species Specific Mitigation Measures. Project applicant shall implement Mitigation Measures BR-4 and BR-5 below, pursuant to applicable USFWS, CDFG and/or HMP guidelines.*	LTS

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	Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation
			BR-2.2	*Implementation of City of Marina tree protection measures (or the University Villages Specific Plan Tree Standards) will concurrently mitigate for habitat loss (i.e., potential nest trees) for those species that utilize trees on the site for nesting. Any tree removal that occurs during the construction phase of the project shall be subject to the conditions in the City of Marina Municipal Code Chapter 12.04 (Tree Removal, Preservation and Protection) (or the UVSP Tree Standards), and shall be mitigated accordingly.*	
BR-3	The Proposed Project could result in the loss of individual black legless lizards or California horned lizards.	LTS	None required.		NA
BR-4	The Proposed Project could result in the loss of nesting raptors, loggerhead shrike or other migratory birds.	PS	*BR-4.1*	*Pre-construction (i.e. no more than 30 days prior to construction) surveys for active nests shall be conducted within 250 feet of proposed construction activities. If active nests are found and the biologist determines that construction activities would adversely affect the nest or cause nest abandonment, then those activities should be avoided in these areas until the young have fledged, as determined by nest monitoring by a qualified biologist through the breeding season. Once the young have fledged, construction activities may resume in the vicinity and no further mitigation measures would be required.*	LTS
BR-5	The Proposed Project could result in the loss of hibernation or maternity roosts for special-status bats.	PS	*BR-5.1*	*Conduct surveys for special-status bats in the project site and implement avoidance/relocation plan if present.*	LTS

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		(a) Prior to the removal of large trees or abandoned buildings, a qualified biologist shall survey the trees and abandoned buildings for presence of roosting bats. If special-status bat species are present, the following measures should be implemented. *(b) Tree removal should not occur if maternity bat roosts are present (between April 15 and August 1) in the trees to be removed.* *(c) No tree removal should occur within 300 feet of the maternity roost until all young bats have fledged – as determined by a qualified biologist.* *(d) If special-status bats are present, but there is not an active maternity roost, a Memorandum of Understanding (MOU) with the CDFG should be obtained in order to remove the animals prior to tree removal. Alternate habitat may need to be provided if bats are to be excluded from maternity roosts. A roost with comparable spatial and thermal characteristics should be constructed as directed by a qualified biologist. In the event that adult bats need to be handled and relocated, a qualified biologist shall prepare and implement a relocation plan subject to approval by CDFG that includes relocating all bats found on-site to an alternate suitable habitat. A Mitigation and Monitoring Plan that mitigates for loss of bat roosting habitat should be prepared by a qualified biologist and approved by CDFG prior to tree or building removal.*	
BR-6 The Proposed Project could result in conflicts with the HMP.	LTS	None required.	NA

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BR-7	The Proposed Project could result in an increase in ambient light in the adjacent Fort Ord Dunes State Park.	PS	*BR-7.1* *Plant native vegetative screening along the western frontage of Highway 1 adjacent to the Imjin Parkway overpass to disrupt or diffuse light from vehicle headlights from reaching the park. Plant species used for the screening shall be native species if possible, or non-invasive ornamental species that are similar in appearance to native vegetation for the region. CalTrans and the California Department of Parks and Recreation shall be consulted on the planning of the landscape design.*	LTS
	3.4 Cultural Resources			
CR-1	The Proposed Project could cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5 of the CEQA Guidelines.	LTS	Recommended measure: *CR-1.1 (a) In the event that any prehistoric subsurface archaeological features or deposits, including locally darkened soil ("midden"), that could conceal cultural deposits, animal bone, obsidian and/or mortar are discovered during construction-related earth-moving activities, all work within 50 meters of the resources shall be halted and the City shall consult with a qualified archaeologist to assess the significance of the find. Archaeological test excavations shall be conducted by a qualified archaeologist to aid in determining the nature and integrity of the find. If the find is determined to be significant by the qualified archaeologist, then representatives of the City and the qualified archaeologist shall meet to determine the appropriate course of action. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report shall be prepared by the qualified archaeologist according to current professional*	NA

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		standards.	
		(b) If a Native American site is discovered, then the evaluation process shall include consultation with the appropriate Native American(s). *When Native American archaeological, ethnographic, or spiritual resources are involved, all identification and treatment shall be conducted by qualified archaeologists who are either certified by the Register of Professional Archaeologists (RPA) or meet the federal standards as stated in the Code of Federal Regulations (36 C.F.R. 61), and Native American representatives who are approved by the local Native American community as scholars of the cultural traditions.* *In the event that no such Native American is available, persons who represent tribal governments and/or organizations in the locale in which resources could be affected shall be consulted.*	
		(c) A qualified archaeologist shall be present at the preconstruction meeting to educate all construction workers for the Proposed Project on the identification of subsurface cultural resources. The preconstruction meeting shall be completed prior to the commencement of any earth work or other construction activities and verification of compliance shall be provided to the City. Each contractor and all employees involved with earth moving activities to include, but not limited to grading, scraping, drilling, and trenching, shall be required to participate in this preconstruction meeting. If subsequent contractors are hired who did not participate in this preconstruction meeting they shall be required by	

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				the City to meet independently with the qualified archaeological consultant to review and discuss potential archaeological resources these materials so as to meet the spirit and the intent of this mitigation measure. They too shall provide verification to the City.	
CR-2	The Proposed Project could have the potential to disturb undiscovered human remains.	PS	*CR-2.1 (a)*	*If human bone or bone of unknown origin is found during construction, all work shall stop in the vicinity of the find and the County Coroner shall be contacted immediately. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission who shall notify the person it believes to be the most likely descendent. The most likely descendent shall work with the contractor to develop a program for reinterment of the human remains and any associated artifacts. No additional work is to take place within the immediate vicinity of the find until the identified appropriate actions have been carried out.*	LTS
			(b)	*Implement Mitigation Measure CR-1.1 (b).*	
CR-3	The Proposed Project incorporates site planning and design features that reflect the historical significance of the former Fort Ord, consistent with *City of Marina General Plan* Policy 4.128 subsection 2.	LTS	None required.		NA
CR-4	The Proposed Project, in combination with surrounding development, has the potential to eliminate important examples of major periods of California prehistory, which may be significant pursuant to Section 15064.5 (a)(1) of the CEQA Guidelines.	LTS	None required.		NA

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	3.5 Hazardous Materials and Public Safety			
HM-1	Construction and operation of the Proposed Project would involve the routine use, storage, transport, and disposal of hazardous materials.	LTS	None required.	NA
HM-2	The Proposed Project is located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, but it would not create a significant hazard to the public or the environment.	LTS	None required.	NA
HM-3	The Proposed Project could expose the public to unexploded ordnance in the long-term, creating risk of upset related to human or environmental health or safety.	LTS	*HM-3.1 Prior to commencement of on-site construction activities, the Master Developer shall coordinate with the Army to develop a safety program that specifies protocols relative to Munitions and Explosives of Concern (MEC) and in accordance with Cal-Osha regulations.*	LTS
HM-4	The Proposed Project, in combination with other development, could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	LTS	None required.	NA
	3.6 Hydrology and Water Quality			
HY-1	Development and occupancy of the Proposed Project could increase impervious areas and increase the flow and volume of stormwater runoff resulting in on- or off-site flooding.	LTS	None required.	NA

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Table S-1
Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
HY-2	Increased rates of surface runoff generated by development of the Proposed Project or dewatering for construction activities could result in increased levels of urban contaminants in stormwater runoff.	LTS	None required.	NA
HY-3	Runoff from the Proposed Project would contain urban pollutants that could impact local groundwater.	LTS	None required.	NA
HY-4	The Proposed Project could increase the amount of impervious surface area which could interfere with groundwater recharge.	NI	None required.	NA
HY-5	The Proposed Project would demolish the existing drainage infrastructure on the project site which would result in flooding upstream on the CSUMB campus.	S	*HY 5.1 Prior to the issuance of grading permits that would affect those drainage facilities supporting CSUMB, the developer shall demonstrate to the satisfaction of the City Engineer that the phasing and timing of drainage improvements have been coordinated with CSUMB.*	LTS
HY-6	Increased runoff generated by cumulative development, including the Proposed Project, could result in sedimentation and increased levels of urban contaminants, which could affect receiving water quality.	LTS	None required.	NA
	3.7 Land Use and Planning			
LU-1	Implementation of the Proposed Project would not conflict with the *City of Marina General Plan* policies that are intended to protect the environment.	LTS	None required.	NA

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Table S-1
Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
LU-2	Implementation of the Proposed Project would not conflict with nearby existing or planned uses.	NI	None required.	NA
			3.8 Noise	
NE-1	Construction of the Proposed Project would temporarily increase noise levels.	PS	*NE-1.1 The City shall ensure that notes for grading plans and/or the site improvement plans would clearly state the noise limitation requirements of Marina Municipal Code Section 15.04.055.* *NE-1.2 Pre-drilling shall be required prior to any pile driving.*	SU
NE-2	Construction activities associated with the Proposed Project would generate or expose persons on or off-site to excessive groundborne vibration.	PS	*NE 2.1 Implement NE-1.2 (pre-drill prior to pile-driving).*	LTS
NE-3	The Proposed Project would increase operational noise levels on and off-site.	LTS	None required.	NA
NE-4	The Proposed Project would contribute to cumulative on-site noise levels.	CC	*NE-4.1 The applicant shall ensure that primary outdoor activity areas at new University Villages residences along Imjin Parkway are outside the 70 dBA L_{dn} noise contour.* *NE-4.2 An acoustical analysis will be performed to ensure all interior noise levels at new University Villages residences along Imjin Parkway meet the 45 dBA standard.*	LTS
NE-5	The Proposed Project would contribute to cumulative noise levels off-site.	LTS	None required.	NA

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Table S-1
Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
			3.9 Public Utilities	
UT-1	Existing water entitlements and resources are sufficient to meet the projected water demand for the Proposed Project.	LTS	*Improvement Measure:* *UT-1.1 Implement the water conservation measures identified in the Specific Plan.* *UT-1.2 Replace the water transmission infrastructure lines to drastically reduce the volume of unaccounted-for water throughout the project boundary.*	LTS
UT-2	The Proposed Project would increase flows to the RTP but would not result in the need to construct a new wastewater treatment facility or the expansion of an existing facility.	LTS	None required.	NA
UT-3	The Proposed Project would not exceed the capacity of existing wastewater collection infrastructure resulting in the need to construct new infrastructure.	LTS	None required.	NA
UT-4	The Proposed Project would not generate an increase in solid waste that could be in excess of available permitted landfill capacity resulting in the need to expand existing facilities.	LTS	*Improvement Measure:* *UT-4.1 To ensure continued compliance with AB 939, the City of Marina shall expand the curbside recycling program to serve all properties within University Villages, including multi-family residences and commercial establishments. The project sponsor shall design multi-family and commercial sites to provide for trash enclosures of adequate size to accommodate the collection of both garbage and recyclable refuse. Recyclable refuse shall include cardboard, plastics, paper, metal, grass and whatever else is anticipated to be recycled.*	LTS

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Table S-1
Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
UT-5	The Proposed Project, in combination with other current and proposed City of Marina development, could result in a water supply impact.	LTS	None required.	NA
UT-6	The Proposed Project, in combination with surrounding current and probable future development, would not warrant the construction of a new wastewater treatment facility or the expansion of an existing facility.	LTS	None required.	NA
UT-7	The Proposed Project would result in a less-than-significant solid waste impact because it would be served by a landfill with sufficient permitted capacity to accommodate the project's and current and probable future development's solid waste disposal needs.	LTS	None required.	NA
	3.10 Transportation and Circulation			
TR-1	Ten intersections would operate at an unacceptable LOS under background plus project phase 1 traffic conditions.	S	*TR-1.1 Signalize the California Avenue/Reservation Road intersection (#2).* *TR-1.2 Widen Imjin Road and Reservation Road at the Imjin Road/Reservation Road intersection (#3) to provide one NB left, one NB through and three NB right turn lanes. A third WB and EB through lane as well as a third WB left turn lane would also be required.*	SU

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Table S-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		TR-1.3 Signalize the SB Highway 1 Ramps/12th Street/Imjin Parkway intersection (#7) and restripe the 12th Street/Imjin Parkway bridge over Highway 1 to accommodate two WB left turn lanes and one EB lane. (Shared Contribution)	
		TR-1.4 Close the median at the Highway 1 NB Ramps/Imjin Parkway intersection (#8). (Shared Contribution)	
		TR-1.5 Widen Imjin Parkway and 2nd Avenue at the 2nd Avenue/Imjin Parkway intersection (#9) to provide a second NB and WB left turn lane, add a NB and EB right turn lane and convert the NB and EB signal phasing to a right turn overlap.	
		TR-1.6 Add a second westbound left turn lane at the Imjin Road/Imjin Parkway intersection (#11). (Shared Contribution)	
		TR-1.7 Widen the east and westbound approaches of the Abrams Drive/Imjin Road intersection (#12) and convert the EB-WB signal phasing to provide EB-WB protected left-turn phasing.	
		TR-1.8 (a) Signalize 4th Avenue/1st Street intersection (#17) and add a NB and SB left turn lane. (Shared Contribution) *OR* *(b) Install a modern roundabout at the 4th Avenue/1st Street intersection (#17). (Shared Contribution)*	
		TR-1.9 (a) Signalize the General Jim Moore Boulevard/1st Street intersection (#18). (Shared Contribution) *OR* *(b) Install a modern roundabout at the General Jim Moore Boulevard/1st Street intersection (#18). (Shared Contribution)*	

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Table S-1
Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
			TR-1.10 Signalize General Jim Moore Boulevard/Coe Road/Eucalyptus Road intersection (#24) and add a SB left turn lane. (Shared Contribution)	
			TR-1.11 Signalize General Jim Moore Boulevard/Broadway Avenue intersection (#25) and add a NB left turn lane. (Shared Contribution)	
TR-2	Four of the study segments would operate at an unacceptable LOS under background plus project Phase 1 traffic conditions.	S	*TR-2.1 Widen Highway 1 NB off-ramp at 12th Street (#5) to a two-lane ramp.*	SU
			TR-2.2 Widen Highway 1 SB on-ramp at 12th Street (#6) to a two-lane ramp.	
			TR-2.3 Widen Blanco Road North of Reservation Road (#12) to a six-lane arterial.	
			TR-2.4 Reservation Road between Imjin Road and Blanco Road should be widened to a six-lane expressway (segment #13). The widening of Reservation Road to three EB and WB through lanes was identified as a FORA CIP. (Shared Contribution)	
TR-3	Eight intersections would operate at unacceptable LOS under background plus Proposed Project buildout traffic conditions.	S	*TR-3.1 Widen Blanco Road/Reservation Road intersection (#4) to provide a third EB left turn lane and a third NB receiving lane on Blanco Road.*	SU
			TR-3.2 Convert SB Highway 1 off-ramp to become an off-ramp loop at the Highway 1 SB ramps/Imjin Parkway intersection (#7).	
			TR-3.3 Widen Imjin Parkway and 2nd Avenue at the 2nd Avenue/Imjin Parkway intersection (#9) to provide third NB and WB left turn lanes; add a second NB and EB right turn lanes, add a second EB left turn lane, a third EB and WB through lane, and add a SB right turn lane and convert the SB and NB signal phasing to a right turn overlap.	

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Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation
			TR-3.4	*Widen Imjin Parkway and California Avenue at the California Avenue/Imjin Parkway intersection (#10) to provide one NB and EB right, three EB and WB through lanes. The signal setting should be optimized and right turn overlap phasing installed for the SB right turn.*	
			TR-3.5	*Widen Imjin Parkway and the re-striping of Imjin Road at the Imjin Road/Imjin Parkway intersection (#11) to provide three EB and WB through lanes and the re-striping of the NB as one NB left and two NB right turn lanes.*	
			TR-3.6	*Widen the Abrams Drive/Imjin Road intersection (#12) to provide three EB and WB through lanes with optimized signal phasing.*	
			TR-3.7	*Widen the 4th Avenue/3rd Street intersection (#17) to provide EB and WB left turn lanes.*	
			TR-3.8	*Widen the SB approach at the 1st Avenue/Light Fighter Drive intersection (#19) to provide one right, one through and one left turn lane and change the N/S signal phasing to permitted.*	
			TR-3.9	*Widen the EB and WB approach at the 2nd Avenue/Light Fighter Drive intersection (#20) to provide a second EB left turn lane and a WB right turn lane; re-stripe the SB approach to one left, one through and left and one right turn lane and change the N/S signal phasing to split phasing and SB right turn overlap phasing.*	
TR-4	Five road segments would operate at an unacceptable LOS under background plus Proposed Project buildout traffic conditions.	S	*TR-4.1*	*(a) Widen Highway 1 south of Light Fighter Drive interchange (segment #1) to an eight-lane freeway.* *OR*	SU

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Summary of Impacts and Mitigation Measures

	Impact	Level of Significance Prior to Mitigation		Mitigation Measure(s)	Level of Significance After Mitigation
				(b) If the widening of Highway 1 is not considered feasible, construct a northbound auxiliary lane.	
TR-5	The Proposed Project, in addition to cumulative conditions in the region, without the 2nd Avenue extension, would result in unacceptable intersection LOS.	CC	*TR-5.1*	*(a) Widen Imjin Road/Reservation Road intersection (#3) to provide for a WB to SB flyover ramp, and re-stripe of the NB approach to one left, one through and two free right turn lanes.* *OR* *(b) The Blanco Road connector between Imjin Parkway and Reservation Road could be constructed as a six lane arterial, although the FORA CIP identifies this as a four-lane road. (Shared Contribution)*	SU
			TR-5.2	*Widen Blanco Road/Reservation Road intersection (#4) to provide a second WB through lane. (Shared Contribution)*	
			TR-5.3	*Signalize the California Avenue/Reindollar Avenue intersection (#6). (Shared Contribution)*	
			TR-5.4	*Widen Imjin Parkway and California Avenue at the California Avenue/Imjin Parkway intersection (#10) to provide a second EB left turn lane, a WB left turn lane and NB right turn overlap signal phasing. (Shared Contribution)*	
			TR-5.5	*Signal phase the Imjin Road/Imjin Parkway intersection (#11) to provide NB right turn overlap phasing. (Shared Contribution)*	
			TR-5.6	*Widen the Abrams Drive/Imjin Road intersection (#12) to provide a second WB left lane, a NB left turn lane and NB right turn overlap signal phasing.*	
			TR-5.7	*Construct a modern roundabout at the Imjin Road/8th Street intersection (#15). (Shared Contribution)*	

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Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		TR-5.8 Widen 3rd Street at the 2nd Avenue/3rd Street intersection (#16) to provide a second EB left lane, WB and SB right turn lanes and optimized signal phasing. (Shared Contribution)	
		TR-5.9 Widen 3rd Street and 4th Avenue at the 4th Avenue/3rd Street intersection (#17) to provide right turn lanes on all four approaches would be required. (Shared Contribution)	
		OR	
		TR-5.10 Construct a modern roundabout at the 4th Avenue/3rd Street intersection (#17). (Shared Contribution)	
		TR-5.11 Construct a modern roundabout at the General Jim Moore Boulevard/1st Street intersection (#18). (Shared Contribution)	
		TR-5.12 Widen the SB approach at the 2nd Avenue/Light Fighter Drive intersection (#20) to provide a second SB right turn lane, third left turn lane and EB receiving lane on Light Fighter Drive; also, widen and re-stripe the NB lane to one left, one through/left and one right, EB right turn lane, a second WB right turn lane and NB and WB right turn overlap signal phasing. (Shared Contribution)	
		TR-5.13 Widen the General Jim Moore/Light Fighter Drive intersection (#21) to provide a third NB left turn lane, a second EB left turn lane, a second WB through lane, and a SB right turn lane with right turn overlap phasing. (Shared Contribution)	
		TR-5.14 Widen the General Jim Moore/Gigling Road intersection (#22) to provide third NB and SB through lanes, a second NB left turn lane, a second SB left turn lane and a EB right turn lane with right turn overlap phasing would be required. (Shared Contribution)	

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	Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
			TR-5.15 Widen the General Jim Moore/Normandy Road intersection (#23) to provide third NB and SB through lanes and optimized signal phasing. (Shared Contribution)	
			TR-5.16 Widen the General Jim Moore/Coe Road intersection (#24) to provide second NB and SB through lanes, a NB right turn lane, the re-striping of the EB lane as one left and one through/right turn lane and a WB left turn lane. (Shared Contribution)	
			TR-5.17 Widen the General Jim Moore/Broadway Avenue intersection (#25) to provide a second NB through lane and a second EB left turn lane. (Shared Contribution)	
TR-6	The Proposed Project, in addition to cumulative buildout conditions in the region, without the 2nd Avenue extension, would result in unacceptable LOS along road segments.	CC	*TR-6.1 (a) Widen NB Highway 1 between Light Fighter Drive interchange (segment #2) and 12th Street interchange to an eight-lane freeway would be required.* *OR* *(b) If the widening of Highway 1 is not considered feasible, the implementation of a northbound auxiliary lane could be constructed. (Shared Contribution)* *TR-6.2 Widen of the Highway 1 NB off-ramp at Light Fighter Drive (segment #9) to a two-lane ramp. (Shared Contribution)* *TR-6.3 Widen the Highway 1 SB on-ramp at Light Fighter Drive (segment #10) to a two-lane ramp. (Shared Contribution)*	SU

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Summary of Impacts and Mitigation Measures

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TR-7	The Proposed Project, in combination with cumulative buildout conditions in the region, with 2nd Avenue extension, would result in unacceptable intersection LOS.	CC	*TR-7.1* *Add a SB right turn lane at the 2nd Avenue/3rd Street intersection (#16). (Shared Contribution)* *TR-7.2* *Widen and re-stripe the NB lane as two left, two through and one through/right turn lane, adding a second EB right and second EB left, a second SB left and a second and third SB through lane, a second WB left turn, a WB right turn lane and overlap phasing for the SB and WB right turns at the 2nd Avenue/Light Fighter Drive intersection (#20). (Shared Contribution)* *TR-7.3* *Re-stripe the NB approach to one left, one through/right turn lane, the adding of a second EB left turn lane and a SB right turn lane at the General Jim Moore/Light Fighter Drive intersection (#21) would be required. (Shared Contribution)* *TR-7.4* *Add a third NB and SB through lane, EB right turn lane and second NB and SB left turn lanes at the General Jim Moore/Gigling Road intersection (#22). (Shared Contribution)*	SU

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1.0 INTRODUCTION

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Purpose of the Draft Environmental Impact Report

The City of Marina is the lead agency under the California Environmental Quality Act (Public Resources Code Section 21000, *et seq.*) (CEQA) for the preparation of this Draft Environmental Impact Report (DEIR) (SCH # 2004091167). This document serves as the environmental review for the Marina University Villages Specific Plan and the related implementing development approvals (Proposed Project). This DEIR has been prepared in compliance with CEQA Guidelines to disclose the environmental impacts associated with the Proposed Project, including the direct, indirect, and cumulative impacts of demolition, deconstruction, construction, and operation.

As provided by CEQA Guidelines, public agencies are charged with the duty to avoid or substantially reduce significant environmental damage where feasible. In discharging this duty, the public agency has an obligation to balance a variety of public objectives, taking into account economic, environmental and social issues. This EIR is an informational document that informs public agency decision makers and the general public of the significant environmental effects of the Proposed Project. An EIR must identify possible means to minimize the significant effects and describe reasonable alternatives to the project. As lead agency, the City of Marina is required to consider the information in this EIR along with any other available information in making its decision. The basic informational requirements for an EIR include discussions of the environmental setting, environmental impacts, mitigation measures, alternatives, significant irreversible changes, growth-inducing impacts, and cumulative impacts.

Type of EIR

This EIR provides a project-level analysis of the Proposed Project. A project EIR is described in Section 15161 of the CEQA Guidelines as "focusing primarily on the changes in the environment that would result from project development." A project-level EIR is required to examine all of the phases of the project including planning, construction and operation.

Scope of the EIR

The Initial Study determined that either a less-than-significant impact or no impact would occur in the following issues areas (see Appendix A). Therefore, these issues are not analyzed in the EIR:

- Agricultural Resources
- Geology and Soils
- Mineral Resources
- Public Services (fire, police, schools and parks)

- Recreation

This DEIR evaluates the existing environmental resources within the project site, analyzes potential impacts on those resources due to implementation of the Proposed Project, and identifies mitigation measures to reduce significant impacts. The analysis addresses the following issue areas:

- Aesthetics and Visual Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Hazards Materials and Public Safety
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Demographics
- Public Utilities
- Transportation and Circulation

In the case of Demographics, this issue is discussed herein in the context of growth inducement and is not discussed as a separate EIR section as the above listed EIR sections are, because demographics is recognized through the CEQA Guidelines Appendix G Initial Study checklist as a growth inducement issue. Refer to the Chapter 4 discussion on Growth Inducement.

The evaluation of these subject areas is presented on a resource-by-resource basis in Sections 3.1 through 3.11 of Chapter 3, Environmental Analysis. Each section is divided into three primary parts: *Setting*, *Regulatory Setting*, and *Impact Assessments and Mitigation Measures*.

The Fort Ord Reuse Plan/Reuse Plan EIR and Baseline Conditions

The Fort Ord Reuse Authority (FORA) was created by the California legislature (California Government Code Section 67650 *et seq.*) to plan, finance, and implement the conversion of Fort Ord to civilian activities.

Since the realignment of Fort Ord, the U.S. Army Corps of Engineers (Corps) has prepared the following environmental studies relating to the disposal and reuse of the military base: *Fort Ord Disposal and Reuse Final Environmental Impact Statement* (June 1993) and the *Fort Ord Disposal and Reuse Supplemental Environmental Impact Statement* (December 1995), herein referred to as the FEIS and FSEIS. FORA relied in part on the Corps' previous analyses in the FEIS and FSEIS for the development of the *Fort Ord Reuse Plan Environmental Impact Report* (Reuse Plan EIR), which is

identified as a program-level EIR. The information from the FEIS and FSEIS was supplemented with additional information and analysis. The FORA certified the Reuse Plan EIR and adopted the *Fort Ord Reuse Plan* on June 13, 1997.

For purposes of CEQA, "all public and private activities taken pursuant to, or in furtherance of, a reuse plan shall be deemed to be a single project. However, further environmental review of any such public or private activities shall be conducted if any of the events specified in Section 21166 have occurred." Cal. Pub. Res. Code § 21083.8.1(b)(2).

As noted in the Reuse Plan EIR, additional CEQA analysis would be prepared at the specific project level to give decision makes more information about site-specific issues which are not addressed in the program level Reuse Plan EIR.

The *Fort Ord Reuse Plan* requires that each member jurisdiction adopt certain policies related to development within the member's jurisdiction. The City of Marina is a member agency of FORA. The *City of Marina General Plan* (as amended), was adopted by the Marina City Council on October 31, 2000, and incorporates those Reuse Plan EIR policies applicable to the City of Marina. On March 6, 2001, FORA determined that the *City of Marina General Plan* was consistent with the Reuse Plan EIR.

In accordance with California Public Resources Code Section 21083.8.1(b)(1), the Reuse Plan EIR examined the physical conditions that were present at the time the decision to close Fort Ord became final for the purpose of determining whether a implementation of the Reuse Plan EIR may have a significant effect on the environment. The federal decision to close Fort Ord became final in 1991.

In order to be conservative, the determination of whether the Proposed Project may have significant effects on the environment has been made in the context of the physical conditions as they exist at the project site and vicinity as of September 30, 2004, the date the Notice of Preparation was published (CEQA Guidelines Section 15125). In order to assess the Proposed Project's relationship to the *Fort Ord Reuse Plan* and the Reuse Plan EIR, information regarding the 1991 baseline conditions described in the Reuse Plan EIR has been included in the analysis of each topic in the EIR. This information provides a more complete picture of the potential environmental impacts and places them in the context of the area's recent history, i.e., how the Proposed Project's environmental impacts compare with the last active use of the project site. Though reference to the 1991 baseline condition is a component of this evaluation, the reader must keep in mind that this DEIR does not provide an analysis of the Proposed Project vis-à-vis the *Fort Ord Reuse Plan*. Instead, the analysis is based on the City of Marina General Pan, which has been found consistent with the *Fort Ord Reuse Plan*.

Focus

The EIR focuses on the additional CEQA analysis that is needed to supplement existing analysis in FORA's Reuse Plan EIR, and the Corps' FEIS and FSEIS. The new information included in this document includes the following:

- Aesthetics and visual resources

- Air quality
- Biological resources
- Cultural resources
- Hazardous materials and public safety
- Hydrology and water quality
- Land use and planning
- Noise
- Demographics (discussed in the context of growth inducing impacts in Chapter 4 of the DEIR)
- Public utilities (sewer, water, landfill)
- Transportation and circulation

Levels of Significance

The CEQA Guidelines define a significant effect on the environment as "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 and aesthetic significance" (CEQA Guidelines, Section 15382). For all environmental issues addressed in this EIR, specific standards of significance are identified. Definitions of significance vary with the physical conditions affected and the setting in which the change occurs. Depending on the impact area, the standards are based on the CEQA Guidelines, the *Fort Ord Reuse Plan*, the Marina General Plan, other applicable plans and, in some cases, professional judgment.

Section 15064 (b) of the CEQA Guidelines states, "The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. In addition, to determine if an effect will be adverse or beneficial, Section 15064 (c) of the CEQA Guidelines states, "…the lead agency shall consider the views held by members of the public in all areas affected as expressed in the whole record before the lead agency."

Where explicit quantification of significance is identified, such as a violation of an ambient air quality standard, this quantity is used to assess the level of significance of a particular impact in this DEIR. For less easily quantifiable impacts, events or occurrences that would be regarded as significant or potentially significant were identified.

Public Review

In accordance with CEQA Guidelines Sections 15063 and 15082, an Initial Study Environmental Checklist (Initial Study) with a Notice of Preparation were prepared and distributed simultaneously by

the City of Marina to responsible and trustee agencies, interested parties and organizations, as well as private organizations and individuals that have stated an interest in the project, for a 30-day public review period (see Appendix A). The comment period for these documents was September 30, 2004 to October 30, 2004. The purpose of the NOP is to provide notification that an EIR for the project is being prepared and to solicit guidance on the scope and content of the document. Written comments were received from the following agencies (See Appendix B):

- California Department of Parks and Recreation
- Monterey Bay Unified Air Pollution Control District
- California Department of Fish and Game
- California Department of Transportation
- Monterey Salinas Transit
- California Department of Public Safety
- California Department of Health Services
- California State University Monterey Bay

In addition, a public scoping meeting was held October 7, 2004 at the City of Marina Council Chambers to solicit oral comments; two persons attended with one stating a concern with night lighting and glare relating to urban glare vis-à-vis the observatory at the corner of 2nd Avenue and 8th Street.

This DEIR and all documents referenced herein are available for public review during normal business hours at:

City of Marina Strategic Development Center
265 Reservation Road, Suite E
Marina, California 93933

This DEIR is being publicly circulated for a 45-day public review. During this period, the general public, organizations, and agencies may submit comments to the lead agency on the DEIR's accuracy and completeness.

The Final EIR (FEIR) will include both written and oral comments on the DEIR received during the public review period and responses to those comments, as well as any revisions to the DEIR made in response to comments. The DEIR and FEIR will comprise the EIR for the Proposed Project.

Prior to approving a project, the lead agency is required to certify that the EIR has been completed in compliance with CEQA, that the decision-making body reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the lead agency. The FEIR will be reviewed by the City of Marina City Council for certification in accordance with CEQA Guidelines

(CEQA Guidelines, Sections 15090, 15091, and 15092). Written findings of fact for each significant environmental impact identified in the EIR will be prepared by the lead agency to:

- Determine if the Proposed Project has been changed to avoid or substantially reduce the magnitude of the impacts;
- Find that changes to the Proposed Project are within another agency's jurisdiction, and such changes have been, or should be, adopted; or
- Find that specific economic, social, or other considerations make mitigation measures or Proposed Project alternatives infeasible.

The findings of fact prepared by the lead agency must be based on substantial evidence in the administrative record and must include an explanation that bridges the gap between evidence in the record and the conclusions required by CEQA. Based on these findings, the lead agency may also prepare a Statement of Overriding Considerations (SOC) (CEQA Guidelines, Section 15093) as part of the project approval process. If the decision-making body elects to proceed with a project that would have significant impacts, then the SOC explaining the decision to balance the benefits of the project against unavoidable environmental impacts must be prepared.

Lead Agency

In conformance with Sections 15050 and 15367 of the CEQA Guidelines, the City of Marina has been designated the "lead agency" for preparation of the environmental analysis for the Proposed Project, which is defined as the "public agency that has the principal responsibility for carrying out or disapproving a project."

Lead Agency Contact:

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Marina, California 93933
831-384-7324

2.0 PROJECT DESCRIPTION

2.0 PROJECT DESCRIPTION

Project Location and Setting

Project Location

The former Fort Ord encompasses 28,000 acres on the Monterey Bay, near the Monterey Peninsula, along the Central Coast region of California. The City of Marina consists of approximately 6,400 acres and is bounded by Highway 1 to the west, Seaside to the south, and unincorporated Monterey County lands to the east and north. Fifty-five percent of the City of Marina's total acres fall within the boundaries of the former Fort Ord and the proposed University Villages Specific Plan is on 420 of these acres.

The proposed University Villages development is within the jurisdiction of the City of Marina on the former Fort Ord, and is roughly an L-shaped area bounded by 8th Street and 1st Street to the south and Highway 1 to the west. The northern boundary of the project site is the top of the slope north of the barrack buildings north of the Imjin Parkway, and Patton Park (currently referred to as "Cypress Knolls"). The east boundary of the project site is California Avenue in the north and 2nd Avenue in the south. Refer to Figures 2-1, 2-2, and 2-3 for the Regional and Project Vicinity, University Villages Specific Plan and Existing Conditions.

Regional access to the site is provided by Highway 1, the major north/south transportation route along the central coast, linking the City of Marina to other cities on the Monterey Peninsula to the south and Santa Cruz and San Benito counties to the north. Local access to the University Villages area includes the primary east/west linkages of Imjin Parkway and 8th Street, and the primary north/south linkages 2nd and 3rd Avenues and California Avenue.

Historical Background

In late 1989, the Department of Defense (DoD) proposed closing Fort Ord as part of an overall budget reduction program. Fort Ord, as well as other posts, was proposed for closure by a congressional study of military facilities. On April 11, 1991, Fort Ord was officially on the DoD's post closure list.

As part of the former Fort Ord, the University Villages Specific Plan area is being made available for development via a legislated conveyance process. The United States Department of the Army (U.S. Army) announced its intent to close and decommission Fort Ord in 1991 as part of 1990's Defense Base Realignment and Closure Act, which set up the process the DoD now uses to assess and reorganize its military infrastructure.

In 1994, the Fort Ord Reuse Authority (FORA) was created to address the economic and environmental challenges presented by the decommissioning of a military base and its conversion to civilian use. The FORA was authorized to prepare, adopt, finance and implement a base reuse plan for future development at the former Fort Ord. The FORA's responsibilities include financing

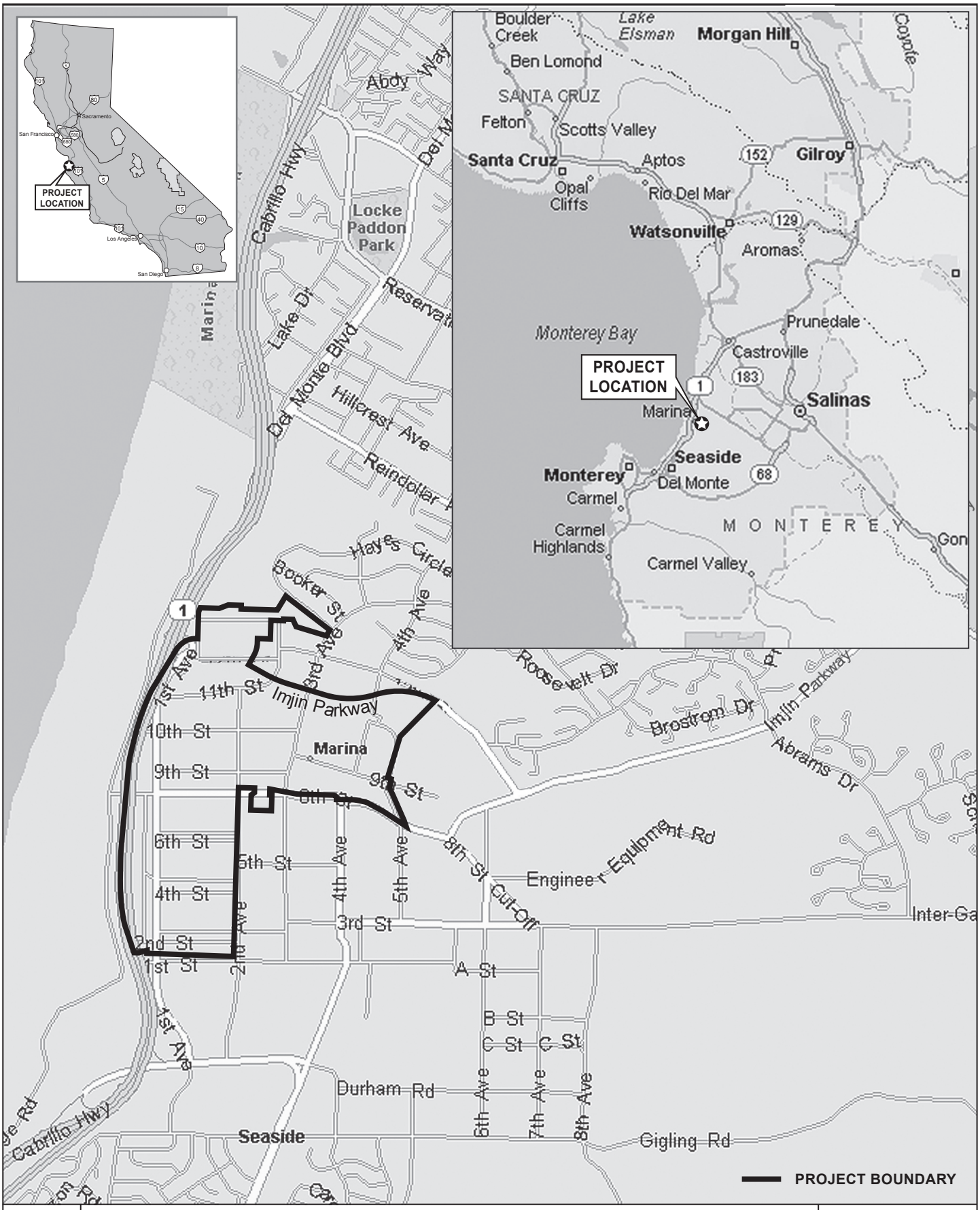


FIGURE **2-1**

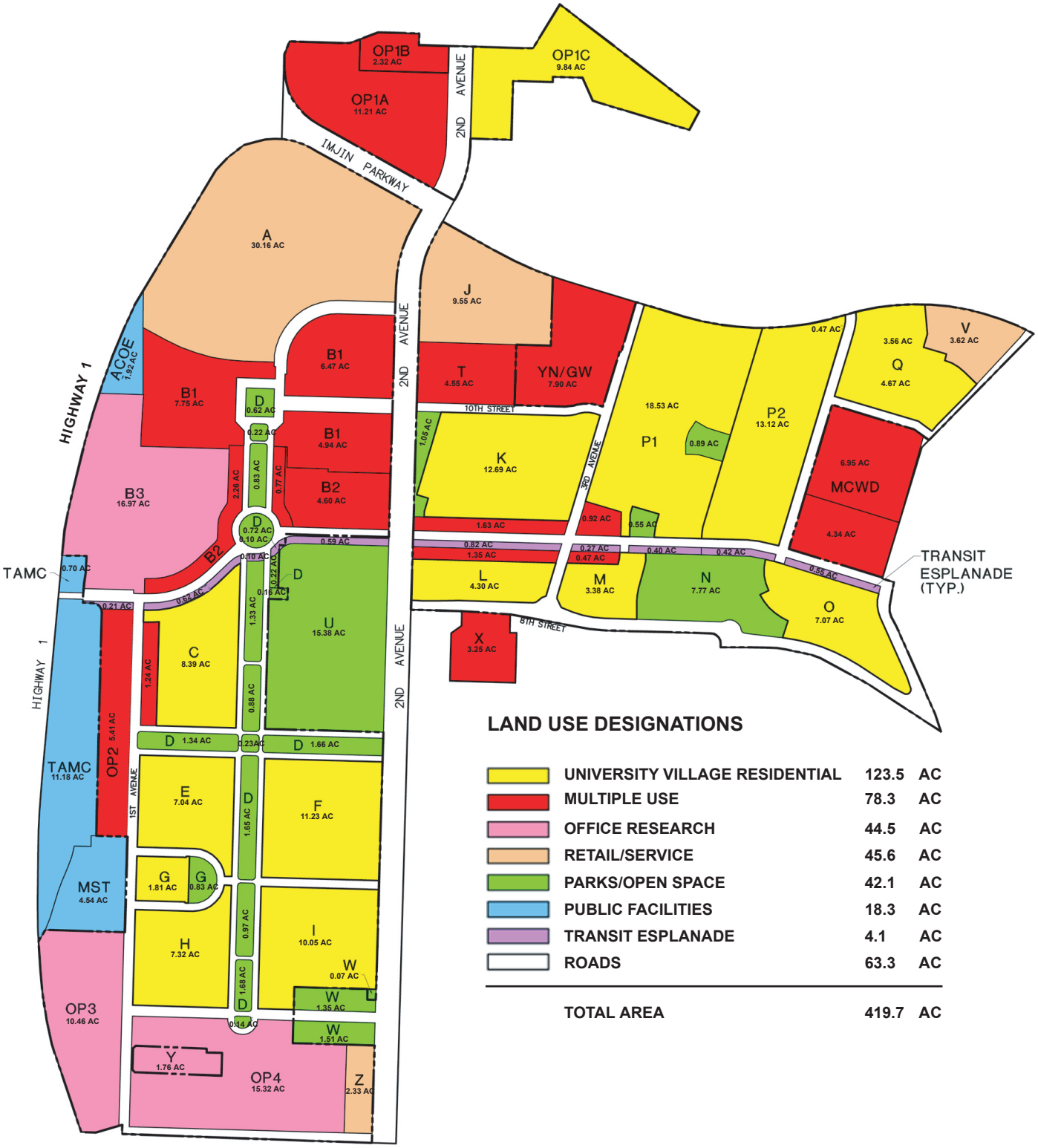
Regional and Project Vicinity

Not to Scale

10886-00

Sources: Microsoft Streets and Trips, 2004; EIP Associates, 2004

City of Marina



LAND USE DESIGNATIONS

UNIVERSITY VILLAGE RESIDENTIAL	123.5	AC
MULTIPLE USE	78.3	AC
OFFICE RESEARCH	44.5	AC
RETAIL/SERVICE	45.6	AC
PARKS/OPEN SPACE	42.1	AC
PUBLIC FACILITIES	18.3	AC
TRANSIT ESPLANADE	4.1	AC
ROADS	63.3	AC
TOTAL AREA	419.7	AC

FIGURE **2-2**

University Villages Specific Plan

10886-00

Source: Dahlin Group, 2004

City of Marina

EIP ASSOCIATES

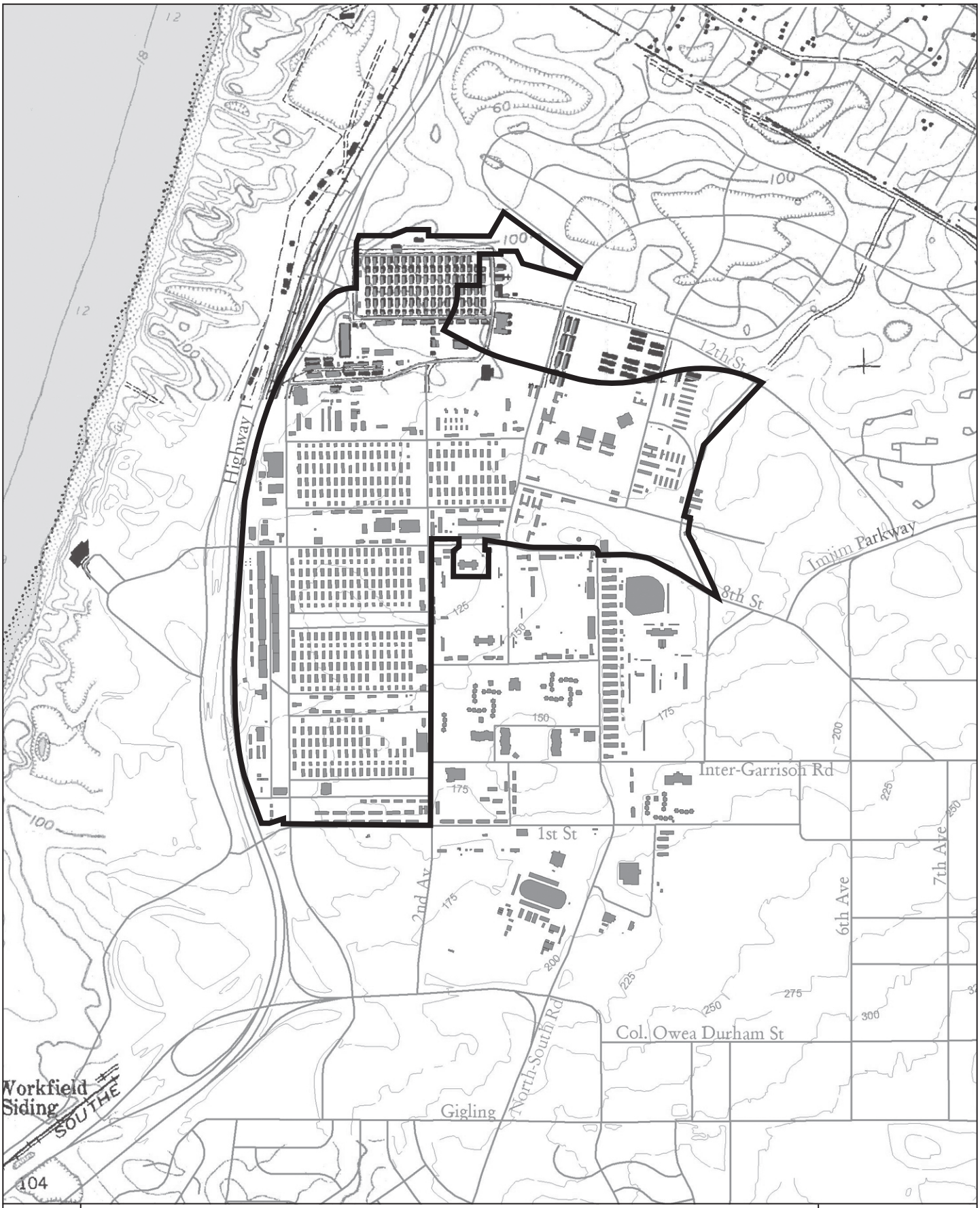


FIGURE **2-3**
Existing Conditions

Not to Scale

10886-00

***Source*:** Dahlin Group, 2004

City of Marina

EIP ASSOCIATES

deconstruction of obsolete buildings and infrastructure, providing environmental mitigation, constructing new infrastructure via a Capital Improvement Program (CIP), and to foster economic development on the Monterey Peninsula, replacing any employment lost by the closure of military operations through the growth of new businesses and industries.

The FORA's board is comprised of both voting and non-voting members representing all the cities on the Monterey peninsula, the County of Monterey, and various other vested interests, including, but not limited to, local congressmen, state senate and assembly members, the University of California at Santa Cruz, the California State University at Monterey Bay, the Transportation Agency of Monterey County, Monterey-Salinas Transit, California Department of Parks and Recreation, Marina Coast Water District, and the Monterey Peninsula Unified School District. In 1997, FORA adopted the *Fort Ord Reuse Plan* and certified its EIR that will guide future development of the base in each of the Marina, Seaside and County jurisdictions. According to California law, FORA will sunset in 2014, or when 80 percent of the adopted Reuse Plan has been implemented, whichever occurs first.

The base closure process allows state and local government agencies, as well as non-profit institutions which serve a specific public purpose, to receive property from decommissioned military installations at no cost or at below market rate prices, through two processes: the Public Benefit Conveyance (PBC) and the Economic Development Conveyance (EDC). Various parcels of land within Fort Ord have been conveyed to the City of Marina as PBCs, for civic, recreational and open space purposes. The land to be developed as part of the University Villages project site has been or will be conveyed to FORA through the EDC, which is intended for private sector reuse and development under the jurisdiction of the City's Redevelopment Agency (RDA). For this purpose, the lands will soon be conveyed to the City of Marina RDA, fulfilling a 1994 Memorandum of Agreement between the City and the U.S. Army.

Some 943 vacated U.S. Army buildings remain within the University Villages Specific Plan boundary. Included are above and below ground infrastructure and expansive parking areas. Deconstruction, demolition and removal of existing structures, including some hazardous materials (lead based paints and asbestos), are primarily the responsibility of FORA but actual work effort is the responsibility of the developer in order to expedite this process. To date, FORA has demolished approximately 50 obsolete military buildings within the Specific Plan area (does not include the 943 buildings). Most of these buildings are painted with lead based paints which creates both reuse and deconstruction challenges. The FORA is also responsible for new construction of infrastructure as outlined in the FORA CIP. To date, FORA has completed the construction of a new four lane arterial, Imjin Parkway, to connect 12th Street /Highway 1 interchange to California Avenue, Reservation Road and Marina Municipal Airport, and California Avenue north of Imjin. Rebuilding of 2nd Avenue by FORA as a four lane arterial from Light Fighter Drive to Imjin Parkway is almost complete and will serve as the backbone roadway for University Villages and a long mutual boundary for University Villages, the City's recreational PBCs and the CSUMB campus. FORA's CIP will also fund improvements to 8th Street east of 2nd Avenue, and limited water infrastructure associated with the 2,400 afy water augmentation needs of the former base.

The former military uses in the Specific Plan area have also left major environmental degradation, requiring hazardous material clean up on a large scale. As a result of contamination in subsurface groundwater from percolation from a municipal waste landfill, the entirety of the former Fort Ord was designated a superfund site in 1990 and placed on the National Priority List of Hazardous Waste Sites. Since 1990, numerous parcels within Fort Ord have been remediated and approved for transfer by the EPA through the Finding of Suitability to Transfer (FOST) process. Lands contained in the University Villages project site (with the exception of one parcel designated E2d.3.1) were included in the Track 0 Parcels of the August 2002 FOST 6, which documented their environmental suitability for a variety of uses including residential, education, mixed use, and development, consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 120(h) and DoD policy (the E2d.3.1 parcel will be a "plug-in" to this process in 2005). The August 2002 FOST also identifies use restrictions and necessary on-going remediation activities. Of note in regards to the University Villages project site is the necessity of on-going environmental cleanup of the groundwater beneath the site, which continues by way of the U.S. Army's pump-and-treat system, which extracts groundwater, purifies it, and then re-injects it underground. Pump-and-treat facilities are located throughout the University Villages site, and require easements for on-going maintenance by the U.S. Army. According to the website of the California Department of Toxic Substances Control (DTSC), the DTSC has issued No Further Action Letters for the FOST 6 parcels.

Existing Setting

Site Characteristics. Proposed Project site topography is relatively flat (the result of grading and development associated with the former military uses), gently sloping to the north, northeast and northwest. Project site vegetation is characterized by low growing, wind tolerant native tree and shrub species, including maritime chaparral, coastal scrub and oak woodlands. Mature Monterey Cypress and other trees are scattered throughout the site.

Existing Land Uses. The University Villages Specific Plan area currently consists of a mix of vacant or undeveloped lands and abandoned former U.S. Army wooden barrack buildings and an assortment of wooden, concrete and brick buildings, a few of which have been renovated and are in current use. Approximately 943 buildings exist within the University Villages project boundary. Most of the existing buildings are wooden (first growth Douglas fir logged commencing in the late 1930's) and are painted with lead based paints. Most of these structures also contain insulation and other building material containing asbestos. The Specific Plan area also includes expansive paved areas previously used for parking military vehicles and storing military equipment and supplies.

Fort Ord Reuse Plan Land Use Designation. As defined in the *Fort Ord Reuse Plan* Figure 3.3-2, the designated land uses for the University Villages project site include Planned Development Mixed Use District, Open Space Recreation and Public Facility/Institutional. These Land Use designations were changed with the adoption of the City's update to the General Plan in 2000. A Consistency Determination of the General Plan Update was made by FORA in 2001.

City of Marina General Plan Land Use Designation. The project site is located in what is currently defined in the City of Marina General Plan as the "West University Village" and "North University

Village". The "west" component is mostly on the west side of 2nd Avenue except for a section north of 8th Street. The "north" area is north of Imjin Parkway and east of 4th Avenue (Marina GP Figure 1.2). Per Figure 2.2 – *Land Use Plan*, of the General Plan, there are a variety of land uses assigned to the University Villages project site to include *Single Family Residential* (avg. density of 5 dwelling units/acre), *Multiple Family Residential* (8-15 dwelling units/acre), *Visitor Serving, Village Homes, Multiple Use, Office/Research, Retail/Service, Public Facilities*, and *Parks and Recreation*.

Housing potential within the University Villages project site totals 837 units (West University Village – 481 plus 400 additional units with a Specific Plan per the Marina General Plan; North University Village – 356) (Marina General Plan, page 2-20, Table 2.4-B). Therefore, there is the potential for 1,237 residential units in the University Villages project site.

Topography and Soils. While the existing topography of the Specific Plan area is largely the result of grading and development associated with the former military uses, it can be described as relatively flat, gentle sloping to the north, northeast and northwest and composed of stabilized sand dunes and sandy, highly permeable soils of the Baywood soil series (Natural Resources Conservation Service, Soil Survey of Monterey County). The entirety of the Monterey Bay region is seismically active and subject to strong ground shaking during an earthquake on any of the fault systems in the area, including the San Andreas fault, the Palo Colorado-San Gregorio fault, and the Monterey Bay offshore fault zone. Low to moderate liquefaction, as well as exposure to seismic shaking is expected in the project site. There are no additional significant soil constraints in the area, although most soils at the former Fort Ord are susceptible to erosion.

Air Quality. The project site is located within the North Central Coast Air Basin (NCCAB), a 5,150 square mile area encompassing the counties of Monterey, San Benito and Santa Cruz. The Monterey Bay is the primary influence on temperature, humidity and wind speed at the site. During the spring and summer, warmer onshore air passes over the cold ocean water and contributes to frequent and heavy fogs. Air quality monitoring within the NCCAB is the responsibility of the Monterey Bay Unified Air Pollution Control District (MBUAPCD). The nearest MBUAPCD comprehensive monitoring site is located at Salinas High School in the City of Salinas. Currently, the NCCAB is not meeting ambient air quality standards for state and federal ozone standards or the state PM_{10} standards, part of which is attributable to the emissions generated from the San Francisco Bay Area Air Basin.

Flora and Fauna. While modified drastically for military development, the project site is typified by low growing, wind tolerant native tree and shrub species, including maritime chaparral, coastal scrub and oak woodland vegetation natural habitats. Mature Monterey Cypress and other trees are also scattered throughout the planning area (an arborist report is being prepared to account for the existing trees). The Habitat Management Plan for the former Fort Ord describes the measures necessary for the continued protection of any and all federally protected plant and animal species on the former Fort Ord, but does not identify any lands within this Specific Plan area to be maintained as open space or managed as habitat for any designated species. However, species identified by the federal government or the State of California as endangered or threatened, or species proposed for listing as endangered,

which may be present on the project site include the sand gilia, the Monterey spineflower, the California red-legged frog, and the California black legless lizard.

Project Objectives

The Proposed Project would redevelop for civilian use a portion of the now decommissioned former Fort Ord military installation. The closure of the Fort Ord Military Installation in 1991 initiated major losses of population and employment in the cities of Marina and Seaside and elsewhere throughout the Monterey Peninsula. Through the development of the Proposed Project, the City of Marina can directly stimulate the local economy, create housing and business location opportunities to stabilize the economy in the long-term, improve the local tax base, create revenue sources for local jurisdictions, and catalyze the future prosperity of the City.

The City wishes to rapidly implement the reuse and redevelop the University Villages portion of the now decommissioned former Fort Ord military installation for civilian use. The closure of the Fort Ord Military Installation in 1991 caused major losses of population and employment in the cities of Marina and Seaside and elsewhere throughout the Monterey Peninsula. The remaining unused structures are rapidly deteriorating and the area has been declared blighted in the *Former Fort Ord Redevelopment Project (Number Three),* City of Marina Redevelopment Agency (May 1999). Through the development of the University Villages area, the City of Marina desires to directly stimulate the local economy, create the maximum housing opportunities possible, rebuild and grow the local population, and create business opportunities to revitalize and enhance the local economy, thereby improving the local tax base, creating revenue sources for local jurisdictions which will help to facilitate local capital improvement programs, and serving as a catalysis for the future prosperity of the City, its residents, and its businesses.

Implementation of Fort Ord Reuse Authority Act

In 1994, the California Legislature adopted the Fort Ord Reuse Authority Act, Government Code section 67650, *et seq.,* in order to facilitate the transfer and reuse of Fort Ord. The City has actively participated in a cooperative effort to achieve the legislative purpose of the Fort Ord Reuse Authority Act, and desires to further implement that legislative purpose at the project level in the University Villages by achieving the following objectives:

> Goal I.A – Formulate and implement project-level land use planning and land disposition in a manner which will achieve the reuse of the real property comprising the University Villages portion of the former Fort Ord with all practical speed.
>
> Goal I.B – Overcome the disruption that was caused to the civilian economy by the closure of the former Fort Ord by providing for a wide variety business development opportunities, including retail, commercial, tourist service, hotel uses, office, and other commercial facilities in order to enhance the local and regional economy.

Goal I.C – Enhance the quality of life for people in the City of Marina and the Monterey Bay area by providing housing, employment, shopping, and recreational opportunities within the University Villages portion of the former Fort Ord.

Goal I.D – Protect the unique environmental features and resources located within the University Village area, including the scenic qualities associated with this coastal area and inland hills, and the vast recreational opportunities in the vicinity.

Implementation of the Fort Ord Reuse Plan

The City desires to implement the Reuse Plan and its Community Design Vision for the University Villages portion of former Fort Ord. The City took an important step toward this implementation in 2000 by adopting its updated General Plan, which FORA certified as being consistent with the Reuse Plan. The City now desires to carry out the Reuse Plan at the project-level by creating a livable community that integrates housing, recreation, retail and job opportunities in the overall community plan. Among the City's most important objectives in this regard are the following:

Goal II.A. – The City wishes to accomplish the Design Objectives 3.8.3 of the Reuse Plan in the University Villages area by approving a specific plan which accomplishes all of the following:

1. Provides for convenient and publicly accessible circulation in a manner that creates a village center with a mix of uses and lively streetscape by incorporating the Village Promenade with shopping, dining, visitor services, employment centers, housing stock, and recreational opportunities all within easy access.

2. Integrates viable residential neighborhoods into the commercial development with open space amenities and convenient personal services and retail uses within a half-mile or less distance from residential areas.

3. Takes advantage of the State Highway 1 visibility and accessibility to establish a high quality commercial and multiple use village center to serve as an anchor for the University Villages area.

4. Protects the visual qualities of the State Highway 1 through the use of enhanced setbacks design guidelines and native landscaping.

5. Takes advantage of the transit accessibility represented in the transit corridor by incorporating a well-designed pedestrian circulation system throughout the University Villages area that links residents and employees to future transit facilities.

6. Enhances the regional identity of this area with a mix of public and quasi public uses to create a regional cultural attraction, by providing linkage via the 8th Street Bridge between the Fort Ord Dunes State Park and by commemorating the former base

through adaptive reuse of 3-4 structures, signage, open corridor retention, historical exhibits, rotating displays and design features that pay tribute to the base's history.

Goal II.B. Adopts a Specific Plan for the University Villages area which comports with general goals and programs contained in the all elements of the Reuse Plan.

Goal II.C. To generate development that will maximize revenues to FORA's CIP program and thereby help to finance base-wide improvements encompassed therein.

Achieving the Goals of the City of Marina Redevelopment Agency Redevelopment Plan

The City of Marina desires to achieve the purposes of the Redevelopment Plan for Project Area 3 through its land use approvals and disposition and development agreement for the University Villages Area. More specifically, its goals in this regard are as follows:

Goal III.A. To expeditiously eliminate the blighted conditions which exist in the University Villages area, including in particular acceleration of the FORA Building Removal Program with the assistance of the project developer and removal of toxic contaminants.

Goal III.B. To eliminate or ameliorate existing substandard conditions, including substandard vehicular and pedestrian circulation, parking, inadequate infrastructure, inadequate public improvements and facilities which have contributed to the blight conditions within Project Area 3 and integrate former Fort Ord lands with city lands by creation and construction of new road connections, bikeways and walkways.

Goal III.C. To facilitate the development of a wide range of housing opportunities for differing lifestyles and affordability levels for a minimum of 1,200 households in order to provide the critical mass necessary to create sustainable neighborhoods and to attract the retail and employment options for a sustainable local economy, and to provide housing opportunities to employees of future businesses.

Goal III.D. To generate funding for the development of the housing of low to moderate income groups, with emphasis on meeting the housing needs of the very low to low income residents of Marina, including the use of set aside funds.

Goal III.E. To facilitate commercial development which will maximize future tax increment revenues from the University Villages area for the City of Marina Redevelopment Agency and FORA.

Goal III.F. To promote economic development opportunities in Project Area 3 which will in turn provide a basis of ongoing revenues to the City to support operation and capital projects, including the generation of sales taxes, transient occupancy taxes, business license and other fees and other taxes.

Goal III. G. In harmony with FORA, the University of California MBEST Center, and Cal State University at Monterey Bay (CSUMB), create and develop local job opportunities to preserve and improve the City's existing employment base, so as to attract new businesses, stimulate economic revitalization and provide business assistance to the Project Area.

Implement the City of Marina General Plan

Another University Villages Specific Plan objective is to meet the goals, Section 1.18, of the *City of Marina General Plan*, including in particular the following:

Goal IV.A. To achieve a balance of jobs and housing that provides the greatest possible opportunity both to live and work in Marina.

Goal IV.B. To avoid sprawl in the region by making efficient use of lands designated for community development purposes.

Goal IV.C. To create residential neighborhoods which are physically and visually distinguishable from the other communities of the Monterey Bay region, with a sense of place and identity in which residents can take pride.

Goal IV.I. To provide a diversified and sound economic base including but not limited to development of specialty retail, convention exhibit facilities and regional retail opportunities.

Goal IV.K. To provide an arts and cultural district which brings together commercial, arts, civic, cultural and educational activities and access to the beach.

Implementation of the Terms of the U.S. Army – FORA Memorandum of Understanding (MOU) – and the Economic Development Conveyance

Goal V.A. the City wishes to adopt a specific plan for the University Villages area and to enter into agreements which provide for the ultimate disposition of the subject property in a manner which fully complies with the City's obligations under both the FORA/Army MOU and the terms of the economic benefit conveyance.

Proposed Project

The Proposed Project includes the redevelopment of approximately 420 acres of the former Fort Ord of which 358 are subject to the current development application submitted to the City of Marina by the Marina Community Partners. The 61.9 acre difference relates to the "Non-Application Parcels" which belong to other agencies and/or organizations and are discussed below in the section titled "Non-Application Parcels". The development components of the Proposed Project are defined in Table 2-1.

Table 2-1

University Villages Land Use Summary

Planning Area	Phase	Acres (net of backbone streets)	Use	Land Use (in acres)						Notes
				Multiple Use	Retail/ Service	Office/ Research	Parks / Greenbelts	Residential	Public Facilities	
A	**1**	**30.2**	Retail/Service	0.0	30.2	0.0	0.0	0.0	0.0	
B1	**1**	**19.2**	Multiple Use	19.2	0.0	0.0	0.0	0.0	0.0	Includes 1.2-acres of mixed-use townhomes
B2	**1**	**7.6**	Multiple Use	7.6	0.0	0.0	0.0	0.0	0.0	Includes 3.0-acres Live/work Townhomes
B3	**1**	**17.0**	Office Research	0.0	0.0	17.0	0.0	0.0	0.0	
D	**1**	**2.4**	Parks/Open Space	0.0	0.0	0.0	2.4	0.0	0.0	
J	**1**	**9.6**	Retail/Service	0.0	9.6	0.0	0.0	0.0	0.0	
K	**1**	**15.4**	University Villages Residential	1.6	0.0	0.0	1.1	12.7	0.0	
L	**1**	**5.7**	University Villages Residential	1.4	0.0	0.0	0.0	4.3	0.0	
P1	**1**	**20.9**	University Villages Residential	0.9	0.0	0.0	1.4	18.5	0.0	
T	**1**	**4.6**	Multiple Use	4.6	0.0	0.0	0.0	0.0	0.0	
Total Phase 1		**132.3**		**35.2**	**39.7**	**17.0**	**4.9**	**35.5**	**0.0**	
C	**2**	**9.6**	University Villages Residential	1.2	0.0	0.0	0.0	8.4	0.0	
D	**2**	**5.8**	Parks/Open Space	0.0	0.0	0.0	5.8	0.0	0.0	
M	**2**	**3.9**	University Villages Residential	0.5	0.0	0.0	0.0	3.4	0.0	

Table 2-1

University Villages Land Use Summary

Planning Area	Phase	Acres (net of backbone streets)	Use	Land Use (in acres)						Notes
				Multiple Use	Retail/ Service	Office/ Research	Parks / Greenbelts	Residential	Public Facilities	
N	**2**	**7.8**	Parks/Open Space	0.0	0.0	0.0	7.8	0.0	0.0	
O	**2**	**7.1**	University Villages Residential	0.0	0.0	0.0	0.0	7.1	0.0	
P2	**2**	**13.1**	University Villages Residential	0.0	0.0	0.0	0.0	13.1	0.0	
Q	**2**	**4.7**	University Villages Residential	0.0	0.0	0.0	0.0	4.7	0.0	
Total Phase 2		**51.9**		**1.7**	**0.0**	**0.0**	**13.6**	**36.7**	**0.0**	
D	**3**	**3.4**	Parks/Open Space	0.0	0.0	0.0	3.4	0.0	0.0	
E	**3**	**7.0**	University Villages Residential	0.0	0.0	0.0	0.0	7.0	0.0	
F	**3**	**11.2**	University Villages Residential	0.0	0.0	0.0	0.0	11.2	0.0	
G	**3**	**2.6**	University Villages Residential	0.0	0.0	0.0	0.8	1.8	0.0	
H	**3**	**7.3**	University Villages Residential	0.0	0.0	0.0	0.0	7.3	0.0	
I	**3**	**10.1**	University Villages Residential	0.0	0.0	0.0	0.0	10.1	0.0	
P2	**3**	**0.5**	University Villages Residential	0.0	0.0	0.0	0.0	0.5	0.0	

Table 2-1

University Villages Land Use Summary

Planning Area	Phase	Acres (net of backbone streets)	Use	Land Use (in acres)						Notes
				Multiple Use	Retail/ Service	Office/ Research	Parks / Greenbelts	Residential	Public Facilities	
Q	**3**	**3.6**	University Villages Residential	0.0	0.0	0.0	0.0	3.6	0.0	
Total Phase 3		**45.8**		**0.0**	**0.0**	**0.0**	**4.3**	**41.5**	**0.0**	
OP1A	**Opportunity**	**11.2**	Multiple Use	11.2	0.0	0.0	0.0	0.0	0.0	
OP1B	**Opportunity**	**2.3**	Multiple Use	2.3	0.0	0.0	0.0	0.0	0.0	
OP1C	**Opportunity**	**9.8**	University Villages Residential	0.0	0.0	0.0	0.0	9.8	0.0	
OP2	**Opportunity**	**5.4**	Multiple Use	5.4	0.0	0.0	0.0	0.0	0.0	
OP3	**Opportunity**	**10.5**	Office Research	0.0	0.0	10.5	0.0	0.0	0.0	
OP4	**Opportunity**	**15.3**	Office Research	0.0	0.0	15.3	0.0	0.0	0.0	
V	**Opportunity**	**3.6**	Retail/Service	0.0	3.6	0.0	0.0	0.0	0.0	
Z	**Opportunity**	**2.3**	Retail/Service	0.0	2.3	0.0	0.0	0.0	0.0	Acreage Includes CSUMB Area
Total Opportunity Phases		**60.5**		**18.9**	**5.9**	**25.8**	**0.0**	**9.8**	**0.0**	
U	**Non-Application Parcel**	**16.4**	Parks/Open Space	0.0	0.0	0.0	16.4	0.0	0.0	Excludes Transit Corridor acreage
W	**Non-Application Parcel**	**2.9**	Parks/Open Space	0.0	0.0	0.0	2.9	0.0	0.0	
X	**Non-Application Parcel**	**3.3**	Multiple Use	3.3	0.0	0.0	0.0	0.0	0.0	PS Parcel
Y	**Non-Application Parcel**	**1.8**	Office Research	0.0	0.0	1.8	0.0	0.0	0.0	County of Monterey Parcel
ACOE	**Non-Application Parcel**	**1.9**	Public Facilities	0.0	0.0	0.0	0.0	0.0	1.9	
TAMC	**Non-Application Parcel**	**11.9**	Public Facilities	0.0	0.0	0.0	0.0	0.0	11.9	

Table 2-1

University Villages Land Use Summary

Planning Area	Phase	Acres (net of backbone streets)	Use	Land Use (in acres)						Notes
				Multiple Use	Retail/ Service	Office/ Research	Parks / Greenbelts	Residential	Public Facilities	
MST	**Non-Application Parcel**	**4.5**	Public Facilities	0.0	0.0	0.0	0.0	0.0	4.5	
YN/GW	**Non-Application Parcel**	**7.9**	Multiple Use	7.9	0.0	0.0	0.0	0.0	0.0	
MCWD	**Non-Application Parcel**	**11.3**	Multiple Use	11.3	0.0	0.0	0.0	0.0	0.0	
Non-Application Parcels		**61.9**		**22.4**	**0.0**	**1.8**	**19.3**	**0.0**	**18.3**	
Backbone Roads		**63.3**								
Transit Esplanade		**4.1**								
		419.7		**78.3**	**45.6**	**44.5**	**42.1**	**123.5**	**18.3**	

[1] *Note:* Residential acreages include small pocket parks of up to one half acre and neighborhood streets, alleys and landscape buffers.
[2] *Note:* Density is gross within each planning area.
Source: Dahlin Group/RBF Consulting.

Included in the development application by Marina Community Partners is a Tentative Subdivision Map for a 132.3 acre Phase 1 development which includes:

- 303 Residential Use Lots
- 29 Multiple Use Lots
- 11 Office Research Lots
- 23 Retail/Service Lots
- 9 Parks/Open Space Lots
- 8 Public Facilities Lots
- 11 Backbone Public Roads Lots (8th St, 9th St, 10th St, 3rd Ave., 2nd Ave.,)

394 lots would be created as part of this Tentative Map (the Tentative Subdivision Map correlates with the area titled Phase 1 in Figure 2-4; Figures 2-5a through 2-5e show the proposed Tentative Map).

Other Proposed Project components include:

- Removal of approximately 943 abandoned military structures.
- A mixed-use village center consisting of retail, commercial, visitor serving and residential uses organized by a village promenade and village square.
- Retail components of approximately 750,000 square feet (sf).
- Office / research uses of approximately 760,000 sf.[1]
- Up to 500 new hotel rooms, with ancillary convention and public spaces.[2]
- Transit Esplanade.
- Parks and recreational opportunities.

---

[1] It is relevant to note that the traffic analysis contained in this EIR includes additional retail and office square footage associated with the 61.9 acres of Non-Application Parcels. The traffic analysis includes the traffic impacts associated with the Non-Application Parcels because they are integral to the University Villages project's transportation and circulation mitigation program. The air quality and noise impacts discussed in this EIR also account for development of the Non-Application Parcels. In addition, the traffic analysis considers the optional retail and / or office / research land uses for Planning Areas OP1A and T.

[2] Subsequent to the Environmental Checklist and NOP being circulated for this project by EIP Associates in September 2004, the project applicant has identified three potential land use options for Polygons "T" and "OP1A" (referred to as OP1A in the Environmental Checklist). They are as follows: 500 hotel rooms, or 160,000 sf of retail, or 277,042 sf of office. Therefore, the total of retail and office / research listed above could increase to 910,000 sf and 1,037,042 sf if the hotel(s) are eliminated.

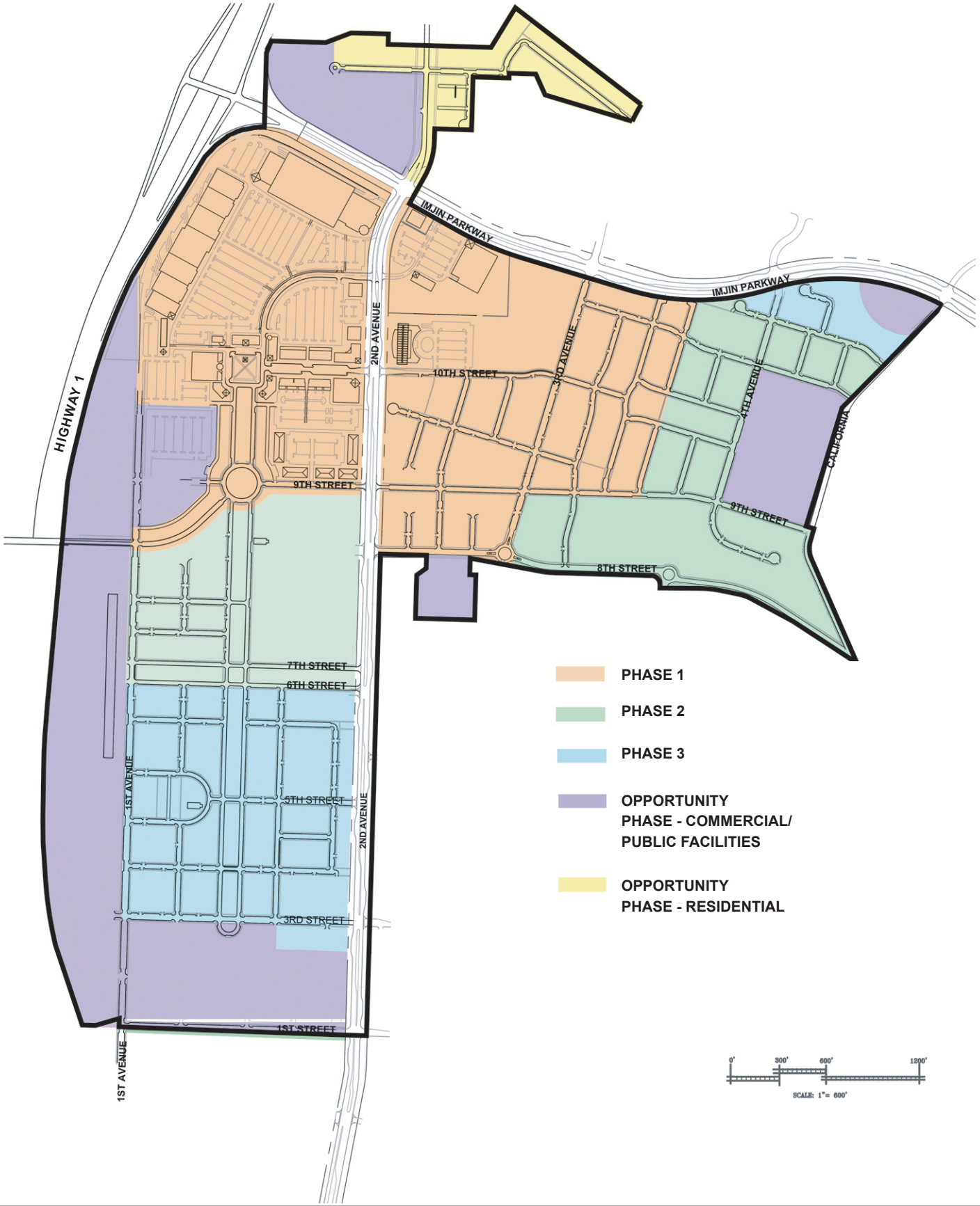


FIGURE **2-4**

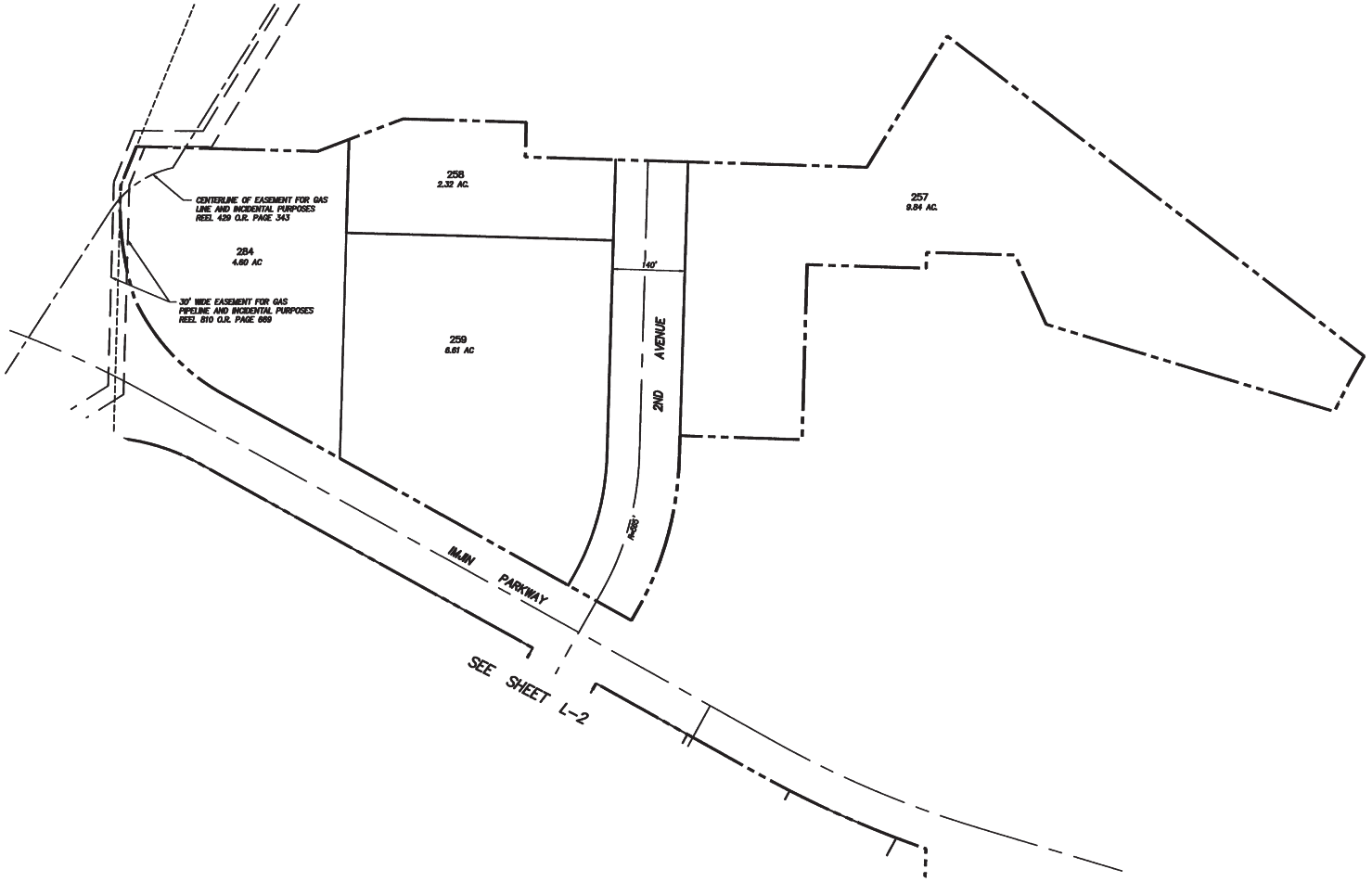
Project Phases

10886-00

***Source*:** Dahlin Group, 2004

City of Marina

EIP ASSOCIATES



LOTTING BASED ON PRELIMINARY APPROVED TENTATIVE MAP DATED SEPTEMBER 22, 2004, SUBJECT TO BE REVISED WITH THE FINAL TENTATIVE MAP.

100 0 100 200 300
GRAPHIC SCALE

N

10886-00

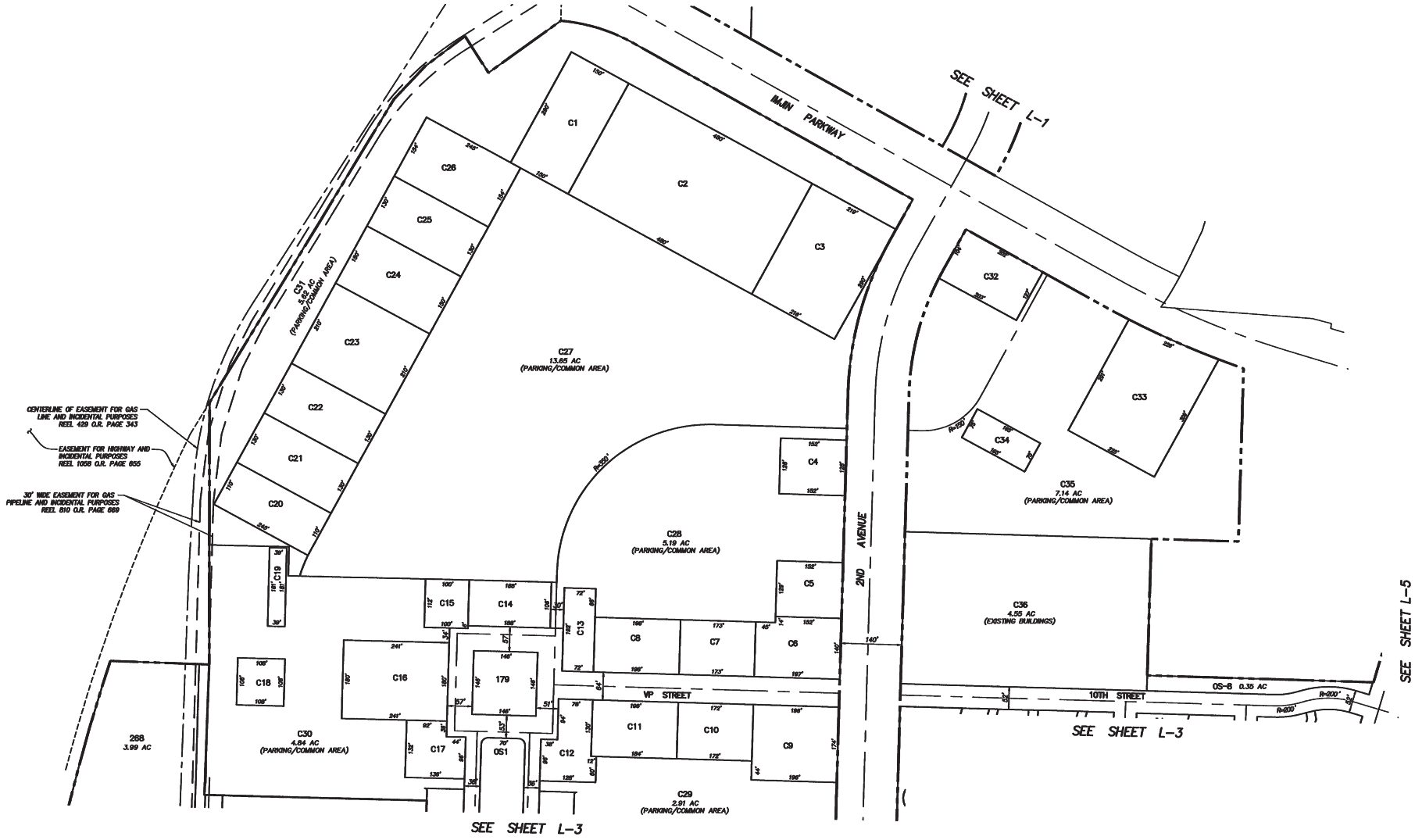
FIGURE **2-5a**

Preliminary Tentative Map

***Source*:** RBF Consulting, 2005

City of Marina

EIP ASSOCIATES



LOTTING BASED ON PRELIMINARY APPROVED TENTATIVE MAP DATED SEPTEMBER 22, 2004, SUBJECT TO BE REVISED WITH THE FINAL TENTATIVE MAP.

100 0 100 200 300
GRAPHIC SCALE

FIGURE **2-5b**

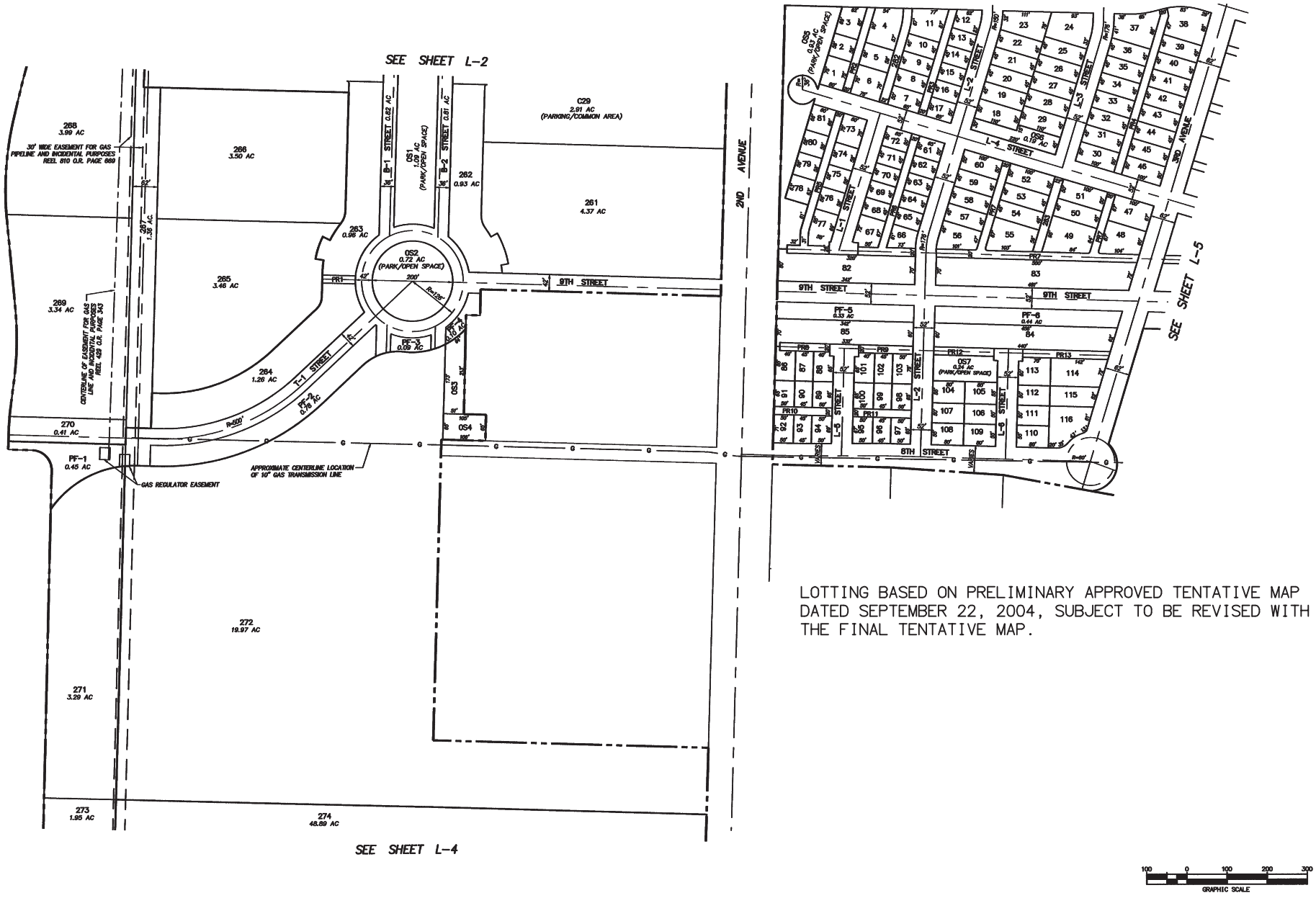
Preliminary Tentative Map

10886-00

Source: RBF Consulting, 2005

City of Marina

EIP ASSOCIATES



LOTTING BASED ON PRELIMINARY APPROVED TENTATIVE MAP DATED SEPTEMBER 22, 2004, SUBJECT TO BE REVISED WITH THE FINAL TENTATIVE MAP.

100 0 100 200 300
GRAPHIC SCALE

FIGURE **2-5c**

Preliminary Tentative Map

10886-00

***Source*:** RBF Consulting, 2005

City of Marina

EIP ASSOCIATES

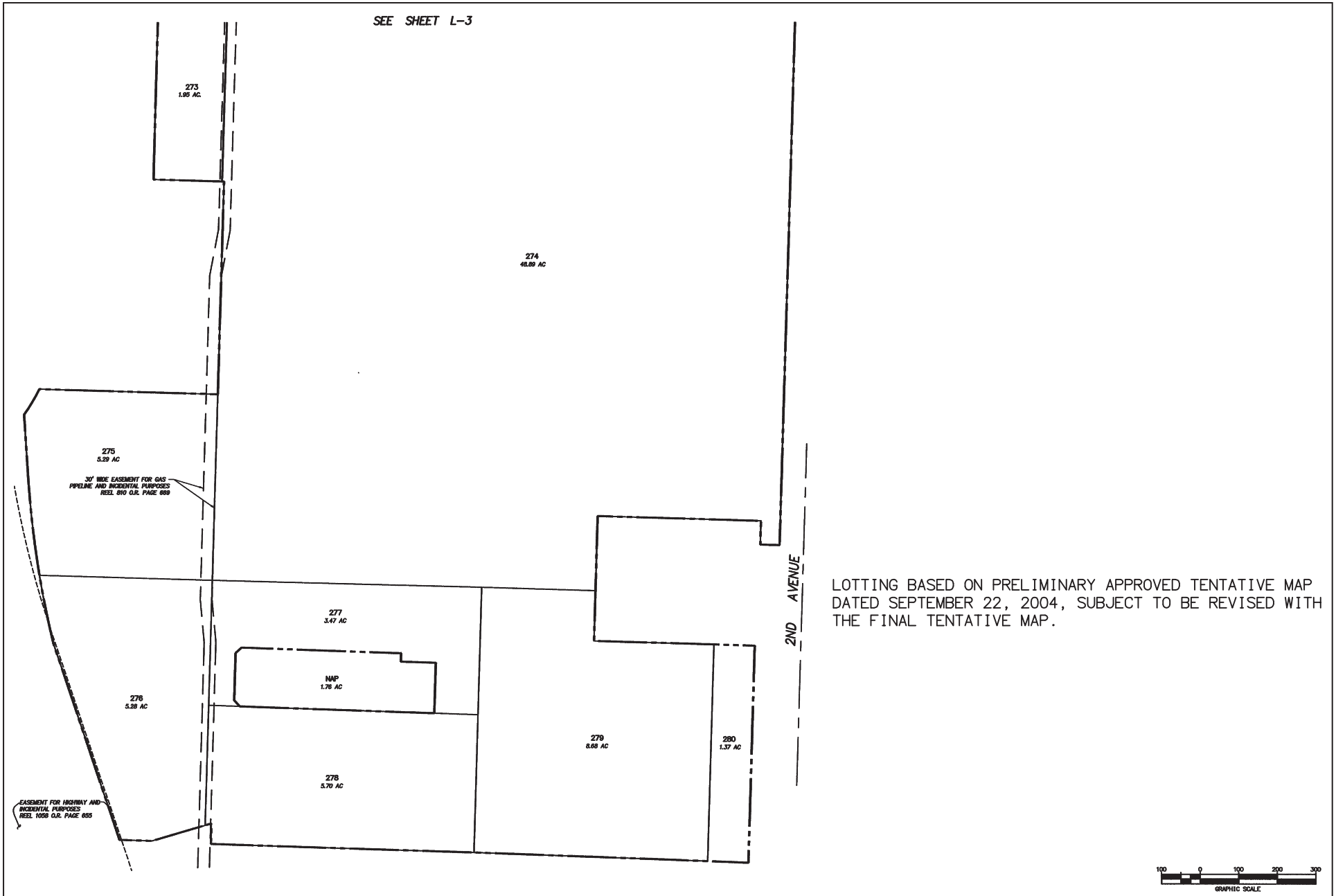


FIGURE **2-5d**

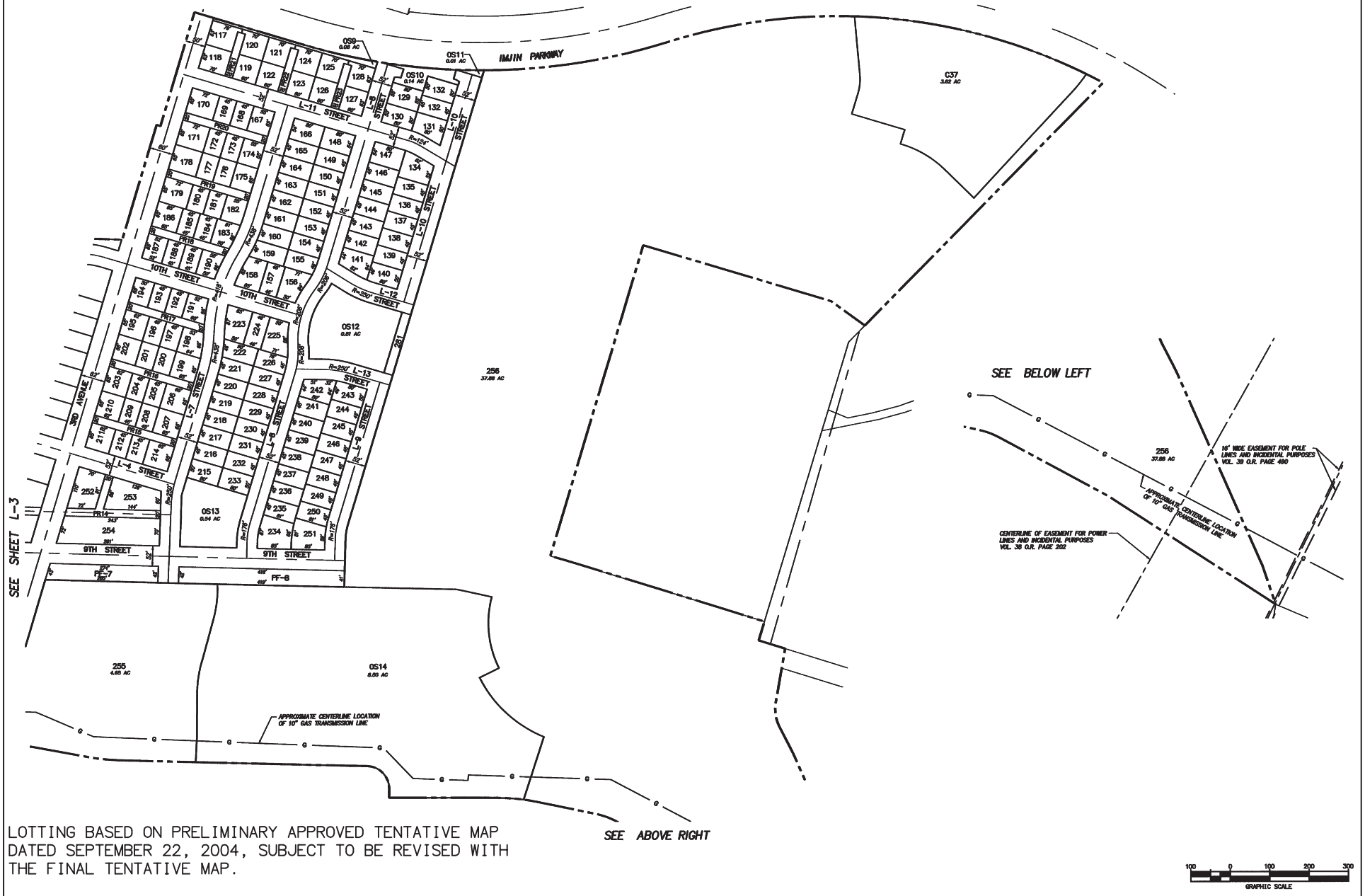
Preliminary Tentative Map

10886-00

***Source*:** RBF Consulting, 2005

City of Marina

EIP ASSOCIATES



LOTTING BASED ON PRELIMINARY APPROVED TENTATIVE MAP DATED SEPTEMBER 22, 2004, SUBJECT TO BE REVISED WITH THE FINAL TENTATIVE MAP.

FIGURE **2-5e**

Preliminary Tentative Map

10886-00

Source: RBF Consulting, 2005

City of Marina

EIP ASSOCIATES

- 1,237 new housing units at a wide range of affordability. Affordable housing would be provided pursuant to California RDA law and the City/RDA's inclusionary housing requirements of the Housing Element of the General Plan.
- Necessary infrastructure to support the future development including:
    - Potable water distribution system
    - Wastewater collection system
    - Recycled Water system
    - Storm Drainage system
    - Dry Utilities system

The following are Specific Plan Land Use designations established by the Specific Plan:

Multiple Use (MU): The MU district is a unique area made up of several different land uses including but not limited to retail, residential, office, visitor service including hotel, timeshare & convention uses, entertainment, and recreation. Parcels may include multiple land uses as individual buildings or within each building.

Office/Research and Development/Light Industrial (O): This land use designation provides for a variety of employment uses including but not limited to research, manufacturing, general office, laboratory, light industrial, and assembly buildings of a variety of sizes to accommodate a number of different users.

Parks and Recreation (P): The Parks designation allows for a variety of recreational uses, and their associated structures. Improvements may include multi purpose trails, bicycle paths, tot lots, playground equipment, turf areas, ball fields, courts, swimming pool, picnic facilities, restroom facilities, and recreational use structures.

Public Facilities (PF): Uses that support a community that include, but are not limited to schools, public safety services, utility providers, and transit.

Retail and Personal Services (R): The land use designation includes both regional and neighborhood orientated retail and services as well as entertainment retail.

University Villages Residential (UVR): Provides for single family detached residential and single family attached dwelling units in a variety of configurations including standard lots, clusters, duets, and multi-family residential development.

Building Heights

The University Villages Specific Plan identifies building heights for residential, commercial and office land uses. For residential uses the maximum building heights are 40 and 45 feet. For non-residential site development, the maximum building height is as follows:

Land Use Designation	Maximum Building Height
Multiple Use	55 feet
Multiple Use: Hotel only (Planning Area OP1A)	90 feet
Retail / Service	55 feet
Office / Research and Development / Light Industrial	55 feet
Public Facilities	40 feet
Open Space	55 feet

Note: For Planning Area OP1A, buildings and / or portions of buildings located within 300 feet of the edge of pavement of the eastern most north-bound lane of Highway 1 shall be limited to 40 feet in height.

Non-Application Parcels

The University Villages Specific Plan boundary area includes the following properties that are not part of the Proposed Project application proposed by Marina Community Partners, LLC and are, or will be owned by other public and/or quasi-public agencies or private parties (a total of 61.9 acres).

1. Monterey-Salinas Transit (MST) property (4.5 acres),
2. Transportation Agency of Monterey County (TAMC) Economic Development Conveyance (11.9 acres),
3. Marina Coast Water District (MCWD) (11.3 acres),
4. County of Monterey (1.8 acres),
5. Goodwill Industries/Young Nak Church (7.9 acres),
6. U.S. Army Corps of Engineers (Corps) (1.9 acres),
7. Planning Area X (3.3 acres), and
8. Planning Areas U and W (19.3 acres).

Though a part of the City of Marina University Villages Specific Plan, but not a part of the development proposals submitted by the Marina Community Partners, the potential development associated with the Non-Application Parcel have nonetheless been included in the traffic, air quality and noise impact sections of this EIR. As air quality and noise issues directly correlate with the average daily trips reported in the transportation report, and the transportation report includes the average daily trips from the Non-Application Parcels, the air quality and noise impacts of the Non-Application Parcels are addressed at a project level, as well as the cumulative context.

The "Non-Application Parcels" were evaluated for their development potential by the transportation consultant for the purpose of determining total transportation and circulation impacts associated with the University Villages Specific Plan EIR, based on rough approximations of what could be constructed on these parcels. Therefore, when the development potential of the Non-Application Parcels is combined with the Proposed Project's, the total units and square footage are as follows:

Land Use	Units or Square Feet (sf)
Residential	1,237 units
Retail and restaurants	1,122,055 sf (as discussed previously, with the option to replace 500 hotel rooms with either 160,000 sf of retail, or 277,042 sf of office, the total sf of retail would be 1,282,055)
Office / Research	819,171 sf (760,00 of this is attributable to the Proposed Project) (as discussed previously, with the option to replace 500 hotel rooms with either 160,000 sf of retail, or 277,042 sf of office, the total sf of office would be 1,096,213)
Public Facilities	561,850 sf (none of this is attributable to the Proposed Project)
Hotel	500 rooms

Building Deconstruction, Demolition and Disposal

It is anticipated that within the project site, including the parcels excluded from the application, 943 buildings will be removed. The deconstruction and demolition is expected to commence in the 3rd Quarter of 2005 and continue at a steady pace over a period that may range from one to three years.

It is estimated that between 6,000 - 6,500 truck loads of building debris would be removed from the project site.

Once material is processed, the containers would be shipped to one of the following landfills:

- Normal construction debris – Class III Landfill (e.g., Marina landfill)
- Cal/ Haz non-RCRA and RCRA waste – Class II-I Landfill; as certified and permitted by CA DTSC. All this material may be trucked to Kettleman City, California

Of the 6,000 - 6,500 truck trips, approximately 1,300 loads (approximately 26,000 tons) of non-friable asbestos materials would be trucked offsite to the Marina landfill or Kettleman City Class III landfill; 520 loads (approximately 10,000 tons) of friable asbestos would go to the Kettleman City Class I/II Landfill.

At no time would any construction debris be buried on-site. All waste streams would be trucked offsite to the proper landfill facilities permitted to accept the various waste streams. Material would leave the site via double trailers or large single trailers (i.e., 40 yard containers).

Utilities

Water Supply. The purveyor of water in the City of Marina is the Marina Coast Water District (MCWD). An existing network of water supply wells, storage tanks and pump stations and trunk pipelines provides water throughout the City. Tie-ins to the existing 2nd Avenue water pipeline are proposed at 5th Street, 6th Street, 9th Street, 10th Street, and just south of Imjin Parkway. Additionally, four new tie-ins are proposed along Imjin, two new tie-ins are proposed along 8th Street, and a final tie-in is proposed on 1st Avenue, north of 3rd Street.

The MCWD is currently proposing a Regional Urban Water Augmentation Project. The purpose of the Regional Urban Water Augmentation Project is to identify feasible water augmentation supplies capable of meeting the water demands for redevelopment requirements of the former Fort Ord. The Regional Urban Water Augmentation Project's key objective is to provide 2,400 AF/Y of water to meet anticipated demands in the former Fort Ord Area. In addition, providing 300 AF/Y for the Monterey Peninsula is also being considered by this project.[3] The two supply alternatives being proposed are a new seawater desalination facility at the existing MCWD seawater desalination plant site and a recycled water project with seasonal surface storage at a location within the Armstrong Ranch property.

Wastewater System. The purveyor of wastewater collection service is the MCWD. An existing network of pipelines, manholes, pump stations and force main pipelines provide wastewater collection throughout the City and the Ord Community. The majority of the University Villages residential lots located west of 2nd and 3rd Avenues would be serviced by 8-inch sewer pipelines flowing to two 24-inch sewer pipelines to follow 1st Avenue and 9th Street. These 24-inch pipelines then flow to a 36-inch pipeline at the intersection of 8th Street and 1st Avenue, which would then connect to an existing trunk pipeline under Highway 1, ultimately terminating at the Monterey Regional Water Pollution Control Agency (MRWPCA) interceptor facility west of the highway. Residential lots located east of 3rd Avenue would flow to a proposed 36-inch sewer pipeline to follow 10th Street and the Village Promenade. This pipeline would then flow to a proposed 48-inch main connecting to a second existing trunk pipeline beneath Highway 1, also ultimately terminating at the MRWPCA interceptor facility. Flow from residential lots located north of Imjin Parkway would be serviced by 8-inch pipelines flowing to a 12-inch pipeline that also services the retail/service center of University Villages. This pipeline then connects with the 48-inch main, flowing west under Highway 1.

Recycled Water System. While no recycled water facilities currently exist within University Villages, MCWD's Regional Urban Recycled Water Distribution Project prepared in collaboration with MRWPCA has developed preliminary engineering plans for the construction of a new recycled water distribution system that includes service to University Villages. The recycled water system will reduce demand for potable water by using recycled water for the irrigation of major landscape areas, medians, golf courses, playgrounds, school grounds, and parks. To accommodate future use of recycled water, the Proposed Project would incorporate recycled water pipeline infrastructure.

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[3] Marina Coast Water District, *Regional Urban Water Augmentation Project Draft Environmental Impact Report*, June 2004.

As part of the Regional Urban Recycled Water Distribution Project, recycled water pipelines and appurtenances are proposed to run parallel to 1st Avenue and tie into the proposed regional network. Sleeves for the proposed pipeline were constructed within 2nd Avenue as part of FORA's Transportation Capital Improvement Program. However, the provision of any recycled water will only occur at the discretion of MCWD and is not anticipated to occur in the immediate future. MCWD has adopted a FEIR addressing the future construction of recycled water storage and delivery to the project site and other parts of the former Fort Ord and Ord Community. Should recycled water be made available to the project site, recycled water may be used for major landscape areas, medians, parks and playgrounds.

Drainage System. Drainage facilities would be designed to infiltrate all of the project site runoff that would be generated on-site during a 100-year storm event. Finished floor elevations would be above wherever calculated 100-year flood levels occur. Design precipitation values for drainage infrastructure will be based on City of Marina and Monterey County Standards. The system would operate by intercepting runoff generated on-site and, where appropriate, directing it through water quality treatment systems into underground infiltration systems. No stormwater generated within the 100 year event would be directed off-site. The systems would be selected and sized using design methodologies adopted as policy by the City of Marina for use within the project site.

Various approaches to percolation facilities would be used within the specific plan area, including:

> *Dry Well Systems* – Dry wells and rock filled boring or excavations that could receive runoff from clean runoff sources such as roofs and backyards.
>
> *Underground Storage and Infiltration* – Underground perforated pipes (such as used under commercial development in Sand City) set in rock filled trenches or systems with similar functions that use other storage chamber configurations could be used where land area is not available for above ground systems.
>
> *Temporary and Multi-use Open Basins* – Percolation basins that use surface storage are the most common configuration currently used in Marina. Surface basins are appropriate for temporary conditions or where they can be incorporated into open space with multiple-use features.

The master drainage facilities would be located under major arterial roadways, residential streets, commercial parking areas, and other locations deemed acceptable to the City and according to acceptable standards for such infrastructure. Using the existing storm drain system was not considered a practical alternative as it is unknown what condition it is in, where it is located and whether it would meet current standards. It is anticipated that the existing system would not meet the on-site retention goals as established by the *Fort Ord Reuse Plan* for redevelopment.

Other Utilities. The dry utilities, including electricity, natural gas, cable and telephone, would be connected through the project site by way of a network of joint trench facilities within the backbone

infrastructure. The new facilities would be integrated into the roadway system and parking facilities (public and private) in underground ducts and vaults. The majority of existing utility lines would be removed and replaced in a phased manner to support the new land uses. The joint trench for the public utility backbone system within the roadway right-of-way would be placed under the sidewalk with 2-feet from centerline from the street right-of-way. Proposed location of utilities will be developed in coordination with utility providers.

Project Phasing

Construction of the Proposed Project would commence with deconstruction of the existing buildings and environmental clean up. This is projected to commence in the second half of 2005. The development is planned in three defined phases, together with certain parcels that are identified as "opportunity phases" that are expected to occur whenever the market will allow. These phases also represent the progress of land acquisition via the EDC conveyance process, which will be detailed in a Disposition and Development Agreement between the Redevelopment Agency and Marina Community Partners, LLC. Following are geographic descriptions of each phase. Table 2-2 shows the details of the Proposed Project.

Phase 1. As indicated in Figure 2-4 – *Project Phases*, retail/service would largely occur west of 2nd and north of 9th Street. The residential components of Phase 1 would include apartment units fronting 9th Street on the west side of 2nd Avenue. Market rate single-family and attached affordable housing would be constructed between 2nd Avenue and 4th Avenue, north of 8th Street and south of Imjin Parkway. A Greenbelt linkage from the Village Square (at the western terminus of 9th Street) would connect to the 8th Street boardwalk link to the beach.

Primary access to Phase 1 and the University Villages would be from Imjin Parkway and 2nd Avenue. Newly constructed infrastructure would include local residential roadways, alleyways and parking to support the Phase I development. Temporary retention basins would be constructed as appropriate within the University Villages area to address drainage and water quality requirements. Permanent drainage facilities would be constructed to support Phase 1 development and subsequent development based on required sizing parameters of projected watershed areas. Water, sewer and recycled water facilities would also be constructed to support Phase 1 development and subsequent development based on buildout demands and flows.

Phase 2. Phase 2 consists of additional market rate and affordable housing and retail/service. Residential development will occur in Planning Areas C, M, O, P2, and Q. This phase also includes an approximately 20-acre park north of 8th Street and at the terminus of 4th Avenue. The retail and services uses are proposed on the southwest corner of California Avenue and Imjin Parkway. The Greenbelt Park from 9th Street to 7th Street and from 1st Avenue to 2nd Avenue would be constructed as part of this phase.

Primary access would be from Imjin Parkway, and newly constructed roadways to include 3rd Avenue, California Avenue[4] and 8th Street.[5] Improvement of these roadways would be coordinated with FORA and implemented to support Phase 2 development. Temporary retention basins would be constructed as appropriate within the Specific Plan area to address drainage and water quality requirements. Permanent drainage facilities would be constructed to support Phase 2 development and subsequent development based on required sizing parameters of projected shed areas. Water, sewer and recycled water facilities would also be constructed to support Phase 2 development and subsequent development based on buildout demands and flows.

Phase 3. Phase 3 consists primarily of the residential portion between 2nd Avenue and 3rd Street, and the remainder of the Greenbelt Park area from 7th to 3rd Street. In addition to affordable housing in Phases 1 and 2, additional affordable housing close to Imjin Parkway and California Avenue would be built as part of this Phase. (The *University Villages Specific Plan* outlines the applicant's approach to meeting the City's Inclusionary Housing Program.)

Primary access would be from 2nd Avenue, and newly constructed roadways, alleyways and parking to support new development. Temporary retention basins would be constructed as appropriate within the Specific Plan area to address drainage and water quality requirements. Permanent drainage facilities would be constructed to support Phase 3 development based on required sizing parameters of projected shed areas. Water, sewer and recycled water facilities would also be constructed to support Phase III development based on buildout demands and flows.

Opportunity Phases. The areas in the *University Villages Specific Plan* area designated "Opportunity Phases" would be developed together with their supporting infrastructure at such time as market demand establishes the need. Refer to Table 2-2.

Permits and Approvals Required

City Approvals Requested

The following is a summary list of approvals followed by a brief discussion of requested approvals from the City.

1. General Plan Amendments
2. Specific Plan
3. Amend the Zoning Map for the area from South Fort Ord to Specific Plan
4. Design Review
5. Tentative Subdivision Map

[4] The segment of California Avenue within the project's boundary is included in FORA's CIP.
[5] The segment of 8th Street within the project's boundary is included in FORA's CIP.

6. Project Development Agreement
7. Grading and Building Permits
8. Tree Removal Permit
9. Environmental Impact Report Certification
10. Mitigation Monitoring Program
11. Approval of Disposition and Development Agreement

This EIR is intended for the consideration and use of project decision-makers in determining whether to approve the following project entitlements:

General Plan Amendments

The following represents a list of the Proposed Project elements that may translate into potential General Plan amendments. This is not intended to be an exhaustive listing by detail, but instead a discussion of the General Plan Chapter policies which may need to be modified for the University Villages planning area.

Chapter 1: Introduction

- Consolidate and better define the boundaries of University Villages.

Chapter 2: Community Land Use

- Change the General Plan land use designations on the Land Use Map.
- Modify the sub-neighborhood park required service area.
- Revisit the Housing Potential table, density for Multiple Use housing and definition and density for Village Homes.
- Add hotels to the list of allowed uses and modify the total floor area allowed for housing.

Chapter 3: Community Infrastructure:

- Modify and add street designs
- Relocate the transit corridor

Chapter 4: Community Design and Development

- Retain the intent and revise to provide general objectives for meeting the intent. For example:

    1. Consolidation of retail uses into a Village Center -

The University Villages Master Plan proposes to consolidate the retail uses shown in the General Plan into a Village Center and two small neighborhood-serving nodes. The General Plan contemplates retail uses in the location of the Village Center, as well as along 2nd Avenue and along both sides of the transit corridor, widely dispersing it throughout the site.

University Villages' goal is to create a strong retail tax revenue base for the City. By consolidating the retail uses, it enables the destination retail to benefit from the activity generated by the regional retailers. Without this synergy, unanchored destination or specialty retail is very fragile economically and will not thrive. The additional neighborhood shopping nodes provide access for the adjacent uses as well as surrounding areas.

2. Location of high density residential -

   Rather than lining both sides of the north/south greenbelt with high density housing, the University Villages Specific Plan proposes to locate the high density housing within the Village Center to take advantage of proximity to amenities, transit and employment.

3. Modify street design.

4. Revisit 2nd Avenue mixed use design concept.

Rezone

Modifications to the City of Marina Zoning Map by changing the existing temporary zoning designation "South Fort Ord" to "Specific Plan."

Design Review

All projects within the *Highway 1 Design Corridor Design Guidelines* area are required to go through the City of Marina Design Review process to assure project conformance with the *Highway 1 Design Corridor Design Guidelines*. In addition to the City of Marina review, FORA will also determine project conformance with these *Design Guidelines*.

The City of Marina also has a Design Review process that reviews projects for conformance with the General Plan and approved Specific Plan for the Proposed Project. The Proposed Project will also be subject to the City of Marina's Design Review process (Municipal Code Section 17.50.040). The Design Review Board reviews project plans, drawings and statements with the goal of encouraging development that would:

- Avoid unsightly, undesirable, or obnoxious appearance;

- Encourage orderly and harmonious development of the City;

- Not impair the desirability of residence or investment or occupation in the City;
- Not limit the opportunity to obtain the optimum use and value of the land and improvements;
- Not impair the desirability of living conditions on or adjacent to the subject site;
- Conform with the standards included in the local coastal land use plan; and
- Protect the general welfare of the community.

Tentative Subdivision Map

The Tentative Subdivision Map has been submitted to the City of Marina. The characteristics of the tentative map are described in the previous Proposed Project discussion.

Project Development Agreement

The Specific Plan and Tentative Map shall be implemented through a project Development Agreement (DA). The DA would set forth needed infrastructure improvements, the timing and method of financing needed improvements, public dedication requirements, landscaping amenities and other specific performance obligations and contributions to be made by the applicant, in return for guarantees by the City that the permitted uses of the property, the intensity of such uses, the building heights and sizes, and the development program established by the *Fort Ord Reuse Plan* and *City of Marina General Plan*, and other project entitlements in effect at the time the DA is executed, would not be modified in the future.

Grading and Building Permits

The City of Marina approves grading and building permits following final map approval and payment of fees.

Tree Removal Permit

A request to remove, or relocate existing trees within the development area will be processed concurrently with other entitlement approvals.

EIR Certification

The City of Marina City Council may certify the EIR per CEQA Section 15090.

Mitigation Monitoring Program

The Mitigation Monitoring Program is part of EIR certification and outlines the City's approach to mitigation implementation and monitoring.

Other Public Agencies Whose Approval is (or may be) Required

- California Department of Fish and Game (Take Permit per Fort Ord HCP)
- Corps (Clean Water Act and Section 404 Permit)
- U.S. Fish and Wildlife Service (Endangered Species Act compliance)
- Regional Water Quality Control Board (for NDPES permit for non-point source compliance relating to construction erosion and run-off, and infiltration of storm surface water into the site)
- California Highway Patrol (for implementation of transportation management associated with building removal)
- Marina Coast Water District (Conceptual Wet Utility Plans and Water Supply Assessment/ Verification of Supply, Water and Wastewater Project Master Plans and Design Plans for Utility Construction)
- FORA (Project consistency analysis with *Fort Ord Reuse Plan*)
- Monterey Bay Unified Air Pollution Control District (Air Quality Permits relating to building deconstruction and in particular asbestos and lead based paint)
- City of Marina Redevelopment Agency (Responsible Agency for disposition of property)
- Caltrans (encroachment permits)

3 ENVIRONMENTAL ANALYSIS

3.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS

Topics Addressed

The Environmental Analysis section of this EIR discusses the environmental setting, impacts, and mitigation measures for each of the following topics.

- Aesthetics and Visual Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Hazards Materials and Public Safety
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Demographics
- Public Utilities
- Transportation and Circulation

In the case of Demographics, this issue is discussed herein in the context of growth inducement and is not discussed as a separate EIR section as the above listed EIR sections are, because demographics is recognized through the CEQA Guidelines Appendix G Initial Study checklist as a growth inducement issue. Refer to the Chapter 4 discussion on Growth Inducement.

Organization of this Section

This section of the Draft EIR presents an analysis of environmental factors that may be affected by the Proposed Project. The environmental analysis has been prepared consistent with Sections 15125 and 15126 of the CEQA Guidelines. For each issue, the following information is presented:

- Setting—describes existing baseline conditions, including the environmental context and regulatory background.

- The regulatory setting lists the federal, State and local regulations relevant to the Proposed Project. In the case that the Proposed Project is not consistent with one of the regulations, the EIR will state this and also provide discussion of the regulation, the potential impacts associated with inconsistency and provide mitigation if appropriate. Otherwise, the Proposed Project should be considered consistent with the policies and is intended to convey to the reader that due diligence and review of relevant regulations occurred.

- *Fort Ord Reuse Plan EIR* (Reuse Plan EIR) Baseline Conditions—in order to provide additional information regarding the project's historical setting and context, a discussion of the baseline used in the Reuse Plan EIR is also included for each topic.

- Impact Assessment—identifies standards of significance and evaluates how the Proposed Project would affect the baseline conditions.

- Mitigation Measures—identifies ways to reduce, eliminate or avoid impacts that are considered significant and adverse.

Classification of Impacts

The impact and mitigation portion for each environmental discussion includes impact statements that highlight the environmental consequences of the proposed action with regard to that environmental topic. An explanation of each impact and an analysis of its significance follow the impact statement.

For each impact, a level of significance is determined and is reported in the impact statement. Conclusions of significance are defined as follows:

1. Significant (S) impacts include effects that exceed established or defined thresholds. For example, traffic volumes that exceed local intersection level of service standards would be considered a significant adverse impact.

2. Potentially significant (PS) impacts include those cases where it is not precisely clear whether a significant effect would occur; the analysis in these instances conservatively assesses the worst-case conditions, but the discussion acknowledges that there is uncertainty regarding the extent of the impact.

3. Less-than-significant (LTS) impacts include effects that are noticeable, but do not exceed established or defined thresholds. For example, air pollution caused by an increase in the development and density of population in the project site may be perceptible, but need not exceed acceptable thresholds or standards. Therefore, the effect would not be considered significant.

4. No Impact (NI) includes situations where there is no adverse effect.

Thresholds or significance criteria are used to classify an impact into one of the above categories. These significance criteria are defined for each environmental topic, based on existing standards of the City of Marina, Caltrans, Monterey Bay Unified Air Pollution Control District (MBUAPCD), or

CEQA. These significance criteria explain to the reader the basis for determining the significance of an impact.

For each impact identified as being significant (S) or potentially significant (PS), the EIR provides mitigation measures to reduce, eliminate, or avoid the negative effect.

If the mitigation measures would reduce the impact to a less-than-significant (LTS) level successfully, this is stated in the EIR. If the mitigation measures would not diminish these effects to a less-than-significant level, the EIR classifies the impacts as "significant unavoidable effects (SU)."

Enumeration of Impacts and Mitigation

Each impact topic is numbered using an alpha-numerical system that identifies the environmental issue. For example, *NE-1* denotes the first impact discussion in the Noise subsection. The two letter codes used to identify the environmental issues discussed in this section are:

- AE - Aesthetics
- AQ – Air Quality
- BR – Biological Resources
- CR – Cultural Resources
- HM – Hazardous Materials and Public Safety
- HY – Hydrology and Water Quality
- LU – Land Use and Planning
- NE – Noise
- UT – Public Utilities
- TR – Transportation

Mitigation measures are numbered to correspond to the impacts they address; e.g., Mitigation Measure TR-3.1 refers to the first mitigation for Impact 3 in the Transportation subsection. A brief title is included to easily identify the mitigation measure. All mitigations prescribed herein will reduce the identified impact to a less-than-significant level unless otherwise specified in discussion pertinent to the mitigation. In all cases, the prescribed mitigations are implementable, practical and are known to effectively reduce the impact to a less-than-significant level.

3.1 AESTHETICS AND VISUAL RESOURCES

3.1 AESTHETICS AND VISUAL RESOURCES

Introduction

This evaluation of aesthetics and visual resources addresses the changing visual character of the project site as the planned uses envisioned in the *Fort Ord Reuse Plan* and Marina General Plan take place over time. Views in and around the project site are described both as they existed in 1991 and in 2004. Potential impacts to the visual character of the area are addressed. In addition, this section will examine impacts to the views from Highway 1. Highway 1 forms the western boundary of the site and is designated as an eligible California State Scenic Highway. This section will also examine the impact to views from the Fort Ord Dunes State Park, a public recreation area.

The written comments received in response to the NOP (see Appendix B) did not include concerns regarding aesthetics and visual resources. However, a comment was raised by a representative of the Monterey Institute for Research in Astronomy (MIRA) during the public scoping meeting, which addressed impacts of increases urban light and glare operation of the MIRA observatory. This issue will be addressed in this section of the EIR.

Setting

The former Fort Ord is located in a region with a variety of visual resources including: the Monterey Bay, dune vegetation, dunes, beaches, historic sites of the Monterey Peninsula, and the natural scenic landscape as well as the agricultural fields of the Salinas Valley. The Monterey Bay area is also an internationally recognized destination area for a variety of visitors including recreationists, ecologists, scientists, racing (car, motorcycle, and bicycle) enthusiasts, sailors, hang-gliders, and golfers.

In 1991, when the final federal decision to close Fort Ord was made, there were approximately 993 buildings, including barracks and industrial buildings, within the Proposed Project boundaries of which many were, and still are, visible from Highway 1 and other points on the former Fort Ord. At that time the buildings were in various stages of use. Over the past 13 years, the Fort Ord Reuse Authority (FORA) has adopted a plan for transitioning the base from military to civilian use. In that process, a determination was made that the buildings within the Proposed Project boundaries would be demolished and replaced with a mixed use development. Since that time, the City of Marina has adopted a Redevelopment Plan for the land within the Proposed Project boundaries and made determinations of blight justifying the removal of buildings and replacing them with a mixed use development. To date, FORA has removed approximately 50 buildings and a number of trees in order to further the *Fort Ord Reuse Plan* and constructed Imjin Parkway and Second Avenue. Remaining buildings are in various states of disrepair.

Currently, the undeveloped portion of the former Fort Ord is typified by low growing, wind tolerant tree and shrub species, including maritime chaparral, coastal scrub and oak woodland vegetation natural habitats. Mature Monterey Cypress and other trees are also scattered throughout the area. The

project site is on a highly developed portion of the former Fort Ord with a mix of vacant army barracks and other buildings. The project site falls within what was known as the Main Garrison area of the former Fort Ord, typified by a regular and small scale street layout, low rise structures and expansive paved areas. "Most of the installation's development is largely confined to the Main Garrison and East Garrison and associated residential areas, consists of one- or two-story buildings."[1] The project site contains existing artificial lighting fixtures associated with the various former military uses. Some of this lighting is still in operation. The majority of the project site contains barracks buildings. During occupation, the barracks would have created an equivalent amount of artificial light to a medium to high density residential development. The light industrial and warehouse like buildings that are scattered throughout the project site would have used a relatively small amount of artificial lighting with security and parking lighting as the chief sources. Street lights are also scattered throughout the project site. Some of this lighting is also still in use.

The project site is generally visible from Highway 1 with screening provided by both the topography of the site and existing mature vegetation such as Cypress and Monterey pine trees. Generally, the project site is relatively easy to see from all directions. Views to and from the Proposed Project were viewed from several points in and around the project site. These views are described in more detail in the following paragraphs and throughout the impact discussion.

Fort Ord can be seen from Highway 1 at a number of viewpoints (see Figures 3.1-1 through 3.1-6). The most northerly viewpoint as seen from Highway 1 is at a point just south of the Highway 1/ Reservation Road intersection. This is identified as view 1 in Figure 3.1-1. This point is approximately two miles north of the Highway 1/Imjin Parkway intersection and it is at this point that the former military base comes into view for the first time while traveling south along Highway 1. The view is framed by two large Monterey Bay beach dunes that flank Highway 1 at this point and which limit the view of Fort Ord into a narrow view field. Traveling further south on Highway 1, near the intersection of Highway 1/Del Monte Boulevard (view 2 in Figure 3.1-1), the area of Fort Ord where Imjin Parkway crosses Highway 1 comes into full view. This is the area on Fort Ord where the proposed hotel may be located (current location of the FORA offices). Also seen from this point are the Monterey Bay beach dunes, which contained the former beach dunes military target ranges, railroad tracks flanking the west side of Highway 1, the 8th Street overpass, other portions of Fort Ord nearest Highway 1, and a distant view of the Monterey Peninsula and the Santa Lucia Range of mountains.

Traveling further south on Highway 1, the range of views of Fort Ord changes with intervening topography, vegetation and distance of the viewer from the former military base. Seasonally, and mostly during the summer months commencing in mid-June, fog is a regular occurrence on the Monterey Peninsula and on Fort Ord, sometimes lingering day after day, but mostly burning off in the late mornings and returning in the late afternoons. Fog will, of course, obscure the views when present. As no fog was present during the site visits during which the photographs were taken, clear views to and from Fort Ord were available allowing maximum observation of existing conditions.

[1] EDAW, Inc. and EMC Planning Group, Inc., *Public Draft Fort Ord Reuse Plan EIR*, May 1996, page 4-145.

10886-00

FIGURE **3.1-1**

Viewpoint Location

Source: Dahlin Group, 2004

City of Marina

EIP ASSOCIATES

View 1 Existing Highway 1 southbound

View 2 Existing Highway 1 southbound

FIGURE **3.1-2**

Views 1 and 2 Highway 1 southbound

10886-00

Sources: Dahlin Group, 2004

University Villages EIR

EIP ASSOCIATES

View 3 Existing Highway 1 southbound

View 4 Existing Highway 1 southbound

FIGURE **3.1-3**

Views 3 and 4 Highway 1 southbound

10886-00

Sources: Dahlin Group, 2004

University Villages EIR

EIP ASSOCIATES

View 5 Highway 1 northbound

FIGURE **3.1-4**
View 5 Highway 1 northbound

10886-00

***Source*:** Dahlin Group, 2004

University Villages EIR

EIP ASSOCIATES

View 6 Existing from 8th Street overpass looking northeast

View 7 Existing from 8th Street overpass looking southeast

FIGURE **3.1-5**
Views 6 and 7 (Existing) Highway 1 northbound

10886-00

***Source*:** Dahlin Group, 2004

University Villages EIR

EIP ASSOCIATES

View 8 Existing Highway 1 northbound

FIGURE **3.1-6**

View 8 Highway 1 northbound

10886-00

Sources: Dahlin Group, 2004

University Villages EIR

EIP ASSOCIATES

Regulatory Setting

The following discussion summarizes federal, State and local regulatory authorities pertaining to aesthetics and visual resources.

Federal

No federal regulations are pertinent.

State

Fort Ord Reuse Plan. The *Fort Ord Reuse Plan* guides all development of the former Fort Ord. Chapter 7 of the *University Villages Specific Plan* contains a consistency analysis as to the Proposed Project's compliance with policies of the *Fort Ord Reuse Plan*. These policies are intended to protect the visual character of the area.

Highway 1 Design Corridor Design Guidelines. The *Highway 1 Design Corridor Design Guidelines* (Design Guidelines) apply to properties within the former Fort Ord boundary, extending from the Del Monte Boulevard off-ramp in the City of Marina to the north, to the Fremont Boulevard off-ramp in the City of Seaside to the south. The Design Guidelines do not apply to other parts of the base; they are only relevant to a narrow band along Highway 1. The Design Guidelines serve two purposes: 1) to define a common look and feel for the Highway 1 Corridor as generally defined by the *Fort Ord Reuse Plan*, and 2) provide overarching guidelines to protect and enhance the character of the Highway 1 Corridor in the deployment of the Independent State Institution responsibilities of the underlying individual jurisdictions. The Design Guidelines are consistent with the land uses allowed in the *Fort Ord Reuse Plan*, and protect the design goals included in that document.

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 which 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. Portions of Highway 1 along the California coastline are both designated and eligible State Scenic Highways. The Department of Transportation describes Highway 1 in the counties of Santa Barbara, Monterey, San Luis Obispo, and San Mateo as including "dramatic sections of highway that dip and soar along the mountainous coast, with views of rocky headlands tumbling into the Pacific Ocean."[2] The section of Highway 1 adjacent to the project site is designated an eligible State Scenic Highway.

Fort Ord Dunes State Park (FODSP) General Plan. The FODSP General Plan contains goals and guidelines for development that aim to preserve the landscape.

Goal: Identify, preserve, and perpetuate the distinctive landscape qualities of the dunes.

[2] CalTrans website, Scenic Highway Program, http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm, accessed December 15, 2004.

Guidelines:

AES-3 To the maximum extent practical preserve and restore the natural, undeveloped visual character of the Fort Ord coast as viewed from within the park, from SR 1, and from other areas beyond the park boundaries. Restore and revegetate natural landforms with native plant species to recreate a natural landscape.

Local

City of Marina General Plan. The City of Marina General Plan is divided into four sections. The Community Design & Development section functions to guide the decisions that will shape the City's future physical and spatial form and appearance at several levels. Chapter 7 of the Specific Plan contains a consistency analysis as to the Proposed Project's compliance with policies of the General Plan, many of which are intended to protect the visual character of the area. The following goals and policies from the Community Design & Development section of the City of Marina General Plan (General Plan) relate to aesthetics and visual resources:

CITY FORM AND APPEARANCE

4.9: Along the City's southern border the major areas reserved for habitat protection encircle the Fredericks-Schoonover Park area and extend inward as far as Imjin Parkway to provide a well-defined edge to the City. Further to the west, however, City residential and commercial uses will eventually border CSUMB's main campus. Along this edge, 8th Street and 2nd Avenue should be designed to clearly identify the boundary between the campus and the City. However, to avoid isolating the campus from the City, this edge needs to be penetrated by streets and pathways which physically and visually link the campus and the surrounding community. A similar design approach should be applied along the campus' 2nd Avenue frontage.

4.13: 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. To achieve this end, the following policies shall apply.

1: Each major travel corridor shall have a generally consistent streetscape appearance along designated segments shown in Figure 4.1 [Marina General Plan], so as to reinforce a sense of identity and continuity. This objective can be achieved by unified landscaping (trees, groundcover, paving, lights, and signage) of the right-of-way.

2: Significant natural features, major intersections, and points of special interest which occur along the corridor should be highlighted with special design treatment.

3: The major entry point to Marina should be designed to reinforce and enhance the image and identity of the City. Accordingly, special attention shall be given to the landscaping, building design, and signage at the designated gateways. Specifically, open parking in these areas shall

be screened from view by attractive landscaping; signage shall be limited primarily to directional information; commercial signage – where permitted – shall be subdued; and buildings shall be constructed with high-quality materials. Special design treatment, consisting of distinctive lighting, banners, special paving materials, or actual structures, shall help define these entrances. Small ornamental parks or plazas may also be provided.

4.15: With the exception of its Monterey Bay frontage, there are no major defining natural topographic features within the existing City. But small-scale topographic features are important in local contexts. For example, along the east side of Highway One south of Reservation Road, high dunes buffer the City from the freeway and serve as a visual backdrop to areas of housing. More generally, the gentle undulating topography of the City's neighborhoods helps break up the generally linear pattern of both local streets and major crosstown routes such as Del Monte Boulevard and Reservation Road.

4.17: The form and appearance of the City is further defined by major areas which are readily distinguishable from other areas. The distinction may result from evident boundaries such as streets, rail lines, watercourses, or open spaces; from contrasts in the type of use and buildings in adjoining areas; from an association with some major internal feature such as park or plaza; or from any combination of such features. When they are adjacent to open spaces, the sense of the separateness of these areas (whether they are residential, commercial, industrial, or institutional in character) defines the City's image. If each neighborhood or district could further develop a distinctive character, the organization of the City would become more evident and its image would become more appealing.

4.18: Figure 4.1 identifies those areas of the City where establishing a distinctive neighborhood or district appearance is desirable. 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 street and associated fronting properties.

4.19: To reduce glare and lighting visible from residential neighborhoods, the use of reflective surfaces and neon lighting on commercial buildings shall be limited.

4.53: Buildings in the West University Villages [University Villages nearest Highway 1] should be sited to complement the existing topography and landscaping, maximize opportunities for vistas of Monterey Bay, and protect identified scenic vistas from public areas of CSUMB's West Campus, including common open space areas, greenbelts and academic buildings. Building heights should

be limited in the area to a maximum of 40 feet, with the exception of the optional height areas designated in Figure 4.15 (see page 4-17 of the Marina General Plan-Draft Urban Growth Boundary Edition). In the latter areas, the intent is to permit higher structures which can serve as attractive landmarks identifying the area and the City from Highway One and orient motorists to destinations with Marina. The higher height allowance also should serve to enhance the economic-development prospect of these areas by increasing the opportunities for views of Monterey Bay for building occupants. Approval of heights in excess of 40 feet shall be conditioned on findings that buildings visually complement the natural landscape and topography, when seen from Highway One, and protect existing identified scenic vistas from the West Campus of CSUMB.

4.128.3: 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, ocean views from Highway 1 shall be maintained to the greatest possible extent; development on the primary ridge line of the Marina dunes shall be avoided; new development proposed for the Armstrong Ranch should maintain an adequate setback from Highway 1; 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 1, 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 area.

Impacts Assessment and Mitigation Measures

Significance Criteria

For the purposes of this EIR, aesthetics and visual resources impacts would be considered significant if the Proposed 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 a State scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings;
- Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

Methodology for Analysis

The visual analysis is based on the potential for the Proposed Project to alter the visual character of the site and surrounding areas. The EIR consultant conducted a site assessment, and photos were taken of the area from various vantage points around the project site. In addition, photos were taken of adjacent land uses. Aerial photos and topographical maps were also examined. Available data in the Specific Plan including proposed building heights and zoning were also used. Existing visual conditions were compared with proposed development as well as with applicable design guidelines. The *Fort Ord*

Reuse Plan EIR (Reuse Plan EIR) evaluated the ultimate reuse of the former Fort Ord. The former Fort Ord includes land in the City of Seaside, the City of Marina, and Monterey County. The assumed reuse of the base under existing plans was also taken into consideration. The assumed development in the *Fort Ord Reuse Plan* includes the CSUMB, housing, business park/light industrial, office/R&D, retail, visitor serving, park & open space, and public facilities uses. The visitor serving component included 1,750 hotel rooms, 350 of which were slated for the City of Marina. Retail uses were estimated for approximately 1.9 million square feet, approximately 722,000 of which were anticipated in the City of Marina.[3]

Baseline Conditions

This section has been prepared based on the 2004 baseline conditions. Baseline conditions in 1991 were different than the 2004 conditions in terms of aesthetics and visual resources. Approximately 50 of the buildings and a number of trees within the project site have been removed since 1991. Also, FORA has constructed Imjin Parkway and Second Avenue, including street lights.

Environmental Analysis

AE-1. The Proposed Project could reduce visual quality as seen from Highway 1 resulting in an adverse effect on a scenic vista or resource. (S)

The Proposed Project is the redevelopment of the Former Fort Ord, which is situated along the Highway 1 corridor. The project proposes a variety of uses along the along the western boundary of the project site, which abuts Highway 1. Some of the proposed development along this western boundary is larger in scale than what currently exists and could have a substantial impact on the visual quality of the area.

Many of the mature Cypress trees that are visible along Highway 1 are located in a landscape setback that is established in the *Fort Ord Reuse Plan* and the Design Guidelines and would, therefore, not be removed as a part of the Proposed Project. Views 1 through 8 (see Figures 3.1-2 through 3.1-5 focus on the various vantage points from the Highway 1 corridor and the Fort Ord Dunes State Park entrance to the site, which is the 8th Street overpass. The location of each of these view points is plotted on the View Location Map (see Figure 3.1-1).

View 1 is the first view of the project site for southbound travelers on Highway 1, approximately 1.5 miles away. Sand dunes flank Highway 1 and the project site is visible in the background on a backdrop of the Santa Lucia Range. It's anticipated that the most prominent structure from this vantage point would be the proposed hotel, in the proposed mixed use land use designated area, north of Imjin Parkway. View 2 is also a view from southbound Highway 1, approximately 0.5 miles away, looking at the project site (see Figure 3.1-1). The project site is much closer in View 2; the Imjin Parkway exit can be seen in the background on the right hand side of the photo. It is anticipated that the proposed hotel would

[3] EDAW, Inc. and EMC Planning Group, Inc., *Public Draft Fort Ord Reuse Plan Volume 2: Reuse Plan Elements*, May 1996, page 3-42.

be the most prominent structure with no other proposed buildings visible from this vantage point due to the vegetation coverage and intervening topography. View 3 is from southbound Highway 1, south of the Imjin Parkway exit, looking southeast at the project site. It is anticipated that the proposed commercial/retail structures that would be visible from the freeway at the northern end of the project site. The massing of these structures would be similar to the existing military structures. Very little vegetation between the freeway and the proposed structures would be lost as the majority of the vegetation is in the Highway 1 right-of-way as discussed above. The 8th Street overcrossing is visible in the background on the right hand side of the photo. The 8th Street overcrossing is considered a major entry point for the Fort Ord Dunes State Park. View 4 illustrates the view from southbound Highway 1 near the 8th Street overcrossing, which can be seen to the right of the photo. This area is slated for office research uses in the Proposed Project. Currently a warehouse like structure dominates this view of the site. View 8 is a view from south of the 8th Street overpass looking northeast at the project site. The project site is obscured by vegetation and it is anticipated that that no proposed structures would be visible above this vegetation. View 5 is the first vantage point for northbound traffic on Highway 1 and looks northeast at the 1st Avenue and 1st Street intersection from the shoulder of Highway 1, south of the project site. Land in the foreground is outside of the project site. In the background military buildings, such as barracks, would be replaced by office research structures.

Two views from the FODSP were included in our analysis (View 6 and 7). As the 8th Street overcrossing will be the primary egress/ingress to FODSP it was determined appropriate to include a couple of viewpoints from this location. View 6 gives a panoramic view of how the project site looks from the 8th Street overcrossing across Highway 1 looking northeast. The warehouses and barracks that are currently visible would be replaced with office research, mixed, and retail/service uses. The scale of the proposed structure as well as the loss of vegetation due to parking lot construction would allow greater visibility of the project site from this point across Highway 1. View 7 gives a panoramic view of how the project site looks from the 8th Street overcrossing across Highway 1 looking southeast. View 7 retains a substantial amount of vegetation that would obscure the proposed development. It is anticipated that only a few roof peaks would be visible.

According to the Specific Plan, hotels shall not exceed a maximum height of 90 feet. Buildings, or portions of buildings, located within 300 feet of the edge of pavement of the easternmost northbound land of Highway 1 shall be limited to 40 feet in height. All other buildings shall be no higher than 55 feet. Public facilities and residential units are restricted to a maximum height of 40 and 45 feet, respectively. Some locations, as shown in the Marina General Plan, are permitted to exceed the 40-foot height limitation. Given that the average height of the existing foliage is over 40 feet and the topography of rolling hills, it is anticipated that only the upper 15 feet of a 55-foot tall buildings specified by the Specific Plan would be visible from Highway 1.

The City of Marina General Plan, Figure 4.15, illustrates general locations at which buildings may exceed the 40-foot height limitation if they meet certain criteria. To attain the added height, a building must meet each of the following conditions: 1) it must be sited so as to complement the existing topography and landscape; 2) it must be designed so as to maximize opportunities for vistas of Monterey Bay; and 3) it must protect identified scenic vistas from public areas of CSUMB's West Campus. An amendment to Figure 4.15 is requested as part of the Proposed Project in order to relocate the sites located along the highest ridge that runs south to north on 2nd Avenue between 8th and 1st Street to a clustered configuration near 12th Street and Imjin Parkway. The new locations are lower in elevation than sites currently designated on Figure 4.15. It is therefore anticipated that the building profiles at the revised locations would be lower in elevation than they would be at the currently designated sites. The criteria that must be satisfied to obtain the added height would remain unchanged. It is not anticipated that the proposed amendment would negatively impact views of the Monterey Bay or of any scenic vistas from the public areas in West Campus. In addition, a recent amendment to the CSUMB Master Plan converts some of these public areas east of 2nd Avenue and south of 8th Street into staff and faculty housing, thus reducing the public areas at issue.

The viewshed along the Highway 1 corridor includes the Santa Lucia Range, which is a distant scenic vista. While the project site is currently developed with a variety of structures and would be required to follow all of the policies and guidelines discussed in the Regulatory Setting, the Proposed Project would substantially raise the roof lines as compared to existing conditions and therefore result in increased view of urban structures as seen from Highway 1, and FODSP, a public recreation area. The Proposed Project's largest and most visible structure is anticipated to be the hotel, at the Imjin Parkway exit, which would substantially alter views of the distant Santa Lucia Range.

This increased visibility and intensity of development along an eligible California State Scenic Highway and alteration of views of the Santa Lucia Range and Monterey Peninsula would constitute a substantial adverse effect and result in a ***significant impact***.

The portion of Highway 1 that is adjacent to the project site has been determined an "Eligible State Scenic Highway". The Scenic Highway designation itself does not restrict improvements on scenic highways or preclude development, but a corridor protection program (i.e. the *Highway 1 Design Corridor Design Guidelines*) "seeks to encourage quality development that does not degrade the scenic value of the corridor."[4]

The Fort Ord Reuse Plan EIR identifies the Highway 1 corridor to be a visual resource requiring policies and programs for its protection. Foremost of these is Program D-1.1 through D-1.3 which has been manifest in the Design Guidelines, currently pending approval. The *Fort Ord Reuse Plan* concluded that with implementation of aforementioned programs there would be a less-than-significant impact. Though not approved as of this date, an

[4] California Scenic Highway Program, Department of Transportation website, http://www.dot.ca.gov/hq/LandArch/scenic/scpr.htm, accessed November 11, 2004.

important component of the *Design Corridor Guidelines* is included below as mitigation AE-1.3.

MITIGATION MEASURES. The following mitigation measures would reduce the impact to a *less-than-significant level*. (LTS)

AE-1.1 Revegetation Along Highway 1. Where demolition or new construction has resulted in the loss of existing vegetation along the Highway 1 corridor, especially in areas where greater visibility of the project site has occurred, new vegetation shall be installed to create a visual buffer between new construction and Highway 1. All replacement vegetation shall be native and consistent with existing, native vegetation at the site.

AE-1.2 Protection of the Highway 1 Design Corridor and Views of the Santa Lucia Range. Visual simulations shall be prepared and reviewed as part of the Design Review process for buildings that exceed 40 feet in height, within the Highway 1 design corridor. The visual simulations shall demonstrate that the buildings visually complement the natural landscape and topography. Visual simulations for buildings in the vicinity of Highway 1 and Imjin Parkway shall demonstrate that views of the Santa Lucia Range will not be eliminated or substantially impacted.

AE-1.3 Signage along the Highway 1 Corridor. All signage shall be in compliance with the Highway 1 Design Corridor Guidelines.

AE-2. The Proposed Project could substantially degrade the existing visual character or quality of the site and its surroundings. (LTS)

General Plan policies (4.9, 4.13, 4.15, 4.53, and 4.128.3) provide direction to maintain the visual appearance of travel corridors, avoid the visual isolation of the CSUMB campus, note that the only major defining natural topographic features is the City's Monterey Bay frontage, and guide development specifically in the West University Villages area (the University Villages area closest to Highway 1). General Plan policy design techniques (4.17 and 4.18) have been developed to guide new development and redevelopment. The Proposed Project would be required to comply with the City's General Plan (as amended through November 6, 2001) and various design guidelines (*Highway 1 Design Corridor Design Guidelines*) and would go through the City of Marina design review process before obtaining any building permits. The project applicant provides a detailed analysis of the Proposed Project's conformity with the City's General Plan goals and policies pertinent to Scenic Resources is attached in Chapter 7 of the Specific Plan.

Development of the Proposed Project would alter the visual character of the site, transforming what is currently a decommissioned military installation with vacant wooden structures to a mixed-use, urban landscape; one developed use would be traded for another. The Proposed Project is anticipated to reduce the amount of impervious surface overall. Because the site is

currently developed and would be redeveloped for other uses, and will be developed with the adherence to General Plan policies and the Design Guidelines, the Proposed Project would not substantially degrade the visual character or quality of the project site, resulting in a ***less-than-significant impact***. Mitigation is not warranted.

AE-3. The Proposed Project could create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area. (S)

Highway 1 traffic provides a varying amount of glare and light throughout the day and night and is a substantial source of light. North of the project site is a largely vacant residential subdivision (Patton Park/Cypress Knolls). The CSUMB campus dominates the area to the east and south, including multiple parking areas and playing fields equipped with nighttime lighting. These are all existing sources of nighttime lighting and glare that are in proximity to the site. 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 Proposed Project would also contribute to the increased light and glare in the area. As discussed in the Setting section, the former military base used artificial lighting, though at a lower level of illumination and intensity as compared to modern urban land uses. The Proposed Project would increase the intensity of development and therefore the amount of artificial light produced by the site.

General Plan Policy 4.19 has been developed to address light and glare issues in residential neighborhoods. The Highway 1 corridor as well as the Fort Ord Dunes State Park would be most affected by this increase in light and glare. Artificial lighting from urbanized uses alters the natural landscape and, in sufficient quantity, lights up the nighttime sky and reduces the visibility of astronomical features.

The Monterey Institute for Research in Astronomy is a non-profit astronomical observatory, founded in 1972 and dedicated to research and education in astronomy.[5] MIRA is located at 8th Street and 2nd Avenue, adjacent to the Specific Plan area, and could be affected by the new sources of light and glare. The *University Villages Specific Plan* contains planning principles and design guidelines, which will lessen this impact. The lighting guidelines call for the use of high efficiency fixtures, sophisticated optics with sharp cut off features that direct light where it is needed without creating excessive glare, and limit artificial lighting to locations where it is specifically needed. This allows for darker conditions in residential neighborhoods. Lighting will not be provided for active nighttime use of the parks; only low intensity lighting will be used in some areas for orientation and security purposes. "Consideration will be given to shielding of lighting and the spectrum of light transmission given that MIRA is a unique neighbor to the University Villages."[6]

Foggy conditions allow light to travel farther distances. This new lighting would likely be visible from other surrounding areas in the vicinity including Highway 1 and major roads (i.e.,

[5] MIRA website, http://www.mira.org/fts0/mira/history/h001z.htm, accessed January 28, 2005.

[6] Marina Community Partners, LLC, Draft Specific Plan University Villages in the City of Marina at Former Fort Ord, September 28, 2004, page 17.

Highway 1, Imjin Parkway, 2nd Avenue). The additional lighting in the project site, especially unshielded light, could result in spillover light that could impact surrounding land uses. Further, daytime glare could occur as light reflects off pavement, vehicles, rooftops and structures.

Light and glare from the Proposed Project would significantly impact day or nighttime views in the region especially along the Highway 1 Corridor and the FODSP west of the highway. Consequently, the effect of the new lighting and glare would be considered a ***significant impact.***

MITIGATION MEASURES. Implementation of the following mitigation measures would reduce light and glare impacts to a *less-than-significant level*. (LTS)

AE-3.1 Implement light reduction and screening measures to reduce nighttime ambient light increases in the Fort Ord Dunes State Park.

(a) *Keep lighting levels (i.e., intensity/foot-candles) in commercial areas as low as feasible. Install light sources so that there is no light radiation above the horizontal plane (i.e. "dark sky"). Focus lighting downward and prevent the splay of ambient light to other areas. Whenever feasible, use path-level or bollard-type fixtures that keep the light source closer to the ground. Use color-tinted and lower wattage lamps to help reduce lighting-related disturbance.*

(b) *Control lighting systems in commercial areas to minimize operating time. Employ an appropriate combination of time scheduling, photo switching, and motion sensors. It is reasonable and feasible that lighting be controlled in the above manner commencing two hours after sunset and two hours before sunrise.*

Cumulative Impact

The following discussion addresses the effects of the Proposed Project in combination with other development in the project vicinity and within the former military base.

AE-4. The Proposed Project, in combination with other cumulative development, could have a substantial adverse effect on an eligible State Scenic Highway. (CC)

The Proposed Project would intensify development in an area that is already developed as discussed in Impact AE-1. In addition, other development planned in and around the former military base would contribute to the overall intensification of development in the area, which would substantially change the existing visual character of the area. These changes were considered in the *Fort Ord Reuse Plan EIR* to be significant and unavoidable.

The Proposed Project would contribute to the cumulative change in visual character of the region; the intensity of this development along with the potential intensity of adjacent land uses would result in a ***cumulatively considerable impact***.

MITIGATION MEASURES. Implementation of the following mitigation would help to reduce the cumulative impact but not to a less-than-significant level. The impact would remain *significant and unavoidable*. (SU)

AE-4.1 Implement Mitigation Measures AE-1.1 through AE-1.3.

AE-5. The Proposed Project, in combination with other development, could contribute to new sources of light or glare that would adversely affect day or nighttime views. (CC)

The Proposed Project would introduce new sources of artificial light, which could contribute to adverse effects on nighttime views, as discussed in Impact AE-3. Redevelopment within the former Fort Ord would also contribute light and glare sources to the region. Cumulatively, these sources would increase the amount of light and glare in the Marina area. New commercial development in Sand City, the intensification of urban land use in redeveloped areas of Fort Ord, future development projects in non-Fort Ord areas of Marina and Seaside, buildout of CSUMB, and buildout of former Fort Ord in the City of Marina, in particular the Cypress Knolls project, Marina Heights project, and the Proposed Project, would combine to substantially alter the night sky over Fort Ord. As an astronomical observatory MIRA is especially sensitive to this increasing amount of light and glare in the region that is resulting from the increased development. During periods of fog the emitted light travels further from its source and increases light impacts substantially. Prescribed mitigation measures would prevent excessive spillover light to pollute pristine areas such as the Fort Ord Dunes State Park. However, the project would contribute to the cumulative levels of light and glare in the region, adversely affecting the night sky and is considered ***cumulatively considerable***.

MITIGATION MEASURES. Implementation of the following mitigation would help to reduce the Proposed Project's contribution to the cumulative impact to a *less-than-significant level*.

AE-5.1 Implement Mitigation Measure AE-3.1.

3.2 AIR QUALITY

3.2 AIR QUALITY

Introduction

This section addresses potential impacts on air quality that could result from implementation of the Proposed Project, and recommends mitigation measures to reduce or eliminate significant impacts. First, the section summarizes the following pertinent baseline information: (1) the climate in the project site; (2) existing air quality conditions in the project site for both "criteria air pollutants" and "toxic air contaminants"; and (3) federal, State, and regional air quality standards. Secondly, the section analyzes the air quality effects caused by stationary and mobile sources related to the Proposed Project.

The Initial Study (Appendix A) concluded that there would be no impact related to objectionable odors. This issue will not be further addressed in the EIR.

Comments in response to the NOP (see Appendix B) were received from the Monterey Bay Unified Air Pollution Control District.

Setting

Ambient air quality is influenced by climatological conditions, topography, and the quantity and type of pollutants released in an area. This section describes pertinent characteristics of Monterey County and the North Central Coast Air Basin and provides an overview of the physical conditions that affect pollutant buildup and dispersion in the project site.

Climate and Topography

The Proposed Project is located in Monterey County, which is part of the North Central Coast Air Basin (NCCAB). The NCCAB lies along the central coast of California covering an area of 5,159 square miles. The northwest sector of the basin is dominated by the Santa Cruz Mountains. The Diablo Range marks the northeastern boundary, and together with the southern extent of the Santa Cruz Mountains forms the Santa Clara Valley which extends into the northeastern tip of the NCCAB. Farther south, the Santa Clara Valley evolves into the San Benito Valley, which runs northwest-southeast and has 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 King City at the southeast end. The western side of the Salinas Valley is formed by the Sierra de Salinas, which also forms the eastern side of the smaller Carmel Valley. The coastal Santa Lucia Range defines the western side of Carmel Valley.

A semi-permanent pressure cell in the eastern Pacific (Pacific High) is the basic controlling factor in the climate of the NCCAB. In the summer, the Pacific High 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 can act 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, which intensifies the onshore air flow during the 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, 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.

Regional Air Quality

The California Air Resources Board (CARB) compiles inventories and projections of emissions of major pollutants. Air quality conditions are reported in the NCCAB for both "criteria air pollutants" and "toxic air contaminants."

Criteria Air Pollutants. Criteria air pollutants refer to a group of pollutants for which regulatory agencies have adopted ambient air quality standards and pollution reduction plans. Criteria air pollutants include ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter, and lead. Reactive organic gases (ROG) are also regulated pollutants because they are precursors to ozone formation. Health effects associated with the criteria air pollutants of most concern in the NCCAB are listed in Table 3.2-1.

The NCCAB is in attainment of most federal and State standards for criteria pollutants. Table 3.2-2 shows the attainment status of the NCCAB for the various criteria pollutants. Table 3.2-3 shows the number and magnitude of exceedances of the federal and State standards between 2001 and 2003 over the entire NCCAB.

Toxic Air Contaminants. Toxic air contaminants (TACs) refer to a category of air pollutants that pose a present or potential hazard to human health, but which tend to have more localized impacts than criteria air pollutants. Toxic air contaminants are pollutants which may be expected to result in an increase in morality or serious illness or which may pose a present or potential hazard to human health. Health effects include cancer, birth defects, neurological damage, damage to the body's natural defense system, and diseases which lead to death.

Table 3.2-1
Health Effect Summary of Major Criteria Air Pollutants

Air Pollutant	Adverse Effects
Ozone	• Eye irritation • Impairment of respiratory function
Nitrogen Dioxide	• Lung Damage
Carbon Monoxide	• Impairment of oxygen transport in blood stream • Aggravation of cardiovascular disease • Impairment of central nervous system function • Fatigue, headache, confusion, dizziness • Can be fatal in the case of very high concentrations in enclosed places
Particulate Matter	• May be inhaled and lodge in the lungs, causing irritation • Increased risk of respiratory disease with long exposure • Altered lung function in children • Premature Mortality • Increased severity of asthma attacks • Cause or aggravate bronchitis

Source: ARB Fact Sheet: Air Pollution and Health, August 24, 2001

Table 3.2-2
Attainment Status of the North Central Coast Air Basin

Pollutant	Federal Status	State Status
Ozone (O_3) – 1 hour	Maintenance	Moderate Nonattainment
Ozone (O_3) – 8 hour	Attainment	Not Applicable
Carbon Monoxide (CO)		Monterey - Attainment
		San Benito – Unclassified
	Unclassified/Attainment	Santa Cruz – Unclassified
Nitrogen Dioxide (NO_2)	Unclassified/Attainment	Attainment
Sulfur Dioxide (SO_2)	Unclassified	Attainment
Inhalable Particulate (PM_{10})	Attainment	Non-Attainment
Inhalable Particulate ($PM_{2.5}$)	Unclassified	Not Applicable

Source: MBUAPCD CEQA Air Quality Guidelines Adopted 1995, Revised 2004, Table 6-1, page 6-4.

Table 3.2-3
Summary of Ambient Air Quality in the NCCAB

Pollutant	Air Quality Standards	Year 2001	2002	2003
Ozone				
Maximum 1-hour concentration		0.108	0.115	0.111
Number of days exceeding federal 1-hour standard	>0.12 ppm	0	0	0
Number of days exceeding State 1-hour standard	>0.09 ppm	3	8	3
Maximum 8-hour concentration		0.088	0.094	0.088
Number of days exceeding federal 8-hour standard	>0.08 ppm	2	5	2
Sulfur Dioxide				
Maximum 24-hour concentration		N/A[1]	N/A	N/A
Number of days exceeding federal 24-hour standard	>0.14 ppm	N/A	N/A	N/A
Number of days exceeding State 24-hour standard	>0.04 ppm	N/A	N/A	N/A
Nitrogen Dioxide				
Maximum 1-hour concentration		0.042	0.049	0.053
Number of days exceeding federal 1-hour standard[a]				
Number of days exceeding State 1-hour standard	>0.25 ppm	0	0	0
Carbon Monoxide (CO)				
Maximum 8-hour concentration		1.64	1.38	1.09
Number of days exceeding federal 8-hour standard	≥9.5 ppm	0	0	0
Number of days exceeding State 8-hour standard	>9.0 ppm	0	0	0
Respirable Particulate Matter (PM_{10})				
Maximum 24-hour concentration		74.0	81.0	90.0
Number of days exceeding federal standard	>150 $\mu g/m^3$	0	0	0
Number of days exceeding State standard	>50 $\mu g/m^3$	8	4	7
Fine Particulate Matter ($PM_{2.5}$)				
Maximum 24-hour concentration		N/A[1]	N/A	N/A
Number of days exceeding federal standard	>65 $\mu g/m^3$	N/A	N/A	N/A

Notes: **ppm** = Parts by volume per million of air; **$\mu g/m^3$** = Micrograms per cubic meter of air;[a] no federal standards set for the appropriate averaging time; [1] = No data available at either monitoring site for pollutant.

Source: California Air Resources Board, 2004. http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start.

TACs can be separated into carcinogens and noncarcinogens based on the nature of the physiological degradation associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts will not occur. Noncarcinogenic TACs differ in that there is generally assumed a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

Although there are hundreds of substances that can be toxic when inhaled, air quality standards have not been set for most of them. TACs can be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. Natural source emissions include windblown dust and wildfires. TACs include both organic and inorganic chemical substances. Examples include certain chlorinated hydrocarbons such as solvents, certain metals, asbestos and lead. In 1998, the State also identified particulate matter from diesel-fueled engines as a TAC. Table 3.2-4 shows health effects associated with TAC. There are currently 192 TACs identified in California.

Table 3.2-4
Health Effect Summary of Toxic Air Contaminants

Adverse Effects
• Cancer
• Chronic eye, lung, or skin irritation
• Neurological and reproductive disorders

Source: ARB Fact Sheet: Air Pollution and Health, August 24, 2001

Each air district is required to collect TAC emissions inventory data from certain industries or activities for these TACs and report that data to CARB. In its annual report, the CARB focuses on ten TACs posing the greatest health risk in California. According to the latest CARB data published in the 2005 report, TAC emissions in Monterey County (including diesel particulate) total approximately 1,118 tons per year. This represents about 60 percent of the TAC emissions in the NCCAB for the ten TACs of concern. The predominant compounds contributing to TAC emissions in the county are benzene, formaldehyde, acetaldehyde, and diesel particulate matter.[1]

The CARB has developed health risk estimates associated with individual TACs and on a combined basis. For the Monterey region, the CARB estimates an existing (background) TAC risk of 100 to 250 excess cancer cases per million people.[2]

The MBUAPCD has established risk thresholds to determine whether a facility emitting TACs should prepare a health risk assessment to identify numerical risk values for a specific facility. The

[1] Compiled from California Air Resources Board, The California Almanac of Emissions and Air Quality, 2005 Edition, February 2005, Appendix C (p.417) and Chapter 5 (p.218).

[2] California Air Resources Board, Cancer Inhalation Risk: Local Trend Maps (2001, 2010), www.arb.ca.gov/toxics/cti/hlthrisk, January 2005.

MBUPACD has only required such an assessment from one facility in the NCCAB, and that facility is located in Hollister.

Diesel Particulate Emissions. Diesel particulate differs from other TACs in that it is generated primarily by mobile sources, and to a lesser extent from stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 24 percent of total State-wide diesel emissions, with an additional 71 percent attributed to other mobile sources such as heavy equipment, agricultural equipment, and transport refrigeration units. Stationary sources, which includes shipyards, warehouses, heavy equipment repair yards, heavy construction, and asphalt manufacturers, account for about 5 percent of emissions. The State-wide total for diesel particulate emissions is over 24,000 tons per year. [3]

Diesel particulate matter is not currently part of ambient air quality TAC monitoring network in the State. However, emissions data and modeled ambient concentrations indicate that of the ten TACs posing the greatest risk, diesel particulate matter has a higher health risk than the other nine compounds combined.[4] Studies have shown that the average cancer risk attributable to diesel particulate emissions account for more than 70 percent of the overall TAC risk.

The risk to sensitive receptors associated with exposure to diesel particulate depends upon a number of factors, including the wind direction, wind speed, concentration of the diesel particulate matter, the length of exposure, the existing concentration of diesel particulate matter in the air, and the distance from the source. On a statewide basis, the average potential cancer risk associated with existing background diesel emissions (as of 2000) is over 540 potential cancer cases per million people. In addition to these general risks, diesel exhaust particulates can also present elevated localized or near-source exposures. Depending on the activity and nearness to receptors, these potential risks can range from small to 1,500 cancer cases per million or more people.[5] With implementation of plans developed by CARB to reduce diesel particulate emissions, the annual average health risk is predicted to decrease to less than 200 excess cancer cases per million by 2010 and less than 100 excess cancer cases per million by 2020.[6]

Diesel particulate emissions in Monterey County (314 tons/year) account for approximately 28 percent of total TAC emissions in the NCCAB and approximately 1.3 percent of the State-wide total.[7] The total TAC risk estimate for the Monterey region noted above includes diesel particulate matter. While the CARB has published unit risk factors for diesel particulate for the five most populated air basins in

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3 California Air Resources Board, *The California Almanac of Emissions and Air Quality*, 2005 Edition, February 2005, p. 218.

4 California Air Resources Board, *The California Almanac of Emissions and Air Quality*, 2005 Edition, February 2005, p. 11.

5 California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October, 2000.

6 California Air Resources Board, *The California Almanac of Emissions and Air Quality*, 2005 Edition, February 2005, p.220.

7 Compiled from California Air Resources Board, *The California Almanac of Emissions and Air Quality*, 2005 Edition, February 2005, Appendix C (p.417) and Chapter 5 (p.218).

the State, a separate unit risk factor for diesel particulate specific to the NCCAB has not yet been developed by CARB,[8] so a specific health risk assigned to the NCCAB does not yet exist.

Asbestos. Asbestos, a naturally-occurring fibrous material, was used as a fireproofing and insulating agent in building construction before such uses were banned by EPA in the 1970s. Because it was widely used prior to the discovery of its health effects, asbestos may be found in a variety of building materials and components including sprayed-on acoustic ceiling materials, thermal insulation, walls and ceiling texture, floor tiles, and pipe insulation. Friable (easily crumbled) materials are particularly hazardous because inhalation of airborne fibers is the primary mode of asbestos entry into the body. Asbestos-related health problems include lung cancer and asbestosis. Non-friable asbestos and encapsulated friable asbestos do not pose substantial health risks.

Lead. Among its numerous uses and sources, lead can be found in paint, water pipes, solder in plumbing systems, and in soils around buildings and structures painted with lead-based paint. In 1978, the federal government required the reduction of lead in house paint to less than 0.06 percent (600 parts per million (ppm)). However, some paints manufactured after 1978 for industrial uses or marine uses legally contain more than 0.06 percent lead.[9] Excessive exposure to lead (even low levels of lead) can result in the accumulation of lead in the blood, soft tissues, and bones. Children are particularly susceptible to potential lead-related health problems because it is easily absorbed into developing systems and organs.

Local Air Quality

Monitoring equipment that collects ambient air quality data are located throughout the NCCAB. The closest air quality monitoring station to the Proposed Project is the Monterey-Silver Cloud Court station located 24580 Silver Cloud Court, in Monterey. This station, however, only monitors for one-hour and eight-hour ozone. The nearest station that monitors for the other pollutants of concern, PM_{10} and CO, is the Salinas High School site. Both these sites are five to eight miles from the site of the Proposed Project. Because of the proximity of these monitoring stations to the former Fort Ord, the monitoring results adequately characterize the ambient air quality in the Proposed Project vicinity for regional pollutants such as ozone. Localized pollutants may vary because the ambient pollutant levels can be affected by localized sources and wind patterns. The monitoring results of the stations are presented in Table 3.2-5. There are no monitoring stations in Monterey County for TACs.

Existing Emissions Sources

Criteria Air Pollutants. Criteria pollutants are generated by many different sources in Monterey County. These sources can be divided into two categories: mobile and stationary/area sources. Mobile sources consist primarily of vehicles driven on and off roadways, as well as watercraft and other special mobile sources such as locomotives. Stationary/Area sources include all other man-made emission sources. The CARB maintains an emission inventory of air pollutants within the State's air

[8] California Air Resources Board, *The California Almanac of Emissions and Air Quality*, 2005 Edition, February 2005, Chapter 5

[9] California Department of Real Estate, *Environmental Hazards: Guide for Homeowners and Buyers*.

Table 3.2-5
Summary of Air Pollutant Data From Monterey – Silver Cloud Court and Carmel Valley – Ford Road Monitoring Stations
(Compared to Federal and State Standards)

Pollutant	2001	2002	2003
OZONE (1-hour)			
Highest 1-hour (ppm)	0.084	0.082	0.092
Days > 0.125 ppm (Fed)	0	0	0
Days > 0.09 ppm (Cal)	0	0	0
OZONE (8-hour)			
Highest 8-hour (ppm)	0.069	0.067	0.081
Days > 0.08 (Fed)[1]	0	0	0
CARBON MONOXIDE			
Highest 8-hour (ppm)	1.64	1.38	1.09
Days > =9.5 ppm (Fed)	0	0	0
Days > =9.1 ppm (Cal)	0	0	0
PARTICULATE MATTER (PM_{10})			
Highest 24-hour (ug/m^3)	51.0	46.0	67.0
Days > 50 ug/m^3 (Cal)	1	0	4
Days > 150 ug/m^3 (Fed)	0	0	0
PARTICULATE MATTER ($PM_{2.5}$)[2]			
Highest 24-hour (ug/m^3)	25.6	23.5	15.9
Days > 65 ug/m^3 (Fed)	0	0	0

Note: Ozone readings are from Monterey – Silver Cloud monitoring station. All other readings are from the Carmel Valley – Ford Road monitoring station. There is no State 8-hour ozone standard.

Source: California Air Resources Board. www.arb.ca.gov. Site accessed 10/20/04.

basins and counties inside those air basins. Table 3.2-6 presents the latest emission inventory of reactive organic gases, nitrogen oxides, carbon monoxide, and particulate matter for Monterey County. This inventory subdivides "stationary/area" and "mobile" sources into smaller, more specific categories. According to the inventory, on-road motor vehicles are the primary source of ROG, NO_x, and CO in Monterey County. "Miscellaneous Processes," which includes cooking, farming operations, and construction and demolition activities, is the largest contributor of PM_{10}.

Toxic Air Contaminants. There are no existing (operational) stationary sources emitting TACs within the project site. Asbestos has been identified in the Track 0 buildings (see Section 3.5, Hazardous Materials and Public Safety). Because of the age of the buildings (approximately 1940 to 1960), asbestos may be present in other buildings as well. Lead is also presumed to be present in site buildings.

Table 3.2-6
2003 Estimated Annual Emissions Summary for Monterey County (tons/day)

Source Category	ROG	CO	NO_x	PM_{10}
Stationary Sources				
Fuel Combustion	0.58	12.38	11.92	0.97
Waste Disposal	1.42	0.11	0.02	0.01
Cleaning and Surface Coatings	3.85	-	-	-
Petroleum Production and Marketing	1.98	-	-	-
Industrial Processes	0.39	-	0.02	0.93
Total Stationary Sources	*8.22*	*12.49*	*11.95*	*1.90*
Area-Wide Sources				
Solvent Evaporation	10.68	-	-	-
Miscellaneous Processes	6.04	89.77	3.12	39.15
Total Area-Wide Sources	*16.72*	*89.77*	*3.12*	*39.15*
Mobile Sources				
On-Road Vehicles	12.91	143.32	28.68	0.80
Other Mobile	6.30	38.07	11.24	0.84
Total Mobile Sources	*19.21*	*181.39*	*39.92*	*1.64*
Natural (Non-Anthropogenic) Sources				
Total Natural Sources	*0.64*	*17.25*	*0.78*	*3.37*
TOTAL	**44.79**	**300.90**	**55.78**	**46.06**

Source: California Air Resources Board. Website accessed 10/20/04.

According to CARB databases, there are some limited sources of TAC emissions in the City of Marina. Businesses reporting TAC emissions are gas stations, a drycleaner, a sand and gravel operation, and the Monterey Regional Water Pollution Control Agency wastewater treatment facility. Based on emissions reports, all of the benzene, formaldehyde, and acetaldehyde TAC combined represent less than one percent of TAC emissions in the entire NCCAB.[10] Although there are TAC emissions, CARB databases reviewed indicate that the MBUAPCD has not submitted the results of any site-specific facility health risk assessments for TAC to CARB for any of these activities.[11]

Diesel Particulate Emissions. Existing sources of diesel particulate emissions consist of traffic, primarily along major roadways such as Highway 1. Of the seven scenarios evaluated in the CARB Risk Characterization Scenarios, the scenario that most closely resembles the Proposed Project is known as the "Low Volume Freeway." In this scenario, the freeway has three lanes in each direction and receptors were placed as close as 20 meters from the edge of the freeway. It was assumed that there was a flow of 2,000 heavy-duty trucks per day. The low-volume freeway scenario evaluated in the assumes 2,000 heavy-duty trucks per day. Based on the low-volume scenario, the health risk was

[10] Compiled from California Air Resources Board, *The California Almanac of Emissions and Air Quality*, 2005 Edition, February 2005, Appendix C (p.417).

[11] California Air Resources Board, AB2588 "Hot Spots Program" Facility Emissions and Risk Data, Facility Search Tool, www.arb.ca.gov/app/emsinv/facinfo/facinfo.php. for North Central Coast Air Basin, February 2005.

estimated to range from a little under 100 to slightly more than 200 excess cancer cases per million people based on 70 years of exposure.[12] This baseline estimated risk exceeds the threshold of 10 excess cancer cases per million people.

Traffic on Highway 1 in the project area includes 3,741 trucks per day, 898 of which are heavy-duty trucks, according to the Annual Average Daily Truck Traffic on the California State Highway System prepared by Caltrans in 2004.[13] Existing diesel exhaust emissions from truck traffic adjacent to the site would, therefore, be well below even the low- volume freeway scenario. Further, ultrafine particle size (which includes PM_{10} and $PM_{2.5}$) distribution from freeways changes markedly and its number concentration drops dramatically with increasing distance.[14] Studies also found that in addition to atmospheric dilution, the smaller the particle, the greater its diffusion because of coagulation (two small particles collide to form a bigger particle).[15] Combined, these studies suggest that cancer risks are a concern along transportation corridors with heavy truck traffic but that ultrafine particulate concentrations diminish rapidly with distance from a freeway and represent a relatively small component of overall PM concentrations near a major roadway such as Highway 1.

Odors

The apparent presence of an odor in ambient air depends on the properties of the substance emitted, its concentration when it is emitted from a source, and the dilution between the emission point and the receptor. Odors can be generated by a variety of land uses, some of which are very common. The MBUAPCD CEQA Air Quality Guidelines does not identify the types of sources that might be considered to possibly create odor impacts. However, the San Joaquin Valley Unified Air Pollution Control District's (SJVUAPCD) *Guide for Assessing and Mitigating Air Quality Impacts* document does note that such sources as sanitary landfills, rendering plants, and fiberglass manufacturing have the potential to produce offensive odors.[16] These kinds of sources are normally found in areas zoned for industrial or agricultural uses. None of these types of odor sources listed in the table are found in the vicinity of the Proposed Project.

The Proposed Project currently plans on developing residential, light commercial, retail, and office uses, which would not generate offensive odors. Consequently, there would be no impact from odors, and this issue is not further addressed in this section.

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[12] California Air Resources Board. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. Stationary Source Division, Mobile Source Control Division. October 2000, Appendix VII, Figure 1.

[13] California Department of Transportation, 2003 Annual Average Daily Truck Traffic on the California State Highway System, November 2004, p.6.

[14] Zhu, Y. Hinds, W.C., Kim, S., and Sioutas, C., "Concentration and size distribution of ultrafine particles near a major highway." J. Air Waste Management Assoc., 52, 1032-1042 (2002), p.1038.

[15] Zhu, Y., Hinds, W.C., Kim, S., Shen, S., and Sioutas, C. "Study on ultrafine particles near a major highway with heavy-duty traffic." Atmospheric Environment, 36, 4323-4335 (2002).

[16] Guide to Assessing and Mitigating Air Quality Impacts, Table 4-2, p. 27. San Joaquin Valley Unified Air Pollution Control District. Adopted 1998, Revised 2002.

Sensitive Receptors

Some individuals are considered to be more "sensitive" than others to air pollution. Possible reasons for greater sensitivity include existing health problems, proximity to the emission source, or duration of exposure to air pollutants. Land uses such as primary and secondary schools, hospitals, and retirement homes are considered to be sensitive receptors because the very young, the old and the infirm are more susceptible to respiratory infections and other air quality-related health problems than the general public. Residential uses are considered sensitive because people in residential areas are often at home for extended periods of time, so they can be exposed to pollutants for extended periods.

The project site is located on the former Fort Ord in the City of Marina. Residential development is located near the project site along Imjin Road to the east. Additionally, residences would be built as part of the Proposed Project, so the Proposed Project itself would essentially be creating sensitive receptors. A day care facility is located north of the Proposed Project, north of Imjin Parkway across from 4th Avenue, and there is a child development center at the CSUMB at 3rd Avenue. No other sensitive uses such as K-12 schools, hospitals, or retirement homes exist near the project site.

Regulatory Setting

Federal and State agencies, as well as local air quality management or air pollution control districts regulate air quality. These agencies develop rules or regulations to meet the goals or directives imposed on them through legislation. Although federal regulations may not be superseded, both State and local air pollution control or air quality management district regulations may be more stringent than the federal standards. Mobile sources of air pollutants are largely controlled through federal and state agencies, while most stationary sources are regulated by the local air pollution control or air quality management districts. The following discussion summarizes federal, State and local regulatory authorities pertaining to air quality.

Federal

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for setting and enforcing the federal ambient air quality standards for atmospheric pollutants. The EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives.

As part of its enforcement responsibilities, the EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs.

State

The California Air Resources Board (CARB), a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and State air pollution control programs within California. In this capacity, the CARB conducts research, sets State ambient air quality standards, compiles emission inventories, develops suggested control measures, and provides oversight of local air pollution control district's programs. The CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. The CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

Local

City of Marina General Plan. Primary policy 3.3.5 addresses air quality protection in the context of managing through-traffic to protect residential areas from pollution. There are no policies specific to construction emissions, TACs, or consistency with regional plans.

Monterey Bay Unified Air Pollution Control District. The Monterey Bay Unified Air Pollution Control District (MBUAPCD) is the primary agency responsible for planning to meet federal and State ambient standards in the NCCAB and Monterey County. The District's jurisdiction covers all of the NCCAB, which consists of Monterey, Santa Cruz, and San Benito counties. The MBUAPCD develops air quality plans that identify strategies for achieving or maintaining the various State and federal standards. The latest MBUAPCD plan for meeting the State ozone standard is called the 2004 Air Quality Management Plan (2004 AQMP). This AQMP was developed because the NCCAB is on the borderline between attainment and nonattainment of the State ozone standard, and has not officially been designated by the CARB as attainment. The 2004 AQMP includes adoption of five control measures to further reduce emissions from specific sources and help the NCCAB achieve attainment of the State ozone standard. Attainment of the PM_{10} standard is addressed in the MBUAPCD's "1998 Report on Attainment of the California Particulate Matter Standards in the Monterey Bay Region."

Local Air District Rules. The MBUAPCD has several rules that relate to the Proposed Project, which are summarized below:

Rule 402 – Nuisances

Prohibits a person from discharging, from any source whatsoever, such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property.

Rule 412 – Sulfur Content of Fuels

Prohibits the burning within the District of any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions, or any liquid fuel or solid fuel having a sulfur content in excess of 0.5 percent by weight.

Rule 424 –National Emission Standards for Hazardous Air Pollutants (NESHAP)

The MBUAPCD enforces the federal asbestos NESHAP regulations pertaining to District Rule 424 requires asbestos surveys prior to demolition activities that would disturb materials that might contain asbestos.

Rule 425 – Use of Cutback Asphalt

Limits VOC emissions from the use of cutback and emulsified asphalts by placing specific restrictions on the types of asphalt that can be used within the District.

Rule 426 – Architectural Coatings

Sets VOC content limits for a number of architectural coating categories.

Toxic Air Contaminants. The MBAUPCD regulates TACs from new or modified sources under Rule 1000 and an approved protocol. These regulations apply to any source that requires a permit to construct or operate pursuant to MBUAPCD Regulation II (Permits) and has the potential to emit carcinogenic or noncarcinogenic TACs. The MBUAPCD also implements Rule 1003, Air Toxic Emissions Inventory and Risk Assessments, which establishes and implements the Air Toxics Hot Spots Act. Rule 1003 pertains to existing facilities and includes additional TACs. Rule 1000 requires new sources of carcinogenic TACs install best control technology to reduce cancer risk to less than one incident per 100,000 population. Sources of noncarcinogenic TACs must apply reasonable control technology.

The Air Toxics Hot Spots Information and Assessment Act of 1987 (Assembly Bill [AB] 2588), California Health and Safety Code Section 44300 et seq., provides for the regulation of over 200 air toxics and is the primary air contaminant legislation in the State. The purpose of AB 2588 is to identify and inventory toxic air emissions and to communicate the potential for adverse health effects to the public. Under the Act, local air districts may request that a facility account for its TAC emissions. Local air districts then prioritize facilities on the basis of emissions, and high-priority designated facilities are required to submit a health risk assessment and communicate the results to the affected public. The TAC control strategy involves reviewing new sources to ensure compliance with required emission controls and limits, maintaining an inventory of existing sources of TACs, and developing new rules and regulations to reduce TAC emissions.

In October 2000, the CARB released the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. This plan identifies diesel particulate matter as the predominant TAC in California and proposes methods for reducing diesel emissions. The plan outlines a comprehensive and ambitious program that includes the development of numerous new control measures over the next several years aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators). Beginning in 1998, the State had already adopted requirements for on-road and off-road diesel engine vehicles to lower emissions for several categories that parallel the federal requirements. These regulations are set forth in Title 13 of the California Code of Regulations (CCR).

Asbestos is regulated both as a hazardous air pollutant under the Clean Air Act and as a potential worker safety hazard under the authority of federal OSHA. These regulations prohibit emissions of asbestos from asbestos-related manufacturing, demolition, or construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos; specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos fibers to the environment; and require notice to federal and local governmental agencies prior to beginning renovation or demolition that could disturb asbestos. California has adopted asbestos regulations that are more stringent than federal regulations and requires licensing of contractors who conduct abatement activities. The MBUAPCD has established regulations for asbestos investigation and abatement that would be applicable to the Proposed Project (Rule 424).

Inspection, testing, and removing (abatement) lead-containing building materials must be performed by State-certified contractors who are required to comply with applicable health and safety and hazardous materials regulations to ensure dust containing lead-based paint (from demolition projects, for example) is not released to the air or disposed of improperly. The MBUAPCD currently does not have a rule regulating airborne lead from demolition activities. The MBUAPCD is, however, working to develop such a rule in the near future. The MBUAPCD intends for this rule to require work practices that would ensure that levels of airborne lead are not allowed to reach unhealthy levels during demolition.

Impacts Assessment and Mitigation Measures

Significance Criteria

For the purposes of this EIR, impacts to air quality would be considered significant if the Proposed Project would:

- Conflict with or obstruct implementation of the 2004 AQMP for the NCCAB;
- Violate or contribute substantially to an existing or projected air quality violation; or
- Expose sensitive receptors to substantial pollutant concentrations.

As discussed above, thresholds for air quality have also been established by the MBUAPCD. As the agency principally responsible for air pollution control in Monterey County, the MBUAPCD recommends that projects should be evaluated in terms of these air pollution impact significance thresholds. The following quantifiable thresholds are currently recommended by the MBUAPCD and are used to determine the significance of air quality impacts associated with the Proposed Project:

For project construction:

- 82 pounds per day of PM_{10}

The MBUAPCD has not established any thresholds for construction ROG, NO_x, or CO.

For project operation:

- 137 pounds per day of NO_x
- 82 pounds per day of PM_{10}
- 137 pounds per day of VOC
- 550 pounds per day of CO
- 150 pounds per day of SO_x

The thresholds listed above apply to individual projects and not cumulative development. For cumulative impacts, the MBUAPCD determines that a project would be cumulatively significant if it is not consistent with the 2004 AQMP. A residential project is inconsistent with the 2004 AQMP if the population generated by the project at the year of project completion exceeds forecasted population for the next five-year increment. Commercial, industrial, or institutional projects intended to meet the needs of the population are reviewed for consistency by determining whether the estimated current population in the county in which the project is located is consistent with the applicable population forecast in the AQMP. A consistency determination with the 2004 AQMP is conducted by the Association of Monterey Bay Area Governments (AMBAG). As discussed in Impact AQ-12, AMBAG has prepared a consistency analysis,[17] and the results are reported in that impact discussion.

For TAC impacts, the MBUAPCD recommends that projects that could emit carcinogenic or toxic air contaminants that exceed the maximum individual cancer risk of 10 in one million be considered significant.

Methodology for Analysis

The analysis in this section focuses on the nature and magnitude of the change in the air quality environment due to construction and operation of the Proposed Project. Air pollutant emissions associated with the Proposed Project would result from construction activities to include demolition, deconstruction, increased residential population, potential commercial and recreational activities, and

[17] Todd Muck, AMBAG, email communication, December 16, 2004.

increased traffic volumes. The increase in emissions generated by these activities and other secondary sources have been estimated and compared to thresholds of significance recommended by the MBUAPCD. The MBUAPCD establishes standards for three types of impacts – short-term impacts from construction, long-term impacts from Proposed Project operation, and cumulative impacts.

Construction Emissions. The Proposed Project encompasses approximately 420 acres of land in the former Fort Ord that currently contains approximately 943 mostly abandoned military structures. As part of the Proposed Project, these structures would have to be demolished. The land would then be cleared and graded, and new buildings would be constructed. All of these activities would generate criteria air pollutants. To analyze impacts from construction, emissions were calculated by estimating the equipment that would be used during the most intensive periods of demolition, clearing and grading, excavating, and construction of proposed structures. Peak daily construction emissions associated with these activities were estimated using emission factors from the URBEMIS 2002 emissions model developed for CARB.

Operational Emissions. Operational emissions refer to the emissions that would be generated once the Proposed Project has been built. In this case, the main source of operational emissions would be the vehicles that drive to and from the Proposed Project, although emissions would also be generated by stationary and area sources associated with the commercial and residential uses that would be developed as part of the Proposed Project.

During the operational phase, ozone precursor emissions and carbon monoxide are the pollutants of primary concern. The MBUAPCD specifies thresholds of significance for operational emissions of these pollutants.

The average daily emission factors for operational emissions of criteria pollutants are estimated using the URBEMIS 2002 emissions model. For mobile source emissions, the daily trip generation rates used in the traffic study were input into the URBEMIS 2002 model. The model includes assumptions for the mix of vehicles (e.g., automobiles, trucks, etc.) that would typically be associated with a mixed-use development such as the University Villages Specific Plan.

Localized CO Concentrations. The CALINE4 dispersion model for predicting CO concentrations is the preferred method of estimating pollutant concentrations at sensitive receptors near congested roadways and intersections. For each intersection analyzed, CALINE4 adds roadway-specific CO emissions calculated from peak-hour turning volumes to the existing ambient CO air concentrations. For this analysis, CO concentrations were calculated based on a simplified CALINE4 screening procedure developed by the Bay Area Air Quality Management District. The simplified model is intended as a screening analysis in order to identify a potential CO hotspot. This methodology assumes worst-case conditions and provides a screening of maximum, worst-case CO concentrations.

Toxic Air Contaminants

Stationary Source Emissions. Some conditionally permitted uses under that land use designation could include processes that may emit TACs (e.g., a laboratory fume hood in an R&D business or a

gas station). In the event any facility is constructed in the project site that could emit TACs, they would be required to either comply with Rule 1000 or AB2588, as appropriate, to ensure that the health risk of 10 in one million is not exceeded. This could include the preparation of a health risk assessment and installation of control technology. For the purposes of this analysis, it is assumed consultation with the MBUAPCD would occur in conjunction with the submittal of development applications to further characterized potential TAC risk from stationary sources that may develop on-site. Because the specific businesses that could operate in the Specific Plan have not been determined, the impact analysis approach is qualitative.

Diesel. The CARB intends to issue statewide guidance for diesel toxic impact analyses for various source categories. Until such time, the MBUAPCD has developed interim technical guidance for estimating potential diesel particulate impacts from two sources: truck idling and movement (such as, but not limited to, truck stops, warehouse and distribution centers or trucking transit centers), and train idling.[18] Such uses are not anticipated within the Proposed Project. Nonetheless, construction diesel particulate and operation emissions are qualitatively evaluated based on approaches established by CARB in its risk reduction plan and risk scenarios, based on the published data identified in the Setting, above.

Asbestos and Lead. The analysis of potential TAC emissions hazards associated with asbestos and lead in building materials that could be emitted during deconstruction and demolition is evaluated qualitatively based on the ages of buildings, previous survey results, and availability of existing regulations and standards to address these types of potential airborne hazards.

Baseline Conditions

This section was prepared using the 2004 baseline conditions. The 1991 baseline is insufficient to use because criteria thresholds for air quality established by the MBUAPCD have changed and the 1991 baseline conditions were specific to the 28,000-acre former military base and not specific to the 420-acre project site. This EIR does not attempt to offset emissions that would be generated by the Proposed Project by subtracting out emissions that were previously generated by the base when it was operational.

Environmental Analysis

AQ-1. Demolition of existing buildings would create PM_{10} emissions. (PS)

Approximately 943 buildings currently exist on the project site. Most of these buildings are vacant military barracks and most would be removed as part of the development of the site. It is anticipated this activity could take one to three years. Buildings containing lead or asbestos, or requiring special demolition techniques, would be deconstructed; i.e., the building elements would be carefully removed. Buildings not requiring any special deconstruction methods, or

[18] Monterey Bay Unified Air Pollution Control District, 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, p. C-1.

buildings that have had hazardous materials removed, would be demolished with heavy equipment. The building materials would be segregated and either recycled or disposed of in a landfill as has been the procedure with other redevelopment projects in Fort Ord, in particular the Hayes Housing project in Seaside.

During the actual demolition of the existing buildings, PM_{10} would be generated. As shown, most PM emissions would come from fugitive dust. Buildings that are deconstructed would tend to generate less dust than buildings undergoing demolition, which would result in fewer PM_{10} emissions. However, in order to examine a worst-case scenario, it was assumed that all buildings were demolished over one year. The results of URBEMIS 2002 modeling of demolition emissions are shown in Table 3.2-7. Under worst-case conditions, peak daily PM_{10} emissions could be as much as 269.13 pounds per day, which would exceed the MBUAPCD threshold of 82 pounds per day. This would create a ***potentially significant impact.*** As noted above, because it is likely some buildings would be deconstructed rather than demolished, PM_{10} emissions would likely be less than the modeled estimate.

Table 3.2-7
Estimated Peak Daily Demolition Emissions

Emissions Source	ROG (pounds/day)	NO_x (pounds/day)	PM_{10} (pounds/day)
Demolition Phase			
Fugitive Dust	-	-	240.79
Off-Road Diesel	-	-	-
On-Road Diesel	55.07	957.39	28.34
Worker Trips	-	-	-
Maximum Demolition Phase Emissions	*55.07*	*957.39*	*269.13*

Source: EIP Associates, 2004.

MITIGATION MEASURE. Wetting material effectively reduces associated PM_{10} emissions to very low levels. While URBEMIS 2002 does not provide for the calculation of PM_{10} mitigation during demolition, in the grading phase URBEMIS calculates that watering three times daily and applying soil stabilizers to inactive areas can reduce PM_{10} emissions by 80 percent. Consequently, the following mitigation measure would reduce the potential impacts from demolition PM_{10} emissions to a *less-than-significant* level. (LTS)

AQ-1.1 Reduction of PM_{10} during demolition. The following shall be implemented during demolition activities.

- *Material to be demolished shall be wetted during demolition and kept wet until the material is removed. Material shall also be wetted during any subsequent disturbance or removal of the material.*

- *Water all active construction areas at least three times daily. Frequency should be based on the type of operation, soil, and wind exposure.*
- *Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).*
- *Haul trucks shall maintain at least 2'0" of freeboards.*
- *Cover all trucks hauling dirt, sand, or loose materials.*
- *Cover inactive storage piles.*
- *Install wheel washers at the entrance to construction sites for all exiting trucks.*

AQ-2. Trucks used for hauling of demolished material off-site would contribute diesel particulate emissions. (LTS)

As existing buildings on the project site are demolished, the material would be disposed of by hauling it off-site to landfills. It is expected that approximately 6,000 to 6,500 truck loads of building debris would be transported during demolition activities, which are expected to occur over a one- to three-year period. The number of trucks that would leave the site daily would range from an estimated maximum of 25 per day (assuming 260 days per year for one year for 6,500 truck loads) to a low of approximately 8 per day (assuming 260 days per year for three years for 6,000 truck loads). The landfills that the debris would be transported to would be the landfill in Marina operated by the Monterey Regional Waste Management District and the Kettleman City Class I/II landfill. It is possible that all of the demolished material would be trucked to Kettleman City. It is assumed the trucks used to transport demolished material would be heavy-duty diesel trucks. These trucks would produce emissions of diesel particulate matter (a toxic air contaminant) as they travel from the project site to the landfills. Land uses along the freeways could be exposed to the Proposed Project's contribution of diesel particulate matter to existing levels.

Both the Marina landfill and the Kettleman City landfill are located near major freeways. The Marina landfill to the north of the project site approximately five miles and is just off of Highway 1 and the Kettleman City landfill is just off of Interstate 5.[19,20] It is expected that transport trucks would do the majority of their traveling on Highway 1 as opposed to surface streets. Because of the proximity of the project site to Highway 1, heavy-duty trucks would not need to drive long distances over surfaces streets to access the highway. Because the highway borders the project site to the west, diesel trucks would travel over mostly undeveloped areas of the project site, and most likely also along Imjin Parkway which borders the Proposed Project to the north. Once trucks have accessed Highway 1, they would travel over high-volume highways and freeways to get to the landfills.

[19] Monterey Regional Waste Management District website: mrwmd.org. Accessed 11/18/04.
[20] Dept. of Toxic Substances Control website: dtsc.ca.gov/Hazardous Waste. Fact Sheet – CWMI Seeks Permit Renewal of Kettleman Hills Facility. Accessed 11/18/04.

When viewed in conjunction with the potential cancer risk range for low-volume freeways, the TAC risk from project-generated demolition truck trips would be negligible for several reasons. First, unmitigated diesel particulate emissions generated by the Proposed Project would be at most 28.34 pounds per day, as shown in Table 3.2-7, which is well below the MBUPACD's threshold of 82 pounds per day for PM. This value assumes all the trips occur in one year for 6,500 trips. Because it is likely several buildings will need to be deconstructed instead of demolished, which is a slower process, the number of daily trips is expected to be at the lower end of the range. It also assumes the trucks would be heavy-duty trucks, which would have the highest diesel emissions. Trucks using smaller diesel engines to haul debris boxes ("dumpsters") would generate less diesel particulate. Moreover, diesel exhaust emissions from trucks are expected to decrease in the future with implementation of the state's Risk Reduction Plan. As such, peak daily diesel particulate emissions likely overestimate actual emissions that would occur.

Second, the truck trips generated by the transport of debris would range from approximately 8 to 25 per day. The number of heavy-duty truck trips would represent less than one percent of total truck traffic and less than three percent of heavy-duty trucks on Highway 1, which is not substantial. Assuming 25 trips per day, the project would represent approximately one percent of the low-volume freeway scenario of 2,000 heavy-duty trucks per day. Assuming a one percent increase in trips, the project would generate 1 to 2 additional potential excess cancers per million, based on the 100 to 200 excess cancer cases per million predicted by the CARB model for the low-volume scenario. This would not exceed the MBUAPCD's threshold of 10 in one million.

Finally, project truck trips would be temporary, lasting only as long as the demolition phase of the Proposed Project, whereas the CARB model assumes 70 years of continuous exposure and that the 70-year risk occurs at the point of maximum off-site impact, which is assumed to be about 66 feet from the highest modeled concentration of diesel particulate. This is unlikely to occur along Highway 1 (or Imjin Parkway).

For the reasons stated above, transport of demolition debris would be a ***less-than-significant impact*** related to diesel particulate matter TAC emissions at off-site receptors, and no mitigation is warranted.

AQ-3. Demolition of existing buildings could release friable asbestos to the air. (LTS)

The Proposed Project would demolish approximately 943 wooden structures currently on-site. Since these existing buildings were constructed between 1940 and 1960, they are presumed to contain friable asbestos, which has been identified as a hazardous airborne contaminant. For example, as noted in the Setting, buildings in Track 0 have been surveyed and have been found to contain asbestos.

Regulations are already in place that require demolition activities to minimize asbestos released into the air. Primarily, this is accomplished through the asbestos National Emission Standards

for Hazardous Air Pollutants (NESHAP). This NESHAP is enforced by EPA in Monterey County through the CARB and the MBUAPCD.

The asbestos NESHAP specifies work practices to be followed during demolition of all structures that contain, or may contain asbestos. These work practices have been designed to effectively reduce airborne asbestos to safe levels. The Proposed Project would be subject to the asbestos NESHAP and MBUAPCD Rule 424, and thus would be required to comply with these specified work practices. Consequently, airborne asbestos would not be generated in unhealthy amounts during demolition. This would be a ***less-than-significant impact,*** and mitigation is not warranted.

AQ-4. Demolition of existing buildings could release unhealthy amounts of lead to the air. (PS)

The existing buildings to be demolished as part of the Proposed Project were originally constructed primarily between 1940 and 1960, and are likely to contain lead-based paint. Lead is a criteria air pollutant that can be hazardous to human health. Demolition of the structures could create unhealthy levels of airborne lead.

Typical concentrations of airborne lead that would be generated during demolition of existing structures are not known at the present time. The MBUAPCD has attempted to conduct lead-monitoring on two separate occasions to determine what levels of airborne lead could be expected during the demolition of a building. On each occasion, a high-volume air monitor was set up near the building to be demolished. The building was then demolished using practices that were presumed to be typical for demolition activities. One of these monitoring runs identified very high levels of airborne lead, the other run identified very low levels. Consequently, it is not known at this time whether lead levels during demolition activities would be unhealthy.

The MBUAPCD currently does not have a rule regulating airborne lead from demolition activities. However, lead abatement is subject to State regulations and standards. The MBUAPCD is, however, working to develop a District rule in the near future. The MBUAPCD intends for this rule to require work practices that would ensure that levels of airborne lead are not allowed to reach unhealthy levels during demolition. If this rule is in place by the time the Proposed Project begins deconstruction activities, it is presumed that this would limit concentrations of airborne lead to levels that are less than significant. Until the MBUAPCD rule is actually in place, however, it must be assumed that lead concentrations could be hazardous. Therefore, this would be a ***potentially significant impact***.

MITIGATION MEASURES. If no MBUAPCD rule to regulate airborne lead concentrations is in place when existing buildings are to be demolished, the following mitigation measure would apply. These measures were developed in conference with the MBUAPCD and would reduce lead concentrations during demolition to a *less-than-significant level.* (LTS)

AQ-4.1 The applicant and the MBUAPCD will monitor one building demolition for airborne lead levels before any additional demolition occurs. The monitoring shall be designed in conference with the MBUAPCD.

AQ-4.2 The demolition contractor shall be certified by the ARB to remove structures containing lead.

AQ-4.3 All buildings to be demolished shall be wetted during demolition and the demolished material shall be wetted during subsequent transport off-site. The demolished material shall be transported off-site expeditiously after demolition of the structure.

AQ-4.4 All truck loads containing demolished materials and that travel city, county or state roads shall be covered.

AQ-5. Construction would contribute emissions of criteria air pollutants. (S)

Once the existing buildings on the project site have been demolished, some land preparation for development would occur. This would include grading and land clearing. Because the Proposed Project would be developed in phases, the entire site would not be graded at once. Instead, the land would be prepared over a period of years as different phases begin.

Construction of the Proposed Project would involve a number of different pieces of construction equipment such as bulldozers, scrapers, graders and loaders. There is not expected to be any construction equipment that would not be considered "typical." This heavy-duty equipment would most likely be diesel-fueled, and would generate emissions of PM_{10}, NO_x, and ROG. The MBUAPCD CEQA Air Quality Guidelines document states that while PM_{10} is a pollutant of concern during construction activities, ozone precursors (ROG and NO_x) are not necessarily of concern because they are accommodated in the emission inventories of State and federally required air plans and would not have a significant impact on the attainment and maintenance of ozone ambient air quality standards.[21]

Because the MBUAPCD thresholds of significance for construction PM_{10} are in "pounds per day", and because the Proposed Project would not be developed all at once, construction impacts were analyzed by evaluating a construction day when the most grading activity would occur. This would most likely be during the initial preparation of the site for Phase 1 of the Proposed Project. Figure 2-4 depicts the various Proposed Project phases. Table 3.2-8 shows the results of the URBEMIS modeling for a work-intensive day during Phase 1.

As shown, daily PM_{10} generated during Phase 1 could reach an estimated 279.31 pounds per day during the grading phase. This would exceed the MBUAPCD thresholds of significance of 82 pounds per day, and would be a ***significant impact***.

[21] MBUAPCD CEQA Air Quality Guidelines, p. 5-2. Adopted October 1995, Revised June 2004.

Table 3.2-8
Estimated Peak Daily Construction Emissions

Emissions Source	ROG (pounds/day)	NO_x (pounds/day)	PM_{10} (pounds/day)
Site Excavation and Grading Phase			
Grading	-	-	265.00
Off-Road Diesel	43.30	322.14	14.28
On-Road Diesel	0.00	0.00	-
Worker Trips	0.19	0.08	0.03
Total Grading Phase Emissions	*43.49*	*322.22*	*279.31*
Total Grading Phase Emissions (Mitigated)	*43.49*	*322.22*	*48.88*
Construction Phase			
Building Construction Off-Road Diesel	195.30	1,451.01	62.98
Building Construction Worker Trips	4.03	2.31	0.67
Arch. Coatings Off-Gas	1,095.53	-	-
Arch Coatings Worker Trips	4.03	2.31	0.67
Asphalt Off-Gas	2.11	-	-
Asphalt On-Road Diesel	0.47	8.06	0.21
Total Construction Phase Emissions	*1,298.90*	*1,401.98*	*64.49*
Total Construction Phase Emissions (Mitigated)	*1,298.90*	*1,401.98*	*64.49*

Source: EIP Associates, 2004.

MITIGATION MEASURES. With the implementation of the following mitigation measure, URBEMIS 2002 calculates that the PM_{10} generated during the grading phase would be significantly reduced to approximately 64.10 pounds per day. This would be below the MBUAPCD threshold of significance for construction PM_{10} of 82 pounds per day. Consequently, implementation of the following mitigation measure would reduce PM_{10} from grading to a *less-than-significant* level. (LTS)

AQ-5.1 Reduction of Particulate Matter. The following mitigation measure will be implemented during construction site grading of the Proposed Project.

- *Soil stabilizers shall be applied to all inactive areas.*
- *Active exposed surfaces shall be watered three times daily.*
- *All stock piles shall be covered with tarps when not in use.*
- *All haul roads shall be watered twice daily.*
- *Traffic on unpaved roads shall be limited to 15 mph or less.*

AQ-6. Operation of the Proposed Project would generate emissions of criteria air pollutants. (S)

Once the Proposed Project is built and fully operational, daily project-related activity would generate emissions of criteria pollutants. These criteria pollutants would be created by on-

going processes at some of the uses developed within the Proposed Project, as well as by vehicles traveling to and from land uses within the Proposed Project.

When these land uses are modeled with the URBEMIS 2002 modeling program, the following criteria air pollutant emissions are calculated to occur as a result of operation of the Proposed Project under build-out conditions.

- ROG – 746.59 pounds per day
- NO_x – 668.64 pounds per day
- PM_{10} – 544.79 pounds per day

Table 3.2-9 shows detailed URBEMIS modeling results.

Table 3.2-9
Estimated Peak Daily Operational Emissions

Emissions Source	ROG (pounds/day)	NO_x (pounds/day)	PM_{10} (pounds/day)
Water and Space Heating	2.11	28.21	0.05
Landscape Maintenance	1.74	0.17	0.03
Consumer Products	60.57	-	--
Motor Vehicles	702.17	659.58	561.17
Total Emissions	766.59	687.97	561.26
Total Emissions (Mitigated)	746.95	668.64	544.79

Source: EIP Associates, 2004.

When compared to the MBUAPCD thresholds of significance, the Proposed Project would be ***significant*** for all the above listed criteria pollutants. Most of these emissions are due to the motor vehicle trips that would be associated with the Proposed Project. Some on-site mitigation is available to reduce emissions from these sources. For example, designing the Proposed Project with roundabouts or retrofitting existing intersections with roundabouts to include the Imjin Parkway at 2nd Avenue intersection can reduce emissions.

Other operational mitigation measures have been integrated into the Specific Plan that reflects the sustainable community concept. Such features would allow residents of the Proposed Project to walk or bike to local businesses for entertainment and shopping purposes. These design features include: sidewalks along at least 50 percent of the roads in the Proposed Project; bike lanes where appropriate; bike racks in apartment, commercial, and office uses; bus shelters to supplement existing transit improvements along 2nd Avenue and Imjin Parkway; and at least three preferential carpool/vanpool spaces.

With regard to diesel particulate emissions and associated TAC risk, the vehicle fleet associated with the Proposed Project would consist mainly of automobiles used by residents, employees,

and visitors to the Specific Plan and small- to mid-sized trucks used for deliveries to the retail/commercial and office research businesses. These types of vehicles would be mainly gasoline-fueled automobiles and light trucks that have very little diesel exhaust emissions. The proposed uses in the project site are not the types of facilities such as truck depots, bus terminals, and distribution centers whose vehicle fleet consists mainly of diesel-fueled vehicles and which contribute the highest TAC risk. Furthermore, as noted above, State-wide emissions of diesel exhaust are expected to decrease in the future with implementation of the State's Risk Reduction Plan.

When these design features identified in the Specific Plan are modeled with URBEMIS 2002, mass emissions of ROG, NO_x, and PM_{10} are estimated to decrease. After mitigation, operational emissions would be approximately:

- ROG – 622 pounds per day
- NO_x – 583 pounds per day
- PM_{10} – 497 pounds per day

However, these emissions are still above MBUAPCD thresholds of significance for Proposed Project operations. Consequently, the Proposed Project would have an operational impact that is *significant and unavoidable*. No additional mitigation feasible. (SU)

AQ-7. Operation of the Proposed Project would contribute CO emissions. (LTS)

The MBUAPCD CEQA Air Quality Guidelines specify that a project would have a significant CO impact if it would cause Levels of Service (LOS) at intersections in the project vicinity to decrease to unacceptable conditions or mass emissions of CO are above 550 pounds per day, and the project would cause or substantially contribute to a violation of the CAAQS for CO.

According to the URBEMIS 2002 modeling for the Proposed Project, mass CO emissions would be approximately 6,519 pounds per day, significantly greater than the MBUAPCD CO threshold of significance. According to the traffic study prepared for the Proposed Project, several intersections in the Proposed Project vicinity would also decrease from "acceptable" LOS (D or better) to "unacceptable" LOS (E or F) during peak hours.

Unlike ozone, which is a regional pollutant, CO impacts tend to be localized. Page 7-11 of the MBUAPCD CEQA Air Quality Guidelines recommends that if operational CO levels exceed the CO levels of significance shown in Table 5-3 on page 5-5, concentration modeling should be conducted if CO concentrations would exceed CAAQS and result in a significant impact. The MBUAPCD recommends the use of CALINE4 to conduct this modeling. Since CO is produced by the incomplete combustion of fuel, congested intersections are most likely to experience the highest levels of CO. To determine if the Proposed Project's operational CO emissions would cause or contribute to an actual violation of the CO CAAQS, intersection with unacceptable LOS were modeled for peak hour CO concentrations using the simplified CALINE4 screening procedure developed by the Bay Area Air Quality Management District.

Background CO values were taken from the nearest monitoring station that monitors for CO. This station monitors for 8-hour CO concentrations only. To account for possible worst-case conditions, the background value used for modeling purposes was the highest 8-hour value recorded over the last three years.

Modeled CO concentrations at intersections with unacceptable LOS are shown in Table 3.2-10. According to the modeling, the highest 8-hour concentrations would be at Imjin Road and Reservation Road. This 8-hour concentration of 3.9 ppm is far below the 9.1 ppm CAAQS for CO. Because the modeling represents worst-case conditions, it can be determined that the Proposed Project would not cause or contribute to any violations of the CO CAAQS, and therefore the impact of the Proposed Project is ***less than significant*** and mitigation is not warranted.

Table 3.2-10
Existing Plus Project Localized Carbon Monoxide Concentrations

	8-Hour CO Concentrations in Parts per Million		
Intersection	**25 Feet**	**50 Feet**	**100 Feet**
California Ave. and Reservation Road	2.7	2.4	2.2
Imjin Road and Reservation Road	3.9	3.4	2.9
SB Hwy 1 Ramps and Twelfth St./Imjin Parkway	2.5	2.3	2.1
NB Hwy 1 Ramps and Twelfth St./Imjin Parkway	3.4	3.0	2.6
2nd Ave. and Imjin Parkway	3.5	3.2	2.8
Imjin Road and Imjin Parkway	2.8	2.6	2.3
Abrams Drive and Imjin Road	2.9	2.7	2.4
4th Ave. and 3rd Street	2.0	2.0	1.9
General Jim Moore Blvd. and Coe Road/Eucalyptus Road	2.1	2.0	1.9
General Jim Moore Blvd. and Broadway Ave.	2.3	2.2	2.0

Notes: Federal 8-hour standard is 9.5 parts per million. State 8-hour standard is 9.1 parts per million.
Source: EIP Associates, 2004. Calculation sheets are provided in Appendix G.

AQ-8. The Proposed Project could include land uses that would be a source of TAC emissions. (LTS)

TAC impacts can occur by creating a new source of TACs, or by placing sensitive receptors in close proximity to an existing TAC source. TACs can be generated by stationary sources as well as by diesel engines in trucks and other heavy-duty mobile equipment. Diesel TAC impacts are evaluated in Impacts AQ-2 and AQ-5. As discussed in those impacts, while construction activity would generate diesel particulate TAC, these emissions would not be generated on a permanent basis. TAC impacts are normally measured based on exposure over a 70-year period. Also, there are no sensitive uses such as schools, residences, or hospitals adjacent to the project site, so diesel TAC generated by construction would not be impacting sensitive receptors. No truck stops, warehouse/distribution centers, or trucking transit centers,

which are identified bye the MBUAPCD as being potentially hazardous for diesel particulate,[22] are expected to be developed as part of the Proposed Project. Likewise, no other uses are expected that would create substantial numbers of truck traffic or idling trucks.

Because the Proposed Project would develop light commercial, office, and residential uses, no considerable stationary sources of TAC are expected to be created from these land uses. Some conditionally permitted or permitted uses could include processes that may emit TACs (e.g., a laboratory fume hood in an R&D business, gas station, or dry cleaner). In the event any facility is constructed in the project site that could emit TACs, they would be required to either comply with the MBUAPCD Rules 1000 and 1003 or AB 2588, as applicable, to ensure that the health risk of 10 in one million is not exceeded. This could include the preparation of a health risk assessment and installation of control technology. Also, there are no significant existing unregulated sources of TACs in the Proposed Project vicinity, so new receptors would not be exposed to hazardous TAC levels.

Because no unregulated stationary TAC sources would be developed as part of the Proposed Project, and because the Proposed Project is not expected to attract large numbers of diesel trucks or opportunities for truck idling, this would be a ***less-than-significant impact*** and no mitigation is warranted.

Cumulative Impacts

The following discussion addresses the effects of the Proposed Project in combination with other development. The cumulative context considered depends on the pollutant being analyzed. For pollutants with more localized impacts such as $PM_{10,}$ CO, and TACs, the cumulative area is the project site and the area immediately surrounding the project site within the City of Marina. For ozone and diesel particulate, which are regional pollutants, the cumulative area is the entire NCCAB.

AQ-9. The Proposed Project, in combination with other cumulative development, could contribute emissions of PM_{10} that would produce cumulative impacts. (CC)

The MBUAPCD CEQA Air Quality Guidelines specify that a project that exceeds the MBUAPCD thresholds of significance for PM_{10} by itself would also have a cumulative impact.[23] As discussed in AQ-6, operation of the Proposed Project would violate the threshold of significance, even with design features incorporated into the Proposed Project to help reduce emissions. The project's contribution would be cumulatively considerable. No additional feasible mitigation to reduce cumulative impacts to a less-than-significant level in the NCCAB is within the authority of the City of Marina to implement, monitor, and enforce. Consequently, this would be a significant and unavoidable ***cumulatively considerable impact*** for PM_{10}. No mitigation is feasible.

[22] MBAUCPD CEQA Air Quality Guidelines, Appendix C.
[23] MBUAPCD CEQA Air Quality Guidelines, p. 5-4.

AQ-10. The Proposed Project, in combination with other cumulative development could contribute emissions of CO that may produce cumulative impacts. (LTS)

Cumulative CO impacts can be evaluated by modeling future cumulative traffic volumes found in the traffic report for the Proposed Project. These numbers reflect estimates of future-year traffic volumes based on forecast future development. In this case, the traffic study evaluated conditions in year 2025. The same intersections modeled for existing-plus-project conditions were modeled for cumulative conditions. Because these intersections were the most impacted under initial with-project conditions, they would be the most likely to exhibit high levels of CO in future years. Modeled 8-hour CO concentrations for these intersections in 2025 are shown in Table 3.2-11. Because future CO background concentrations cannot be known, existing background concentrations were used. This is a conservative approach, because CO background concentrations are expected to decrease over time due to vehicle fleet turnover and cleaner overall vehicle fleets. As shown in the table, CO concentrations would not exceed CAAQS. This would be a ***less-than-significant cumulative impact,*** and mitigation is not warranted.

Table 3.2-11
Localized Carbon Monoxide Concentrations
(Cumulative Conditions – Year 2025)

	8-Hour CO Concentrations in Parts per Million		
Intersection	**25 Feet**	**50 Feet**	**100 Feet**
California Ave. and Reservation Road	2.0	1.9	1.8
Imjin Road and Reservation Road	2.5	2.3	2.2
SB Hwy 1 Ramps and Twelfth St./Imjin Parkway	2.0	1.9	1.8
NB Hwy 1 Ramps and Twelfth St./Imjin Parkway	2.2	2.1	2.0
2nd Ave. and Imjin Parkway	2.3	2.2	2.0
Imjin Road and Imjin Parkway	2.1	2.0	1.9
Abrams Drive and Imjin Road	2.2	2.1	1.9
4th Ave. and 3rd Street	1.8	1.8	1.8
General Jim Moore Blvd. and Coe Road/Eucalyptus Road	1.9	1.8	1.8
General Jim Moore Blvd. and Broadway Ave.	1.9	1.9	1.8

Notes: Federal 8-hour standard is 9.5 parts per million. State 8-hour standard is 9.1 parts per million.
Source: EIP Associates, 2004. Calculation sheets are provided in Appendix G.

AQ-11. The Proposed Project, in combination with other cumulative development in the NCCAB, would create emissions of ozone precursors that could affect cumulative ozone conditions. (LTS)

The MBUAPCD CEQA Air Quality Guidelines state that for ozone, which is a regional pollutant, a project's cumulative impact should be based on whether the project is consistent with the AQMP. The AQMP uses population growth numbers provided by the Association of Monterey Bay Area Governments (AMBAG). If AMBAG does not account for a project in its

population forecasts, the project's population impacts would not be accounted for in the AQMP, and the impacts would be cumulatively significant.

AMBAG was contacted regarding the Proposed Project. According to AMBAG, the development of the Proposed Project is included in the population and housing forecasts for 2010.[24] AMBAG staff concluded the Proposed Project is consistent with the 2004 regional forecasts and the AQMP. Consequently, the Proposed Project would have an ozone impact that is cumulatively ***less than significant,*** and mitigation is not warranted.

AQ-12. Cumulative development would generate diesel particulate TAC emissions. (LTS)

The CARB currently estimates that the existing overall risk level associated with diesel particulate matter in California to be 540 excess cancer cases per 1 million people. Consequently, the existing risk level is higher than the adopted threshold of 10 in 1 million. The CARB has derived a number of strategies for reducing diesel particulate matter. These strategies include retro-fitting existing engines by installing a diesel particulate filter, using alternative fuels, and stricter emission control standards for all new engines. These strategies are designed to achieve significant diesel emission reductions, resulting in an 85 percent reduction State-wide by 2020. The CARB-predicted health risk on a State-wide level is anticipated to be reduced to approximately 80 excess cancer cases per million, which would be a more than five-fold reduction over existing conditions. This future condition would still exceed the 10 in one million health risk threshold, however. It is assumed diesel particulate emissions in the NCCAB could exhibit a similar decrease, but the CARB has not developed a specific emissions estimate for the NCCAB. However, assuming a five-fold decrease in total diesel particulate TAC risk State-wide, it is reasonable to assume that a five-fold decrease in total TAC risk for the portion of the NCCAB that includes the City of Marina area could result in risk levels as low as 20 to 50 excess cancer cases per million for diesel particulate emissions in 2020, which still would exceed the MBUAPCD threshold of 10 in one million. The risk attributable to the diesel particulate component of the total TAC risk would represent a portion of that total risk, but it would not be as high as the current (70 percent) contribution. It cannot be predicted with certainty based on available data that diesel particulate TAC risk under year 2020 conditions in the NCCAB could be less than 10 in one million excess cancer cases. By 2025, the risk may be further reduced.

Diesel particulate emissions would occur in the NCCAB regardless of whether the Proposed Project is implemented. Sources of future diesel particulate mobile and stationary source emissions without the Proposed Project would include traffic on roadways, industries, and agricultural operations. Cumulative development with the Proposed Project would contribute to those emissions and, therefore, associated risk. Future ambient diesel particulate emissions and associated risk levels notwithstanding, in order for the MBUAPCD threshold of 10 in one million to be exceeded, cumulative development would need to generate one-eighth of the total mobile and stationary diesel source emissions in the State (which are assumed to be responsible

[24] Todd Muck, AMBAG, email communication, December 16, 2004.

for the 80 excess cancer cases in a million predicted by CARB for 2020). This is unlikely to occur. None of the planned or approved land uses included in the cumulative projects assumed for this EIR (see Chapter 4, CEQA Considerations) are expected to include the types of activities that are identified by either the CARB or in the MBUAPCD CEQA Air Quality Guidelines as uses that would generate diesel traffic or operations that could create a significant risk from diesel TAC emissions. Almost all of the vehicle travel that would be associated with these uses would be passenger vehicles or light-duty trucks, similar to the Proposed Project. As discussed in Impacts AQ-2 and AQ-6, the Proposed Project's contribution to diesel TAC emissions would not cause an exceedance of the threshold.

Therefore, the Proposed Project would result in a ***less-than-significant*** cumulative impact, and no mitigation is required.

AQ-13. Cumulative development would generate TAC emissions. (LTS)

There are few facilities emitting TACs in the Monterey region/NCCAB. Each source of TACs within the NCCAB would be required to comply with applicable MBUPACD rules and regulations (e.g., permitting process and use of BACT). The TACs would be emitted regardless of whether the Proposed Project is implemented.

The CARB has estimated average excess cancer case risk for the entire Monterey Bay region for year 2010 due TAC emissions to be less than 100 excess cancer cases per million[25], or about one-half of existing levels. It is important to note that because TAC concentrations can vary from one location to another, local risks may be either higher or lower than the average values. Estimates for 2020 or 2025 have not been developed, although it is anticipated there could be additional decreases through improved control processes and materials substitutions.

The MBUAPCD has not required any facilities in the City of Marina to prepare a health risk assessment for TACs because none of the facilities generate TACs at levels that trigger the need for such an assessment. As noted in the Setting, the combined TAC emissions in the City of Marina currently represent less than one percent of that NCCAB-wide total. As such, it is reasonable to conclude that TAC emissions do not pose a significant risk locally under current conditions. Development in the projects considered in the cumulative analysis, along with any future development in the City, could generate some TAC emissions; however, the types of land uses proposed in the pending or approved projects, or under General Plan buildout, would contain few, if any, types of development that would be significant TAC sources. In order for TAC emissions risk levels to exceed the 10 in one million threshold, there would need to be a substantial increase in heavy industrial and commercial activities, which is not anticipated under the current adopted General Plan. Moreover, potential TAC sources would be subject to MBUAPCD regulations to ensure TAC emissions do not exceed the established thresholds. Therefore, the cumulative impact would be ***less than significant***, and no mitigation is required.

[25] includes diesel particulate

3.3 BIOLOGICAL RESOURCES

3.3 BIOLOGICAL RESOURCES

Introduction

This biological resources assessment is prepared using the *Biological Resources Assessment*, prepared by Zander Associates and dated September 2004. The entire report is included in the separately bound Technical Appendix. EIP Associates biological resources staff visited the site on October 13, 2004 to ascertain the accuracy of existing conditions described in the 2004 Zander Associates Report.

The Initial Study (Appendix A) concluded there would be no impacts related to Section 404 waters or the movement of native or migratory fish or wildlife species. These issues are not further addressed in the EIR.

One comment letter (see Appendix B) was received in response to the NOP from the Department of Fish and Game.

Development under the proposed University Villages project would result in direct and indirect impacts on individual special-status plants and wildlife and their habitat. This section also evaluates the contribution of the Proposed Project to any cumulative adverse effects on special-status plant and wildlife species from the surrounding region.

Setting

The University Villages Specific Plan project site is located in the City of Marina, within the Marina USGS 7.5' topographic quadrangle in Monterey County, California. For purposes of this assessment, we assume that all existing natural habitat within the project site will be removed and/or converted for this development. No wetlands or other waters of the United States are present within the project site.

Habitats On-Site

The 420-acre project site is situated within the Main Garrison portion of the former Fort Ord military installation. The majority of the site is either developed or disturbed (i.e. ruderal). However, several remnant patches of natural habitat, including maritime chaparral and oak woodland, remain in the project site. Ornamental trees including Monterey pine (*Pinus radiata),* Monterey Cypress *(Cupressus macrocarpa),* several species of wattle (*Acacia* spp.), and blue gum (*Eucalyptus globulus*) are present as part of the existing landscaping in the project site. For the purposes of this EIR, the following five habitat types have been identified: developed, disturbed, remnant maritime chaparral, degraded maritime chaparral, and mixed oak woodland[1,2] (Figure 3.3-1). These habitat types are described below.

[1] Biological Resources Assessment, University Villages, Zander Associates, September, 2004.
[2] The Installation-Wide Multi-species Habitat Management Plan for Former Fort Ord Corps, April 1997.

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FIGURE **3.1-1**

Viewpoint Location

Source: Dahlin Group, 2004

City of Marina

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Developed. The developed portions of the project site cover approximately 318 acres and contain mostly hardscape (i.e. buildings and extensive paved areas). Vegetation within these developed areas consists of ornamental trees and shrubs, frequently with an understory of non-native annual grasses and other exotic weeds. These non-native, weedy understory species include ruderal species such as ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*), filaree (*Erodium* sp.), iceplant (*Carpobrotus edulis*), plantain (*Plantago* sp.), and wild mustard (*Brassica* sp.). Most of the large, ornamental trees are adjacent to buildings or roads. Wildlife diversity in these developed areas is typically low due to the limited extent of native habitat and associated food and shelter resources. However, the large trees could provide nesting sites for raptors and other birds and the numerous abandoned buildings could potentially provide roosting sites for special-status bats.

Disturbed. This habitat type covers approximately 54 acres and consists of unpaved areas with bare, sandy soils that support a combination of primarily ruderal vegetation with some native coastal scrub species, such as coyote bush *(Baccharis pilularis*), telegraph weed *(Heterotheca grandiflora*), common beach-aster (*Lessingia filaginifolia)*, and deer weed (*Lotus scoparious*). The dominance of ruderal vegetation and the presence of bare, compacted soil in these areas reflects a history of topsoil disturbance. The less-disturbed portions of this habitat (where the soils are less compacted) supports a variety of native species including beach evening primrose (*Camissonia cheiranthifolia)*, suncups (*Camissonia ovata)*, and Monterey spineflower (*Chorizanthe pungens var. pungens*). These disturbed areas provide only limited habitat for wildlife due to the general lack of cover.

Remnant Maritime Chaparral. A total of approximately 18 acres of remnant maritime chaparral occurs within the project site as scattered, isolated patches, the largest of which is approximately seven acres in size. Maritime chaparral is characterized by a wide variety of small- to moderate–sized evergreen, sclerophyllous (hard-leaved) shrubs such as sandmat manzanita (*Arctostaphylos pumila),* shaggy-barked manzanita *(Arctostaphylos tomentosa* ssp. *tomentosa),* Monterey ceanothus (*Ceanothus cuneatus* var. *rigidus*), and chamise (*Adenostoma fasciculatum*). Other species in this habitat include false heather (*Ericameria ericoides),* Eastwood's golden fleece (*Ericameria fasciculata),* golden yarrow (*Eriophyllum confertiflorum),* coast silk- tassel *(Garrya elliptica),* silver bush lupine (*Lupinus albifrons),* monkey flower (*Mimulus aurantiacus)*, black sage *(Salvia mellifera)* and poison oak (*Toxicodendron diversilobum*). Surveys conducted by Zander Associates (2004) revealed the presence of several special status plant species within the maritime chaparral in the project site, including sandmat manzanita, Monterey ceanothus, Eastwood's golden fleece, sand gilia (*Gilia tenuiflora* ssp. *arenaria*), Monterey spineflower and wedge-leaved horkelia (*Horkelia cuneata* ssp. *sericea*).

This maritime chaparral habitat supports the highest potential wildlife diversity in the project site, due to the extensive cover and foraging resource. Birds such as the orange-crowned warbler (*Vermivora celata*), rufous-sided towhee (*Pipilo erythrophthalmus*), and California quail (*Callipepla californica*) nest in the chaparral. Small mammals such as the California mouse (*Peromyscus californicus*) and brush rabbit (*Sylvilagus bachmani*) forage in this habitat and serve as prey for gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), spotted skunk (*Mephitis mephitis*) and northern Pacific rattlesnake (*Crotalus viridis oreganus*). However, the small disjunct patches of chaparral within the

project site unlikely support the diversity of wildlife that would be present in larger, more contiguous stands elsewhere in the region.

Degraded Maritime Chaparral. Several patches of degraded maritime chaparral occur in the project site, totaling approximately 27 acres. These areas have been subjected to varying levels of historic disturbance resulting in the loss of, and/or compaction of topsoils. In this habitat, non-native weedy species comprise the majority of the ground cover, with scattered individuals or small stands of chaparral shrubs, including shaggy barked manzanita and/or sandmat manzanita. Non-native species in these areas include orchard grass (*Dactylis glomerata*), ripgut brome, wild oat, filaree, iceplant, rough cat's ear (*Hypochaeris radicata),* plantain, and wild mustard. Surveys conducted by Zander Associates (2004) revealed the presence of several special status plant species within this habitat including sandmat manzanita, Monterey ceanothus, and Monterey spineflower.

Mixed Oak Woodland. A small (2.4-acre) patch of mixed oak woodland – bounded by 12th St., 10th St., 2nd Avenue, and 3rd Avenue – actually consists of only coast live oak (*Quercus agrifolia*) with landscaped Monterey pine and Monterey cypress. This should therefore be more accurately classified as live oak woodland or merely oak woodland. The understory in this woodland consists of poison oak, snowberry (*Symphoricarpos mollis),* and weedy non-native grasses and forbs. Scattered individuals of sandmat manzanita and Monterey ceanothus were also observed in the understory. Where there is an opening in the canopy, the shrub cover is less dense and there is an opportunity for annual species to colonize. Monterey spineflower and sand gilia were observed in some of these areas during the 2004 survey.

In a natural setting, oak woodlands provide habitat for a variety of wildlife species. The trees serve as nesting sites and provide cover for many birds and mammals. The dense shrubby understory provides food and cover for small mammals, birds and reptiles. However, because this woodland is small and surrounded by development or other disturbance, its habitat value for wildlife is likely to be limited.

Special Status Species. Special-status species are those plants and animals:

1. Listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS);
2. Listed or proposed for listing as rare, threatened, or endangered by the California Department of Fish and Game (CDFG);
3. Occurring on lists 1B or 2 of the California Native Plant Society's *Inventory of Rare and Endangered Plants of California, Sixth Edition* (2001);
4. Designated as "Species of Special Concern" (CSC) by the CDFG; and
5. Addressed in the Fort Ord Habitat Management Plan (HMP).

The *Flora and Fauna Baseline Study of Fort Ord, California* (U.S. Army Corps of Engineers 1992) documented five special status plants and four special status animals as occurring or potentially occurring within the University Villages Specific Plan project site. An assessment of the potential for

the project site to support special-status wildlife species was made by both Zander Associates and EIP Associates biologists, as per Policy A-7.1 of the Base Reuse EIR. Additionally, focused surveys for special status plants were conducted by Zander Associates in 2004 during the appropriate season, as per Program B-1.1 of the Base Reuse EIR.[3] A list of those special-status species potentially occurring in the project site is presented in Table 3.3-1 with detailed descriptions of those species most likely to occur in the area.

Plants. The five special status plant species documented in the flora and fauna baseline study[4] as occurring within the project site are sand gilia, Monterey ceanothus, sandmat manzanita, Eastwood's golden bush, and wedge-leaved horkelia. All five of these species were observed in the project site by Zander Associates biologists during 2004 field surveys.[5] Although not identified in the baseline study[6] for the project site, Monterey spineflower was also observed during the above surveys in several patches within chaparral and oak woodland habitats on the project site.[7] Following is a discussion of each of the special status plants observed in the project site.

Sand Gilia (Gilia tenuiflora ssp. arenaria). Sand gilia is a small, annual herb that occurs on sandy soils in openings in coastal dunes and scrub and in maritime chaparral. This federally-listed endangered species and State-listed threatened species addressed in the HMP was found in three locations within the project site – two within maritime chaparral and one within the small patch of oak woodland (Figure 3.3-2). The occurrence on the eastern edge of the project site consists of one individual that is likely part of a larger population of low-density sand gilia occurring just east of the eastern project boundary (identified in the flora and fauna baseline study). The other two sand gilia occurrences consist of populations of 400+ individuals.

Sand gilia is an annual plant and therefore the size and location of the population can fluctuate from year to year. Based on the 2004 surveys conducted by Zander Associates, the extent of occupied sand gilia in the project site was approximately 0.2 acre.

Monterey spineflower (Chorizanthe pungens var. pungens). Monterey spineflower is a federally-listed threatened species, addressed in the HMP, occurring on sandy soils within coastal dune, coastal scrub, grassland, and other plant communities. In the *Flora and Fauna Baseline Study of Fort Ord, California* (U.S. Army Corps of Engineers 1992), Monterey spineflower was observed adjacent to the project site, but no occurrences were recorded from within the project site at that time. However, during their 2004 survey[8], Zander Associates did find intermittent patches of Monterey spineflower in the project site within remnant maritime chaparral, degraded maritime chaparral, and oak woodland

[3] Zander Associates, *Biological Resources Assessment*, University Villages, September, 2004.
[4] Corps, *Flora and Fauna Baseline Study for Fort Ord, California*, 1992.
[5] Zander Associates, *Biological Resources Assessment, University Villages*, September, 2004.
[6] Corps, *Flora and Fauna Baseline Study for Fort Ord, California*, 1992.
[7] Zander Associates, *Biological Resources Assessment,* University Villages, September, 2004.
[8] Zander Associates, *Biological Resources Assessment,* University Villages, September, 2004.

Table 3.3-1
Special-Status Species Potentially Occurring within the University Villages Specific Plan Project Site

Scientific Name	Common Name	Status Federal/State/ Other (CNPS)	Habitat Requirements	Likelihood of Occurrence in Project Site
Arctostaphylos pumila	Sandmat manzanita	none/none/1B	Openings on sandy soils in closed cone coniferous forests, cismontane woodlands, coastal dunes, coastal scrub and maritime chaparral.	**Present:** Observed during surveys of project site.
Ceanothus rigidus	Monterey ceanothus	none/none/4	Sandy soils in closed cone coniferous forests, coastal scrub and chaparral.	**Present:** Observed during surveys of project site.
Ericameria fasciculata	Eastwood's golden bush	none/none/1B	Openings on sandy soils in closed cone coniferous forests, coastal dunes, coastal scrub and maritime chaparral.	**Present:** Observed during surveys of project site.
Gilia tenuiflora ssp. *arenaria*	Sand gilia	FE/ST/1B	Coastal dunes, coastal scrub, chaparral (maritime), cismontane woodland. Endemic to Monterey County. Occurs on bare, wind-sheltered areas often near dune summit or in the hind dunes	**Present:** Observed during surveys of project site.
Horkelia cuneata ssp. *sericea*	Wedge-leaved horkelia	none/none/1B	Openings on sandy or gravelly soils in closed cone coniferous forests, coastal scrub and maritime chaparral.	**Present:** Observed during surveys of project site.
Anniella pulchra nigra	Black legless lizard	FSC/CSC/ none	Stabilized dunes, coastal scrub, chaparral and oak woodlands. Found in loose friable (usually sandy) soils under leaf litter. Highly dependant on soil moisture	**Moderate:** Suitable habitat is present in the project site. Not observed during surveys of the site.
Phrynosoma coronatum frontale	California horned lizard	FSC/CSC/ none	Scrub, chaparral and oak woodlands. Requires friable soils and abundant native ant colonies.	**Low:** Suitable habitat is present in the project site, but historic urbanization has likely extirpated the species from the site. Not observed during surveys of the site.
Lanius ludovicianus	Loggerhead shrike	FSC/CSC/ none	Grasslands and open oak woodlands with scattered trees, shrubs for roosting and nesting.	**Moderate:** Suitable habitat is present in the project site. Not observed during surveys of the site.
Aquila chrysaetos	Golden eagle	FSC/CSC/ none	Nest on cliff faces and in the tops of large trees. Forages in grasslands and a wide variety of other open habitats.	**None:** No suitable habitat is present in the project site. Not observed during surveys of the site.

Table 3.3-1

Special-Status Species Potentially Occurring within the University Villages Specific Plan Project Site

Scientific Name	Common Name	Status Federal/State/ Other (CNPS)	Habitat Requirements	Likelihood of Occurrence in Project Site
Plecotus townsendii townsendii	Townsend's western big-eared bat	FSC/CSC/ none	Roosts in the open in large caves, mines and abandoned buildings. Forages in a wide variety of wooded and open habitats, usually near water.	**Moderate:** Suitable habitat is present in the project site. Not observed during surveys of the site.
Antrozous pallida	Pallid bat	FSC/CSC/ none	Roosts in crevices in caves, mines, large rock outcrops, under bridges and in abandoned buildings. Forages on or near the ground in a wide variety of open habitats.	**Moderate:** Suitable habitat is present in the project site. Not observed during surveys of the site.
Eumops perotis	Western mastiff bat	FSC/CSC/ none	Roosts in crevices on cliff faces and other elevated sites that allow a long vertical drop for flight takeoff. Forages at high altitudes. Very rare in urbanized areas.	**Low:** habitat in the project site only marginally suitable for this species. Not observed during surveys of the site.
Myotis volans	Long-legged myotis	FSC/CSC/ none	Roosts in crevices in caves, mines, large rock outcrops, under bridges and in abandoned buildings. Forages in a wide variety of open habitats, frequently over water.	**Moderate:** Suitable habitat is present in the project site. Not observed during surveys of the site.

Status:

Federal

E = Federally listed as endangered.

FSC = Federal species of concern.

State

T = Threatened; Species that although not presently threatened in California with extinction, is likely to become endangered in the foreseeable future.

CSC = California Department of Fish and Game "Species of Special Concern". Species with declining populations in California.

CNPS

1B = Plants considered rare, threatened or endangered in California and elsewhere.

4 = Federal species of concern.

View 1 Existing Highway 1 southbound

View 2 Existing Highway 1 southbound

FIGURE **3.1-2**

Views 1 and 2 Highway 1 southbound

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Sources: Dahlin Group, 2004

University Villages EIR

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habitats.[9] Zander Associates mapped the extent of spineflower occurrences and estimated densities within the project site as follows;[10]

- < 5% cover = low density,
- > 5% but < 25% cover = medium density, and
- > 25% cover = high density.

From 2004 survey results, Monterey spineflower habitat occupies approximately 3.9 acres in the project area. Of this total, 0.5 acre is low density, 1.5 acres is medium density and 1.9 acres is high density (Figure 3.3-2). Like sand gilia, Monterey spineflower is an annual plant. It is also an aggressive colonizer of disturbed areas and therefore the size and location of the population can fluctuate from year to year.

In its designation of critical habitat for Monterey spineflower (Federal Register May 29, 2002), the U.S. Fish and Wildlife Service (Service) excluded areas targeted for development in the Fort Ord HMP. Consequently, the Plan Area is not within designated critical habitat for Monterey spineflower.

Monterey ceanothus (Ceanothus rigidus). This evergreen shrub occurs on sandy hills and flats, and is common throughout the maritime chaparral habitat on the former Fort Ord. It has no State or federal protected status, but is included on the CNPS List 1B and is an HMP species and therefore must be considered under CEQA. This species is an abundant component of most of the remnant and degraded maritime chaparral within the project site (Figure 3.3-2).

Sandmat manzanita (Arctostaphylos pumila). Sandmat manzanita is a low-stature, perennial shrub that typically occurs in sandy soils within chaparral or woodland plant communities. It has no State or federal status, but is included on CNPS List 1B and is an HMP species. Sandmat manzanita occurs within most of the remnant and degraded maritime chaparral habitat in the project site (Figure 3.3-2).

Eastwood's golden bush (Ericameria fasciculata). This evergreen shrub of the sunflower family occurs in sandy openings in closed-cone coniferous forest and coastal scrub habitats. The species has no State or federal status, but is included on CNPS List 1B and is an HMP species. Eastwood's golden bush is found scattered within the remnant maritime chaparral habitat on the very eastern edge of the project site (Figure 3.3-2).

Wedge-leaved horkelia (Horkelia cuneata ssp. sericea). Wedge-leaved horkelia is a perennial herb occurring in sandy and gravelly openings in coastal scrub and closed-cone coniferous forest. The species has no State or federal status, but is included on CNPS List 1B. It occurs within only one area of maritime chaparral on the northern edge of the project area but it is quite abundant there (Figure 3.3-2).

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[9] Zander Associates, *Biological Resources Assessment*, University Villages, September, 2004.
[10] Zander Associates, *Biological Resources Assessment,* University Villages, September, 2004.

Wildlife. The four special status animal species identified in the flora and fauna baseline study as potentially occurring within the University Villages Specific Plan Area include the: black legless lizard, coast horned lizard, loggerhead shrike and golden eagle. Potential habitat for these species was identified only within the remnant maritime chaparral in the northern portion of the project site.

California black legless lizard (Anniella pulchra nigra). The black legless lizard is a California Species of Special Concern and HMP species. Although the validity of the subspecies designation is currently under review, the species as a whole shares the same legal status.[11] Legless lizards are fossorial reptiles that burrow in sandy soils, often under leaf litter in oak woodlands, chaparral and stabilized dune habitats. The black legless lizard feeds on insects and other invertebrates and is dependant on soil moisture that prevents dehydration and supports invertebrate prey. At the former Fort Ord, it is closely associated with the Baywood Sands and Oceano soils supporting native dune vegetation, coastal scrub, maritime chaparral, oak woodlands, oak savanna and grasslands. The remnant maritime chaparral, degraded maritime chaparral, and oak woodland habitat in the project site could potentially support this species as indicated on Table 3.3-1, however, the disturbed habitats on the project area, where vegetative cover is limited, would not likely support this species due to a probable lack of sufficient soil moisture.

Potential habitat for black legless lizard is present within the study area. However, these habitat areas are small, fragmented and isolated from other areas of suitable habitat by urban development. This species has not been observed during recent reconnaissance level surveys of the project site. Negative results of focused surveys for this species are generally considered to be inconclusive by the resource agencies, and they will typically require that presence is assumed if a project is within the species known range and contains appropriate habitat, even if the species is not observed. Therefore, black legless lizard is assumed to be present in suitable habitat within the project site.

California horned lizard (Phrynosoma coronatum frontale). The California horned lizard is a State Species of Special Concern and a federal Species of Concern but is not included in the HMP. California horned lizards inhabit open country, especially sandy areas, washes, flood plains, and wind-blown deposits in a wide variety of habitats, including shrub lands, woodlands, riparian habitats and annual grassland. Warm, sunny, open areas with friable soils are a main habitat requirement, along with colonies of native harvester ants. This horned lizard is vulnerable to predation from domestic cats, dogs and humans, and their primary prey (granivourous ants) out-competed by the non-native Argentine ant species associated with development. The California horned lizard at one time occurred in many habitat types on the former Fort Ord, but while this species is likely to have occurred in the project site historically, California horned lizards typically disappear quickly from urbanized areas and adjacent habitats.[12] No California horned lizards were observed during the field surveys conducted for this project.

Potential habitat for California horned lizard is present within the study area. However, these habitat areas are small, fragmented and isolated from other areas of suitable habitat by urban development.

[11] Jennings and Hayes, 1994.
[12] Jennings and Hayes, 1994.

This species has not been observed during recent reconnaissance level surveys of the project site. Negative results of focused surveys for this species are generally considered to be inconclusive by the resource agencies, and they will typically require that presence is assumed if a project is within the species known range and contains appropriate habitat, even if the species is not observed. Therefore, California horned lizard is assumed to be present in suitable habitat within the project site.

Loggerhead shrike (Lanius ludovicianus). The loggerhead shrike is a California Species of Special Concern that occurs in open woodlands and adjacent grassland habitats with scattered trees, shrubs, posts, fences, or other perches. Nests are usually built in trees and shrubs; however, structures such as telephone poles and abandoned buildings are occasionally used. The remnant oak woodland, landscape trees, or abandoned buildings in the project site could provide potential nest sites for this species.

Golden eagle (Aquila chrysaetos). The golden eagle is a California Species of Special Concern and is also provided protection under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (16 USC 668). Nests are usually constructed on cliffs or in large trees in open areas and eagles are relatively site-faithful, often reusing old nests. No active golden eagle nests are known to occur in the vicinity of the project site. Additionally, because golden eagles are sensitive to disturbance, it is unlikely that this species would nest in close proximity to the project site.

Special-status bats. Four special-status bat species are known to roost in buildings or trees in Monterey County. These species include: Townsend's western big-eared bat (*Plecotus townsendii townsendii*), pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis*), and long-legged myotis (*Myotis volans*). All of these bats are California Species of Special Concern and federal Species of Concern. The abandoned buildings in the project site could provide suitable roosting habitat for the Townsend's western big-eared bat, pallid bat, and long-legged myotis. Western mastiff bats rarely occur near urbanized areas and requires roost sites with a significant vertical drop to assist this large bat on takeoff.[13]

Other Species. The California tiger salamander (*Ambystoma californiense*) was recently listed as threatened by the USFWS. In response, the U.S. Army prepared a Biological Evaluation to address the effects of U.S. Army actions on CTS, including property disposal (DENR/POM 2004). The evaluation identified all known and potential breeding habitat for CTS and all potential upland habitat within up to two kilometers of each breeding site. The project site does not contain any known or potential breeding sites for the California tiger salamander and is not within a two-kilometer radius of any breeding habitat. Additionally, in its proposed designation of critical habitat for California tiger salamander, the Service did not include any lands within the project site.

Regulatory Setting

The following discussion summarizes federal, State and local regulatory authorities pertaining to biological resources.

[13] http://www.batcon.org/

Federal

Endangered Species Act. Projects resulting in adverse effects on federally-listed threatened or endangered species are required to consult with, and mitigate through consultation with, the U.S. Fish and Wildlife Service (USFWS). The objective of consultation is to determine whether the project would impact a protected species or designated critical habitat, and to identify mitigation measures that would be required to avoid or reduce impacts to the species. This consultation can occur pursuant to either Section 7 or 10 of the FESA. Section 7 consultation is required when a federal agency is involved in project approval, funding, or permitting. Section 10 consultation is required when no federal agencies are involved with the project.

The FESA of 1973 provides legal protection for plant and animal species in danger of extinction, and requires definitions of critical habitat and development of recovery plans for specific species. Section 7 of the FESA requires federal agencies to make a finding on the potential to jeopardize the continued existence of any listed species potentially impacted by all federal actions, including the approval of a public or private action, such as the issuance of a permit pursuant to Sections 10 and 404 of the CWA. Section 9 of the FESA prohibits the take of any member of an endangered species. Take is defined by the FESA as "…to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has further defined the terms harass and harm. Harass is defined as follows:

> *"…an intentional or negligent act or omission that creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding, or sheltering."*

Harm is defined to include the following:

> *"…significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering."*

Section 10(a) of the FESA permits the incidental take of listed species if the take is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Section 3 of the FESA defines an endangered species as "any species, including subspecies, in danger of extinction throughout all or a significant portion of its range." This section defines threatened species as any species "likely to become endangered within the foreseeable future throughout all or a significant portion of its range." Federally-listed or "listed" indicates that a species has been designated as endangered or threatened through publication of a final rule in the *Federal Register*. Designated endangered and threatened species, listed under Section 4 of the FESA, receive the full protection of the FESA. Proposed endangered and threatened species are those for which a proposed regulation, but not a final rule, has been published in the *Federal Register*. Proposed species are granted limited protection, while candidate species and species of special concern are afforded no protection under the FESA.

Migratory Bird Treaty Act – 1936. The MBTA regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50 Code of Federal Regulations (CFR) Section 10.13. The MBTA is an international treaty for the conservation and management of bird species that migrate through more than one country, and is enforced in the United States by the USFWS. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50 CFR 20. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors). Six families of raptors occurring in North America were included in the amendment and all species and subspecies of these families are protected under the amendment:

- Accipitridae (kites, hawks, and eagles);
- Cathartidae (New World vultures);
- Falconidae (falcons and caracaras);
- Pandionidae (ospreys);
- Strigidae (typical owls); and
- Tytonidae (barn owls).

Installation-Wide Multi-species Habitat Management Plan for Former Fort Ord (U.S. Army Corps of Engineers, April 1997). A provision of the project description for the U.S. Army's closure of former Fort Ord was the development and implementation of a habitat management plan (HMP) to minimize incidental take of listed species and their habitat and to mitigate for impacts to vegetation and wildlife resources resulting from the U.S. Army's actions. The HMP provides the biological resource management basis for the agreement between the U.S. Army and the USFWS, and articulates what are effectively the U.S. Army's "conditions of approval" from the USFWS for incidental take of federally-listed threatened and endangered species under the ESA. The HMP provides parcel-specific prescriptions for both pre-transfer activities and post-transfer reuse that are intended to mitigate for impacts to vegetation and wildlife resources.

A general goal of the HMP is to promote habitat preservation, enhancement and restoration, while allowing implementation of a community-based reuse plan that supports economic recovery after closure of Fort Ord. The HMP assumes a reuse development scenario for the entire base that will result in the removal of up to 6,300 acres of existing vegetation and wildlife habitat. Losses to 18 special-status species (HMP Species) are also accounted for by the HMP. The establishment of approximately 16,000 acres of habitat reserves with about 400 additional acres of connecting habitat corridors is the primary measure to minimize the impacts of reuse on HMP Species. In addition, the HMP further conditions development on approximately 1,800 additional acres by requiring reserve areas or restrictions on those lands.

The HMP can be divided into two parts. The first part deals with habitat management prescriptions for the U.S. Army's clean up and remediation activities prior to transfer. It provides guidance for contaminated soils removal in habitat areas, landfill remediation, lead and other heavy metal removal in the beach ranges, ordinance and explosives removal in the multi-range area and interim uses.

The second part of the HMP provides a template for land transfer and reuse. It identifies categories of future land use and specifies parcel by parcel resource conservation and management requirements. Some parcels are designated for development with no restrictions or management guidelines, other parcels are designated for partial or conditional development with obligations to implement certain management guidelines, and still other parcels are designated as habitat reserves or corridors with specific management guidelines and restrictions on development and uses.

The HMP is a binding document. The U.S. Army is obligated to comply with the mandates of the HMP under the ESA and the Record of Decision (ROD). However, the HMP has implications beyond allowing the U.S. Army to proceed with its actions. Conformance with the requirements of the HMP is a prerequisite for the transfer of land from the U.S. Army to other parties, which will also obligate those parties to the mandates of the HMP through separate memoranda of agreement (MOAs) and/or deed restrictions. Acceptance of designated habitat reserve land (with its deed restrictions) and/or execution of an MOA binds those recipients to a commitment to manage the land for habitat purposes in perpetuity. In return, the HMP is intended to simplify future regulatory compliance regarding biological resource issues.

The entire project site is located within parcels designated as development with no restrictions in the HMP. These parcels have no management restrictions placed upon them and according to the HMP, the biological resources found in these parcels are not considered essential to the long-term preservation of sensitive species at former Fort Ord. However, the HMP, in itself, does not provide specific authorization for incidental take of State or federally-listed species to other (i.e., non-federal) parties.[14] The HMP was therefore intended to serve as the basis for a proposed Habitat Conservation Plan (HCP) to support the possible issuance of incidental take permits under Section 10(a)(1)(B) of the ESA to non-Federal land recipients. This HCP and Implementing Agreement (IA) have been prepared, based on the HMP, by interested non-federal parties. The HCP has not yet been adopted and the IA has not been executed. In the interim, special status species, incidental take permits from the USFWS and CDFG must be pursued on a project-by-project basis.

State

California Endangered Species Act (CESA). The CDFG administers a number of laws and programs designed to protect fish and wildlife resources. Principal of these is the California Endangered Species Act of 1984 (CESA - Fish and Game Code Section 2050), which regulates the listing and take of State-endangered and State-threatened species. The CESA declares that deserving species will be given protection by the State because they are of ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. The CESA established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats.

[14] USFWS, 2004, Notice of Intent To Prepare an Environmental Document for Issuance of an Incidental Take Permit Associated With a Habitat Conservation Plan at the Fort Ord Military Installation, Monterey County, CA, Federal Register, Vol. 69, No. 188, p. 58181, U.S. Department of the Interior, Fish and Wildlife Service, September 29, 2004.

Species listed under the CESA cannot be taken without adequate mitigation and compensation. "Take" in the context of the CESA means to hunt, pursue, kill, or capture a listed species, as well as any other actions that may result in adverse impacts when attempting to take individuals of a listed species. However, based on findings of the California Attorney General's Office, take under the CESA does not prohibit indirect harm by way of habitat modification. Typically, the CDFG implements endangered species protection and take determinations by entering into management agreements (Section 2081 Management Agreements) with project applicants.

CDFG maintains lists for Candidate-Endangered Species and Candidate-Threatened Species. California candidate species are given equal protection of the law as listed species have. CDFG also lists Species of Special Concern based on limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. Species of special concern do not receive protection under the CESA or any section of the California Fish and Game Code, and do not necessarily meet CEQA Guidelines Section 15380 criteria as rare, threatened, endangered, or of other public concern. Like federal species of concern, the determination of significance for California species of special concern must be made on a case-by-case basis. Designation of Species of Special Concern is intended by CDFG to be used as a management tool for consideration in future land use decisions.

California Fish and Game Code - Sections 3503, 3503.5, 3513. Fish and Game Code Section 3503 States that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Fish and Game Code Section 3503.5 protects all birds-of-prey (raptors) and their eggs and nests. Section 3513 States that it is unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act. These regulations could require that elements of the Proposed Project (particularly vegetation removal or construction near nest trees) be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by CDFG and/or USFWS.

Fish and Game Code B Sections 3511, 4700, 5050, and 5515. Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code designate certain species as "fully protected." Fully protected species, or parts thereof, may not be taken or possessed at any time, and no provision of the California Fish and Game Code or any other law may be construed to authorize the issuance of permits of licenses to take any fully protected species. No such permits or licenses heretofore issued may have any force or effect for any such purpose, except that the California Fish and Game Commission may authorize the collecting of such species for necessary scientific research. Legally imported and fully protected species or parts thereof may be possessed under a permit issued by CDFG.

California Environmental Quality Act (CEQA). Although threatened and endangered species are protected by specific federal and State statutes, CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after

definitions in the FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. Section 15380(b) requires public agencies to undertake reviews to determine if projects would result in significant effects on species that are not listed by either the USFWS or CDFG (i.e., candidate species). Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

California Public Resources Code, Section 21083.4. Filed on 9/24/04, this Act would add Section 21083.4 to the CA Public Resources Code, requiring "*a county, in determining whether CEQA requires an environmental impact report, negative declaration, or mitigated negative declaration, to determine whether a project in its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment, and would require the county, if it determines there may be a significant effect to oak woodlands, to require one or more of specified mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands*."

Mitigation alternatives include:

1. Conserve oak woodlands, through the use of conservation easements.
2. (A) Plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees.

   (B) The requirement to maintain trees pursuant to this paragraph terminates seven years after the trees are planted.

   (C) Mitigation pursuant to this paragraph shall not fulfill more than one-half of the mitigation requirement for the project.

   (D) The requirements imposed pursuant to this paragraph also may be used to restore former oak woodlands.
3. Contribute funds to the Oak Woodlands Conservation Fund, as established under subdivision (a) of Section 1363 of the Fish and Game Code, for the purpose of purchasing oak woodlands conservation easements, as specified under paragraph (1) of subdivision (d) of that section and the guidelines and criteria of the Wildlife Conservation Board. A project applicant that contributes funds under this paragraph shall not receive a grant from the Oak Woodlands Conservation Fund as part of the mitigation for the project.
4. Other mitigation measures developed by the county.

Local

City of Marina Municipal Code Chapter 12.04. The City recognizes that the maintenance and new growth of healthy trees facilitates drainage and combats soil erosion, adds real property and aesthetic values, and provides habitat for wildlife. "To enhance the beauty of our city, while at the same time recognizing individual rights to develop private property, the city council adopts this chapter, establishing basic standards and measures to preserve and maintain existing trees and to encourage new

tree planting. It is the intent of the city by the adoption of these regulations to limit and restrict the removal of healthy and desirable trees in the city. However, regarding single-family residential properties which cannot be further subdivided, the intent is to limit and restrict only the removal of landmark trees." (Ord. 96-3 § 2 (part), 1996).

University Villages Specific Plan Tree Standards. Though proposed in the University Villages Specific Plan and not an approved standard, the University Villages Specific Plan Tree Standards are included here as it would replace existing City standards which pre-date the *Fort Ord Reuse Plan* goals and objectives and *City of Marina General Plan*.

The goal of the University Villages Specific Plan Tree Standards is to preserve as many of the healthy, existing Monterey Cypress and oak trees as practicable. These trees are a resource and add to the unique character of the area. However, development at urban densities is not conducive to avoidance of the existing trees. Therefore, this Specific Plan establishes the overall program as to how these trees will be either preserved, relocated or removed and replaced.

As a major redevelopment project with new streets and infrastructure, buildings and amenities, crafting this new community will require grading for portions of the site to be developed. Where grading is not required, soil compaction is still needed for infrastructure and building improvements.

Monterey Cypress and oak trees that are found to be rated as in "good" or "fair" condition shall be protected during construction and preserved wherever practicable.

The classification system used to rate the condition of the trees is as follows:

Condition	Criteria
Good	Tree is healthy and vigorous as indicated by color of foliage and density, has no apparent signs of insect, disease, structural defects or mechanical injury. Tree has good form and structure
Fair	Tree is in average condition and vigor for the area, but may show minor insect, disease, or physiological problems. Trees rated as Fair/Poor may be improved with correctional pruning.
Poor	Tree that is in a general State of decline and may show severe structural or mechanical defects which may lead to failure, may have insect or disease damage, but is not dead.

If relocated, Monterey Cypress shall be removed by machinery and then immediately replanted at a new site. Relocated oak trees may be boxed prior to relocation and replanting.

Existing healthy trees rated as "good" or "fair" to be removed shall be replaced on-site at a ratio of two replacement trees for every one removed.

For any trees proposed to be removed or relocated between January and July, surveys for active nests of birds-of-prey birds shall be undertaken by a qualified biologist. If active nests are found and the biologist determines that construction activities would remove the nest or have the potential to cause

abandonment, then those activities shall be avoided until the young have fledged and left the nest (see BR-4.1 below).

Prior to issuance of a tree removal permit, a map showing all numbered trees proposed to remain, be relocated or removed shall be submitted along with a plan delineating replacement trees.

All trees within the University Villages Specific Plan area shall be inventoried by a licensed forester or certified arborist. The majority shall be individually rated, while small groups with similar stand characteristics may be rated as a group.

In general, the trees located within the University Villages Specific Plan area consist of Monterey Cypress, Monterey Pine, coast live oaks and Eucalyptus. The use of the term "trees" in this Specific Plan refers to those species.

It is essential to have accurate tree trunk location information (i.e. professionally surveyed) in relation to grading impacts and proposed area development plans in order to determine if it is possible for a tree to be retained no matter what condition the tree was rated. Trees rated Fair and better have a higher likelihood of tolerating impacts from construction related activities.

The following protocol will be used for the University Villages Specific Plan:

- Groups and individual trees will correspond to polygon numbers on Tree Reference Map (topo map).
- Polygons with more than one tree will be numbered as follows:

#trees per polygon	Polygon Number	Tree Number
3	1	1.1
		1.2
		1.3
1	2	2.1

- Polygons with multiple trees will be numbered from south to north or west to east depending on shape of polygon. The first and last tree in multiple tree polygons is tagged.
- Trees rated as "good" condition are tagged.
- "SNAGS" (dead standing trees) will also be recorded.
- Cypresses, oaks, pines and eucalyptus trees 6 inch DBH and greater will be recorded along with their condition. The condition of eucalyptus will not be recorded. Acacia trees will not be recorded in table but locations will be noted on map.
- Diameters will be recorded at breast height (4.5 feet above ground) or at the most representable location (i.e. for multiple stemmed trees).

- Aluminum tags (3" x ¾") will be placed at the base of the tree on the south facing side.

Species	CYP	= Monterey cypress
	MP	= Monterey pine
	CLO	= coast live oak
	EUC	= Eucalyptus species (2 observed)
	P	= Other pine species
Condition	G	= Good condition
	F	= Fair condition
	P	= Poor condition
DBH (in.)	@base	= measured at base of tree
	12	= measured at 4.5 feet above ground
	@2'	= measured at 2 feet above ground

Impacts Assessment and Mitigation Measures

Significance Criteria

Impacts of the Proposed Project would be considered significant if proposed activities:

- Have a substantial adverse effect, either directly or through habitat modifications on 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 U.S. Fish and Wildlife Service. For this EIR, substantial adverse effect is defined as losses greater than those anticipated in the *Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord* (April 1997);

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. For the purposes of this EIR, substantial adverse effect is defined as losses greater than those anticipated in the *Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord* (April 1997);

- Have a substantial adverse effect on federally protected wetlands 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 by 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 the provisions of an approved local, regional or State policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or State habitat conservation plan.

Methodology for Analysis

During the preparation of this section, a review was conducted of previously prepared documents, including, The *Installation-Wide Multispecies Habitat Management Plan for Fort Ord* prepared by the U.S. Army Corps (Corps) of Engineers in 1997, and Biological Resources Assessment, University Villages, prepared by Zander Associates in September of 2004. A query of the CNDDB for the Marina, Moss Landing, Prunedale, Salinas, Spreckles, Seaside, and Monterey U.S. Geological Survey's (USGS) 7.5 minute quadrangles to identify any other special-status species that have been recorded in the region. Species identified by these sources as potentially occurring in the area, but for which there is either no suitable habitat, or the project site is outside the known range of the species are not addressed further. A site visit was also conducted by EIP Associates biological resources staff for the purpose of field verifying the accuracy of the existing conditions section of the 2004 Zander Associates Report.

Baseline Conditions

This section was prepared using the 2004 baseline conditions. In addition, information from the 1992 *Flora and Fauna Baseline Study for Fort Ord*, California, prepared by the Corps has also been outlined where it is relevant.

Environmental Analysis

BR-1. The Proposed Project would result in the loss of special-status plant populations. (PS)

Grading and other ground disturbance related to construction of the Proposed Project would result in the removal of approximately 0.2 acres of occupied sand gilia habitat, and approximately 3.9 acres of occupied Monterey spineflower habitat. Monterey spineflower and sand gilia are both federally-listed, but only the sand gilia is State-listed.

There would be an additional loss of 17.6 acres of occupied habitat for additional special-status (CNPS List 1B) plant species, including Monterey ceanothus, wedge-leaved horkelia, Eastwood's golden bush and sandmat manzanita. However, acreage estimates for these additional species (particularly Monterey ceanothus and sandmat manzanita) focus on areas of highest concentration, and do not include all outlying individuals scattered throughout the site.[15]

While the loss of all special status plants listed in Table 3.3-2 and their habitat in the project site is considered a potentially significant impact and requires mitigation under CEQA, the HMP assumed losses of plant species in areas designated as "Development Without Restrictions", and has already provided for the mitigation for these losses through set-aside and management of large, contiguous tracts of land supporting these species on former Fort Ord.

[15] Zander Associates, *Biological Resources Assessment, University Villages*, September, 2004.

Species not specifically addressed in the HMP, such as the non-listed wedge-leaved horkelia, would be preserved in these set-aside lands, as they occupy the same habitat as the other species listed in Table 3.3-2.

While the HMP is a binding document, and recipients of land on the former Fort Ord are bound by the mandates of the HMP; the HMP, in itself, does not provide a take permit for non-federal parties for those species listed as threatened or endangered by the USFWS or CDFG. Therefore, even though mitigation for the loss of these species is proposed in the HMP, the project applicant is still responsible for acquiring appropriate take permits prior to construction of the Proposed Project.

The Monterey spineflower is listed as endangered under the FESA, but is not listed under the CESA. If a federal nexus exists for the project (i.e., any federal permits are required [including federal permits not related to biological resources], federal funding, or the project is on federal lands), the potential loss of Monterey spineflower plants in the project site would require consultation with the USFWS under Section 7 of the FESA. If no federal nexus exists, there is no requirement to mitigate for the loss of a plant under FESA.[16] Based upon past experience, for the development of individual parcels containing Monterey spineflower at Fort Ord, this consultation process has not resulted in additional mitigation requirements since the Service's position is that sufficient acceptable mitigation has already been proposed as part of the HMP.

Table 3.3-2
Summary of Impacts on Special-Status Plant Species for the University Villages Specific Plan[17]

Species		Total Existing (acres)	Impacted (acres)
Sand Gilia		0.2	0.2
Monterey Spineflower			
High Density		1.9	1.9
Medium Density		1.5	1.5
Low Density		0.5	0.5
	Sub-Total	**3.9**	**3.9**
Monterey ceanothus		± 7	± 7
Sandmat Manzanita		± 10	± 10
Wedge-leaved Horkelia		0.5	0.5
Eastwood's golden bush		0.1	0.1
	Sub-Total	**17.6**	**17.6**
	TOTAL	**21.7**	**21.7**

Note: Acreage figures with ± symbol do not include all outlying individuals of these species that are scattered throughout the site

[16] Section 9 (a)(2)(B) of the Federal Endangered Species Act.
[17] Zander Associates, *Biological Resources Assessment, University Villages*, September, 2004.

For the loss of sand gilia plants, listed as threatened under the CESA, acquisition of a Section 2081 Incidental Take Permit from the CDFG would be required and mitigation for the loss of this species on the project site would be a condition of the permit. The mitigation for the loss of this species provided in the HMP is adequate; however, take permission for this species for non-federal entities would not be formalized until the HCP is completed. Take sand gilia by a non-federal entity before the HCP is executed would be considered a ***significant impact***, and an individual 2081 permit would need to be obtained. Consequently, additional mitigation for this species is provided below.

MITIGATION MEASURES. Implementation of the mitigation measures under either of the two following options would reduce impacts to sand gilia populations to a *less-than-significant level*. (LTS)

Option 1 (If the Installation-wide HCP and IA are executed prior to the Proposed Project):

BR-1.1 The project applicant shall comply with the provisions of the HCP and IA for the loss of sand gilia populations and no further mitigation would be required.

Option 2 (If the Installation-wide HCP and IA are not executed prior to the Proposed Project) the following mitigation measure shall apply to the loss of at least 782 sand gilia plants and approximately 0.2 acre of occupied habitat.

BR-1.2 Project applicant shall avoid areas containing sand gilia during construction of the Proposed Project and preserve these populations in place in perpetuity; or

BR-1.3 Project applicant shall acquire a California Fish & Game Code, Section 2081 Incidental Take Permit from the CDFG. Required mitigation for the loss of this species and its habitat will be indicated as a condition of the permit. Mitigation could be accomplished through seed and seedbank salvage, and restoration or creation of habitat of an appropriate size and character at a suitable location on former Fort Ord (e.g. the landfill or Parker Flats).

BR-2. The Proposed Project could result in the loss of special-status wildlife habitat. (PS)

Implementation of the University Villages Specific Plan would result in the direct loss of approximately 18 acres of remnant maritime chaparral, 27 acres of degraded maritime chaparral, 2.4 acres of oak woodland, 54 acres of disturbed, ruderal vegetation, and 318 acres of previously developed areas. Of these 420 total acres, only the combined 47.4 acres of remnant maritime chaparral, degraded maritime chaparral, and oak woodland habitats would be of any significant value to local wildlife populations. However, these remaining natural habitats are relatively small, fragmented, and isolated by surrounding urban development, and while they could provide habitat for special-status wildlife such as the black legless lizard, California horned lizard, loggerhead shrike and one or more special-status bat species, they are not considered essential to the long-term preservation of these or other sensitive species at

former Fort Ord.[18] A summary of the acreages of suitable wildlife habitat affected by the Proposed Project is provided below in Table 3.3-3.

Table 3.3-3
Summary of Project Effects on Wildlife Habitat

Habitat Type	Total Existing (acres)	Impacted (acres)
Degraded Maritime Chaparral	27	27
Remnant Maritime Chaparral	18	18
Oak Woodland	2.4	2.4
Total	**47.4**	**47.4**

The Proposed Project is entirely within an area designated in the HMP as "Development Without Restrictions" (i.e., no identified habitat management restrictions).[19] The biological resources within these parcels are not considered essential to the overall long-term preservation of sensitive species on former Fort Ord.[20] The Biological Opinion issued to the Corps for the HMP allows for the development of these parcels. Since the loss of natural habitats within the project site has been anticipated and compensated for in the HMP, loss of these natural habitats in the project site would be considered a less-than-significant impact and no additional mitigation would be required for the loss of degraded maritime chaparral, remnant maritime chaparral and oak woodland in the project site. Species not specifically addressed in the HMP that occupy the same habitats would concurrently receive protection (indirectly) through the HMP.

However, apart from the vegetation communities described above, trees in the project site are protected under separate regulations described below. Trees in the project site, whether native or ornamental, represent habitat for local (common and special-status) wildlife species, and provide perching sites, shade and feeding opportunities (i.e., seeds, insects) as well as potential nesting opportunities. Approximately 1,450 trees were inventoried on the Proposed Project site by a registered professional forester (Staub Forestry and Environmental Consulting, *Criteria for Rating Trees*. July 22, 2004). Hundreds of these trees will be removed as a result of the construction of the Proposed Project; this would be considered a ***potentially significant impact***. The removal of trees in the project site that do not contain nesting birds or bats will be subject either to conditions in the City of Marina's Municipal Code, Chapter 12.04 or the *University Villages Specific Plan Tree Standards* and is addressed under Mitigation Measure BR-2.2 below. Removal of trees with active bird nests would conflict with the Migratory Bird Treaty Act and Section 3503.5 of the California Fish and Game Code, and is addressed later in this section, under Mitigation Measure BR-4. Removal of active maternity roosts of special

[18] The Installation-Wide Multi-species Habitat Management Plan for Former Fort Ord Corps, April 1997.
[19] The Installation-Wide Multi-species Habitat Management Plan for Former Fort Ord Corps, April 1997.
[20] The Installation-Wide Multi-species Habitat Management Plan for Former Fort Ord Corps, April 1997.

status bats would conflict with Section 4700 of the California Fish and Game Code, and is addressed later in this section, under Mitigation Measure BR-5.

MITIGATION MEASURES. Implementation of the following mitigation measures would reduce impacts to special-status wildlife habitat to a *less-than-significant level*. (LTS)

BR-2.1 *Implement Species Specific mitigation measures. Project applicant shall implement mitigation measures BR-4 and BR-5 below, pursuant to applicable USFWS, CDFG and/or HMP guidelines.*

BR-2.2 *Implementation of City of Marina tree protection measures (or the University Villages Specific Plan Tree Standards) will concurrently mitigate for habitat loss (i.e., potential nest trees) for those species that utilize trees on the site for nesting. Any tree removal that occurs during the construction phase of the project shall be subject to the conditions in the City of Marina Municipal Code Chapter 12.04 (Tree Removal, Preservation and Protection) (or the UVSP Tree Standards), and shall be mitigated accordingly.*

BR-3. The Proposed Project could result in the loss of individual black legless lizards or California horned lizards. (LTS)

Loss of individual black legless lizard and California horned lizard would occur during the construction of the Proposed Project; however, losses of black legless lizard in this area has already been anticipated in the 1997 HMP. Although California horned lizard is not specifically addressed in the HMP, it occupies the same habitat and would therefore concurrently receive protection (indirectly) through the HMP. Therefore, their losses would not result in adverse effects to either species on former Fort Ord beyond what has already been accounted for in the HMP. The project site occurs within an area of the Former Fort Ord designated as "development without restrictions" and habitat for special-status species present within this area has been determined to not be essential to the conservation of those species at the former Fort Ord in the 1997 HMP and accompanying Biological Opinion from the USFWS.

Mitigation for the loss of habitat for these species is provided in the 1997 HMP through the set-aside and management of habitat reserve areas within the boundaries of the former Fort Ord. Since parties receiving lands on the former Fort Ord are required to comply with the mandates of the HMP as a condition of the land transfer, removal of potential habitat for California horned lizard and black legless lizard through grading or other ground disturbance in the project site would be considered a ***less-than-significant impact*** and no additional mitigation is warranted.

BR-4. The Proposed Project could result in the loss of nesting raptors, loggerhead shrike or other migratory birds. (PS)

If construction activities associated with the Proposed Project are initiated outside the nesting season for loggerhead shrike or other migratory and/or special-status bird species known from the region (i.e., between August 1 and January 15), no significant impact on these species is anticipated and additional mitigation would be unnecessary. A ***potentially significant impact*** would, however, result if construction activities occur during the nesting season (i.e., between January 15 and August 31) and if one or more active nests are present within the construction zone. In this case, the following mitigation measures would apply.

MITIGATION MEASURES. Implementation of the following mitigation measure would reduce impacts to nesting raptors, loggerhead shrike or other migratory birds to a *less-than-significant level*. (LTS)

BR-4.1 *Pre-construction (i.e. no more than 30 days prior to construction) surveys for active nests shall be conducted within 250 feet of proposed construction activities. If active nests are found and the biologist determines that construction activities would adversely affect the nest or cause nest abandonment, then those activities should be avoided in these areas until the young have fledged, as determined by nest monitoring by a qualified biologist through the breeding season. Once the young have fledged, construction activities may resume in the vicinity and no further mitigation measures would be required.*

BR-5. The Proposed Project could result in the loss of hibernation or maternity roosts for special-status bats. (PS)

Special-status bats, including Townsend's western big-eared bat, the pallid bat, western mastiff bat and long-legged myotis could have hibernation or maternity roosts in cavities of large trees and/or in abandoned buildings on the project site. If removal of occupied trees or abandoned buildings should occur during the construction of the Proposed Project, individual bats and their roosting habitat would be lost. The loss of special-status bats and their roost sites would be in violation of the CDFG Code (Section 4700) and would be considered a ***potentially significant impact***.

MITIGATION MEASURES. Implementation of the following mitigation measures would reduce impacts to special-status bats to a *less-than-significant level*. (LTS)

BR-5.1 *Conduct surveys for special-status bats in the project site and implement avoidance/relocation plan if present.*

(a) *Prior to the removal of large trees or abandoned buildings, a qualified biologist shall survey the trees and abandoned buildings for presence of roosting bats. If special-status bat species are present, the following measures should be implemented.*

(b) *Tree removal should not occur if maternity bat roosts are present (between April 15 and August 1) in the trees to be removed.*

(c) *No tree removal should occur within 300 feet of the maternity roost until all young bats have fledged – as determined by a qualified biologist.*

(d) *If special-status bats are present, but there is not an active maternity roost, a Memorandum of Understanding (MOU) with the CDFG should be obtained in order to remove the animals prior to tree removal. Alternate habitat may need to be provided if bats are to be excluded from maternity roosts. A roost with comparable spatial and thermal characteristics should be constructed as directed by a qualified biologist. In the event that adult bats need to be handled and relocated, a qualified biologist shall prepare and implement a relocation plan subject to approval by CDFG that includes relocating all bats found on-site to an alternate suitable habitat. A Mitigation and Monitoring Plan that mitigates for loss of bat roosting habitat should be prepared by a qualified biologist and approved by CDFG prior to tree or building removal.*

BR-6. The Proposed Project could result in conflicts with the HMP. (LTS)

The entire project site is designated for "Development without Restrictions" in the HMP. Impacts on habitats and species present in the project site were anticipated and accommodated by the HMP. The biological resources found in the project site are not unique and are not considered essential to the long-term preservation of special status species at former Fort Ord. The Biological Opinion issued to the U.S. Army allows for development of the project site.

Conformance with the requirements of the HMP is a prerequisite for the transfer of land from the U.S. Army to the project applicant, which also obligates the project applicant to the mandates of the HMP through separate MOAs and/or deed restrictions. Therefore, the Proposed Project is in compliance with the HMP, and would result in a ***less-than-significant impact*** and no mitigation is warranted.

BR-7. The Proposed Project could result in an increase in ambient light in the adjacent Fort Ord Dunes State Park. (PS)

The Fort Ord Dunes State Park is adjacent to the project site to the west, but separated from it by State Highway 1. Construction of the Proposed Project would result in an increase in ambient nighttime light levels in the park from residential, commercial, office/industrial and traffic sources. While the effects of artificial lighting on wildlife are largely unexplored, it is known that such increases can result in general disruptions in daily (i.e. nocturnal) activity cycles, reductions in dispersal, foraging, and reproductive opportunities. Secondary effects may occur on prey species, offspring rearing, and habitat reductions. During periods of fog, light is also transmitted more readily and the ambient light cast during foggy periods will travel further from the source. As habitat continues to be fragmented by roads and other

developments, the effects of artificial lighting will be exacerbated. Increases in light levels from the Proposed Project's residential and office/industrial sources are expected to be relatively low, but increases from commercial sources located adjacent to Highway 1 and particularly from traffic accessing Highway 1 to and from commercial areas via Imjin Parkway would result in a steady stream of intense and focused vehicle headlights directed to the west and into the dunes. This increase in ambient light levels in the Fort Ord Dunes State Park would be considered a ***potentially significant impact***.

MITIGATION MEASURES. Implementation of the following mitigation measure would reduce impacts from increased nighttime ambient light levels to a *less-than-significant level*. (LTS)

BR-7.1 *Plant native vegetative screening along the western frontage of Highway 1 adjacent to the Imjin Parkway overpass to disrupt or diffuse light from vehicle headlights from reaching the park. Plant species used for the screening shall be native species if possible, or non-invasive ornamental species that are similar in appearance to native vegetation for the region. CalTrans and the California Department of Parks and Recreation shall be consulted on the planning of the landscape design.*

Cumulative Impact

This discussion addresses the contribution of the Proposed Project to cumulative impacts on regional biological resources in light of current and anticipated future development in the vicinity of the former Fort Ord and City of Marina.

With continued development of this region, more mobile species may be able to survive by moving to new areas, while less mobile species would be extirpated. However, with continued conversion of the natural environment in the region to human use, the availability and accessibility of remaining suitable habitats for wildlife and plants would continue to dwindle and remaining natural areas would not be able to support additional plant or animal populations of above their current carrying capacities through increased competition for resources, displacement, and development-induced introduction of non-native species.

The Installation-Wide HMP anticipated this cumulative effect (e.g. incremental habitat fragmentation) of development on former Fort Ord and provides for regional planning for sensitive biological resources and natural communities. Since the Proposed Project is consistent with, and accounted for in the Installation-wide HMP by occurring in an area designated for "development without restriction," its contribution to regional habitat fragmentation and loss of biodiversity would result in a ***less-than-significant cumulative impact*** and no further mitigation beyond that identified in the HMP is warranted.

3.4 CULTURAL RESOURCES

3.4 CULTURAL RESOURCES

Introduction

Information in this section was obtained from numerous documents including the *City of Marina General Plan*, the *Marina General Plan* EIR; the *Fort Ord Reuse Plan;* the *Archaeological Survey Report on the University Villages Specific Plan, 390 Acre Project Site, at Former Fort Ord* by Far Western Anthropological Research Group, Inc. (November 2004); and the *Historical Resources Inventory and Evaluation Report for the University Villages Specific Plan for Former Fort Ord* by JRP Historical Consulting (January 2005).

The JRP Historical Consulting report references previous documents related to Fort Ord including: Lois Roberts and Jack L. Zanhister, *Cultural Resources: Literature Search and Overview Fort Ord, California,* prepared for Department of the Army, Sacramento Corps of Engineers (1980); Michael Swernoff, *A Reconnaissance Cultural Resources Survey of Fort Ord, California,* prepared for Department of the Army, Sacramento Corps of Engineers (1982); Keith Landreth, et al., Tri-Services Cultural Resources Research Center, *Historical and Architectural Documentation Reports for Fort Ord, California,* prepared for Office of the Directorate of Environmental Programs (1993); and Tri-Services Cultural Resources Research Center, *Historical and Architectural Documentation Reports for Fort Ord, California (Draft)* (1992). Both the Far Western and JRP reports are available in their entirety in Appendix D of the separately bound University Villages Specific Plan Technical Appendices.

This section of the EIR provides an evaluation of the potential for historic and archeological resources to be impacted by the Proposed Project. No comments were received in response to the NOP pertaining to these resources. Impacts to unique paleontological resources or geologic features were determined to be less than significant in the Initial Study; therefore, paleontological resources and geologic features will not be further discussed in this section.

Setting

Ethnohistoric Background

Franciscan mission records indicate that the Rumsen, a subgroup of the Costanoan/Ohlone-speaking Indians, occupied the lower Carmel, Sur, and lower Salinas Rivers, including the Fort Ord area in southern Monterey Bay. Like many California Indians, the traditional Rumsen consisted of organized communities called tribelets. Each tribelet was further organized into permanent and semi-permanent villages, populated by 50 to 500 inhabitants at distances of about five kilometers from one another. Permanent villages were situated on high ground away from the ocean shore. The Costanoan/Ohlone people intensively collected wild plants, and hunted. Marine resources such as mussels and abalone were also used for food.

The coastal and coast range tribes were absorbed into Mission San Juan Bautista between 1797 and 1807 with different factions joining for various reasons including the desire for Spanish material culture, using the missions as a safe haven from traditional feuds, and that the traditional practices had lost their efficacy.

Archaeological Background

It is assumed that people were in the Monterey Bay area as early as the Paleoindian period (13,500-8500 BP). Fluted projectile point were the signature element of the earliest well-documented cultural assemblages in western North America.

The Millingstone period (8500-5000 BP) was originally identified along the southern California coast, where it is variously referred to as the Encinitas Tradition, La Jolla Complex, or Oak Grove culture. Sites dating to this period along the southern California coast usually contain relatively dense shell middens and artifact assemblages dominated by handstones, millingslabs, and a variety of cobble/core tools. Millingstone Period sites along the central coast of San Luis Obispo and Monterey Counties include eccentric crescents, long-stemmed projectile points, cobble/core tools, handstones, and millingslabs.

The Early Period (5000-2600 BP) in this region is marked by contracting-stemmed, square-stemmed, and side-notched projectile points; mortars and pestles; handstones and millingslabs; and thick rectangular and end-ground *Olivella* beads and square abalone beads. Use of estuary habitats continued from the Millingstone Period through the Early Period on the central California coast at such places as Morro Bay and Goleta Slough; known sites along the Elkhorn Slough estuary, five miles north of the project site appear to have been abandoned during the first part of the Early Period, between 5000 and 3000 BP.

Diagnostic elements of the Middle Period (2600-1250 BP) in the Monterey Bay area include *Olivella* saucer and saddle beads. At the Early/Middle Transition many of the subsistence-settlement trends set in motion prior to 2600 BP continued forward, including an increased use of mortars and pestles, a more intensified use of small schooling fish, and a decreased reliance on shellfish. Diagnostic artifacts of the central coast Middle/Late Transition include contracting-stemmed and small-stemmed projectile points; hopper mortars, bowl mortars and pestles; handstones and millingslabs; and *Olivella* split-punched beads and callus cups in the latter portion of the period. Throughout Monterey County, several coastal sites were abandoned after 10,000 BP, and new settlements were established on the interior. This shift is believed to have been caused by severe environmental degradation in the central coast region, resulting in reduced human population densities and undermining the entire socio-economic system.

Diagnostic artifacts of the Late Period include desert side-notched and cottonwood triangular projectile points; hopper mortars, bowl mortars and pestles; handstones and millingslabs; *Olivella* callus beads, with lipped beads after 500 BP; clam shell disk beads no earlier than 400 BP; and talc schist disk beads. Local populations were believed to have recovered to some degree from the aforementioned environmental degradation but maintained a terrestrial orientation with the Late Period coastal sites

probably representing specialized activities originating from the larger, more permanent interior residential areas.

Historic-Period Background

European contact with Native people began with the arrival of Spanish explorers in the sixteenth century. However, it was not until the Portola expedition in 1769 that a European settlement was established on Rumsen lands. Construction of the Mission and Royal Presidio at Monterey in 1770 had the greatest impact on the Costanoan/Ohlone-speaking Indians living in the project site. The local Native populace was compelled to relocate to the mission's vicinity and provide labor for a variety of agricultural enterprises. Between 1794 and 1836, the best lands were titled to the Spanish. Following the independence of Mexico from Spain in 1820 and the secularization of the mission, a great deal of land was opened up for development. The 1914 Monterey County Book of Deeds describes four former *ranchos,* Noche Buena, El Chamisad, Laguna Seca, and Saucito, all with lands that covered portions of former Fort Ord. After the acquisition of California by the United States in 1847, the land grants passed into American hands.

In 1917, the War Department acquired a 200-acre parcel from lands formerly designated part of the City of Monterey Tract No. 1 and built Camp Clayton. In the same year, an additional 15,609 acres were acquired and became known as the Gigling Field Artillery Target Range. Camp Gigling was located near the East Garrison at the intersection of present-day Reservation and Inter-Garrison Roads, approximately four miles east of the project site. In 1940, the U.S. Department of the Army (U.S. Army) began acquiring more land, including parcels that contain the project site, and in the summer of the same year the installation became a permanent army facility and was renamed Fort Ord. The fort consisted of more than 15,000 acres, but the portion of land west from present day Watkins Gate Road to Highway 1, including the project site, appears to have remained undeveloped through the 1930's, and was used for maneuvering practice.

Historical Resource Surveys of the Project Site

In September 2004, as part of the archaeological investigation for the University Villages Specific Plan, Far Western Anthropological Research Group conducted a records search of the project site at the Northwest Information Center of the California Historical Resources Information System.[1] That records search concluded that architectural surveys of former Fort Ord had been completed through 1993, when Fort Ord was realigned, and that 35 properties had been previously determined eligible for the National Register of Historic Places as a result of those studies. The earliest of those studies was a cultural resources survey conducted in 1980 by Lois Roberts and Jack Zanhister of Environmental Research Archaeologists. This was the first study to identify the potential historical significance of the East Garrison Area and Stilwell Hall. This study also suggested that Martinez Hall was historically significant.[2] A subsequent survey in 1982 by Michael Swernoff of Professional Analysts made the

[1] Darcangelo, Michael, and Laura Leach-Palm, *Archaeological Survey Report on the University Villages Specific Plan, 390 Acre Project site, at Former Fort Ord, Monterey, California*, November 2004 (draft).

[2] Lois Roberts and Jack L. Zanhister, *Cultural Resources: Literature Search and Overview Fort Ord, California*. Prepared for Department of the Army, Sacramento Corps of Engineers, 1980.

same recommendations.[3] A third inventory, evaluation and mitigation study of historic architectural resources at Fort Ord was completed in 1993 by the U.S. Army Construction Engineering Research Laboratory Tri-Services Cultural Resources Research Center under the requirements of the 1992 nationwide Base Realignment and Closure (BRAC) Programmatic Agreement. This study also found Stilwell Hall and the East Garrison Complex eligible for inclusion in the National Register, but concluded that modifications of Martinez Hall had become so extensive as to preclude its eligibility for listing on the National Register.[4]

The purpose of the 1993 Tri-Services Cultural Resources Research Center study was to identify buildings within the historic boundaries of Fort Ord that were built in 1945 or earlier and evaluate their potential for National Register eligibility. The buildings that the report concluded were eligible for listing in the National Register included 35 buildings and structures in the East Garrison area, and Stilwell Hall, the old Soldier's Club.[5] According to the *Fort Ord Reuse Plan EIR* (EDAW/EMC 1996), the U.S. Army and the California State Historic Preservation Officer (SHPO) concurred in this finding and concluded that "Stilwell Hall and 35 structures in the East Garrison area were the only former Fort Ord properties eligible for listing on the National Register of Historic Places."[6] None of these buildings are located within the project site: the East Garrison buildings are located approximately two miles east of the project site, and Stilwell Hall was demolished in 2002 because it sat precariously on a beach-side cliff and its foundation was steadily eroding. It was formerly located west of the Main Garrison on the opposite side of Highway 1.

Also covered by the 1993 survey were hundreds of buildings classified as "temporary" and "semi-permanent" standardized army buildings that were built on Fort Ord as part of the World War II mobilization effort. A handful of permanent World War II era buildings were also present on the post. The "temporary" and "semi-permanent" status of the buildings were determined through an examination of real property records then held on Fort Ord, combined with on-site inspection of the buildings. This work revealed that all of the semi-permanent buildings, except one (Building 3215, a concrete block radio building), were actually temporary buildings that had been reclassified because of modifications and improvements made to the buildings in the 1980s.[7] The report concluded that all of the World War II temporary buildings (including the reclassified semi-permanent buildings) required no further consideration under Section 106 of the National Historic Preservation Act (NHPA) because they were covered under the Programmatic Memorandum of Agreement (PMOA) between the

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3 Michael Swernoff, *A Reconnaissance Cultural Resources Survey of Fort Ord, California*. Prepared for Department of the Army, Sacramento Corps of Engineers, 1982.

4 Keith Landreth, et al., Tri-Services Cultural Resources Research Center, *Historical and Architectural Documentation Reports for Fort Ord, California*. Prepared for Office of the Directorate of Environmental Programs, 1993.

5 Tri-Services Cultural Resources Research Center, *Historical and Architectural Documentation Reports for Fort Ord, California (Draft)*, November 1992.

6 EMC Planning Group, Inc., *Fort Ord Reuse Plan Environmental Impact Report, SCH No. 96013022, Certified June 13, 1977*. Prepared for the Fort Ord Reuse Authority (republished November 2001), 4-194.

7 The one true semi-permanent building (Building 3215) is located outside the project site.

Department of Defense (DoD), the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers.[8]

While the World War II temporary buildings on Fort Ord were treated as not eligible and categorically excluded from further review under the PMOA, the permanent World War II era buildings that were surveyed in 1992-93 were evaluated following standard Section 106 procedures by applying the National Register of Historic Places significance and integrity criteria. According to the U.S. Army's FEIS for base realignment and closure, SHPO and the U.S. Army agreed that none of the permanent World War II era structures at Fort Ord were eligible for listing under National Register criteria.[9]

In January 2005, JRP Historical Consulting surveyed and evaluated the historic period buildings on the former Fort Ord that had become 50 years old since the last comprehensive survey was completed in 1993. The purpose of the survey was to evaluate these buildings, which were not included in previous surveys, for California Register of Historical Resources eligibility, thus satisfying the CEQA requirements for the Proposed Project as they pertain to historical resources. The California Register was instituted in 1993, at about the same time that the previously discussed architectural survey of Fort Ord was underway, and was consciously designed on the model of the National Register. The registration requirements are therefore very similar, although there are some subtle differences, mostly in the terminology.[10] Like the National Register, the California Register requires that an eligible resource possess both significance and integrity. The significance requirements, Criteria 1 through 4, closely parallel National Register Criteria A through D (the California Register criteria are discussed further in Section 5 of the JRP report), as do the aspects of integrity.

The survey population developed for the Proposed Project consists of all buildings within the boundaries of the project site constructed after 1945 through 1960. The State Historic Preservation Office sets the standard guideline for review of potential California Register eligible buildings as properties that are 50 years of age or older; however, this age limit has been extended to include resources constructed in 1960 or before to account for lead-time between preparation of environmental

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8 Programmatic Memorandum of Agreement among the United States Department of Defense(DoD), the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers, July 7, 1986. The nationwide PMOA was executed in 1986 in response to the Military Construction Authorization Bill of 1983, which called for the demolition of all World War II era temporary buildings throughout the nation. The PMOA acknowledged that in certain circumstances World War II era temporary buildings may be eligible for the National Register, but allowed for their removal or demolition without further Section 106 review, provided that DoD first complete appropriate Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) documentation regarding the property type, complete a thematic study, and preserve a number of representative temporary buildings at selected installations throughout the nation. The DoD complied with the stipulations of the PMOA, thus satisfying the Section 106 requirements for World War II temporary buildings. No buildings at Fort Ord were earmarked for preservation under the nationwide thematic study.

9 EMC Planning Group, Inc., *Fort Ord Reuse Plan Environmental Impact Report, SCH No. 96013022, Certified June 13, 1977.* Prepared for the Fort Ord Reuse Authority (republished November 2001), 4-194. Among the permanent World War II buildings within the project site are: Building 2425 (an observation facility); Building 2237 (swimming pool building), Building 2236 (swimming pool heater building), and Buildings 2420 and 2424 (warehouses).

10 California Office of Historic Preservation, *Technical Assistance Series #6, California Register and National Register: A Comparison*, n.d.

documentation and actual project construction, which is expected to conclude in 2010. Properties built after 1960 are not included in the survey population and are treated in accordance with general cultural resources practices and are exempt from study.

JRP identified seven buildings constructed during this period: Buildings 1041, 1043, 1063, 1064, 1065, 1895, and 2048 (identified in more detail in the attached Appendix D). The construction dates for these buildings were gleaned from two databases, one maintained by FORA engineer's office, and one maintained on a website dedicated to the history of Fort Ord.[11] A review of historic plans showing the buildings and layout of the installation from various periods in its history corroborated the construction dates included in the database.[12] On January 6, 2005, JRP Historical Consulting conducted a reconnaissance survey of the project site in an attempt to identify any additional buildings that appeared to have been built between 1946 and 1960. None were identified. Also on this date, the field crew recorded the seven buildings that comprise the survey population, noting their architectural characteristics and photographing them. The results of this survey are included in the five DPR 523 forms attached to this report in Appendix D and none of these buildings were determined to have historical significance.

Information regarding construction and usage history of Cold War Era buildings on the former Fort Ord is scarce. Several agencies were contacted or visited over the course of this study in an attempt to locate real property records, construction plans, historic photographs, and other documentary evidence, but this effort was met with limited success. The archives of the Defense Language Institute Foreign Language Center, located on the Presidio of Monterey, was the most likely repository for such records and the first visited during the course of this study. Although the archives were rich with records from Fort Ord's World War II period, very little documentation from the installation's Cold War period is on file there. The investigation turned up useful Cold War installation maps as well as a few newspaper clippings and historical typescripts, but very little else. Contacts with the U.S. Army Corps of Engineers (Corps), Sacramento District, the Base Realignment and Closures (BRAC) office on Fort Ord, the Fort Ord Historic Preservation Office, and the Fort Ord Reuse Authority (FORA) engineer's office similarly yielded little information. JRP conducted additional background research of Fort Ord's history at the California Room of the Monterey County Public Library, Monterey, and reviewed previous cultural resources studies regarding Fort Ord collected for the project.

Historical Survey Findings and Conclusions. There are no properties within the University Village project site that are currently listed in or determined eligible for listing in the National Register of Historic Places, nor did any of the Cold War-era buildings surveyed for this report (those built between 1946 and 1960) appear to be historical resources for the purposes of CEQA.

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[11] Telephone interview with Stan Cook, Fort Ord Reuse Authority Real Property and Facilities Manager, January 11, 2005; *Fort Ord Building List*, maintained at www.fortord.org. According to Caroline Cantillas, archivist of the Defense Language Institute Library (Presidio of Monterey), this list was compiled through the research efforts of California State University of Monterey Bay student Emily Garnero. The information in these two databases, insofar as they pertain the buildings in this project's survey population, is consistent.

[12] Post Engineer Office, Fort Ord, *Fire Hydrants & Fire Telephones, Main Garrison* (map), July 3, 1944; USGS 7.5-minute topographic quadrangle, *Marina, California*, 1947; Corps of Engineers, U.S. Army, *Main Garrison Layout*, September 4, 1951, corrected to August 1959.

As discussed previously, buildings built prior to and during Fort Ord's World War II period were inventoried and evaluated in the 1993 study, *Historical and Architectural Documentation Reports for Fort Ord, California*. This report concluded that only 35 buildings in the East Cantonment Complex and Stilwell Hall appeared eligible for listing in the National Register. The U.S. Army and SHPO concurred. Stilwell Hall has since been demolished. None of the buildings within the East Cantonment Complex are within the boundaries of the University Village Specific Plan project site. All of the other pre-1946 buildings within the project site were determined not eligible for listing in the National Register, either because they lacked historic significance, integrity, or both, or because they were among the hundreds of Fort Ord's World War II temporary buildings covered by the 1986 PMOA.

JRP used the criteria of the California Register to evaluate the historical significance of the historic period Cold War-era buildings located within the project site. The criteria for listing properties in the California Register are in Section 15064.5(a)(2)-(4) of the CEQA Guidelines, which are from Section 5024.1 of the California Public Resources Code. The California Register is in the California Code of Regulations Title 14, Chapter 11.5. The historic significance of a building is judged by applying the following criteria. Each resource must be determined to be *significant* at the local, State, or national level under one of four criteria (paraphrased below) in order to be determined eligible:

Criterion 1: Resources associated with important events that have made a significant contribution to the broad patterns of our history.

Criterion 2: Resources that are associated with the lives of persons important to our past.

Criterion 3: Resources that embody the distinctive characteristics of a type, period, or method of construction, or represents the work of a master.

Criterion 4: Resources that have yielded, or may be likely to yield, information important in prehistory or history.

A property must have both significance and integrity to be considered eligible. Loss of integrity, if sufficiently great, will overwhelm historical significance a property may possess and render it ineligible.

Under the California Register, integrity is defined as "the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance." The California Register further states that eligible resources must "retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance." It lists the seven aspects of integrity: location, design, setting, workmanship, materials, feeling, and association. These seven can be roughly grouped into three types of integrity considerations. Location and setting relate to the relationship between the property and its environment. Design, materials, and workmanship, as they apply to historic buildings, relate to construction methods and architectural details. Feeling and association are the least objective of the

seven criteria, pertaining to the overall ability of the property to convey a sense of the historical time and place in which it was constructed.[13]

None of the Cold War-era buildings evaluated during the current study (Buildings 1041, 1043, 1063, 1064, 1065, 1895, and 2048) appear to meet the criteria for listing in the California Register because they lack historic and architectural significance. Furthermore, most have suffered substantial modifications. All seven of the survey population buildings were built during the 1950s and served a variety of support roles ranging from electronics maintenance (Building 2048) to miscellaneous administration (Buildings 1041 and 1043) to a taxi shelter (Building 1895). Buildings 1041, 1063, 1064, and 1065 were built during the Korean Conflict (1950-1953), while others were built later in the decade following the end of hostilities.

All of the buildings in the study population for this historic building survey are examples of infill development: they were added incrementally, on an as-needed basis, to an area of Fort Ord that was substantially developed and in many ways completed during the mobilization period leading up to the United States' entry into World War II. The buildings all exist in an area formerly known as the Main Garrison, which was largely constructed in 1940 and 1941, but continued to expand throughout the duration of the war. It is these wartime temporary buildings, which still number in the hundreds, that dominate the project site. These buildings consist primarily of Series 700 and 800 barracks, standard design housing units built by the thousands on military bases throughout the nation during the war. On Fort Ord, the barracks are arranged in orderly blocks, with as many as 60 barracks in a block. Other World War II buildings such as mess halls, most of which are also of temporary construction, also populate the Main Garrison area. The barracks blocks are separated by wide, open parade grounds that were used for troop assembly and inspection. Although most of the buildings in the barracks area individually are in a general state of decay and some of the World War II buildings have been removed, the Main Garrison area still reflects the orderly layout of a World War II-era troop cantonment area. It is on the margins of this orderly barracks or cantonment environment in which the survey population buildings are situated. Six of the seven are located at the northern and southern margins of the World War II quartermaster's sector of the cantonment. The seventh building, the taxi cab stand, is located on the eastern edge of the main barracks area along a main road running north-south through the base.

The seven Cold War-era buildings that are the subject of this survey are not distinctive architecturally, nor do they share any strong associations with important military themes. Architecturally, all are simple, utilitarian buildings that – with the exception of Building 2048 – are difficult to differentiate from their World War II era counterparts. They all have simple, rectangular plans and employ wood frame construction with a variety of rustic siding (most commonly shiplap or channel groove). Additionally, as a group they have been substantially altered, usually through the addition of non-historic siding (plywood, wood shingles) and the replacement of windows and doors. Building 2048, a concrete building, is also undistinguished as it embodies design characteristics common to Cold War-

[13] California Public Resources Code, Sections 4850 through 4858; California Office of Historic Preservation, *Instructions for Nominating Historical Resources to the California Register of Historical Resources*, August 1997.

era shops buildings. Additionally, none of the buildings appear to be significantly associated with important military themes or events, or in the history of Fort Ord. On the contrary, all of the buildings played minor or secondary support roles to the installation's ongoing primary mission, infantry training. Finally, there is no evidence that any of the buildings are associated with persons important to our past, nor have they yielded, or will be likely to yield, information important in history or prehistory.

For these reasons, in accordance with Section 15064.5 of the CEQA guidelines, Buildings 1041, 1043, 1063, 1064, 1065, 1895, and 2048 are not considered historical resources for the purposes of CEQA. Therefore, historic resources will not be further evaluated in this EIR.

Archaeological Survey of the Project Site

A prefield records search was conducted by Far Western Anthropological Research Group, Inc. on September 7, 2004 at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) housed at Sonoma State University, Rohnert Park, California. The records search included a review of cultural resource records and reports for sites and surveys within a one-half mile radius of the project site. Sources consulted include the USGS 7.5-minute Marina quadrangle base map showing previously recorded sites, isolates, and survey areas; site records; report files; and the *Directory of Properties* in the *Historical Property Data Files*, which includes the *National Register of Historic Places, California Register of Historical Resources, California Points of Historical Interest,* and *California Historical Landmarks*. The records search identified 11 previous archaeological studies conducted within one-half mile of the project site boundaries. Only two of these previous studies include an archaeological survey within the project site. In a sample survey of Fort Ord (Wait 1995), four small survey tracts were found partially within the project site, along the eastern and western boundaries. More recently, there was the archeological survey for the new Imjin Parkway, which is almost entirely within the project site. No archaeological resources were identified in either of these studies (Far Western Anthropological Research 2004). The other nine studies have been conducted along the western edge of the project site within or adjacent to the Highway 1 right-of-way (Ibid.). No archaeological resources were identified as part of these studies, and none are recorded within one-half mile of project site boundaries.

The Native American Heritage Commission was notified of the Proposed Project in a letter sent to Debbie Pilas-Treadway, dated August 30, 2004. In a September 9, 2004 reply, the Commission noted that no Native American sacred sites were known to be located in the immediate area. A list of Native American contacts that might have knowledge of local cultural resources was provided by the Commission. These individuals/organizations were notified of the project by letter, dated September 24, 2004 and asked to express any concern they might have regarding Native American cultural sites within the project site; only one response was received. Mr. Edward Ketchum, Tribal Historian of the Anah Mutsun Band of Ohlone/Costanoan Indians, indicated that he was not concerned about the project due to the extent of previous disturbance in the area. However, Mr. Ketchum suggested a professional archaeologist "examine the soils to assess if the site was once occupied or used by the tribal people" (Ibid.).

Archaeological Survey Findings and Conclusions. The project site was surveyed September 9, 2004 by Far Western Anthropological Research Group, Inc. The results of this survey indicates that due to the project site being situated within stabilized dune fields dating from the late Pleistocene and Holocene, and although there is some potential for buried archaeological sites to be located in these dunes, all previous investigators have identified this area as low sensitivity for archaeological sites (Ibid.). This conclusion is based on a lack of freshwater in the dune fields, and a general absence of important subsistence resources that would have attracted sustained human occupation. Similarly, the dune fields are not close enough to the coastal strand or the Salinas River to have contained prehistoric settlements associated with the use of these more environmentally productive zones (the study area was even farther removed from these features earlier in time). While there is a high likelihood that buried land surfaces (i.e., buried soils) exist within the stabilized Holocene dunes, there is no compelling reason to believe that the current project site would have been any more attractive for human use in the distant past (when these buried soils were exposed at the surface) than it was in the near past. As a result, the study area has a low potential for both surface and buried archaeological resources, and so no additional archaeological work is recommended (Ibid.).

If, however, archaeological deposits or human remains are accidentally discovered during building demolition or as part of construction for the Proposed Project, work in the immediate vicinity of the finds should be halted and a qualified archaeologist contacted to evaluate the finds. Archaeological deposits may include areas of darkened soil containing shell, bone, and/or stone tools and tool making debris, but may also include more subtle evidence, including discrete areas of shell and rock concentrations. If such deposits are encountered, archaeological test excavations should be conducted to determine the nature and integrity of the finds and to evaluate the importance of the deposit, as per the requirements of CEQA. This response to a "find" is included as a mitigation below.

Regulatory Setting

Federal, State and local governments have developed laws and regulations designed to protect significant cultural resources that may be affected by actions that they undertake or regulate. The NHPA and the California Environmental Quality Act (CEQA) are the basic federal and state laws governing preservation of historic and archaeological resources of national, regional, State and/or local significance. The following discussion summarizes federal, State and local regulatory authorities pertaining to cultural resources.

Federal

Federal regulations for cultural resources are primarily governed by Section 106 of the NHPA of 1966. The goal of the Section 106 review process is to offer a measure of protection to sites, which are determined eligible for listing on the NRHP. The criteria for determining National Register eligibility are found in 36 CFR Part 60. Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and affords the Federal Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The Council's implementing regulations, "Protection of Historic Properties," are found in 36 Code of Federal

Regulations (CFR) Part 800. The National Register of Historic Places criteria (contained in 36 CFR 60.4) are used to evaluate resources when complying with NHPA Section 106. Those criteria state that eligible resources comprise:

> …[D]istricts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that (a) 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 past; or (c) that embody the distinctive characteristics of a type, period, or method of construction, or that possess high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction; or (d) that have yielded or may be likely to yield, information important to history or prehistory.

Archaeological site evaluation assesses the potential of each site to meet one or more of the criteria for NRHP eligibility based upon visual surface and subsurface evidence (if available) at each site location, information gathered during the literature and record searches, and the researcher's knowledge of and familiarity with the historic or prehistoric context associated with each site.

The NRHP was established to recognize resources associated with the country's history and heritage. Guidelines for nomination are based on significance in American history, architecture, archaeology, engineering, and culture that also possess integrity of location, design, setting, materials, workmanship, feeling, and association.

The American Indian Religious Freedom Act, Title 42 United States Code, Section 1996, protects Native American religious practices, ethnic heritage sites, and land uses.

State

State historic preservation regulations affecting the Proposed Project include the statutes and guidelines contained in the CEQA (Public Resources Code Sections 21083.2 and 21084.1 and Section 15064.5 of the CEQA guidelines. CEQA requires lead agencies to carefully consider the potential effects of a project on historical resources. An "historical resource" includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript, which is historically or archaeologically significant (Public Resources Code Section 5020.1). Section 15064.5 of the CEQA Guidelines specifies criteria for evaluating the importance of cultural resources, including:

- The resource is associated with events that have made a contribution to the broad patterns of California history;
- The resource is associated with the lives of important persons from our past;
- The resource embodies the distinctive characteristics of a type, period, region or method construction, or represents the work of an important individual or possesses high artistic values; or,

- The resource has yielded, or may be likely to yield, important information in prehistory or history.

Advice on procedures to identify such resources, evaluate their importance and estimate potential effects is given in several agency publications such as the series produced by the Governor's Office of Planning and Research (OPR). The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities, including but not limited to, museums, historical commissions, associations and societies, be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains and associated grave goods regardless of their antiquity and provides for the sensitive treatment and disposition of those remains.

Section 7050.5(b) of the California Health and Safety code specifies protocol when human remains are discovered. The code states:

> In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.

Local

Marina General Plan. The *City of Marina General Plan* is divided into four sections. The Community Design & Development section function to guide the decisions that will shape the City's future physical and spatial form and appearance at several levels. The following Marina General Plan Scenic and Cultural Resources policy is from the Community Design & Development section and applies to the Proposed Project:

> **Policy 4.128:** The following scenic and cultural resources are deemed to be particularly valuable, and the following policy should be pursued.
>
> 2. The historical significance of former Fort Ord should be reflected in new development and/or reuse of at least a small portion of the West University Village area near the 8th Street overcrossing and at the Fort Ord State Park entrance.

Marina General Plan Policy 4.128.2. The EIR for the *Fort Ord Reuse Plan* (EDAW/EMC 1996) discussed the preservation and reuse of Stilwell Hall within the Fort Ord Dunes State Park, although the EIR acknowledged that beachfront erosion might make the reuse difficult. As noted above, Stilwell Hall was the sole building outside the East Garrison area which was determined to be eligible by the

U.S. Army and SHPO for listing on the National Register of Historic Places. According to the *Fort Ord Disposal and Reuse Final EIS* (Corps 1993), the barrack buildings were examined as part of a nationwide study and were found to be the standard types of temporary buildings which were erected at numerous installations across the U.S. The EIS concluded that no additional recordation studies were recommended for the structures.

The Conservation Element of the *Fort Ord Reuse Plan* envisioned a connection between the reuse of Stilwell Hall and the area that had served as the former barracks area on the east side of Highway. In this way, visitors to Stilwell Hall could connect the former barracks area with former soldiers club, which was then located just across the Highway 1 overpass from the barracks. While the barrack buildings themselves were not considered historic resources, this historical connection between the two areas would help visitors to appreciate the historical context of Stilwell Hall and the entire the base. Toward this end, Program B-1.4 of the Conservation Element of the *Fort Ord Reuse Plan* stated that "[t]he City of Marina should attempt to establish a historic barracks district near the 8th Street overcrossing and the State Park Entrance. This small area could represent the historic character of former Fort Ord, be utilized for museums and non-profit organizations and assist in establishing an activity center in the Town Center Planning Area." In describing the Town Center Planning Area, Volume I of the *Fort Ord Reuse Plan*, Section 3.8.3 referenced the 8th Street corridor as on opportunity to create a Visitor/Cultural Center as a gateway to the Ford Ord Dunes State Park, and noted that the center could incorporate recreational facilities. The *Fort Ord Reuse Plan* noted that if feasible, this cultural center could feature a complex of existing buildings to recall the historical role of the former military base. However, such reuse was not mandated as part of the adopted program.

When the City of Marina was updating its General Plan in 2000 to implement the *Fort Ord Reuse Plan*, the potential for the preservation and use of Stilwell Hall had become less certain. The General Plan EIR acknowledged that it was still the City's hope that once Stilwell Hall was transferred to the California Department of Parks and Recreation, the structure would be reused in some capacity. However, due to further beachfront erosion, the EIR for General Plan Update acknowledged that long-term preservation may not be viable. In order to implement Program B-1.4 of the *Fort Ord Reuse Plan*, the City adopted General Plan Policy 4.128.2, which states: "The historical significance of former Fort Ord should be reflected in new development and/or reuse of at least a small portion of the West University Village area near the 8th Street overcrossing and at the Fort Ord State Park entrance." In 2001, in accordance with Government Code Section 67675.3, FORA determined that this policy and the other policies adopted in the *City of Marina General Plan* were consistent with the *Fort Ord Reuse Plan*, and certified the City's General Plan.

As stated above, the *Fort Ord Reuse Plan EIS* noted that the U.S. Army has developed an agreement (PMOA) with the Advisory Council on Historic Preservation and the California SHPO to dispose of the historic Fort Ord property in accordance with the National Historic Preservation Act.[14]

[14] EDAW, Inc. and EMC Planning Group, Inc., *Public Draft Fort Ord Reuse Plan, Volume 2: Reuse Plan Elements*, May 1996, Page 4-215.

After the adoption of the City's General Plan update, the U.S. Army determined that Stilwell Hall could not be reused. Pursuant to the NEPA process, the State Office of Historic Preservation determined that Stilwell Hall needed to be deconstructed due to beachfront erosion. Historic American Buildings Survey's (HABS) documentation was completed prior to demolition. Stilwell Hall was torn down and partially deconstructed and is no longer in existence and therefore connection between Stilwell Hall and the former barracks area is no longer possible. Moreover, as discussed below, the actual reuse of any of the barrack buildings is not feasible. However, the Specific Plan contains elements which are designed to reflect the historical importance of the former Fort Ord.

Impacts Assessment and Mitigation Measures

Significance Criteria

For the purposes of this EIR, an impact would be considered significant if the Proposed Project would:

- Cause a substantial adverse change in the significance of an archaeological resources pursuant to Section 15064.5 or the CEQA Guidelines;
- Disturb any human remains, including those interred outside of formal cemeteries; or
- Conflict with Marina General Plan Policy 4.128 subsection 2.

Methodology for Analysis

As previously discussed, a pre-field records search was conducted by Far Western Anthropological Research Group, Inc. at the NWIC to identify known archaeological sites within a one-half mile radius of the project site. In addition, the Native American Heritage Commission was notified of the Proposed Project to ascertain if there was any concern regarding Native American cultural sites within the project site.

The project site was surveyed September 9, 2004 by Far Western Anthropological Research Group, Inc. More than three-quarters of the project site is developed, with large expanses of pavement, landscaped areas, and hundreds of buildings obscuring ground visibility. As a result, pedestrian survey focused on all undeveloped open spaces and small discontinuous areas where original soils were present, including vacant lots, planted areas, and between buildings. Large open areas were surveyed in transects spaced 20 meters apart, whereas smaller areas were examined at tighter transect intervals. The Marina Coast Water District corporation yard on the eastern most edge of the project site was not surveyed because it is surrounded by a chain link fence and is locked. This yard would not be changed as a result of the Proposed Project. Due to the extent of previous development, only about 70 acres, 18 percent of the 390-acre site, were surveyed. Most of this was open, grass-covered lands in the north-central and northeastern portions of the project site.

Baseline Conditions

As it pertains to archaeological resources, this section is prepared using the 2004 baseline, which is the same condition which existed in 1991. With regard to archaeological resources, the project site has remained undisturbed except for the recent construction of Imjin Parkway and Second Avenue and resources in that location, if any, would still be in place.

In the context of the historical resources within the project site, the baseline condition for purposes of this EIR is established as 2004. However, information relating the determinations of historical significance that were previously made is also referenced, and the changes which have occurred since 1991 (e.g., deconstruction of Stilwell Hall, demolition of some buildings) are discussed.

Environmental Analysis

CR-1. The Proposed Project could cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5 of the CEQA Guidelines. (LTS)

Archaeological surveys conducted for the *Fort Ord Reuse Plan* as well as the Proposed Project indicate that human occupation of the area reaches back to the Millingstone Period (8500-5000 BP). No prehistoric or historic-period archaeological material was identified during the most recent survey. It is apparent that the whole project site has been significantly disturbed from military use, and previous development has severely limited the amount of soil available for examination.[15]

However, there is still the possibility that previously unidentified subsurface archaeological resources could be present on the project site and could be discovered during the various earth working and excavation activities necessary to construct the Proposed Project. Policies and programs established in the *Fort Ord Reuse Plan* were designed to identify, protect, and preserve the cultural resources at the former Fort Ord. Therefore, the Proposed Project would result in a ***less-than-significant impact.***

MITIGATION MEASURES. In the event that previously unidentified buried archaeological resources are discovered during construction, implementation of the following mitigation measures would ensure that this impact would remain *less than significant*. (LTS)

CR-1.1 (a) In the event that any prehistoric subsurface archaeological features or deposits, including locally darkened soil ("midden"), that could conceal cultural deposits, animal bone, obsidian and/or mortar are discovered during construction-related earth-moving activities, all work within 50 meters of the resources shall be halted and the City shall consult with a qualified archaeologist to assess the significance of the find. Archaeological test

[15] Far Western Anthropological Research Group, Inc., *Draft Archaeological Survey Report on the University Villages Specific Plan, 390 Acre Project site, at Former Fort Ord, Monterey County, California*, November 2004, page 13.

excavations shall be conducted by a qualified archaeologist to aid in determining the nature and integrity of the find. If the find is determined to be significant by the qualified archaeologist, then representatives of the City and the qualified archaeologist shall meet to determine the appropriate course of action. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report shall be prepared by the qualified archaeologist according to current professional standards.

(b) If a Native American site is discovered, then the evaluation process shall include consultation with the appropriate Native American(s).

When Native American archaeological, ethnographic, or spiritual resources are involved, all identification and treatment shall be conducted by qualified archaeologists who are either certified by the Register of Professional Archaeologists (RPA) or meet the federal standards as stated in the Code of Federal Regulations (36 C.F.R. 61), and Native American representatives who are approved by the local Native American community as scholars of the cultural traditions.

In the event that no such Native American is available, persons who represent tribal governments and/or organizations in the locale in which resources could be affected shall be consulted.

(c) A qualified archaeologist shall be present at the preconstruction meeting to educate all construction workers for the Proposed Project on the identification of subsurface cultural resources. The preconstruction meeting shall be completed prior to the commencement of any earth work or other construction activities and verification of compliance shall be provided to the City. Each contractor and all employees involved with earth moving activities to include, but not limited to grading, scraping, drilling, and trenching, shall be required to participate in this preconstruction meeting. If subsequent contractors are hired who did not participate in this preconstruction meeting they shall be required by the City to meet independently with the qualified archaeological consultant to review and discuss potential archaeological resources these materials so as to meet the spirit and the intent of this mitigation measure. They too shall provide verification to the City.

CR-2. The Proposed Project could have the potential to disturb undiscovered human remains. (PS)

While no prehistoric archaeological material has been previously identified, there is a remote possibility human remains could be uncovered during grading, excavation, and other earth-moving activities. If encountered, such resources could be damaged or destroyed. This would be considered a ***potentially significant impact***.

MITIGATION MEASURES. Adherence to Section 7050.5(b) of the California Health and Safety Code would protect any previously unidentified buried human remains.

Implementation of mitigation measure CR-2.1 (a) and (b) requires that any prehistoric subsurface archaeological material that is discovered be evaluated by the appropriate individual/group and handled appropriately as described below and would reduce this impact to a *less-than-significant level*. (LTS)

CR-2.1 *(a) If human bone or bone of unknown origin is found during construction, all work shall stop in the vicinity of the find and the County Coroner shall be contacted immediately. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission who shall notify the person it believes to be the most likely descendent. The most likely descendent shall work with the contractor to develop a program for reinterment of the human remains and any associated artifacts. No additional work is to take place within the immediate vicinity of the find until the identified appropriate actions have been carried out.*

(b) Implement Mitigation Measure CR-1.1 (b).

CR-3. The Proposed Project incorporates site planning and design features that reflect the historical significance of the former Fort Ord, consistent with City of Marina General Plan *Policy 4.128 subsection 2.* (LTS)

City of Marina General Plan Policy 4.128.2 calls for the historical significance of former Fort Ord: (1) a small portion of the West University Village area; and (2) the Fort Ord State Park entrance, which is outside the Specific Plan area and outside of the City. The General Plan provides flexibility as to how the policy is to be implemented. It can be accomplished by: (1) incorporating the area's historical significance into the features and design of a portion of the new development; (2) reusing one or more of the existing structures; or (3) through a combination of these two approaches.

Reuse of any of the residential barrack buildings is not anticipated. The buildings were constructed in 1940 and 1941, and consist of two types of buildings: Type 1a – 2-Story Enlisted Barracks, and Type 1b – 2 Story officer Barracks. These are among the 573 buildings that have been characterized as "Special Waste Buildings"[16] subject to special procedures for demolition. These structures are identified as containing asbestos is likely to be present in pipe insulation, floor tiles, joint compounds, wallboards and roofs. In addition, lead based paints on the barracks buildings are considered toxic. These buildings have been identified to have lead-based paint on the siding, windows, trip, rafters, doors, and roof sheathing. In addition, many of the buildings have deteriorated and do not meet civilian building codes. The buildings were

[16] FORA, Specifications for Building Removal Contractors, General Description of: Removal Scenario, Waste Separation and Specifications for Project Work Plan for Removal of WWII Era Buildings on the Former Fort Ord.

constructed were constructed as temporary buildings without conformity to California building, seismic, plumbing, electrical, and health and safety codes. They are wood frame construction with either post and pier foundations or no foundations. They were constructed with lower quality roofing, siding, and floor materials as compared to U.S. Army's permanent structures. Inasmuch as the U.S. Army was exempt for local land use regulation, the Main Garrison area was never subdivided into individual parcels. As a result, buildings are located without proper regards to required City setbacks, parking requirements, and other matters regulated by zoning and land use regulation.

Due to years of non-use and the U.S. Army's lack of adequate maintenance, the buildings have further deteriorated. The *City of Marina Redevelopment Plan* identified all buildings within the Main Garrison, including the barracks, as blighted due to their age, sub standard condition, lack of preventive maintenance, vandalism, functional obsolescence, asbestos and lead based paint contamination.

For these reasons, none of the barracks buildings are proposed for reuse.

The Specific Plan implements General Plan Policy 4.128.2 with a combination of the two approaches.

Further, the historic street pattern and general geometry of development is largely retained. The 1st Avenue alignment, the 8th Street overcrossing, and the general gridded character of this area would be preserved. These locations provide the public with an opportunity to interact with these features.

Additionally, as the space between buildings can be a resource as important as the buildings themselves, the existing east-west open space corridor between 5th and 6th Streets would be retained and enhanced as a linear park within the new community.

The Specific Plan also contemplates the retention and reuse of several buildings. The adaptive reuse of these buildings would meet the intent of preserving buildings that are representative of the history of former Fort Ord. None of the barracks buildings are proposed for reuse, but two existing chapel buildings would be converted to community gathering buildings and be located in parks. A brick and hollow clay tile structure in the village center would be adaptively reused to commercial/retail uses. In addition, a portion of a linear warehouse located within the cultural/arts district is targeted to be adaptively reused as artist studios.

In addition to the reuse of the buildings listed above, commemorative interpretive materials such as plaques, monuments or pieces of public art would be located at strategic places to inform and remind visitors of the history of the Former Fort Ord. These locations would be clustered around the former barracks area in recognition of its former role in the base.

The Proposed Project would therefore meet the intent of General Plan policy 4.128 subsection 2, resulting in a ***less-than-significant impact***.

Cumulative Impact

The cumulative analysis for impacts to cultural resources involves a discussion of current and future development projects within the vicinity of the Proposed Project that may add additional impacts when combined with the impacts associated upon buildout. The cumulative context for the cultural resources analysis for the Proposed Project includes buildout of the former Fort Ord and the City of Marina.

CR-4. The Proposed Project, in combination with surrounding development, has the potential to eliminate important examples of major periods of California prehistory, which may be significant pursuant to Section 15064.5 (a)(1) of the CEQA Guidelines. (LTS)

Based upon previous archaeological resource surveys and research, communities in the vicinity of Marina and throughout California have been inhabited by prehistoric peoples for thousands of years. The Proposed Project, in addition to other development within the City of Marina and the Monterey Peninsula could contribute to the loss of significant cultural resources.

Because all significant cultural resources are unique and non-renewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. The loss of any one archaeological site affects all others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The boundaries of an archaeologically important site could extend beyond the property boundaries. As a result, a meaningful approach to preserving and managing cultural resources must focus on the likely distribution of cultural resources, rather than on project or parcel boundaries. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains.

However, proper planning and appropriate mitigation can help to capture and preserve knowledge of such resources and can provide opportunities for increasing our understanding of the past environmental conditions and cultures by recording data about discovered sites and preserving artifacts found. Mitigation measures and recommendations have been provided, as discussed above, with the goal of minimizing the Proposed Project's potential impact on archaeological resources as a whole. Previous studies have not identified any prehistoric archaeological material on-site, and the likelihood of discovering any such resources is low. Federal, State and local laws are also in place, as discussed above, that protect these resources as well as policies and mitigation measures from the regulating documents discussed in the above Regulatory Setting. Therefore, potential impacts on unique archaeological resources on the project site would not be cumulatively considerable, and a ***less-than-significant impact*** would result.

3.5 HAZARDOUS MATERIALS AND PUBLIC SAFETY

3.5 HAZARDOUS MATERIALS AND PUBLIC SAFETY

Introduction

This section describes the potential adverse impacts on human health due to exposure to hazards that could result from the development of the University Villages project. Hazards evaluated include potential exposure to hazardous materials used, generated, stored, or transported in the Proposed Project site. This section will also evaluate the potential for encountering contamination or hazards related to past uses during deconstruction, demolition, grading, construction and use of the Proposed Project site. Included in this discussion is a summary of applicable hazardous materials laws and regulations and agencies responsible for their implementation. Potential hazards and associated impacts related to toxic air contaminant (hereinafter "TAC") emissions are discussed in Section 3.2, Air Quality, of this EIR.

The Initial Study (see Appendix A) determined hazards related to the following issues would be less than significant or have no impact: reasonably foreseeable upset and accident conditions involving the release of hazardous materials, location near a public or private airport, interference with an adopted emergency response or evacuation plan, and exposure to risk from wildland fires. All other issues identified as potentially significant are addressed in this section.

Comments received in response to the NOP (see Appendix B) did not raise concerns or issues related to hazards and hazardous materials. In their response to the NOP, the DTSC commented that the Proposed Project would not impact the remediated chemical sites or ordnance/explosive sites undergoing investigations.

Sources of information to describe existing conditions and for the analysis include a variety of City and Fort Ord Reuse Authority planning documents, agency and provider correspondence and analysis, and published technical information available through various websites.

Setting

The entire former Fort Ord military base was designated a Superfund National Priority List (NPL) Hazardous Waste Site in 1990 primarily due to groundwater contamination.[1] The project site remains designated as a Superfund site; all parcels retain this designation until adequate clean up is certified for the entirety of the former Fort Ord base.[2] The project site is part of the "Main Garrison Area" and contains approximately 943 buildings, primarily residential barracks constructed in 1940 and 1941.

The parcels comprising the University Villages project site were remediated and approved for transfer by the EPA under the Finding of Suitability to Transfer (FOST) process. With the exception of one

[1] Environmental Protection Agency, *NPL Site Narrative for Fort Ord,* February 21, 1990, http://www.epa.gov/superfund/sites/npl/nar1125.htm, accessed on September 17, 2004.

[2] Melissa Broadston, Community Relations, Fort Ord BRAC, personal communication, November 17, 2004.

parcel, the project site was transferred in the August 2002 FOST for Track 0 parcels. Parcel E2d.3.1 is scheduled as a "plug-in" to the 2005 Track 0 findings.[3] Track 0 parcels are determined, through archive searches and investigations, to be areas with no evidence of military munitions use.[4] The FOST documents the environmental suitability of parcels for a variety of uses including education, mixed use, and development, consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 120(h) and Department of Defense (DOD) policy. The FOST also identifies use restrictions necessary to protect human health or the environment.[5] All parcel deeds include a provision reserving the right of the U.S. Army to conduct remediation activities as needed.

The environmental condition of the parcels transferred was determined based on the Final Community Environmental Response Facilitation Act (CERFA) Report (April 1994), the Environmental Baseline Survey for the Main Garrison Parcels (September 1997), and on a visual site inspection performed in August 2004.[6]

On the basis of environmental condition, each parcel was placed in one of four CERFA/DOD Environmental Condition of Property (ECP) categories. The project site includes parcels in ECP Categories 3 and 4. ECP Category 3 includes areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response; the majority of parcels on the project site are in this category. ECP Category 4 includes parcels where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.[7]

On the Proposed Project site, parcels were placed in ECP Category 3 due to migration of volatile organic compounds (VOCs) from the Fort Ord landfill (Operable Unit (OU 2)), but at concentrations that do not require a remedial response.

Parcels placed in ECP Category 4 contained concentrations of VOCs from OU 2 and the Remedial Investigation (RI) Sites 2 and 12 at concentrations exceeding maximum contaminant limits (MCLs). One parcel, E2b.2.1, also required removal of debris and soil containing petroleum hydrocarbons and metals. Remediation operations are discussed below.

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3 United States Army, *Search Results for Parcel: E2D.3.1,* http://www.fortordcleanup.com/proptytrans/searchbyparcel.asp, accessed on September 20, 2004.

4 United States Army, Fact Sheet: Munitions Response Remedial Investigation/Feasibility Study for Former Fort Ord, February 2004.

5 United States Army, *Finding of Suitability to Transfer (FOST), Track 0 Parcels*, Former Fort Ord, California, August 2002, Page 1, www.fortordcleanup.com/ar_pdfs/AR-OTH-207/track0_fost.pdf, accessed on 09/20/04.

6 United States Army, *Finding of Suitability to Transfer (FOST), Track 0 Parcels*, Former Fort Ord, California, August 2002, Page 1, www.fortordcleanup.com/ar_pdfs/AR-OTH-207/track0_fost.pdf, accessed on 09/20/04.

7 United States Army, *Finding of Suitability to Transfer (FOST), Track 0 Parcels*, Former Fort Ord, California, August 2002, Page 2, www.fortordcleanup.com/ar_pdfs/AR-OTH-207/track0_fost.pdf, accessed on 09/20/04.

Groundwater. Three groundwater plumes exist on the former Fort Ord. A carbon tetrachloride groundwater plume, which is undergoing successful remediation, is northeast of the project site and would not impact the project. The project site is above two contaminated groundwater plumes, one from the OU 2 site and the other originating from RI Sites 2 and 12 (see Figure 3.5-1). The OU2 and RI Sites 2 and 12 plumes are contaminated with trichloroethylene.

The OU 2 and RI Sites 2 and 12 plumes are undergoing remediation; both have pump-and-treat systems in place and operating "properly and successfully".[8] Parcel E2b.2.5 contains the RI Sites 2 and 12 groundwater treatment facility; its operation would continue after property transfer. The OU 2 groundwater treatment facility is not on the project site. The Baseline Risk Assessment determined the groundwater does not pose a threat to occupants on the property, provided groundwater from the contaminated aquifers is not used as a drinking water source. Well drilling and use of groundwater are prohibited on the project site, with the exception of ongoing remediation efforts.[9]

Asbestos. Because a substantial amount of construction on Fort Ord occurred from 1940 to 1960, asbestos is likely present in buildings on site. In addition, the *Asbestos Survey Report, Fort Ord Installation* (April 26, 1993), identified asbestos within buildings in the Track 0 parcels, including within the project site. Friable asbestos, which can be reduced to powder or dust under hand pressure when dry, is considered hazardous. Non-friable asbestos does not pose a significant threat to human health.

Lead-Based Paint. The buildings present on the project site were constructed prior to 1978, and therefore are presumed to contain lead-based paint.

Ordnance and Explosives (OE). The project site is an identified non-OE area, or an area that contains no evidence of OE and has never been suspected of use for OE-related activities of any kind. However, OE was used throughout the history of Fort Ord and potential OE sites are adjacent to parcels included in the Track 0 FOST.[10] A notification to this effect is included in the deed for all properties on Fort Ord.

Pesticides. Routine application of pesticides occurred around the residential areas of Fort Ord. Records show the type of pesticides used, location and date application, final application concentration, and the name of the applicator. With the exception of diazinon, all the pesticides are still in use and are considered safe for residential and outdoor areas.

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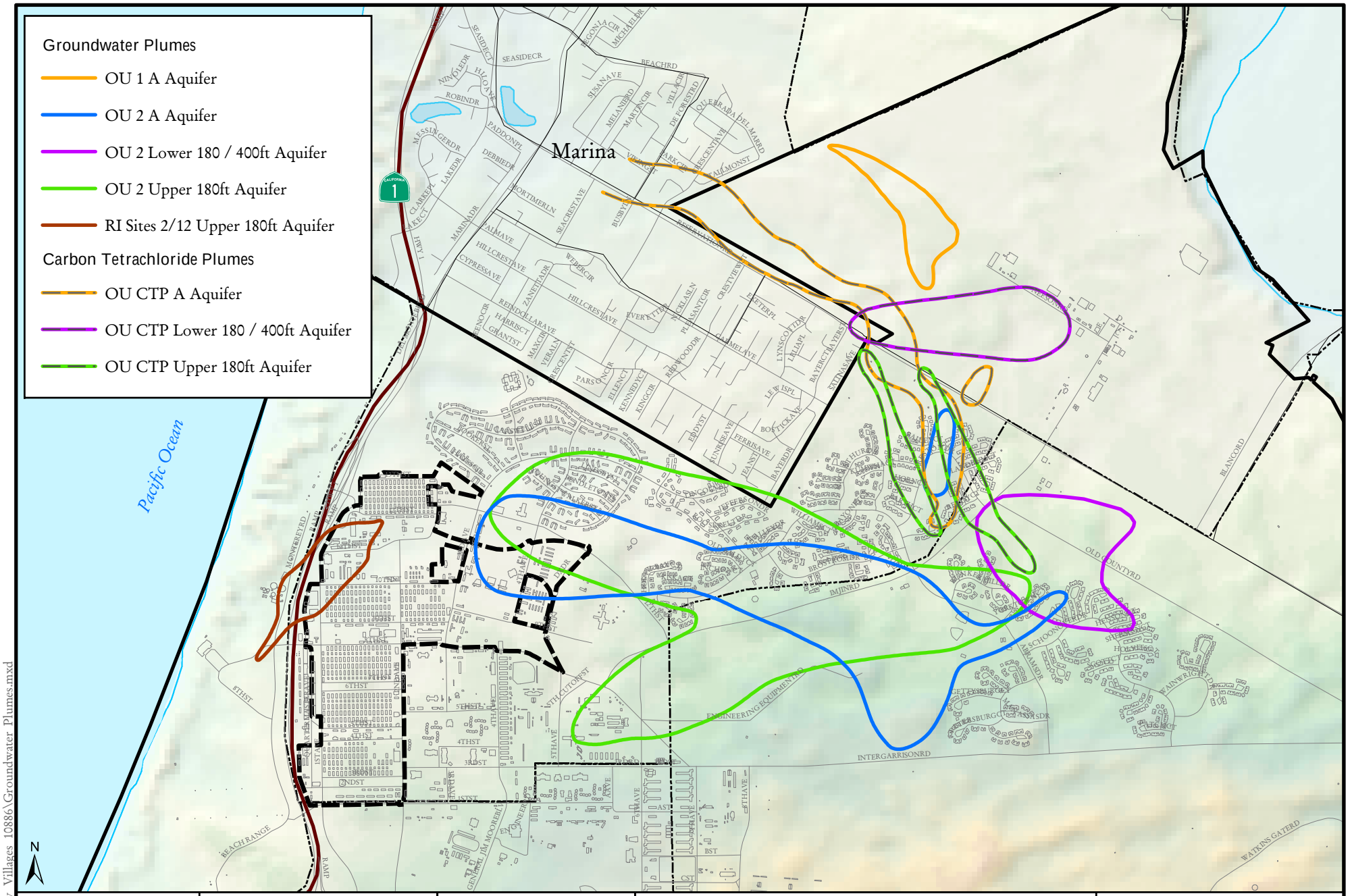
8 Certified by the EPA for the OU 2 plume 01/04/1996; certified by the EPA for the Sites 2 and 12 plume 07/03/2002.

9 United States Army, *Finding of Suitability to Transfer (FOST), Track 0 Parcels*, Former Fort Ord, California, August 2002, Pages 9, 10, www.fortordcleanup.com/ar_pdfs/AR-OTH-207/track0_fost.pdf, accessed on September 20, 2004.

10 United States Army, *Finding of Suitability to Transfer (FOST), Track 0 Parcels*, Former Fort Ord, California, August 2002, Pages 13, 14, www.fortordcleanup.com/ar_pdfs/AR-OTH-207/track0_fost.pdf, accessed on September 20, 2004.



N:\GISProjects\University Villages 10886\Groundwater Plumes.mxd

EIP ASSOCIATES

Source: US Army Corps of Engineers, Fort Ord Boundary, May, 2001; Groundwater Plumes, Dec. 2003; Carbon Tetrachloride Plumes, March 2004; Dahlin Group, Project Site Boundary, Nov. 2004; US Census Bureau, City Boundaries, July 2000; TIGER 2K Transportation, 2000; USGS, Rivers and Streams, Dec. 1998, and EIP Associates GIS Program, Nov. 18, 2004.

GIS Data Projection: Albers Equal Area (meters), NAD 27

0 1,250 2,500
Feet

1 inch equals 2,500 feet

University Villages Project Boundary
Fort Ord Boundary
City Boundary
Lakes and Reservoirs
Highway
Local Road
Rivers and Streams

FIGURE 3.5-1 GROUNDWATER PLUMES

University Villages
Specific Plan EIR
Monterey County, CA

Regulatory Setting

The following discussion summarizes federal, State, and local regulatory authorities pertaining to hazardous materials management and cleanup.

Federal

Several federal agencies regulate hazardous materials. These include the U.S. Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA) and the Department of Transportation (DOT). Applicable federal regulations are contained primarily in Titles 10, 29, 40, and 49 of the Code of Federal Regulations (CFR).

The identification, remediation, and disposal of hazardous waste associated with the Superfund clean-up process is regulated by the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), California Code of Regulations (CCR), Titles 22 and 23; the California Water Code, and other relevant requirements.

State

The California Environmental Protection Agency (Cal/EPA) and the Office of Emergency Services (OES) establish regulations governing the use of hazardous materials in the State. The California Highway Patrol (CHP) and the California Department of Transportation (Caltrans) are the enforcement agencies for hazardous materials transportation regulations. Hazardous materials and waste transporters are responsible for complying with all applicable packaging, labeling, and shipping regulations.

Within Cal/EPA, the Department of Toxic Substance Control (DTSC) has primary regulatory responsibility for hazardous waste management. Enforcement of regulations has been delegated to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the Hazardous Waste Control Law. State regulations applicable to hazardous materials are contained in Title 22 of the California Code of Regulations (CCR). Title 26 of the CCR is a compilation of those sections or titles of the CCR that are applicable to hazardous materials management. Along with the DTSC, the Regional Water Quality Control Board (RWQCB) is responsible for implementing regulations pertaining to management of soil and groundwater investigation and cleanup. RWQCB regulations are contained in Title 27 of the CCR.

Government Code section 65962.5 requires the Cal/EPA to develop, at least annually, an updated Hazardous Waste and Substances (Cortese) List. The Cortese List is a planning document used by the State, local agencies and developers to comply with the CEQA requirements in providing information about the location of hazardous materials release sites. DTSC is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List.

In January 1996, Cal/EPA adopted regulations implementing a "Unified Hazardous Waste and Hazardous Materials Management Regulatory Program" (Unified Program). The six program elements of the Unified Program are hazardous waste generators and hazardous waste on-site treatment, underground storage tanks, above-ground storage tanks, hazardous material release response plans and inventories, risk management and prevention program, and Uniform Fire Code hazardous materials management plans and inventories. The program is implemented at the local level by a local agency – the Certified Unified Program Agency (CUPA). The CUPA is responsible for consolidating the administration of the six program elements within its jurisdiction.

The Fort Ord Reuse Authority (FORA) was created by the California legislature (California Government Code section 67650) to plan, finance, and implement the conversion of Fort Ord to civilian activities.

Location of Schools Relative to Source of Hazardous Emissions. In addition to an evaluation of potential site contamination issues, Public Resources Code Sections 21151.4, 21151.8, and 21151.2 require that no EIR be approved for a project involving the construction or alteration of a facility that might reasonably be anticipated to result in hazardous air emissions within one-quarter mile of a school unless the lead agency has consulted with the school district having jurisdiction regarding the potential impact of the project on the school, or the school has been given written notification of the project not less than 30 days prior to approval of the EIR.

Local

Marina General Plan Policies

2.4.7: Development shall be prohibited or restricted where natural conditions present a serious threat to life or may lead to the destruction of homes, businesses, or public facilities.

4.106.1: The City shall support all local, regional and State efforts directed at preventing injuries and avoiding environmental contamination due to the uncontrolled release of hazardous substances. The City shall follow all applicable regulations and procedures related to the use, storage and transportation of toxic, explosive and other hazardous materials to prevent uncontrolled discharges.

4.106.2: In addition, 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.

4.106.3: 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 Proposed Projects prior to the granting of any entitlements by the City.

4.106.4: The City shall ensure that proposed industrial or commercial project that will use or generate hazardous materials shall be compatible with surrounding uses as designated by the General Plan. Residential uses and other sensitive uses such as schools shall be adequately buffered from adjoining uses which involve the use or generation of hazardous materials.

Impacts Assessment and Mitigation Measures

Significance Criteria

For the purposes of this EIR, impacts related to hazards and public safety would be considered significant if the Proposed Project would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment; or
- Expose the public to unexploded ordnance in the long-term, creating risk of upset related to human or environmental health or safety.

Methodology for Analysis

A review of applicable documents and prior studies from the U.S. Army and FORA was used to determine the exiting hazards in the Proposed Project site. In particular, the U.S. Army's *Finding of Suitability to Transfer (FOST) Track 0 Parcels* (August 2002) was relied upon as a comprehensive summary of hazards on Track 0 parcels. Standards of significance were generated from CEQA Appendix G.

Baseline Conditions

This section is prepared using the 2004 baseline. The 1991 baseline would differ from the 2004 baseline with regard to Hazardous Materials and Public Safety, because remediation of the groundwater conditions identified in 1991 has since been implemented and is ongoing. Groundwater contamination does occur under the project site but, as established in 1991, and as the project is precluded from drilling water wells on the project site, this issue is not an impact to the Proposed Project. Contamination associated with asbestos and lead based paints have not changed since the 1991 baseline condition and remain a significant issue, except that 50 buildings have been removed by FORA to accommodate new road construction and other infrastructure important to civilian reuse.

Environmental Analysis

HM-1. Construction and operation of the Proposed Project would involve the routine use, storage, transport, and disposal of hazardous materials. (LTS)

Hazardous Materials during Deconstruction and Demolition. Development of the University Villages Specific Plan would occur in multiple stages. The deconstruction process would occur first, removing approximately 943 mostly wooden structures currently on site. In light of the scope of needed demolition, FORA had categorized the demolition, deconstruction and/or relocation of these structures as a basewide obligation which is to be implemented as a FORA CIP program (the Building Removal Program). Implementation of the program may be accelerated by the project developer in accordance with FORA's procedures, in which case the developer obtains a price adjustment on the property acquisition from FORA's share of the sale proceeds.

The deconstruction process poses specific challenges due to the presence of hazardous materials in the standing structures. The buildings present on the project site were constructed primarily during 1940 and 1941. Asbestos has been identified in some structures, and buildings are also presumed to contain lead-based paint. Guidelines for the safe deconstruction of buildings containing these hazardous materials are provided by FORA. In addition, as described in Impacts AQ-3 and AQ-4 in Section 3.2, Air Quality, measures would be implemented to prevent airborne emissions of these contaminants during deconstruction or demolition. The demolished materials, which may contain asbestos or lead, would then be transported off-site.

It is estimated that 6,000 – 6,500 truck loads of debris would be generated by the deconstruction process. The debris would be sent to the Monterey Regional Waste Management District (Marina Landfill), located in Marina, or the Kettleman Hills Facility, located near Kettleman City (western San Joaquin Valley). Normal construction debris and debris containing non-friable asbestos would remain at the Marina Landfill, a Class III facility. All materials containing lead-based paint and/or friable asbestos would be transported to the Class I/II Kettleman Hills Facility. It is estimated that deconstruction would generate 1,300 loads (approximately 26,000 tons) of non-friable asbestos materials and 520 loads (approximately 10,000 tons) of friable asbestos.

Thirty trucks would be used to transport the hazardous materials to Kettleman City, the nearest Class I/II facility. The Kettleman Hills facility is approximately 175 miles east via Highways 101, 152, and Interstate 5. The hazardous debris would be transported through primarily rural landscape, although passage through some urban areas would occur (Marina, Castroville, Prunedale, and San Juan Bautista). The transportation of hazardous materials is regulated by the Code of Federal Regulations Title 49, Parts 171-180. The Proposed Project would comply with these regulations, ensuring safe transport of deconstructed materials to the appropriate landfills. This would reduce risk the risk of accidental release of hazardous materials to a ***less-than-significant level***.

Hazardous Materials during Construction and Operation. Hazardous materials would be used in varying amounts during construction and occupancy of the Proposed Project. Products and materials typically used during construction that could contain hazardous substances include paints, solvents, cements, glues, and fuels. Exposure of construction workers or site occupants to hazardous materials would occur in the following manner: improper handling or use of hazardous materials or hazardous wastes during construction or occupancy of the Proposed Project,

particularly by untrained personnel; transportation accident; environmentally unsound disposal methods; or fire, explosion or other emergencies.

The Office/Research and Development/Light-Industrial (41.5 acres), Retail/Service (52.1 acres) and Multiple Use (68.1 acres) land uses would use and store hazardous materials, and some waste classified as hazardous could also be generated (e.g., in Light-Industrial or Research and Development businesses). Hazardous materials that could be present during occupancy of the residential and open space uses in the Proposed Project site are expected to include, for example, household-type and maintenance products (e.g., paints, solvents, pool chemicals, pesticides/herbicides). Office and commercial activities could use a variety of products such as cleaning agents, solvents, paints, materials used in printing, pesticides, and chemicals for landscaping. Activities in the Light-Industrial and Research and Development could include laboratories or processes using chemicals. The types and amounts of hazardous materials used within each land use type would vary according to the location and nature of the activity. However, all allowable uses would be subject to code requirements, as necessary, which would ensure compliance with applicable permits and inspections. The use of hazardous materials on-site would also result in transportation of hazardous materials along major thoroughfares that provide access to the site, which could include some residential neighborhoods or near schools.

Hazardous materials regulations, which are codified in Titles 8, 22, and 26 of the CCR, and their enabling legislation set forth in Chapter 6.95 of the California Health and Safety Code, were established at the State level to ensure compliance with federal regulations to reduce the risk to human health and the environment from the routine use of hazardous substances. These regulations must be implemented by employers/businesses, as appropriate, and are monitored by the State (e.g., Cal OSHA in the workplace or DTSC for hazardous waste) and/or local jurisdictions (e.g., the Marina Fire Department and the Monterey County Environmental Health Department).

By ensuring that businesses in the project site comply with the Unified Program, the City would reduce impacts associated with the potential for accidental release of hazardous materials during occupancy of the Proposed Project that would result in increased risk of exposure to accidental release of hazardous materials, and the potential for an increased demand for incident emergency response. This would be accomplished by ensuring that regulated activities (e.g., businesses) are managed in accordance with applicable regulations such as Hazardous Materials Release Response Plans and Inventories (Business Plans), the CalARP Program, and the California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements.

The specific businesses that could operate in the Office/Research and Development/Light-Industrial-designated areas in the Specific Plan could be a source of hazardous air emissions. As noted in AQ-9 in Section 3.2, Air Quality, the Monterey Bay Unified Air Pollution Control District has established mechanisms to determine whether emissions would be a source of increased health risk and requirements for controlling such emissions. In the case of schools, there are no schools proposed within the Specific Plan that could be subject to hazardous emissions. For existing or proposed K-12 schools within one-quarter mile of a potential hazardous

emissions source (if any) that could be constructed on the project site, the Public Resources Code contains procedures that would ensure the schools are adequately protected from emissions.

Compliance with Title 26, Division 6, of the CCR, which would be monitored by the City, would reduce impacts associated with potential for accidental release during construction or occupancy in the project site. Compliance with this regulation would ensure that businesses and public facilities where hazardous materials are used or stored near well sites (e.g., groundwater) adhere to regulations designed to prevent leakage and spills of material in transit and provide detailed information to clean-up crews in the event of an accident.

Workplace regulations addressing the use, storage, and disposal of hazardous materials in Title 8 of the CCR would apply to businesses and public facilities in the project site. Compliance with these regulations would be monitored by the Marina Fire Department and the Monterey County Environmental Health Department when they perform inspections for flammable and hazardous materials storage. Other mechanisms in place to enforce the Title 8 regulations include compliance audits and reporting to local and State agencies. Implementation of the workplace regulations would further reduce the potential for hazardous materials releases.

Implementation of Title 49, Parts 171-180, of the Code of Federal Regulations would reduce any impacts associated with the potential for accidental release during construction or occupancy of the Proposed Project or by transporters delivering hazardous materials to the project site or picking up hazardous waste. These regulations establish standards by which hazardous materials will be transported.

Compliance with of existing federal, State, and local laws and regulations that are administered and enforced by the CUPA (Monterey County Environmental Health Department), and Marina Fire Department standards (the local agency that implements applicable hazardous materials-related sections of the Uniform Fire Code and Uniform Building Code) would reduce impacts associated with the routine use, storage, and transportation of hazardous materials associated with construction and occupancy of the Proposed Project to a ***less-than-significant level,*** and mitigation is not warranted.

HM-2. The Proposed Project is located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, but it would not create a significant hazard to the public or the environment. (LTS)

As discussed in the Environmental Setting, the entire former Fort Ord facility is a NPL Superfund site. It is listed on the DTSC Hazardous Waste and Substances (Cortese) List.[11] The project site is above two known groundwater plumes. Cleanup of these plumes is the responsibility of the U.S. Army; the cleanup operation is ongoing, and easements on the project site will permit the operation to continue to completion. Deed restrictions on the project site prohibit well drilling and use of groundwater. Groundwater levels in the vicinity of the project site are at a depth (the

[11] DTSC, Site Mitigation and Brownfields Reuse Program Database: Profile Report, http://www.dtsc.ca.gove/database/Calsites/CALP001.CFM?IDNUM=2797002, accessed 09/21/04.

shallowest aquifer is the 180-foot aquifer) that will ensure groundwater is not encountered by construction workers.

In their response to the NOP, the DTSC commented that the project would not impact the remediated chemical sites or ordnance/explosive sites undergoing investigations.

Asbestos and lead-based paint are known to be present in buildings currently on the project site. Deconstruction of the buildings on the project site could introduce contaminants into the air. The air quality section of this report discusses the hazard associated with increases in TAC associated with demolition and deconstruction. Post-deconstruction, these contaminants would not pose a threat to the future residents and workers of the University Villages area.

The Proposed Project's location on a Cortese List site would pose a ***less-than-significant*** hazard to future site occupants.

HM-3. The Proposed Project could expose the public to unexploded ordnance in the long-term, creating risk of upset related to human or environmental health or safety. (LTS)

The project site is not within a known OE area; however, for nearly 80 years areas of the based were used for a variety of military activities that involved OE. Unexploded ordnance is expected to occur only in the impact areas of the inland ranges.[12] Pursuant to the FOST, the information regarding the former storage or disposal of hazardous substances on the subject property indicates that it was conducted in a manner that would not pose a threat to human health and the environment. This notice was given pursuant to CERCLA and no additional action is necessary under CERCLA to protect human health and the environment.[13] However, there could be the potential of OE to be present given that OE was used throughout the history of Fort Ord. Should any OE be discovered within the project site, the source should be identified following Section A of the Ordnance and Explosives Incident Reporting Form, followed by notifying Presidio of Monterey Police Department for proper disposal. The potential for exposure of future residents or workers to unexploded ordnance and associated hazards are not anticipated in this part of Fort Ord and are considered ***less than significant***.

MITIGATION MEASURES. Implementation of the following mitigation measure would help to assure that impacts to health and safety remains *less-than-significant*. (LTS)

HM-3.1 Prior to commencement of on-site construction activities, the Master Developer shall coordinate with the Army to develop a safety program that specifies protocols relative to Munitions and Explosives of Concern (MEC) and in accordance with Cal-Osha regulations.

[12] Fort Ord Reuse Authority, *Fort Ord Reuse Plan DEIR,* May 1996, Page 4-64.

[13] Finding of Suitability to Transfer (FOST) Track 0 Parcels, Former Fort Ord, California, May 2003.

Cumulative Impact

The cumulative context for hazards and hazardous materials includes development of the former Fort Ord Base according to the *Fort Ord Reuse Plan*.

HM-4. The Proposed Project, in combination with other development, could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. (LTS)

The Proposed Project, in conjunction with cumulative development in the former Fort Ord, would include areas designated for commercial uses. Development would increase the use of hazardous materials within the area, resulting in potential health and safety effects related to hazardous materials use. For the most part, potential impacts associated with the Proposed Project would be confined to the office or commercial areas. Hazardous materials incidents would typically be site-specific and would involve accidental spills or inadvertent releases. Associated health and safety risks would generally be limited to those individuals using the materials or to persons in the immediate vicinity of the materials. Thus, the Proposed Project's contribution to increased use of hazardous materials, and associated exposure risks, would not be cumulatively considerable. Airborne TAC emissions from the Proposed Project are addressed in the cumulative analysis for air quality. Implementation of applicable hazardous materials management laws and regulations adopted at the federal, State, and local level would ensure cumulative impacts related to hazardous materials use remain less than significant. The Proposed Project's contribution to this impact would not be cumulatively considerable, and a less-than-significant impact would result.

Development in the former Fort Ord, including the University Villages project, would result in an increase in hazardous materials transportation in the area, which could expose greater numbers of people to increased risks in the event of an inadvertent release or spill. Stringent regulatory requirements apply to the common carriers that would handle the delivery and transport of hazardous materials to and from the project site. While these regulations do not eliminate the potential for accidents and resulting spills, they would reduce the frequency of occurrences and would limit the number people that could be exposed. Implementation of applicable laws and regulations would ensure that cumulative impacts associated with the transport of hazardous materials within the region such that this activity would remain less than significant. The project's contribution to this impact would not be cumulatively considerable, and a less-than-significant impact would result.

For any projects in the former Fort Ord that would involve development or redevelopment of an existing site in which soil or groundwater contamination may have occurred, the potential exists for release of hazardous materials during construction and/or remediation of those sites. For individuals not involved in construction activities, the greatest potential source of exposure to contaminants would be airborne emissions, primarily through construction-generated dust. Other potential pathways, such as direct contact with contaminated soils or groundwater, would not pose as great a risk to the public because such exposure scenarios would typically be confined to the construction zones. Assuming that site-specific risk management controls are implemented and

compliance with applicable laws and regulations pertaining to site cleanup and hazardous materials management is achieved at all other locations, soil or water contamination identified in the University Villages area would not result in any significant cumulative impacts. Moreover, an individual who is near the construction zone of one source would not likely be exposed to maximum levels off-site from another source. Implementation of applicable hazardous materials management laws and regulations adopted at the federal, State, and local level would ensure cumulative impacts related to development of known or potentially contaminated sites remains less than significant. The Proposed Project's contribution to this impact would not be cumulatively considerable, and a ***less-than-significant impact*** would result.

3.6 HYDROLOGY AND WATER QUALITY

3.6 HYDROLOGY AND WATER QUALITY

Introduction

This section of the EIR identifies regional and local surface water and groundwater resources that could affect or be affected by the Proposed Project. Specific issues analyzed in this section include the following: stormwater runoff (quantity and quality), flooding, and groundwater recharge.

The Initial Study for the Proposed Project (Appendix A) concluded there would be no impacts related to placing housing or other structures in the 100-year flood zone or to expose people or structures to seiche, tsunami, or mudflow. These issues are not further addressed in the EIR.

Sources of information to describe existing conditions and for the analysis include a variety of City and Fort Ord Reuse Authority planning documents, agency and provider correspondence and analysis, and published technical information available through various websites.

Comments related to hydrology and water quality were received in response to the NOP (see Appendix B) from the Department of Health Services.

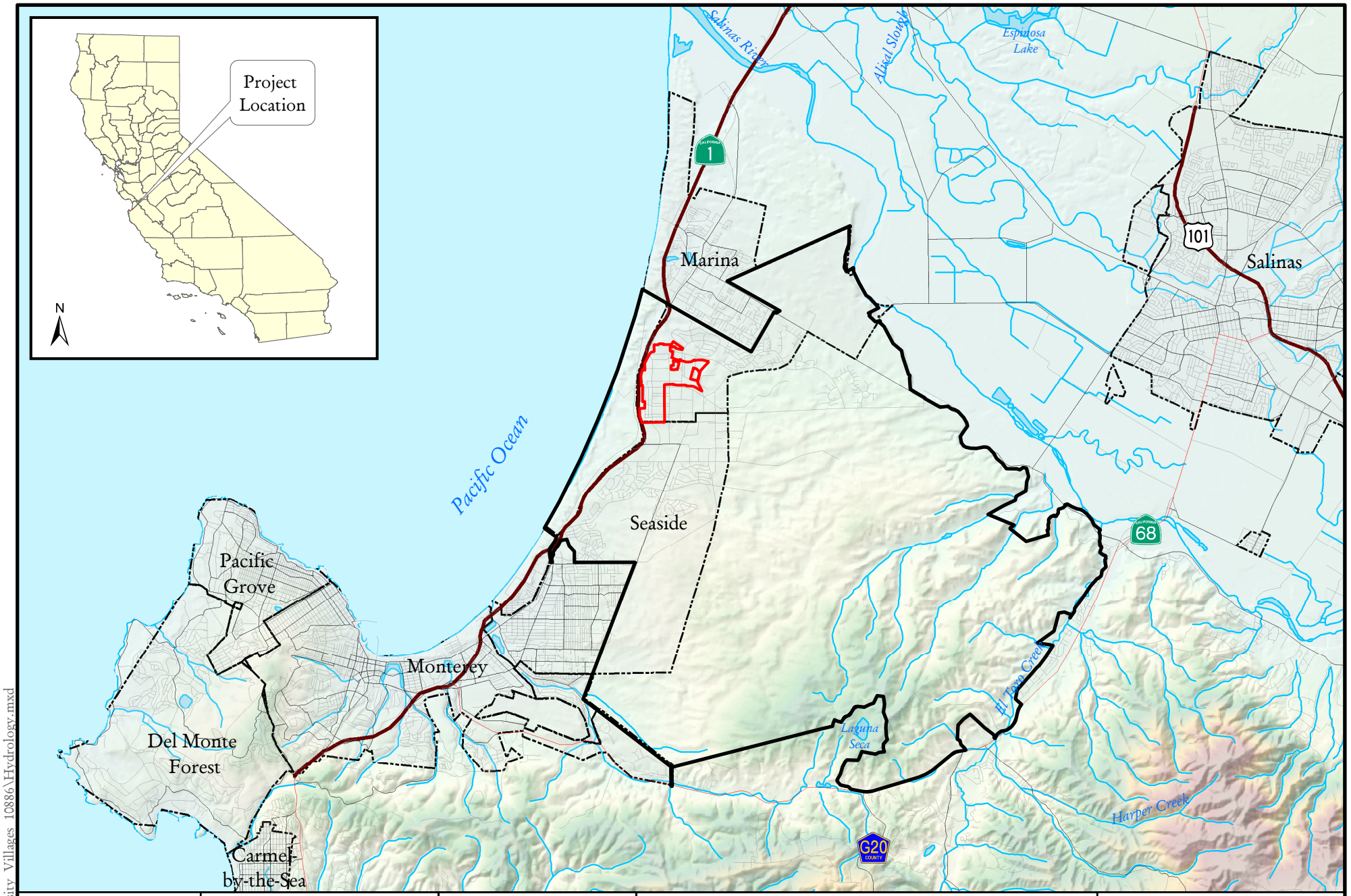
Issues related to the potential environmental effects related to the construction and use of planned water supply facilities are addressed in Section 3.9 Public Utilities.

Setting

Regional Hydrology

Climate. Climatic conditions for the Monterey Bay area are consistent with the temperature conditions predominant along California's Central Coast. The summers are hot and dry inland, but often foggy and cool on the coast, and the winters are cool and moist. Average monthly temperatures range from lows in the 40s and highs in the 50s during the winter months, to lows in the 60s and highs in the 90s during the summer months. The project site is located between the Carmel and Salinas River watersheds in the former Fort Ord military base. This area receives 90 percent of the annual rainfall during November through April. Spatial rainfall distribution over the Monterey Bay area consists of higher intensities and volumes in the upper elevations of the Coastal Range and lower intensities and volumes to the west. Mean annual precipitation is approximately 14.2 inches.

Surface Water. The Proposed Project is located in the greater Monterey Bay coastal watershed system (see Figure 3.6-1). In particular, the Proposed Project is located in the mostly urbanized coastal watershed encompassing the communities of the City of Marina south to the City of Pacific Grove. This coastal watershed is located north of the Carmel River watershed and south of the Salinas River watershed. Major runoff characteristics of this watershed are influenced by urban development



EIP ASSOCIATES

Source: US Army Corps of Engineers, Fort Ord Boundary, May, 2001; Dahlin Group, Project Site Boundary, Nov. 2004; US Census Bureau, City Boundaries, July 2000; TIGER 2K Transportation, 2000; USGS, Rivers and Streams, Dec. 1998, and EIP Associates GIS Program, Nov. 11, 2004.

GIS Data Projection: Albers Equal Area (meters), NAD 27

0 1 2
Miles

1 inch equals 2 miles

- University Villages Project Boundary
- Fort Ord Boundary
- City Boundary
- Lakes and Reservoirs
- Highway
- Local Road
- Rivers and Streams

FIGURE 3.6-1
REGIONAL HYDROLOGY

University Villages
Specific Plan EIR
Monterey County, CA

N:\GISProjects\University Villages 10886\Hydrology.mxd

land use and stormwater drainage systems. Surface water drainage in this watershed is collected in local drainage systems that either discharge directly to Monterey Bay or are retained in infiltration basins.

Groundwater. The Proposed Project is located in the 25,900-acre Seaside Area Sub-basin of the greater Salinas Valley Groundwater Basin. The Seaside Area Sub-basin includes the Cities of Seaside and Marina, and the western portion of the former Fort Ord. The western boundary of this sub-basin is the sand dunes which form the shoreline of Monterey Bay west of and beyond Highway 1 from the western border of the Proposed Project. The northeastern edge of this sub-basin is located at the boundary of the 180/400 foot aquifer sub-basin and the southeastern boundary of this sub-basin is the Corral de Tierra sub-basin. Groundwater recharge in this sub-basin is from deep percolation of local precipitation, seepage from minor amounts from creeks, and from subsurface flow from the southeastern Corral de Tierra sub-basin. Groundwater levels in the sub-basin have been declining about one foot per year over from the 1950's to at least 1997. Groundwater quality in the Seaside Area Sub-basin is characterized as a sodium-chloride type in the southern portion and a sodium-bicarbonate type in the northern portion of the sub-basin. Salt water intrusion total dissolved solids have been a problem in this sub-basin.[1]

Local Hydrology

Surface Water Hydrology. The Proposed Project is located on the western edge of the former Fort Ord military base east of Highway 1. Topography in the former Fort Ord area is gently sloping along the western portions with rolling hills and canyons in the easternmost portions of the fort. Surface water drainage in the western portion of former Fort Ord consists of a system of storm sewers that drain the majority of the approximately 4.7 square miles that had been the cantonment area.[2] There are six major tributaries or sub-watersheds that encompass the western portion of the former Fort Ord. These six tributaries have been further divided based on a recent analysis for the Proposed Project. The results reflect that there are 13 smaller sub-watersheds that encompass the project site and surrounding areas in the western portion of the former Fort Ord (Figure 3.6-2).[3] Surface water drainage from these six sub-watersheds enter an existing drainage system that was constructed nearly 60 years ago. This drainage system is composed of subsurface interconnected drainage pipes that collect surface drainage from inlets on streets and in parking lots. The original storm drainage system discharged to five ocean outfalls, one percolation basin west of Highway 1, and to some small infiltration basins east of Highway 1.[4]

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1 California Department of Water Resources, *California's Groundwater, Bulletin 118*, Salinas Valley Groundwater Basin, Seaside Area Subbasin, February, 27, 2004.

2 Fort Ord Reuse Authority, *Draft Storm Water Master Plan*, September 2004, page ES-1.

3 RBF Consulting, *Draft Type Selection Report for Stormwater Infiltration Systems, September 2004,* pages 2 and 3, and Exhibit 3.

4 Schaaff & Wheeler Consulting Engineers, *Final Master Plan for Improvements to the Regional Storm Drainage System*, August 31, 2001, pages 2 and 3.

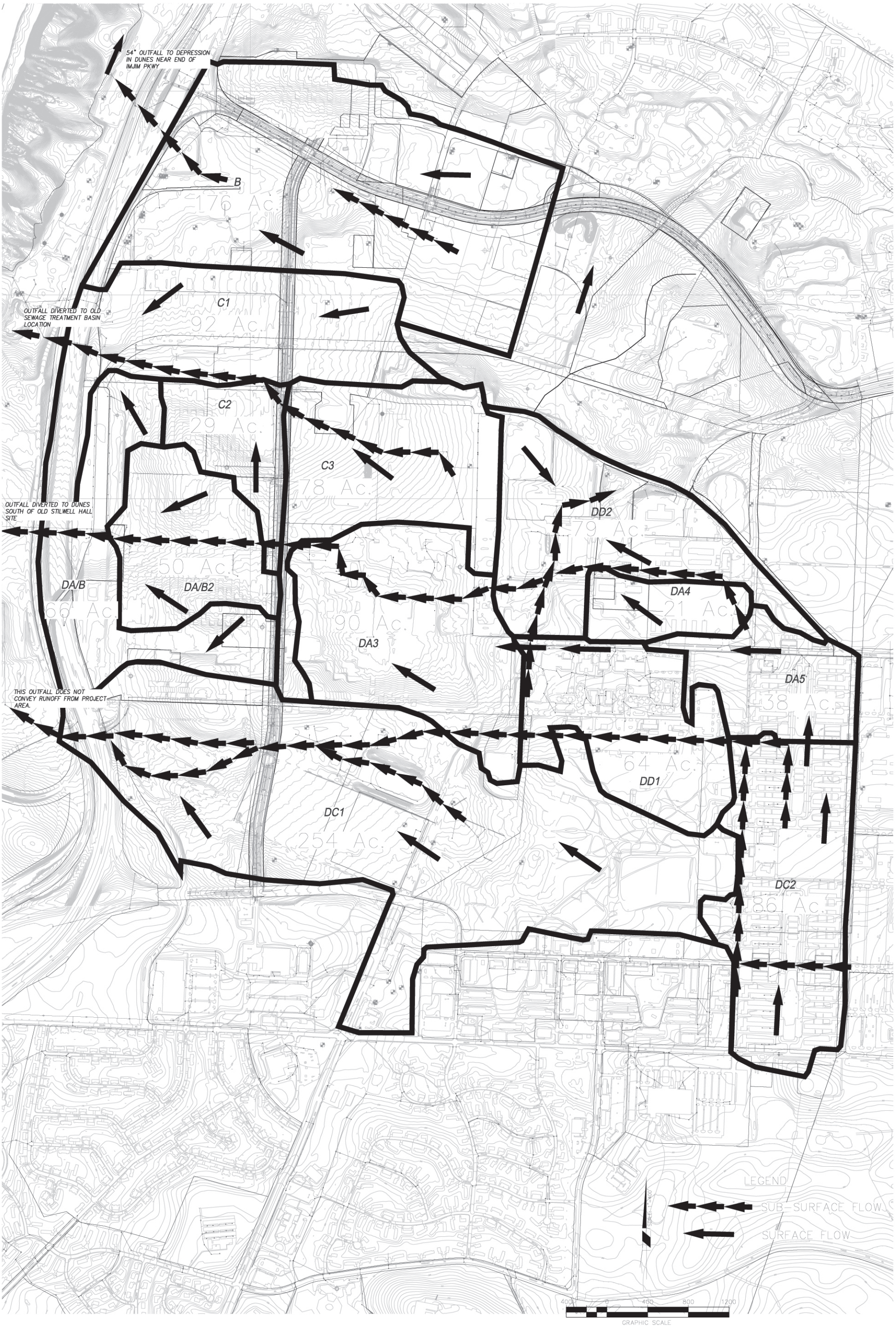

FIGURE **3.6-2**

Existing Drainage Sheds

***Source*:** RBF Consulting, 2004

City of Marina

10886-00

EIP ASSOCIATES

Drainage to the southernmost ocean outfall has been diverted into a percolation basin east of Highway 1. Drainage to the three northern ocean outfalls has been diverted into low areas between Highway 1 and the coastal dunes.

The area adjacent and to the east of the project site is occupied by the California State University at Monterey Bay (CSUMB). Stormwater runoff from this area drains through the existing drainage infrastructure and discharges to the percolation ponds to the west of Highway 1. Pursuant to the certified Final Supplemental EIR for the *CSUMB Master Plan Update* (SCH# 1997081036), the *Utilities and Infrastructure Plan* (*Master Plan Update*, Volume II System Plan, Chapter 4) proposes trunk line relocation, construction of retention ponds, construction of additional on-site percolation ponds, and the installation of some new storm water lines in the West campus zone. The Master Plan addresses utilizing natural drainage patterns, retaining all stormwater runoff on the CSUMB campus, and developing a Storm Water Master Plan.

Groundwater Hydrology. Groundwater in the former Fort Ord is characterized by several distinct geological and hydrological regions. The northwest portion of the former Fort Ord (i.e., the Proposed Project location) is located in a portion of the Salinas Valley groundwater basin. The Salinas Valley groundwater basin contains several aquifers that are separated by confining layers of clay or aquitards. The shallowest aquifer, known as the 180-foot aquifer, is located in the Main Garrison area underneath the Salinas Valley Aquiclude, and served as the former Fort Ord's water supply. The Salinas Valley Aquiclude is not present along the coast and in an area extending south from the East Garrison portion of the former Fort Ord. At these locations, surface water can percolate through the soil into the 180-foot aquifer. Beneath the 180-foot aquifer are two deeper aquifers referred to as the 400- and 900-foot aquifers.[5]

Most groundwater pumpage from the former Fort Ord and the City of Marina came from the 180-foot aquifer. However, as a result of increased groundwater pumping, seawater intruded up to 2.5 miles into the 180-foot aquifer and up to 1.2 miles into the 400-foot aquifer in the vicinity of the City of Marina. Since the 1980's, seawater intrusion has slowed as a result of the decrease in water demand from a decrease in U.S. Army personnel, conservation, changes in groundwater well locations and depths, drought-related decreases in total pumping, and the construction and operation of the Castroville Seawater Intrusion Project.[6]

The Seaside groundwater basin extends into the southwestern portion of the former Fort Ord. The former Fort Ord overlies the northern part of the basin and supplies the Seaside basin with a substantial amount of groundwater recharge. Most of groundwater use from this basin is from municipal wells in Seaside and Sand City. This basin had minor seawater intrusion at one municipal well, and has recently experienced seawater intrusion along the Monterey Peninsula.[7]

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5 Fort Ord Reuse Authority, *Fort Ord Reuse Plan EIR* (SCH#96013030), May 1996, pages 4-45 and 4-46.

6 Fort Ord Reuse Authority, *Fort Ord Reuse Plan EIR* (SCH#96013030), May 1996, pages 4-45 and 4-46.

7 Christine Di Iorio, City of Marina, Strategic Development Center, facsimile to EIP Associates, dated December 15, 2004.

The eastern portions of the Fort Ord are hilly and less permeable than the more sandy western portions. However, the eastern portion of the former Fort Ord is capable of supporting water wells and contributes to recharge of the groundwater aquifers that flow to the western part of the former Fort Ord.

Water Quality

Surface Water Quality. Surface water quality in the Proposed Project has not been thoroughly studied or documented. Because the project site is not inhabited or occupied by residents or full-time businesses, impervious surfaces over much of the project site have not been cleaned or used for parking purposes. Therefore, the surface water quality in drainage from the project site most likely consists of organic matter and fine sand particles left deposited on the remaining roads and surfaces. Because of the low occupation of the project site, stormwater runoff most likely contains only a fraction of urban pollutants, such as oils, grease, heavy metals, pesticides, and coliform bacteria, than what is contained in normal urban runoff. However, large storm events can cause localized areas of erosion since the soil is highly sandy and prone to erosion from wind and rain.

Groundwater Quality. Groundwater quality in the project site is generally connected hydraulically with the rest of the former Fort Ord through the underlying aquifers as discussed above. The groundwater quality underlying the former Fort Ord is variable depending on location and former land use factors. Seawater intrusion, as discussed above, has migrated several miles inland into the 180- and 400-foot aquifers and could affect the deeper aquifer if groundwater pumping in the area were to increase above the safe yield of the groundwater basin.[8] In addition, former land uses in the fort have resulted in three contaminated groundwater sites where remediation is ongoing under the authority of BRAC. In the course of further development on the former Fort Ord there could be contamination found in isolated areas due to past activities. The soil and groundwater contamination in and adjacent to the project site is discussed in further detail in Section 4.4, Hazardous Materials and Public Safety.

Regulatory Setting

The following is a summary of the regulatory context under which issues associated with drainage, flooding and water quality is managed at the federal, State, and local level.

Federal

Water Quality. Section 303 of the federal Clean Water Act (CWA) requires states to adopt water quality standards for all surface water of the United States. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based upon biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards.

[8] Fort Ord Reuse Authority, *Draft Fort Ord Reuse Plan Environmental Impact Report*, May 1996, page 4-46.

Title 40 of the Code of Federal Regulations (40 CFR) includes U.S. Environmental Protection Agency (EPA) regulations to implement the National Pollutant Discharge Elimination System (NPDES) permit system, which was established in the CWA to regulate municipal and industrial discharges to surface waters of the U.S. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that EPA must consider in setting effluent limits for priority pollutants.

Two types of non-point source discharges[9] are controlled by the NPDES program: non-point source discharges caused by general construction activities; and discharges from municipal stormwater systems (either as part of a combined system or as a separate system). The goal of the NPDES non-point source regulations is to improve the quality of stormwater discharged to receiving waters to the "maximum extent practicable" through the use of best management practices (BMPs). BMPs can include the development and implementation of various practices including educational measures (workshops informing public of what impacts result when household chemicals are dumped into storm drains), regulatory measures (local authority of drainage facility design), public policy measures (label storm drain inlets as to impacts of dumping on receiving waters) and structural measures (filter strips, grass swales and detention ponds).

The 1987 amendments to the CWA directed the federal EPA to implement the stormwater program in two phases. Phase 1 addressed discharges from large (population 250,000 or above) and medium (population 100,000 to 250,000) municipalities and certain industrial activities. Phase 2 addresses all other discharges defined by EPA that are not included in Phase 1, and construction activities that affect one to five acres. The Phase 2 regulations were published in the Federal Register on December 8, 1999.

State

Water Quality. The State Water Resources Control Board (SWRCB) and the RWQCB are responsible for ensuring implementation and compliance with the provisions of the federal CWA, California's Porter-Cologne Water Quality Control Act, and NPDES programs. Along with the SWRCB and RWQCB, water quality protection is the responsibility of numerous water supply and wastewater management agencies, as well as city and county governments, and requires the coordinated efforts of these various entities.

The project site is situated within the jurisdiction of the Central Coast Region of the RWQCB (Region 3). The Central Coast RWQCB (CCRWQCB) has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction. Water quality objectives are specified in the *Central Coast Region Basin Plan* prepared by the CCRWQCB in compliance with the federal CWA and the State Porter-Cologne Water Quality Control

[9] Non-point sources diffuse and originate over a wide area rather than from a definable point. Non-point pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances

Act.[10] The Basin Plan establishes water quality objectives, and implementation programs to meet stated objectives and to protect the beneficial uses of water in the Central Coast Basin, including Monterey Bay.

Construction Site Runoff Management. The SWRCB adopted a State-wide general NPDES permit for stormwater discharges associated with construction activity (General Permit) in August 1999. Performance standards for obtaining and complying with the General Permit are described in NPDES General Permit No. CAS000002, Waste Discharge Requirements (WDR), Order No. 99-08-DWQ. The General Permit was modified in April 2001 (SWRCB Resolution No. 2001-046) to require permittees to implement specific sampling and analytical procedures to determine whether the BMPs used at the construction site are effective.

Under the General Permit, dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity in the State. The Proposed Project would be required to comply with the General Permit.

Examples of typical construction BMPs completed in SWPPPs include: using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains; and using barriers, such as straw bales or plastic, to minimize the amount of uncontrolled runoff that could enter drains or surface water. The discharger must also install structural controls, such as sediment control, as necessary, which would constitute Best Available Technologies (BAT) to achieve compliance with water quality standards.

Urban Runoff Management. The City of Marina is required to operate under the NPDES Municipal Stormwater Phase II Permit (Phase II General Permit) requirements set forth in the Monterey Regional Storm Water Management Program (MRSWMP). Discharges of urban runoff in the City area regulated under the MRSWMP through the promulgation of recently adopted regulations applicable to smaller dischargers and administered by the State Water Resources Control Board (SWRCB). Under the General Permit, the City is required to develop, implement, and enforce a stormwater management program. The details of the development, implementation, and enforcement of the General Permit requirements are provided in the MRSWMP.

The MRSWMP identifies activities required to implement the following six minimum control measures required under the Phase II General Permit: public outreach, public involvement, illicit discharge detection and elimination, construction site runoff, new development and redevelopment, and municipal operations. Some typical types of outreach may include a stormwater hotline, website, storm drain

[10] California Regional Water Quality Control Board, Central Valley Region, *The Water Quality Control Plan (Basin Plan) [for] the Central Coast Region*, December 6, 2002.

stenciling, and other programs. Public meetings and presentations, volunteer water quality monitoring groups, and community cleanup days are some of the elements of the public involvement component.

Post-construction measures under the Phase 2 program will require the City to implement structural and non-structural BMPs that would mimic pre-development quantity and quality runoff conditions from new development and redevelopment areas. Structural BMPs include engineered features that provide some treatment, such as vegetative drainage ways, detention infiltration ponds, constructed wetlands, or filtration basins and sand filters. A BMP may be City/drainage area-wide or site-specific. Non-structural BMPs are typically non-engineered management measures such as administrative and education programs focused on pollution prevention and source control. Under the Phase II General Permit, the Proposed Project would be required to incorporate structural BMPs appropriate to the type of development and land uses in the project site, taking into account local and regional drainage and water quality considerations.

Construction Dewatering. Clean or relatively pollutant-free wastewater that poses little or no threat to water quality may be discharged directly to surface water under certain conditions. In addition to the State General Construction Activity Permit, the CCRWQCB has also adopted a general NPDES permit for short-term discharges of small volumes of water from certain construction-related activities. Permit conditions for the discharge of dewatering activities are specified in *Waste Discharge Requirements General Order for Dewatering and Other Low-Threat Discharges to Surface Waters* (Order No.5-00-175, NPDES Permit No.CAG995001). Discharges may be covered by the permit provided they are (1) either four months or less in duration, or (2) the average dry weather discharge does not exceed 0.25 million gallons per day. Construction dewatering, dry-well development water, pump/well testing, and miscellaneous dewatering/low-threat discharges are among the types of discharges that may be covered by the permit. The very sandy soil conditions would likely preclude dewatering as sandy soils quickly percolate and perched water requiring dewatering from a construction site would be unusual in these soil conditions. Furthermore, pump/well testing, though covered by a dewatering permit, is not part of the Proposed Project as water wells are the purview of the MCWD only and no wells are proposed by the MCWD. The general permit also specifies standards for testing, monitoring, and reporting, receiving water limitations, and discharge prohibitions.

Fort Ord Reuse Authority. In April 1994, the FORA was created by the passage of State Senate Bill SB-899. FORA, a 13-member board representing Monterey County and the cities of Marina, Seaside, Carmel, Del Rey Oaks, Sand City, Monterey, Pacific Grove, and Salinas, has been given the responsibility for implementing the local community's Fort Ord reuse planning effort. The *Fort Ord Reuse Plan* was completed by FORA in June 1997.

As part of the process of converting land from the former Fort Ord land uses to private urbanized land uses, FORA prepared a deed restriction which covers the parcel within the project site and is explained in detail in the *Fort Ord Finding of Suitability to Transfer, Track 0 Parcels, former Fort Ord, California* (FOST), May 2003. This document describes the parcels and their underlying contamination which restricts certain activities on the parcels to be developed in the Proposed Project and elsewhere on the former Fort Ord site. These land use restrictions are further analyzed in Section

3.7, Land Use and Planning, in this EIR. One of the deed restrictions required by the FOST is the restriction of drilling and construction of groundwater wells in the project site except for monitoring and/or treatment of groundwater contamination. This deed restriction was approved of by the FORA parties and the U.S. Environmental Protection Agency (US EPA).

Local

City of Marina General Plan. City of Marina policies and programs related to flooding and stormwater runoff were developed from the *Ford Ord Reuse Plan*. The programs and policies applicable to the Proposed Project are listed below.

COMMUNITY LAND USE ELEMENT

2.3.6: Development shall be prohibited or restricted where natural conditions present a serious threat to life or may lead to the destruction of homes, businesses, or public facilities.

Community Infrastructure – Stormwater Facilities

3.55: The manner in which stormwater runoff is accommodated has major implication for water quality, safety and overall aesthetics of the area. At present, stormwater runoff is accommodated through the use of small scattered retention [and percolation] basins. Since Marina has mostly fine to medium-grained generally unconsolidated soils with a high percolation rate, this type of localized stormwater drainage will most likely continue to be workable and practical.

3.56: There are, however, several adverse effects of the present system of stormwater drainage that should be addresses. Among these are the current practice of fencing in retention areas without regard to issues of design or appearance and the need to prevent urban runoff from contaminating groundwater sources. The latter will become an increasing problem with construction of larger-scale commercial and industrial projects, which are normally characterized by more extensive areas devoted to parking, vehicular circulation, and outdoor storage. Throughout the planning area most soils are also susceptible to water erosion.

3.57: To avoid the above problems related to stormwater drainage, the following measures shall be taken:

3.57.1: All storm water runoff shall continue to be retained onsite and accommodated by localized retention [or percolation facilities] basins. Retention basins associated with a particular project shall be landscaped with appropriate plant materials and shall be designed wherever possible as integral parts of a development project's common open space or parks, or to create new or enhance existing habitat. All onsite drainage facilities shall be designed to convey runoff from a 10-year frequency storm at a minimum. In areas of the City where recycled water will not be readily available, the City encourages the provision of stormwater reuse facilities of sufficient size to provide for landscape irrigation of development in proximity to retention basins. The adequacy of onsite and off-site drainage facilities shall be determined

through the preparation of storm drainage reports and plans, approved by the City Public Works Director; such reports and plans shall be required for all new subdivisions and new commercial/industrial development proposed in Marina.

3.57.2: Pretreatment of stormwater runoff from roads, large parking areas, and other extensive paved areas used by vehicles shall be provided using appropriate means such as primary settlement structures, [on-site percolation facilities] routing through settlement ponds, or routing through adequately long natural swales or slopes. In addition, all development plans shall conform to the requirement of the City's National Pollution Discharge Elimination System permit and City ordinances, and all subdivisions and new commercial/industrial development shall identify Best Management Practices (BMP's) appropriate or applicable to uses conducted onsite to effectively prevent the discharge of pollutants in stormwater runoff.

3.57.3: Stormwater systems shall be constructed in a manner which prevents soils erosion. Appropriate measures to avoid such impacts include the dispersal of runoff, installation of energy dissipaters where dispersal is not practical and concentration of runoff water is necessary, and retention of vegetation or revegetation of affected surfaces.

Community Development & Design – Safety

4.104: The City shall continue to ensure that new development is in compliance with the provisions of the federal flood insurance program. Hydrologic investigations shall be undertaken for all new development proposed within or adjacent to sites identified as "Zone A" areas – i.e., potential areas of flooding for which the 100-year flood elevation has not yet been determined – as shown on FEMA's Flood Insurance Rate Map for Marina. As new information becomes available, it should be submitted to FEMA for the purpose of updating Marina's Flood Insurance Rate Map.

Community Development & Design – Water Resources

4.127: Approval of all future uses and construction within the Marina Planning Area shall be contingent upon compliance with the following policies and conditions intended to protect the quality of the area's water resources, avoid unnecessary consumption of water, and ensure that adequate water resources are available for new development.

4.127.1: Where site size and soils permit, all storm drainage systems for new development shall be designed in accordance with the provisions of Section 3.57 of this plan to retain stormwater on-site and provide for its filtering of urban pollutants and its percolation into underlying aquifers.

4.127.2: All new roads should be designed to allow the localized retention, filtering of urban pollutants, and percolation of stormwater into the underlying aquifer.

4.127.3: All potential major sources of water pollution shall comply with state and regional water quality programs, including the need to obtain a discharge permit from the State Water Resources Control Board for storm drain outfall classified as "industrial."

4.127.4: All construction activities involving improvement of roads, buildings and other structures, where applicable, shall maintain and enhance the quality of the environment of Monterey Bay in support of the bay's designation as a national marine sanctuary.

Mitigation Measures from Final Environmental Impact Report and Mitigation Monitoring Plan for the Marina General Plan

MITIGATION MEASURE 5.3: Compliance with Flood Insurance Program

All development proposed within the City of Marina shall be required to be in full compliance with the provisions of the federal flood insurance program. Specifically, no new development shall be permitted unless all proposed foundations are at least one foot above the elevation of stormwater within the floodplain following a 100-year storm, as shown in the appropriate FEMA maps.

Marina University Villages Specific Plan. Section 6 – Infrastructure, Subsection 6.4, Drainage and Type Selection Master Plan Development Standards:

- All assessments and technical analyses for University Villages drainage and water quality will be in compliance with the local drainage policies and requirements for the City of Marina, FORA, Regional Water Quality Control Board, and Monterey County as deemed appropriate.
- Major drainage facilities within public road right-of-ways and drainage easements are proposed to be maintained by the City of Marina Department of Public Works. Maintenance responsibilities for local drainage will be determined through the processing of individual tract maps.
- The project shall comply with the appropriate National Pollutant Discharge Elimination System (NPDES) construction permit and pay the appropriate fees. A construction Storm Water Pollution Prevention Plan (SWPPP) will be prepared and a Notice of Intent (NOI) will be submitted prior to commencing construction.

Fire, Flood, and Emergency Management Goal: To prevent or minimize loss of human life and personal injury, damage to property, and economic and social disruption potentially resulting from fire, flooding, or other natural disasters.

Implementation Plan. A comprehensive study will be prepared by a Geotechnical Engineering Consultant of applicable literature, including any FEMA studies available and investigation of field conditions for surface and sub-surface soils by way of borings and percolation tests. The results of this study will be combined with hydrologic analysis by the Civil Engineering Consultant, which will determine the manner in which storm run-off will be collected and infiltrated into the groundwater and

buildings will be located and floors set at elevations that will preclude flooding of structures during defined heavy storms.

Impacts Assessment and Mitigation Measures

Significance Criteria

For the purpose of this EIR, impacts to storm drainage and water quality are considered significant if the Proposed Project would:

- 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.
- Violate any water quality standards, waste discharge requirements, or otherwise substantially degrade water quality.
- Interfere substantially with groundwater recharge.
- Substantially alter the existing drainage pattern in a manner that would either result in substantial erosion or siltation on- or off-site.
- Increase the rate or amount of surface runoff or interfering with existing drainage infrastructure traversing the project site resulting in flooding on- or off-site.
- Create or contribute runoff that would exceed the capacity of existing or planned storm water drainage systems.

Methodology for Analysis

The Proposed Project changes the land use in the project site from a mostly unoccupied portion of the former Fort Ord military base. The current conditions of the project site are old military housing and roads that could be considered high density residential-style housing and industrial land uses with a large amount of impervious surfaces. The Proposed Project would result in multi-family residential and general commercial and retail business land uses that could result in a change in the runoff characteristics during a storm event. For example, more impervious area from a change in land use results in higher runoff that flows faster in gutters and drain pipes than as overland flow from undeveloped land.

The Proposed Project was evaluated through the use of hydrologic models and a preliminary site drainage plan consistent with the design standards of the FORA *2nd Draft Storm Water Master Plan* and the County Intensity-Duration-Frequency (IDF) equation. The following analysis is based on assumed acreages for the different land uses in the project site. The following primary sources of information were used for the analysis of stormwater runoff and quality: *Draft Type Selection Report for Stormwater Infiltration Systems*, RBF Consulting (September 2004); *2nd Draft Storm Water Master Plan*, C & D Consulting Civil and Structural Engineers (October 2003); and, *Final report: Master Plan for Improvements to the regional Storm Drainage System*, Schaaf & Wheeler (August 2001).

Impacts on water quality were evaluated qualitatively by comparing constituent loading in receiving waters contributed by existing versus future land uses and assessing the increase in flows to the receiving waters.

Baseline Conditions

This section is prepared using the 2004 baseline. The 1991 baseline is insufficient because drainage conditions were not specific to the Proposed Project but were relevant to the entirety of the urbanized area of Fort Ord which includes the Main Garrison area where the Proposed Project is located.

Environmental Analysis

HY-1. Development and occupancy of the Proposed Project could increase impervious areas and increase the flow and volume of stormwater runoff resulting in on- or off-site flooding. (LTS)

The project site was used by the U.S. Army and was the main military cantonment area of the base since about 1940 when the barrack buildings were constructed. Through use as a military installation, large areas of the project site have been covered over by concrete and asphalt to accommodate storage of vehicles and equipment, as well as military drills. Though the acreage of impervious surface is not known, a survey of aerials of the project site and windshield surveys conducted on June 24 and September 10, 2004 indicate that existing impervious surfaces (i.e., concrete, asphalt, and buildings) comprise a significant portion of the project site and surrounding land uses to the east (i.e., large parking area on CSUMB campus at 2nd Avenue and 8th Street). Runoff currently finds its way into the existing drainage infrastructure and is discharged via underground pipelines directly to percolation ponds located in the dunes to the west of Highway 1. There are no current systems of creeks in the project site due to the sandy nature of the soils, the dearth of exposed soils, and the rarity of events that could produce substantial runoff that would create creek or river channels. The development of Fort Ord created the impervious surfaces and consolidated drainage flows such that the storm drainage systems built by the U.S. Army as part of the development of Fort Ord included large diameter outfalls that discharged into Monterey Bay.

Operational Phase Water Quality and Hydrology. The existing drainage infrastructure conditions on the property are degraded and likely inoperable in many areas as maintenance of the drainage infrastructure has waned since the departure of the U.S. Army from the project site in the early 1990's. Operation of the Proposed Project may increase the rate and amount of surface runoff. Nevertheless, increased surface runoff would be controlled through a system of stormwater infiltration systems, which would include a combination of dry well systems, underground storage and infiltration systems, and surface storage infiltration basins. The Proposed Project would stop runoff form the project site from discharging into the existing storm drainage system up to a minimum of a 100-year storm event. The Proposed Project would include new facilities that conform to mandated stormwater infrastructure standards including conveyance elements, infiltration facilities, and stormwater quality treatment measures to protect the performance of the infiltration facilities.

All development in the City of Marina's jurisdiction of the former Fort Ord is required to retain all storm water runoff in on-site facilities in compliance with the City's General Plan Policies, Section 3.55 through 3.57 and 4.127. Thus, the *City of Marina's General Plan* Policies regarding storm drainage facilities require, as a condition of approval for specific projects, that all drainage facilities be designed using a 10-year design storm event, and that retention facilities have sufficient capacity to capture the 10-year, 24-hour duration storm event, with no allowance for discharge to occur off-site. However, FORA's *Storm Water Master Plan* has suggested using a standard that would require storm facilities be designed to capture and infiltrate on-site drainage so that there is one-foot of freeboard at infiltration basins during the 100-year, 24-hour design storm. FORA's and City's standards also provide standard calculation methods for peak flow rates for use in design of these facilities. Prior to issuance of building permits, the final design for the storm drainage infrastructure must be approved by the City's Public Works and/or Engineering Department(s) to ensure compliance with these standards.

Compliance of development with existing FORA and City standards and requirements would ensure that the impact of the Proposed Project with respect to stormwater runoff flow and volume (i.e., flooding) would be less than significant by requiring site drainage and percolation system capacity for development to meet approved standards as it occurs.

The *Draft Type Selection Report for Stormwater Infiltration Systems* has analyzed a variety of infiltration system components and calculation methods to provide the analysis for on-site conditions to capture and infiltrate the 100-year, 24-hour storm event, thus reducing off-site runoff. The *Draft Type Selection Report for Stormwater Infiltration Systems* also used a set of equations from the County, City, and from the U.S. Department of Agriculture to develop a calculation of the 100-year, 24-hour design storm for capture in on-site infiltration systems. Further, the Proposed Project would be designed to not discharge stormwater into the percolation ponds west of Highway 1 during a 100-year event. Therefore, design criteria prepared for the Proposed Project in the *Draft Type Selection Report for Stormwater Infiltration Systems*, and FORA and City requirements would collectively ensure that flooding would neither occur nor be exacerbated as a result of the Proposed Project during the design conditions.

Stormwater Infiltration System. In order to design a functional infiltration system with the capacity to store and infiltrate the storm event required by the FORA, the *Draft Type Selection Report for Stormwater Infiltration Systems* assumed the following in its analysis of sizing requirements for potential infiltration system components within proposed sub-watersheds produced as a result of construction of the Proposed Project:

- The Proposed Project's infiltration would be based entirely on the recommendations presented in the *Draft Type Selection Report for Stormwater Infiltration Systems*;

- That location, sizing, and type of infiltration and water quality components would be chosen from the *Draft Type Selection Report for Stormwater Infiltration Systems* after site-specific geometries and soil conditions are known;

- The Proposed Project drainage infiltration system would be based on the design parameters, percolation tests, infiltration rates, and infiltration and water quality technologies suggested and analyzed in the *Draft Type Selection Report for Stormwater Infiltration Systems*.

Thus, the *Draft Type Selection Report for Stormwater Infiltration Systems* provides a menu of infiltration components to pick from to combine the best possible drainage system for site-specific conditions. The *Draft Type Selection Report for Stormwater Infiltration Systems* also provided the following recommendations that surface and subsurface drainage facilities would be designed such that:

- Site grading should be designed to infiltrate 100-year runoff originating within a specific area in that area without overflow to adjacent areas.

- The 100-year inundation level that could potentially impact a structure must be below the lowest grade adjacent to that structure and at least one foot below the lowest finished floor.

- Storm drainage inlets should be spaced such that ponding during a 10-year storm does not encroach into a minimum of one travel lane in each direction.

- A minimum of one foot of freeboard should be provided above the maximum 10-year inundation level within infiltration facilities to the lower of adjacent grade and street flow line.

Examples of potential infiltration facilities include:

- Dry wells;

- Underground pipes and vaults; and

- Surface basins.

Storm Drain System Maintenance. To ensure that the proposed storm drainage system functions as designed, the Proposed Project would implement a program that would involve maintenance by the City Department of Public Works. The timing of the maintenance would generally be prior to, and during the rainy season. Maintenance techniques include cleaning catch basins and inlets, road maintenance, sediment and debris removal, and vegetation maintenance. Additionally, property owners would be required (by Covenants, Codes, and Restrictions) to pay for a weekly parking lot sweeping service to clean parking lots and streets.

As the percolation rates associated with all of the stormwater retention basins have not been precisely determined, peak flows from the Proposed Project could exceed the percolation rates

of the basins and increase the risk of on- and off-site flooding. However, as described above, the proposed stormwater drainage system would be designed to contain the 100-year, 24-hour storm, above and beyond the City's standards of containing the 10-year, 24-hour or greater storm event. Consequently, if, during design for future development, percolation rates are determined to be insufficient for the infiltration systems envisioned, the systems design would be improved to accommodate adequate flow volumes, and any design adjustments would remain subject to review and approval by the City. Compliance of the storm drainage system design with City standards and requirements would ensure that basins and other portions of the drainage system would be adequately sized and located for the percolation rates required for the design storm duration, which would in turn ensure that the final drainage system design would accommodate the increased stormwater flows associated with the Proposed Project. Due to mandatory compliance with FORA and City standards, the Proposed Project would not result in or exacerbate on- or off-site flooding, and the impact would be ***less than significant,*** and no mitigation is required.

HY-2. Increased rates of surface runoff generated by development of the Proposed Project or dewatering for construction activities could result in increased levels of urban contaminants in stormwater runoff. (LTS)

Construction Phase Water Quality and Hydrology. The project site topography is characterized bys gentle slopes whereby the sandy soils are potentially subject to erosion. It is anticipated that the increased rates of erosion would be substantial with the slope characteristics of the project site. The Proposed Project would include demolition activities, and the construction of structures, roadways, parking lots, and infrastructure, which would require grading, excavation, and other construction-related activities that could cause soil erosion at an accelerated rate during storm events. Construction equipment spills could result in the release of pollutants, such as heavy metals, oil, grease, and other petroleum hydrocarbons. During storms, runoff from the construction site(s) could carry sediment or other pollutants into the drainage system and discharge into the percolation ponds west of Highway 1 or into the pervious soil. The discharge of sediment or pollutants into the percolation ponds could affect water quality by increasing turbidity or changing the water chemistry, which could, in turn, have an adverse effect on groundwater. Dewatering activities may occur associated with construction and dry-well development only, and if they are to occur they must be permitted through the RWQCB. It is uncertain the dewatering will be required by any activities associated with project development.

Proposed Project construction activities would be required by State law to obtain and comply with the State General Construction Activity Stormwater Permit. The State General Construction Storm Water Permits are required for storm water discharges associated with construction activities involving the disturbance of one acre or more. Compliance with the permit would involve the preparation of a Stormwater Pollution Prevention Plan (SWPPP) and the implementation of BMP's. Preparation of a SWPPP consistent with the requirements under the NPDES General Construction permit would be required prior to any demolition, grading,

or construction activities in the project site, or issuance of a grading permit. The plan would include a description of the construction site, time restrictions, erosion and sediment controls to be used, means of waste disposal, control of post-construction sediment and erosion control measures and maintenance responsibilities, landscaping during and after grading, and non-stormwater management controls. During project construction, all new development would be required by the plan to implement appropriate stormwater runoff BMP's and design features to protect receiving water quality during construction and occupancy, consistent with City and MRSWMP standards. BMPs include schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce pollution (i.e. straw bales, dikes, silt fences, sediment traps, or similar methods). The addition of recent SWRCB amendments to the General Permit also requires permittees to implement specific sampling and analytical procedures to determine whether the BMPs used at the construction site are effective.

Compliance with the State General Construction Activity Permit, as recently modified by SWRCB resolution, and City standards, would ensure that construction-related sediment or other contaminants that could adversely affect receiving water would be reduced to a ***less-than-significant impact,*** and not mitigation is warranted.

HY-3. Runoff from the Proposed Project would contain urban pollutants that could impact local groundwater. (LTS)

Operational Phase Water Quality and Hydrology. Urban stormwater runoff is expected to contain oil, grease, and heavy metals from vehicles and pesticides and herbicides from landscape maintenance. If not properly managed, constituents carried in runoff could adversely affect receiving water quality (groundwater). The Proposed Project would install BMPs that would filter out urban pollutants to levels to reduce the magnitude of any pollutants that could enter the subsurface infiltration systems and groundwater. The adequacy of the infiltration systems to filter out urban pollutants would only be guaranteed through a maintenance program that would ensure that structural BMPs are repaired, replaced, and maintained to ensure that performance standards are not degraded. Since the Proposed Project would be required to meet the MRSWMP BMP standards for stormwater runoff and to pay fair share fees to the City for maintenance costs associated with the maintenance of on-site BMPs, impacts would be ***less than significant,*** and no mitigation is warranted.

HY-4. The Proposed Project could increase the amount of impervious surface area which could interfere with groundwater recharge. (NI)

The Proposed Project would result in the construction of structures, roads, parking lots, and other impervious surfaces. However, the Proposed Project would not significantly increase the amount of impervious surfaces as compared to the current urbanized setting of the project site. In addition, the Proposed Project would construct a stormwater drainage system that would capture all on-site runoff, up to the 100-year, 24-hour storm event, in a variety of underground infiltration facilities (i.e., dry wells, underground infiltration basins, and percolation basins).

Therefore, the proposed stormwater drainage system would provide an increase in groundwater recharge in the project site, compared to the current drainage system that conveys all on-site stormwater runoff to off-site percolation basins west of Highway 1. Thus, the Proposed Project would result in a benefit to the recharge of the underlying aquifer and result in ***no impact,*** and no mitigation is warranted.

HY-5. The Proposed Project would demolish the existing drainage infrastructure on the project site which would result in flooding upstream on the CSUMB campus. (S)

The Proposed Project would involve construction and grading activities that would demolish the current drainage infrastructure that passes under the project site. This aged drainage infrastructure drains a portion of the project site, including off-site areas associated with the CSUMB campus to the south and east.

According to the certified Final Supplemental EIR for the *CSUMB Master Plan Update*, the Utilities and Infrastructure Plan (Master Plan Update, Volume II System Plan, Chapter 4) proposes trunk line relocation, construction of retention ponds, construction of additional percolation ponds, and the installation of some new storm water lines in the West campus zone. The Final Supplemental EIR for the *CSUMB Master Plan Update* addressed the use of natural drainage patterns, the retention of all storm water runoff within CSUMB, and the development of a Storm Water Master Plan. Because the Proposed Project does not have a timeline based on the CSUMB Master Plan timeline, the Proposed Project could remove the drainage infrastructure during construction and grading activities prior to implementation of CSUMB's Master Plan on-site drainage improvements. The demolition of the underlying infrastructure would result in potential flooding from upstream flows from CSUMB. This is a ***significant impact***.

MITIGATION MEASURES. Implementation of Mitigation Measure HY-5.1 would ensure that stormwater runoff originating from the CSUMB campus would not be interrupted by the Proposed Project's demolition of existing drainage infrastructure. Implementation of these mitigation measures would ensure that impacts would be reduced to *less-than-significant levels*. (LTS)

HY-5.1 Prior to the issuance of grading permits that would affect those drainage facilities supporting CSUMB, the developer shall demonstrate to the satisfaction of the City Engineer that the phasing and timing of drainage improvements have been coordinated with CSUMB.

Cumulative Impact

The cumulative context for the analysis of cumulative hydrology, drainage, and water quality impacts is the urbanized watershed located between the Carmel and Salinas River watersheds, which includes the City of Marina south to the City of Pacific Grove and all cumulative growth therein, as represented by full implementation of the general plans that encompass this area (see Figure 3.6-1).

Groundwater recharge potential would not be substantially affected because infiltration is under the Proposed Project would increase compared to existing conditions. For a discussion of cumulative impacts related to groundwater use and supplies, please see Section 3.9, Public Utilities.

HY-6. Increased runoff generated by cumulative development, including the Proposed Project, could result in sedimentation and increased levels of urban contaminants, which could affect receiving water quality. (LTS)

Cumulative development in the watershed could include development of currently undeveloped land. Increasing the amount of impervious surface cover over existing conditions would result in an associated increase in runoff. Runoff could carry increased levels of sediment (as a result of construction activities) and urban contaminants (post-construction activities) that could affect receiving water quality in the watershed.

Any construction in the State of California on one acre or more requires preparation of a SWPPP to comply with the requirements of the SWRCB NPDES Construction General Permit. The best management practices identified in the SWPPP would help mitigate for the impact of construction activities on storm water quality. Recent amendments to the General Permit also require water quality monitoring. Construction activities (e.g., excavation and trenching) in areas where shallow groundwater is present and groundwater extraction is necessary for construction would be subject to the RWQCB construction dewatering permit requirements, which would help minimize the potential for discharging sediment-laden groundwater into surface water drainages.

The City of Marina has implemented the Phase II NPDES requirements as presented in the MRSWMP. At this time no specific ordinance has been passed to reflect the implementation of the Phase II stormwater regulations, but the City has informed developers that review of current development projects will be reviewed for compliance with stormwater regulations and BMPs. Post-construction measures in the MRSWMP require the City to implement structural and non-structural BMPs that would mimic pre-development quantity and quality runoff conditions from new development and redevelopment areas. The Proposed Project includes implementation of BMPs to manage water quality by providing on-site runoff treatment in line with the on-site infiltration system. Therefore, the Proposed Project's contribution to runoff would not be considerable, and would result in a ***less-than-significant impact*** and no mitigation is required.

3.7 LAND USE AND PLANNING

3.7 LAND USE AND PLANNING

Introduction

This section of the EIR addresses land uses for the Proposed Project including a description of the existing and planned land uses within the project site and in surrounding areas; an analysis of projected changes in the type, intensity or pattern of land uses; compatibility of planned uses within the Proposed Project and external compatibility with surrounding land uses; and potential conflicts with applicable land use plans, policies or regulations.

Comments raised in letters received on the Notice of Preparation (see Appendix B) did not include any land use issues.

Setting

Regional Setting / Historical Land Uses

For a discussion of the regional setting and historical land uses the reader is referred to Chapter 2 of this EIR.

Site Characteristics, Existing Land Uses and GP and Zoning Designations

While modified drastically for military development, vegetation on the project site is typified by low growing, wind tolerant tree and shrub species, including maritime chaparral, coastal scrub and oak woodland vegetation natural habitats. Mature Monterey Cypress and other trees are also scattered throughout the area and planted as part of the urbanization of the project site. The project site is a mix of vacant, undeveloped lands and military structures including approximately 943 abandoned army barracks and buildings. A few of the buildings have been renovated and are in use and used for churches, and construction company yards. The site consists of gently rolling hills mostly overlain with asphalt and barracks. Active uses remaining on-site include the Marina Coast Water District (MCWD) Corporation Yard, a recreation building, and the Young Nak Church.

The former Fort Ord can be compartmentalized into the following six areas: Coastal Zone/Practice Range Area, the Main Garrison (i.e., University Villages project site), the Residential Communities (Hayes Park, Schoonover Park, Patton Park, etc.), Fritzsche Field (now the Marina Municipal Airport), the historic East Garrison, and Upland Areas (consists of the unurbanized area of former Fort Ord which includes the 15,000 acre Bureau of Land Management holdings). The project site falls within what was known as the Main Garrison area of the former Fort Ord, typified by a regular and small scale street layout, low rise structures and expansive paved areas.

Existing general plan land use designations in the project site include Planned Development, Multiple Use, Open Space, Recreation, Public Facility/Institutional, Retail Service, and Office/Research. The project site is currently zoned open space district, public facility district, multi-family residential,

community/multi-family residential, general commercial, and retail business. The current general plan and zoning designations were approved by FORA and are consistent with the *Fort Ord Reuse Plan*.

Adjacent Land Uses

Highway 1 borders the project site to the west beyond which lies the Fort Ord Dunes State Park and the Pacific Ocean. Vacant land is located south of 1st Street and west of 2nd Avenue. The California State University, Monterey Bay Campus, lies just east and south of the site. Existing and planned campus uses bordering the project site include housing, educational facilities and recreational uses. Immediately to the north is the proposed Cypress Knolls retirement community project which was previously known as Patton Park when the Fort Ord was an active military base. Cypress Knolls is primarily vacant and contains numerous degraded 1950's, early 1960's one story residences. To the northeast is the Marina Highlands Specific Plan/Abrams "B" Housing project (Marina Highlands). Further north is the main residential area of the City of Marina. To the east of California Street between 8th and 12th Streets (far east boundary of the project site) are vacant lands, horse stalls and a USCOE facility.

Other significant land uses in the vicinity of the project site include the University of California Monterey Bay Education, Science and Technology Center (MBEST Center) 2.5 miles to the northeast, Marina Municipal Airport (formerly Fritzsche Air Field) also to the northeast, and the East Garrison mixed use development which is approximately 2.5 miles to the east.

Regulatory Setting

The following discussion summarizes the local regulatory authorities pertaining to land use and planning. There are no known federal regulations pertinent to the Proposed Project.

Federal

No federal regulations are pertinent.

State

Fort Ord Reuse Plan. The Proposed Project is located within the former Fort Ord and is therefore subject to the provisions of the *Fort Ord Reuse Plan* that was adopted by FORA in June 1997. However, these objectives, policies, and programs were incorporated into the Marina General Plan Update and so the Marina General Plan document is the relevant document for evaluation of the Proposed Project.

Local

City of Marina General Plan. The Marina General Plan is composed of four elements: Community Land Use, Community Infrastructure, Community Design and Development, and Program and Implementation. The overall goal of the general plan is to create a community which provides a high

quality of life for all its residents; offers a broad range of housing, transportation and recreation choices; and which conserves irreplaceable natural resources. The Proposed Project consists of two specific areas that are referred to in the General Plan as the "West University Village" and "North University Village." The following policies from the *City of Marina General Plan* relate to land use issues and are applicable to the Proposed Project:

COMMUNITY LAND USE

Section 2.4.4: Future land development, whether it involves development of new areas, infilling of existing neighborhoods or commercial areas, or redevelopment of former Fort Ord lands, shall have sufficient intensity to help ensure the long-term feasibility of public transit for work and other trip purposes, and to create a pedestrian oriented community.

Section 2.4.5: Retail and personal-service uses shall be channeled into existing commercial areas and other identified commercial centers in the plan and efforts shall be taken to avoid strip-type commercial development.

Section 2.4.6: Construction of broad range housing types shall be permitted and promoted in order to provide greater housing choice and diversity.

Section 2.4.8: Where feasible, the community shall be demarcated from adjacent communities by permanent open space.

Section 2.4.9: Sufficient land shall be set aside to meet the outdoor recreation needs of existing and future residents.

Section 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 developments, 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.

Section 2.31.2: All housing developments over 20 or more dwellings shall include and maintain an appropriate percentage of below-market-rate housing based on the 2000 and 2010 census. In no case, however, shall the amount of affordable housing provided be less than 20 percent of the total number of units approved for any housing project subject to this requirement.

Section 2.31.3: 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 retired residents.

Section 2.31.5: New housing shall be constructed at densities and in patterns, which conserve land, reduce reliance on the private automobile and result in a walkable, attractive neighborhood.

Section 2.31.6: New housing shall be integrated into the fabric of the city in such a way that it complements existing housing areas and contributes to the overall stability, image and sense of community of the City. Accordingly, gated communities should be avoided and, if included as part of a development application, should be allowed only if significant public benefits are provided as part of the project.

Section 2.31.7: Amenities such as common open space, pedestrian paths and bikeways and well-landscaped streets, shall be incorporated into the design of new housing areas to ensure long-term desirability and stability of these areas as well al 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.

Section 2.33.2: Village homes, consisting of a mix of single-family detached houses, townhouses, and multifamily housing. The mix of housing types within the 'Village Homes' area may vary from that in Table 2.4.A, except that the number of single-family homes shall be considered the allowable maximum for this housing type. Townhouse development outlined in Table 2.4.A 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 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 should not exceed 8 units per gross acre, nor be less than 7.5 units per gross acre – pursuant to Section 2.35.1.

Section 2.33.3: Townhouses and multifamily housing constructed within designated multiple-use areas.

Section 2.35.1: If the majority or all of the existing homes is replaced, new housing shall be provided in accordance with the Village Homes designation and shall include an integrated mix of housing types and mini-parks at the neighborhood level.

Section 2.35.4: A combination of small-lot single-family houses, townhouses, and low-density multi-family housing (not exceeding 24 units per residential acre on any single site) in the North University Village area, north of the CSUMB campus and adjoining the planned light-rail corridor. The average combined density of all housing in this area shall not exceed 15 units per acre, net of major roads and parks within lands designated for residential use.

Section 2.35.5: Higher Density multi-family housing in the West University Village area. This housing is to be developed in conjunction with an overall multiple-use pattern of development in the area between Highway One and the campus. The average density of residential-designated land shall not exceed 35 units per net acre. The General Plan initially provides for no more than 300 total units on the 20 acres with this land use designation; however, an increased development potential of up to 400 additional units may be allowed if approved within the framework of a future specific plan adopted for the West University Village area. Beyond this, live/work types of

housing – that is, units which combine living and working space – are considered especially appropriate, and are encouraged in the Multiple-use Commercial designated land.

Section 2.35.7: Additionally, live/work housing may be incorporated with the retail, commercial, and light-industrial uses in areas designated for multiple use.

Section 2.40: Designated Retail and Service area shall be developed to a minimum floor area ratio (FAR) of 0.25 to avoid economic underutilization and to maintain sufficient intensity of use to promote a pedestrian-oriented pattern of development. A maximum FAR of 0.4 shall be established to ensure that transportation and other infrastructure requirements of such uses are consistent with their planned capacity.

Section 2.41: Except as provided otherwise herein, office types of use are permissible as ancillary uses only to be located either on upper floors or in a manner which does not interfere or distract from the primary retail and personal-service function of an area. Churches and similar religious institution are permissible subject to a 5-year limitation. Churches, private schools, charter schools and instructional institutions are allowed within Commercial Retail/Personal Service areas.

Section 2.42: Other allowances for retail, personal-service and business-service uses are provided for in the Multiple-Use category. This allows and encourages the combination of retail uses with office, research-and-development, and light-industrial uses. Retail and service uses, such as restaurants, commercial recreation facilities, and specialty shops that serve visitors to the Monterey Peninsula are also permitted within the 290-acres designated for Visitor-Serving uses.

Section 2.48: Retail sales and services intended to serve the larger Monterey Peninsula shall be located in West University Village. A total of 57 acres here have been designated as Retail/Service to take advantage of the proximity to Highway One and planned transit improvements and redevelopment opportunity provided by the decommissioning of former Fort Ord.

Section 3.3.1: Develop future areas of the city, and redevelop existing developed areas, in patterns and to densities that make the provision of frequent regional and local transit economically feasible.

Section 3.32: To ensure the feasibility of future transit services, 80 percent or more of the city's residential growth shall be located within transit-served corridors designated in Figure 3.2 [of the General Plan]. Furthermore, all future residential development within 1,500 feet (approximately ¼ mile) of designated transit routes shall be governed by minimum density requirements; [...] the minimum density for newly developing or redeveloping areas of the City shall be 7 units per gross acre (i.e. total development area excluding major roads, public facilities and open space, but including local streets and local open space features and amenities).

Section 3.3.3: Reduce the number and length of vehicular trips and limit overall traffic congestion by promoting land use patterns which allow for multipurpose trips and trip deferral during peak travel times.

Section 3.3.5: Design the city to enable and encourage walking and biking as a major and safe means of travel.

Section 4.18.2: Major identifying features such as park, plaza or school sites should be provided.

COMMUNITY INFRASTRUCTURE

Regional Light-Rail Transit

Section 3.27: The *Fort Ord Reuse Plan* incorporates a multi-modal corridor, the purpose of which is to accommodate longer-term high capacity transit operations that would link the cities of Marina and Salinas. The plan includes right-of-way reservation beginning at the Blanco Road south of the Salinas River and extending to a final station location adjoining Highway One and 1st Street. The latter station shall be closely linked with the passenger rail station planned for the adjacent Union Pacific Railroad line on the west side of Highway One.

Section 3.28: In the early phase of transit development in the area, the transit right-of-way shall be developed with an exclusive roadway for buses. Bus transit service along this corridor shall be used to help promote public transit use and transit-oriented development at intensities sufficient to eventually support conversion of the corridor to light-rail operations. A portion of the MST service between Salinas, Marina, and other Peninsula cities should be routed along this alignment. Five station sites shall be reserved to serve the planned development of the corridor.

Section 3.29: The initial roadway and subsequent rail lines shall be designed such that these transit facilities will be integrated into and become a focus of a pedestrian-oriented street extending west from the planned extension of California Avenue to Highway One. Additional design and development policies and guidelines for the corridor and station areas are provided in the Community Development and Design Element of the General Plan.

Impacts Assessment and Mitigation Measures

Significance Criteria

For the purposes of this EIR, impacts related to land use would be considered significant if the Proposed Project would:

- Conflict with Land Use policies that are intended to protect the environment that are contained in the *City of Marina General Plan*, the *Fort Ord Reuse Plan*, or any other applicable plan or policy.
- Result in land use conflicts with nearby existing or planned uses.

Methodology for Analysis

EIR discussions of land use and planning generally consider compatibility of a Proposed Project with its surrounding and neighboring areas, changes to or displacement of existing uses, compliance with zoning regulations, and consistency with relevant local land use and planning policies.

This EIR analysis qualitatively evaluated land use conflicts and compatibility issues to determine whether or not the Proposed Project would affect the existing development pattern and development intensity in the area surrounding the project site. Specific environmental related issues and their potential significance are discussed in detail in the associated topical sections of this EIR. In the growth inducing section of the EIR (Chapter 4) we discuss the potential for the Proposed Project to cause growth outside of the project site. These sections collectively indicate the Proposed Project would not substantially alter the land use pattern to result in a significant land use conflict.

The Proposed Project is evaluated for consistency with the *City of Marina General Plan* and other applicable regulations. Ultimately, the Marina City Council, as the decision makers for the Proposed Project, would make the determination of compliance with the General Plan. Potential impacts were assessed by reviewing the *City of Marina General Plan* goals and policies, the *Fort Ord Reuse Plan*, and taking inventory of existing and surrounding uses. A site visit was conducted on June 24, 2004 and review of the *CSUMB Master Plan* and its associated EIR was also conducted.

Baseline Conditions

This section is prepared using the 2004 baseline. The 1991 baseline would be inappropriate to use in this EIR because it predates the adoption of the *Fort Ord Reuse Plan* and the *City of Marina General Plan* update, and therefore would not reflect the current land use designations. Additionally, many of the surrounding uses have changed since 1991, so the assessment for potential land use conflicts with existing or planned uses is more appropriately considered on the bases of the 2004 baseline.

Environmental Analysis

LU-1. Implementation of the Proposed Project would not conflict with the City of Marina General Plan *policies that are intended to protect the environment.* (LTS)

The overall goal of the general plan is to create a community which provides a high quality of life for all its residents, offers a broad range of housing, transportation and recreation choices, and conserves irreplaceable natural resources (Marina General Plan, Community Goals, Section 1.17). General Plan policies that are relevant to the Proposed Project are included in the Community Land Use Element and are listed above in the Regulatory section. The intent of the community land uses element is to help achieve the overall General Plan goals of providing a satisfying, safe, and healthful living and working environment and promoting the economic well-being of city residents and businesses.

The Proposed Project would result in the development of a portion of the former Fort Ord including removal of approximately 943 military structures to make way for a mixed-use village center, office / research facilities, hotel rooms, convention and public spaces, public facilities including opportunity for regional and local transit uses. Parks and recreational opportunities as well as 1,237 new housing units at a range of affordability will be included in the Proposed Project. Affordable housing will be provided pursuant to California RDA law and the City/RDA's inclusionary housing requirements of the Housing element of the General Plan. More detail on housing is located in the Demographic discussion in Chapter 4. New infrastructure would be required to support the future development of the proposed uses. In addition, the Proposed Project is within the main garrison of the former military base and as such the Proposed Project is within the existing urban footprint and substantially disturbed area of the former military base where the natural environment has been almost completely eliminated except for pockets of small natural vegetation in the east area of the project site.

The Proposed Project incorporates a number of amendments to the City's General Plan and a rezoning. This was determined to be necessary by the applicant as the City of Marina's North and West University Villages development areas were approved by the City as conceptual plans and were not developed as a result of a site specific land use planning, design and economic analysis. The Specific Plan changes to the General Plan are discussed in detail in section 2 of this document. In addition, the Specific Plan document submitted to the City as part of the project application includes a consistency review of the pertinent General Plan Community Goals (Section 1.17 and 1.18). The entirety of the *University Villages Specific Plan* and its consistency discussion is incorporated herein by reference.

In summary, the *University Villages Specific Plan* reorganized the two University Villages areas into one area (now called the Marina University Villages), reorganized the land use designations of the Marina General Plan applicable to what is now called the Marina University Villages, consolidated and better defined University Villages boundary area, modified the sub-neighborhood park area, defined a housing development mix for the project planning areas, modified the density for multiple-use housing and modified the definition and density for detached homes. Regardless, of these proposed changes, the total number of residential units remains 1,237.

The proposed consolidation of retail uses would consolidate the existing retail land uses as envisioned in the General Plan that front the transit esplanade, and 2nd Avenue into the Village Center at the Highway 1/Iimjin Parkway intersection, plus two small neighborhood-serving notes. Road infrastructure and the transit esplanade have been relocated within the project site in order to reduce vehicle conflict and optimize circulation for vehicles and bicycles and pedestrian access.

The Proposed Project also relocates the high density housing near retail, transit and employment opportunities rather than lining both sides of the north/south greenbelt. The Proposed Project rezones the project site current zoning designation from "South Fort Ord" to "Specific Plan". The Proposed Project's transit esplanade also reflects the above listed

General Plan policies pertinent to the regional light-rail system, though the Proposed Project has rerouted the esplanade south from its current 10th Street alignment to the 9th Street alignment. The proposed esplanade realignment and absence of stations in the Specific Plan is not indicative of their being a substantial environmental impact.

The Proposed Project does not conflict with the policies that are intended to protect the environment nor would the Proposed Project amendments adversely impact the environment. Furthermore, the Proposed Project is in general conformance with the Community Land Use policies listed above in the regulatory section. Therefore, this is a ***less-than-significant impact*** and no mitigation is warranted.

LU-2. Implementation of the Proposed Project would not conflict with nearby existing or planned uses. (NI)

There are two other jurisdictions of concern relating to potential land use conflicts. To the west is the CSUMB campus which, though in both Seaside and Marina, is an Independent State Institution, and to the south (between 1st Street and Light Fighter Boulevard) is an area within City of Seaside jurisdiction.

The Proposed Project is immediately adjacent and to the west and north of the CSUMB "North Campus" and "West Campus". The *Fort Ord Reuse Plan* documents originally anticipated a full-time CSUMB student population of 25,000 students (as indicated in the *Fort Ord Reuse Plan* and the *CSUMB Master Plan Update Draft EIR*, Denise Duffy and Associates, July 2004) by the year 2030, with 12,000 in the year 2015. This has subsequently been revised to 12,000 students in the year 2030 and 8,750 in 2015 (Ibid.). Review of the CSUMB Master Plan document indicates that adjacent to the Proposed Project are campus buildings and student and faculty housing. As housing and higher education are commonly mixed together in colleges and university towns these land uses are considered appropriate when mixed. There are no foreseen or anticipated conflicts in land uses between the Proposed Project and the land uses proposed in the CSUMB Master Plan.

The area to the south of 1st Street and south of the project site is designated in the City of Seaside General Plan as Regional Commercial (RGC). Per the Seaside General Plan's Proposed Land Use Classification System (page LU-9 in the Seaside General Plan), hotels, auto sales, "big box" retail and large scale, multi-screen movie theaters, and business parks are allowed. As the Proposed Project has Office Research designated lands on its southern boundary adjacent to the City of Seaside's RGC area, the future land uses are considered appropriate neighbors. Therefore, there are no foreseen or anticipated conflicts in land uses between the Proposed Project and the land uses proposed in the City of Seaside RGC area resulting in ***no impact***.

Cumulative Impact

The Land Use section generally does not address cumulative impacts, because for land use, there is no cumulative context to assess land use consistency and compatibility issues unless there is an environmental impact in which case the environmental impacts is discussed in the appropriate environmental discussion sections in this DEIR; land use effects are localized and would not combine with similar effects in other locations.

3.8 NOISE

3.8 NOISE

Introduction

This section describes the existing noise environment in the area of the proposed University Villages Specific Plan (Proposed Project), and the regulations or adopted plans that shape the noise environment. The section also analyzes the effects of the Proposed Project on the existing and future noise environment. These effects include potential impacts from temporary project-related construction noise and construction vibration. Permanent ambient noise increases as a result of the Proposed Project are also evaluated.

Issues scoped out in the Initial Study include proximity to public or private airports, since the Proposed Project is not within an airport land use plan, within two miles of a public airport, or in the vicinity of a private airstrip.

Written comments were received in response to the NOP from California State University, Monterey Bay (CSUMB) (see Appendix B).

Setting

Fundamentals of Sound and Environmental Noise

Sound can be described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). The decibel scale is a logarithmic scale that describes the intensity of the pressure vibrations that make up a sound. The pitch of the sound is correlated to the frequency of the sound's pressure vibration. Because humans are not equally sensitive to a given sound level at all frequencies, a special scale has been devised that specifically relates noise to human sensitivity. The A- weighted decibel scale (dBA) does this by placing more importance on frequencies that are more noticeable to the human ear.

Noise is typically defined as unwanted sound. Typically, noise in any environment consists of a base of steady "background" noise made up of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These sources can vary from an occasional aircraft or train passing by to virtually continuous noise from traffic on a major highway. Table 3.8-1 lists representative environmental noise levels.

Several rating scales have been developed to analyze the adverse effect of noise on people. Since environmental noise fluctuates over time, these scales consider that the effect of noise upon people is largely dependent upon the volume of the noise, as well as the time of day when the noise occurs. Those that are applicable to this analysis are as follows:

Table 3.8-1
Representative Environmental Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock Band
Jet Fly-over at 100 feet		
	—100—	
Gas Lawnmower at 3 feet		
	—90—	
		Food Blender at 3 feet
Diesel Truck going 50 mph at 50 feet	—80—	Garbage Disposal at 3 feet
Noisy Urban Area during Daytime		
Gas Lawnmower at 100 feet	—70—	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
Heavy Traffic at 300 feet	—60—	
		Large Business Office
Quiet Urban Area during Daytime	—50—	Dishwasher in Next Room
Quiet Urban Area during Nighttime	—40—	Theater, Large Conference Room (background)
Quiet Suburban Area during Nighttime		
	—30—	Library
Quiet Rural Area during Nighttime		Bedroom at Night, Concert Hall (background)
	—20—	
		Broadcast/Recording Studio
	—10—	
Lowest Threshold of Human Hearing	—0—	Lowest Threshold of Human Hearing

Source: California Department of Transportation, 1998

L_{eq}, the equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

L_{dn}, the Day Night Average Level, is a 24-hour average L_{eq} with a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime.

L_{min}, the minimum instantaneous noise level experienced during a given period of time.

L_{max}, the maximum instantaneous noise level experienced during a given period of time.

Noise caused by natural sources and human activities is usually well represented by median noise levels during the day, night, or over a 24-hour period. Environmental noise levels are generally considered low when the L_{eq} is below 60 dBA, moderate in the 60-to 70-dBA range, and high above 70 dBA.

Examples of settings with low daytime background noise levels are isolated, natural settings that can provide noise levels as low as 20 dBA and quiet, suburban, residential streets that can provide noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise settings are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most people living or working in urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA) accept the higher noise levels commonly associated with these land uses.

When evaluating changes in 24-hour community noise levels, a difference of 3 dBA is a barely perceptible increase to most people. A 5 dBA increase is readily noticeable, while a difference of 10 dBA would be perceived as a doubling of loudness.

Noise levels from a particular source decline as distance to a receptor increases. Other factors, such as the weather and reflecting or shielding, also help intensify or reduce noise levels at any given location. A commonly used rule of thumb for roadway noise is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically "hard" locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically "soft" locations (i.e., the area between the source and receptor is normal earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The manner in which older homes in California were constructed generally provides a reduction of exterior- to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dBA or more.

Fundamentals of Groundborne Vibration

Vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. The ground motion caused by vibration is measured in the U.S. as vibration decibels (VdB).

The background vibration velocity level in residential and educational areas is usually around 50 VdB. Groundborne vibration is normally perceptible to humans at approximately 65 VdB. A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for most people.

Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. The

range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

The general human response to different levels of groundborne vibration velocity levels is described in Table 3.8-2.

Table 3.8-2
Human Response to Different Levels of Groundborne Vibration

Vibration Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception for many people.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Source: Federal Railroad Administration, 1998.

Existing Receptors

The Proposed Project would be developed on land that is currently developed with vacant military buildings. Because these buildings no longer provide residential uses, there are no existing sensitive receptors on-site. There are few existing sensitive receptors in the vicinity of the Proposed Project. There is a day care to the north of the Proposed Project site, north of Imjin Parkway and just west of 4th Avenue. Education buildings associated with CSUMB are situated east of the site, north of 1st Street. CSUMB facilities east of 2nd Avenue include a sports center, offices and classroom, Child Development Center, North Campus Faculty/Staff Housing, and the northern portion of CSUMB west campus. Of these uses, the offices and classrooms and childcare facilities would be more noise sensitive than other land uses.

Other existing uses on the Proposed Project site are the Young NAK Church on the west side of 2nd Avenue, the Shoreline Community church, and Goodwill Industries on the east side of 2nd Avenue. The Monterey Institute for Research in Astronomy (MIRA) facility is located off-site at the southeast corner of 2nd Avenue and 8th Street.

Existing Ambient Daytime Noise Levels

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA.

Existing ambient daytime noise levels were measured at eight selected locations around the project site on July 23, 2004. These locations are identified in Figure 3.8-1. The noise levels were measured using a Larson-Davis Model 814 precision sound level meter, which satisfies the American National Standards Institute (ANSI) standards for general environmental noise measurement instrumentation. Readings were 15 minutes in duration. Sunny, clear atmospheric conditions prevailed during the

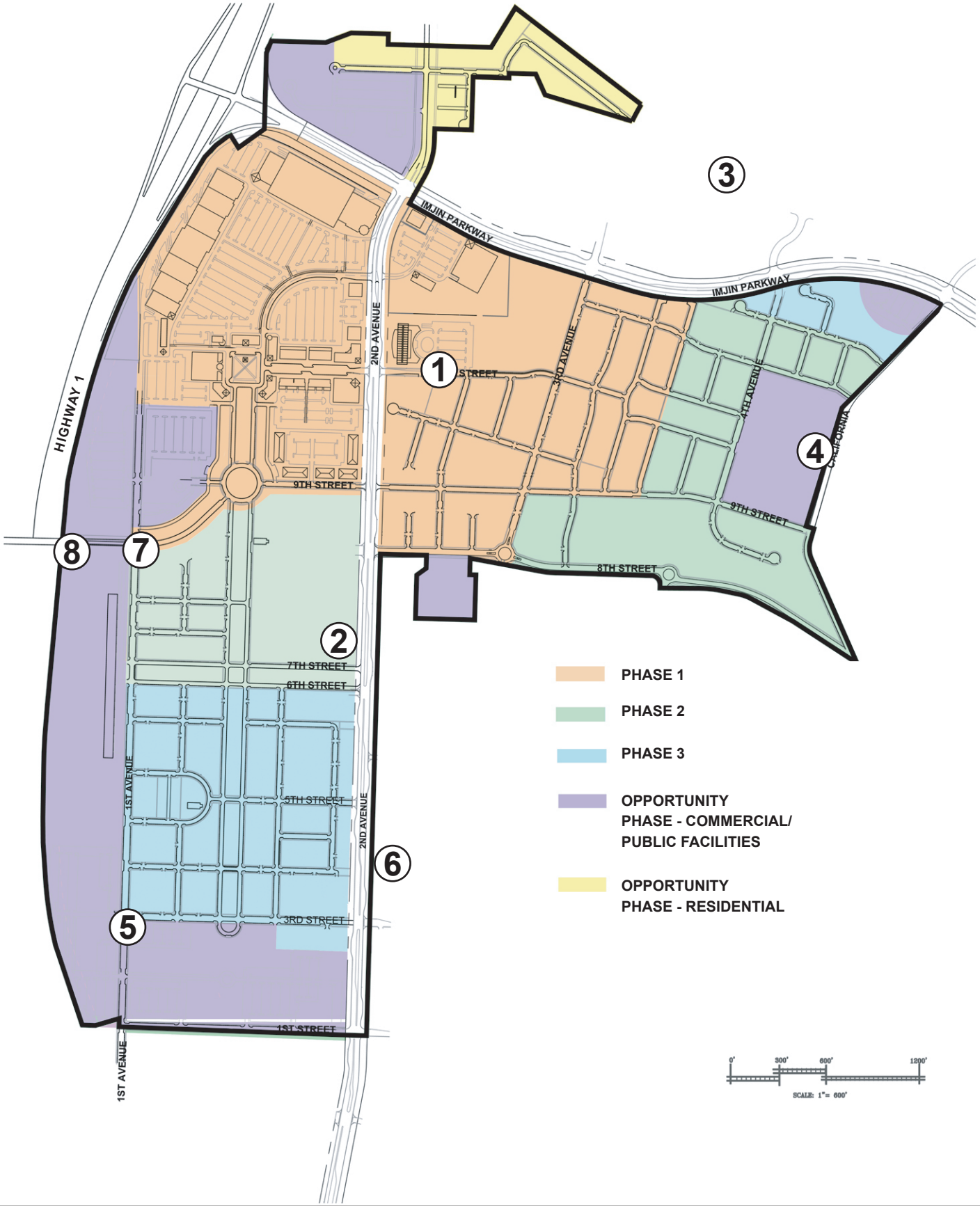

FIGURE **3.8-1**

Noise Measurement Locations

Source: Dahlin Group, 2004

City of Marina

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EIP ASSOCIATES

monitoring. The sound level meter was calibrated using a CA 150 acoustic calibrator. The average noise levels and sources of noise measured at each location are identified in Table 3.8-3.

Table 3.8-3
Existing Daytime Noise Levels at Selected On- and Off-Site Locations

Noise Measurement Location	Primary Noise Sources	Noise Level Statistics		
		L_{eq}	L_{min}	L_{max}
1. Interior of site. 10th Street, 100 yards east of 2nd Avenue.	Traffic from Highway 1, Imjin Parkway	41.3	35.2	64.6
2. Interior of site. 2nd Ave. between 9th and 7th streets.	Traffic from Highway 1, vehicles on 2nd Street, construction workers.	45.9	39.0	62.6
3. Off-site. Day Care north of project site, just off 4th Avenue.	HVAC noise. Traffic on Imjin, employee cars in parking lot.	53.5	49.7	70.2
4. Potential future school site. California Street, north of 9th Street	Traffic on California and Imjin.	53.0	44.1	66.6
5. Intersection of 1st Avenue and 3rd Street	Traffic on Highway 1.	62.0	56.6	69.5
6. Just north of intersection of 3rd Street and 2nd Avenue.	Traffic on Highway 1.	46.8	41.1	57.8
7. Just west of intersection of 1st Avenue and 8th Street.	Traffic on Highway 1, police siren.	58.0	52.2	73.0
8. East end of 8th Street overpass over Highway 1.	Traffic on Highway 1.	71.4	66.4	76.6

Note: Sites were chosen based on their proximity to future potentially sensitive uses.
Source: EIP Associates, 2004.

Noise levels at these locations were almost exclusively due to vehicular roadway noise.

Existing Roadway Noise Levels On-site

The project site was originally developed as part of Fort Ord. Fort Ord has since been de-commissioned, and the buildings that occupy the Proposed Project site are now abandoned. Few traffic-generating uses still occur on the site, and are limited mostly to site preparation construction activity. These uses generate only low levels of traffic. Noise from this traffic is therefore low as well.

Existing Roadway Noise Levels Off-Site

Existing roadway noise levels were also calculated for the roadway links in and around the project site. Roadways were chosen because they experience high traffic volumes or because of their potential to have noise sensitive uses constructed near them. This task was accomplished using the Federal Highway Administration Highway Noise Prediction Model (FHWA-RD-77-108) and traffic volumes from the Proposed Project traffic analysis (included as Appendix F). The model calculates the average noise levels at specific locations based on traffic volumes, average speeds, roadway geometry, and site

environmental conditions. The average vehicle noise rates (energy rates) utilized in the FHWA Model have been modified to reflect average vehicle noise rates identified for California by Caltrans. The Caltrans data show that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. Traffic volumes were taken from the traffic study prepared for the Proposed Project by KB Higgins. The average daily noise levels along these roadway segments are presented in Table 3.8-4.

Table 3.8-4
Existing Roadway Noise Levels Off-site
(dBA L_{dn} at 50 and 75 Feet From Center of Roadway)

Roadway	Roadway Segment	Existing dBA L_{dn}
Imjin Parkway	2nd Avenue and California Avenue.	68.1 (66.2)
2nd Ave.	3rd Street and 8th Street	58.0 (56.1)
4th Ave.	9th Street and Imjin Parkway	56.4 (54.6)
Imjin Parkway	West of Abrams Drive	68.3 (66.4)
Del Monte Blvd.	South of Reservation Road	67.2 (65.2)

Note: XX(XX) = L_{dn} at 50 feet (L_{dn} at 75 feet)
Source: EIP Associates, 2004.

Existing Groundborne Vibration

Usually, the biggest existing source of groundborne vibration at a project site is roadway truck and bus traffic. Trucks and buses typically generate groundborne vibration velocity levels of around 63 VdB. These levels could reach 72 VdB where trucks and buses pass over bumps in the road. Imjin Parkway, the main arterial in the vicinity of the Proposed Project, would experience the greatest volumes of bus and truck traffic. Because most of the former Fort Ord is not currently in use, few bus or truck trips currently occur along Imjin Parkway. Highway 1 runs below the grade of the project site, and so groundborne vibration from this source is minimal.

Regulatory Setting

The following discussion summarizes federal, State and local regulatory authorities pertaining to noise.

Federal

There are no federal regulation related to noise that affect the Proposed Project.

State

Title 24 of the California Code of Regulations codifies Sound Transmission Control requirements, which establishes uniform minimum noise insulation performance standards for new hotels, motels,

dormitories, apartment houses, and dwellings other than detached single-family dwellings. Specifically, Title 24 states that interior noise levels attributable to exterior sources shall not exceed 45 dBA CNEL in any habitable room of new dwellings. Dwellings are to be designed so that interior noise levels would meet this standard for at least ten years from the time of building permit application.

Local

City of Marina Municipal Code. The City of Marina Municipal Code chapter 9.24 contains ordinances pertaining to noise regulation. While chapter 9.24 does not identify specific noise limits, it does prohibit excessive, unnecessary or unusually loud noises and vibrations in the community. This applies to any noise whose volume, level, or duration disturbs, injures or endangers the comfort, repose, health, peace or safety of Marina residents. Section 9.24.040 lists specific nuisances. Included in this list are many hand-powered, fuel-powered, and electric-powered tools that could be used during construction projects. Section 9.24.040 limits the operation of the listed equipment to after seven a.m. and before seven p.m. on a daily basis except for Sundays and holidays when their use is prohibited before ten a.m. and after seven p.m. During daylight savings, this equipment may be operated until eight p.m.

The City Municipal Code chapter 15.04 sets construction allowable hours and noise levels. Construction may only occur between seven a.m. and seven p.m. when the construction is adjacent to residential uses. On Sundays and holidays, construction can only occur between ten a.m. and seven p.m. Section 15.04.055 also limits overall construction noise to no more than 60 dB for twenty-five percent of an hour at any receiving property line.

City of Marina General Plan. The California Government Code requires that a noise element be included in the general plan of each county and city in the state. The purpose of the noise element is to ensure that noise control is incorporated into the planning process. The noise element can help City planners achieve and maintain consistent noise levels for existing and proposed land uses.

4.109: The land use policies 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 exterior noise levels greater than the "acceptable" standards set forth in Table 4.1 [Table 3.8-5] 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 3.8-5
City Of Marina
Maximum Exterior And Interior Acceptable Ambient Noise Levels (L_{dn})

Land Use	Maximum Acceptable Exterior	Maximum Conditionally Acceptable Exterior	Maximum Acceptable Interior
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

Source: Marina General Plan –Adopted October 31, 2000, Revised November 6, 2003, Table 4.1, page 4-37.

4.110: 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 Table 4.1 [Table 3.8-5] 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.

These measures must reduce interior noise to the maximum allowable limits shown in Table 4.1 [Table 3.8-5], 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 would 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 Proposed 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 Proposed Project would 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 roads or improvements of existing arterials and collectors which

would result in significant increases in traffic volumes. If projected cumulative 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 [Table 3.8-5], 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 earthberms.

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 earthberms 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 of this plan.

Impacts Assessment and Mitigation Measures

Significance Criteria

The following thresholds of significance are based on Appendix G of the *CEQA Guidelines,* and the City of Marina Municipal Code. For purposes of this EIR, implementation of the Proposed Project may have a significant adverse impact on noise if it would result in any of the following:

- Permanently expose nearby sensitive uses to excessive groundborne vibration levels. While CEQA states that the potential for any excessive groundborne vibration levels must be analyzed, it does not define "excessive", and there are no federal, State or local standards for groundborne vibration. Consequently, this analysis uses the Federal Railway Administration's vibration impact thresholds for sensitive buildings, residences, and institutional land uses. These thresholds are 80 VdB at residences and buildings where people normally sleep (e.g., nearby residences and day care facility) and 83 VdB at institutional buildings;

- Cause buildings to experience structural damage as a result of construction activity vibration.

- Conflict with Section 9.24 or Section 15.04 of the City of Marina Municipal Code.

- Cause exterior or interior noise levels for new land uses to exceed the conditionally acceptable noise levels shown in Table 4.1 in the City of Marina General Plan (Table 3.8-5 in this EIR). For uses where ambient noise is already above these levels, significance would be determined by whether noise levels are increased by 5 dBA L_{dn} or more.

Methodology for Analysis

Construction Noise. Construction noise levels were estimated by data published by the U.S. EPA. The EPA has developed typical noise levels for construction equipment such as that which would be used during the construction of the Proposed Project. Using the EPA noise level data, potential noise levels were estimated at existing receptors near the project site.

Project-Related Traffic Noise. To assess traffic noise impacts, traffic noise levels were predicted at 50 feet under both existing and existing-plus-project conditions. This allows roadway noise impacts to be identified at any affected existing receptors. Noise impacts at future affected land uses located within the project site were also evaluated based on the road segments analyzed in the traffic study.

Traffic-related noise level projections were made using the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108). The model is based upon the Federal Highway Administration Highway Noise Prediction Model (FHWA-RD-77-108) and traffic volumes from the Proposed Project traffic analysis with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

Baseline Conditions

This section is prepared using the 2004 baseline. The 1991 baseline is insufficient to use because it does not reflect the current noise characteristics associated with Imjin Parkway and Highway 1. In addition, the train operations that occurred under baseline conditions no longer exist.

Environmental Analysis

NE-1. Construction of the Proposed Project would temporarily increase noise levels. (PS)

Proposed Project development would require the use of heavy equipment for site grading and excavation, installation of utilities, paving, and building construction. Development activities would also involve the use of smaller power tools, generators, and other sources of noise. During each stage of development there would be a different mix of equipment operating and noise levels would vary based on the amount of equipment in operation and the location of the activity. Tractors, jackhammers, and pile-drivers, if used, would produce the highest noise levels. Other intensive construction activity, such as the use of jack-hammers or bulldozers would generate far less noise than pile-driving.

The EPA has compiled data regarding the noise generating characteristics of specific types of construction equipment and typical construction activities. These data are presented in Table 3.8-6 and 3.8-7. These noise levels would diminish rapidly with distance from the construction-site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 84 dBA measured at 50 feet from the noise source to the receptor would reduce to 78 dBA at 100 feet from the source to the receptor, and reduce by another 6 dBA to 72 dBA at 200 feet from the source to the receptor.

Table 3.8-6
Noise Ranges of Typical Construction Equipment

Construction Equipment	Noise Levels in dBA L_{eq} at 50 feet[1]
Front Loader	73-86
Trucks	82-95
Cranes (moveable)	75-88
Cranes (derrick)	86-89
Vibrator	68-82
Saws	72-82
Pneumatic Impact Equipment	83-88
Jackhammers	81-98
Pumps	68-72
Generators	71-83
Compressors	75-87
Concrete Mixers	75-88
Concrete Pumps	81-85
Back Hoe	73-95
Pile-Driving (peaks)	95-107
Tractor	77-98
Scraper/Grader	80-93
Paver	85-88

Notes: 1. Machinery equipped with noise control devices or other noise-reducing design features does not generate the same level of noise emissions as that shown in this table.
Source: U.S. EPA, 1971.

Table 3.8-7
Typical Outdoor Construction Noise Levels

Construction Phase	Noise Levels at 50 Feet (dBA L_{eq})	Noise Levels at 50 Feet with Mufflers (dBA L_{eq})
Ground Clearing	84	82
Excavation, Grading	89	86
Foundations	78	77
Structural	85	83
Finishing	89	86

Source: U.S. EPA, 1971.

As stated in the "Existing Receptors" discussion of this section, there are very few existing receptors in the vicinity of the Proposed Project that could be affected by construction noise. The nearest receptors are those that currently exist on the project site. This includes the Young NAK church, Shoreline Community church, and Goodwill Industries. The nearest receptors considered "sensitive" receptors would likely be the day-care located to the north of the Proposed Project and a child development center on the CSUMB campus. The day-care is

approximately 500 feet from the northern border of the Proposed Project where it is adjacent to Imjin Parkway, and is considered sensitive because children would most likely sleep at this facility at certain times of the day. An elementary school may also be built in the future near the daycare center and it should be noted that this school may not be built and occupied before construction begins on the Proposed Project. The child development center is near the intersection of 3rd Avenue and 12th Street and is approximately 500 feet from the Proposed Project at its nearest boundary.

During the construction of the various phases of the Proposed Project, existing on-site uses would be exposed to construction noise. Because the Proposed Project would be developed in phases, residential uses developed during one phase could be affected by construction that occurs during a subsequent phase. For instance, residences east of 3rd Avenue that would be developed during Phase 1 could be affected by adjacent Phase 2 construction west of 4th Avenue. Construction noise, however, would be limited by the City of Marina Municipal Code. Section 15.04.055 of the Marina Municipal Code would limit construction to between the hours of seven a.m. and seven p.m. during weekdays and Saturdays, and ten a.m. and seven p.m. on Sundays and holidays, effectively limiting construction to non-sleep hours. Section 15.04.055 also stipulates that during the hours of construction, no construction, tools or equipment shall produce a decibel level of more than 60 dBA for twenty-five percent of an hour at any receiving property line.[1] This 60 dBA limit is at or below the maximum acceptable exterior noise levels for all land uses as found in Table 4.1 of the City of Marina General Plan.

It is not known at this time if pile-driving would occur or where it would occur. Pile-driving normally occurs only when buildings would be at least five stories tall. For the Proposed Project, this would mean that any pile-driving would be limited to locations where retail/service or office research uses, including the hotel, could be developed. If pile-driving activity occurs during construction, maximum noise levels could reach 107 dBA L_{eq} at 50 feet from the Proposed Project or development site boundary. This would create intermittent noise levels of approximately 88 dBA L_{eq} at the existing day-care/future school if pile-driving were to take place at the border of the project site closest to the day-care. This would likely exceed current ambient outdoor noise levels at the day care. No pile-driving is anticipated near the CSUMB Child Development Center, classrooms, or future housing because development in the Specific Plan nearest these off-site land uses would consist of low-rise (less than five stories) residential development. Pile-driving noise at the proposed hotel site, if it were to occur, could affect existing residential development east of 2nd Avenue and north of Imjin Parkway, however, even if pile-driving is limited to retail/service and office research areas, it could still affect receptors in other on-site areas. This is because of the extremely high dBA levels generated by pile-driving, and because pile-driving in retail/service or office/research areas could be adjacent to new occupied areas that would be created by the Proposed Project during earlier phases of project development. This could occur during Phase 3 development, in particular, as buildings are constructed in Planning Areas OP1A (hotel), OP1B, OP2, and V.

[1] City of Marina Municipal Code, Section 15.04.055.

Pile-driving in these areas could affect adjacent buildings or nearby on-site land uses (e.g., residential constructed in Phase 1 or 2).

California State University of Monterey also plans to develop housing (the North Campus) east of 2nd Avenue, and south of 8th Street. This housing would be developed near areas that would be developed during phases one, two, and three of the Proposed Project. If the north campus housing is developed before phases one, two and three are built, Proposed Project construction could affect this housing. If the north campus housing is built after build-out of phases one, two, and three, the construction noise could affect residential uses in the Proposed Project. As discussed above, the City of Marina Municipal Code, Section 15.04.055 limits the intensity of noise from construction, and also limits the hours during which construction can occur. Residential uses in Proposed Project phases one, two, and three, and residences living at the north campus housing, would be partially protected from construction noise because it would be limited to non-sleep hours, and construction noise would be limited to less than 60 dBA for 45 minutes out of every hour. This 60 dBA threshold is at or below the maximum acceptable exterior noise levels for residential land uses as found in Table 4.1 of the City of Marina General Plan. However, because high levels of noise could still occur intermittently throughout the day, sensitive uses could still be impacted if intensive construction activity occurs in the vicinity of these receptors.

In summary, construction activity would generate noise levels that may be noticeable at the day-care facility and existing CSUMB facilities east of 2nd Avenue. Construction noise from future phases of the Proposed Project could also affect existing uses, as well as residences constructed during Phases 1 and 2 and potentially CSUMB North Campus housing. This noise would be temporary, and would also be limited to non-sleep hours. However, because high levels of noise could still be generated in close proximity to sensitive receptors, this would remain a ***short term potentially significant impact***.

MITIGATION MEASURES. The following mitigation measure would reduce the noise impact of construction activity, except for pile-driving, to *less-than-significant levels*. Pile-driving noise would be reduced as well, but this would still be significant if it occurs in close proximity to noise-sensitive receptors. Consequently, pile-driving would remain a *significant and unavoidable impact*. (SU)

NE-1.1 *The City shall ensure that notes for grading plans and/or the site improvement plans would clearly state the noise limitation requirements of Marina Municipal Code Section 15.04.055.*

NE-1.2 *Pre-drilling shall be required prior to any pile-driving.*

NE-2. Construction activities associated with the Proposed Project would generate or expose persons on or off-site to excessive groundborne vibration. (PS)

Construction activities that would occur at the project site have the potential to generate low levels of groundborne vibration. Vibration has two potential impacts. The less severe impact is the potential disturbance of individuals. The Federal Railway Administration has determined the annoyance threshold from vibration to be 81 VdB. This is almost exclusively an issue during the nighttime when people are trying to sleep. The more severe impact is potential structural damage to existing buildings as a result of excessive groundborne vibration.

Table 3.8-8 identifies various vibration velocity levels for the types of construction equipment that would operate at the project site during construction. As discussed in Impact NE-1, several existing structures, including the Young NAK and Shoreline Community churches, and Goodwill Industries would occur within 25 feet of these structures. Though not on the project site, the MIRA facility is in proximity whereby vibration could impact this scientific research facility. If certain activities, such as the use of a bulldozer or loaded truck, would occur within 25 feet of these structures, VdB in excess of the 81 VdB threshold of significance could occur. However, these existing buildings do not qualify as uses where people would be trying to sleep. Intensive construction in such close proximity to these uses would also be temporary.

Table 3.8-8
Vibration Source Levels for Construction Equipment

	Approximate VdB				
Construction Equipment	**25 Feet**	**50 Feet**	**60 Feet**	**75 Feet**	**100 Feet**
Large Bulldozer	87	81	79	77	75
Loaded Trucks	86	80	78	76	74
Jackhammer	79	73	71	69	67
Small Bulldozer	58	52	50	48	46

Source: Federal Railroad Administration, 1998; and EIP Associates, 2004.

As discussed in Impact NE-2, because the Proposed Project would be developed in phases, residences built during initial phases could be affected by construction activity associated with subsequent phases. Section 15.04.055 of the Marina Municipal Code would prohibit construction from occurring during recognized sleep hours.

The existing day care and CSUMB Child Development Center are the nearest existing off-site sensitive receptors, and would be at least 500 feet from possible construction activity. Consequently, groundborne vibration levels would not reach 81 VdB at these locations, and would be below the applicable threshold of significance. Also, the CSUMB north campus housing may be constructed before all phases of the Proposed Project are complete. Consequently, construction vibration could affect this student housing. The north campus housing would qualify as a use where people normally sleep. However, as stated above, Section 15.04.055 of the Marina Municipal Code would prohibit construction from occurring during recognized sleep hours.

In addition to the annoyance that construction-related groundborne vibration can cause, certain very intensive construction activities also have the potential to create excessive vibration that can produce structural damage to existing buildings. Concerning the Proposed Project, the only construction activity that could produce vibrations this great is pile-driving. Pile-driving typically only occurs during construction of buildings that are at least five stories tall. The only buildings that would be this tall would be located in areas designated for retail/service or office/research. Generally, existing structures within 50 feet of pile-driving activity are susceptible to structural damage because peak particle velocity (PPV) for impact equipment such as pile drivers is typically 1.518 to 0.644 PPV at 25 feet, and pile drivers provide sufficient time between impacts to allow a building's resonant effects to decay before the next vibration effect.[2] No existing off-site structures are a distance of 50 feet or less to the boundary of the project site. The existing on-site structures, however, could be affected if pile-driving occurs in close proximity to these uses, as discussed in Impact NE-1.

Even if pile-driving were to only occur in these areas, there is still the potential that this activity could occur close enough to existing buildings or new buildings constructed in earlier project phases, that structural damage could be an issue. Because pile-driving that would occur as part of the Proposed Project has the potential to affect the structural integrity of existing on-site buildings, or newly created buildings, this would be a ***short-term potentially significant impact.***

MITIGATION MEASURES. Implementations of the following mitigation measure would reduce this impact to a *less-than-significant level* by reducing the extent and duration of installing driven piles, which would reduce the risk of vibration-generated structural damage. (LTS)

NE-2.1 Implement NE-1.2 (pre-drill prior to pile-driving).

NE-3. The Proposed Project would increase operational noise levels on and off-site. (LTS)

The Proposed Project would create residential, office/research, retail, public facilities, and parks/open space. This development would be typical of less intensive land uses built in other locations. As such, no stationary sources are expected to be built that would create high, noticeable levels of noise. Stationary noise would almost certainly be limited to typical sources such as rooftop heating, ventilation, and air conditioning equipment. These sources are all common to residential, retail and office uses. They generate low levels of noise and are not considered substantial. Moreover, General Plan Policy 4.113 requires that new stationary sources adjacent to sensitive land uses comply with specific noise standards. Acoustic design to achieve such standards would be developed at the time a specific project is proposed. Compliance with these standards would need to be demonstrated prior to any discretionary or ministerial City approvals to construct.

[2] Federal Transit Administration Transit Noise and Vibration Impact Assessment, DOT-T-95-16, April 1995.

In contrast to stationary source noise, increased traffic volumes resulting from development of the Proposed Project could potentially elevate noise near roads to significant levels. This has implications for existing uses in the vicinity of the project site. It also has implications for any new sensitive uses that might develop as part of the Proposed Project itself.

Table 3.8-9 shows background and background plus Proposed Project noise levels modeled at selected noise-sensitive locations along the study-area roadway segments in the Proposed Project vicinity. The following discussion evaluates 1) project-related noise affecting existing receptors, and 2) project-related noise affecting new receptors built as part of the Proposed Project.

Table 3.8-9
Background and Plus-Project Roadway Noise Levels (dB L_{dn})

	Background	Project Conditions	Difference
Imjin Parkway, between 2nd Ave. and California Ave.	68.1 (66.2)	70.2 (68.2)	2.1 (2.0)
2nd Ave., between 3rd Street and 8th Street	58.0 (56.1)	64.7 (62.8)	6.7 (6.7)
4th Ave., between 9th Street and Imjin Parkway	56.4 (54.6)	57.7 (55.9)	1.3 (1.3)
Imjin Parkway, West of Abrams Drive	68.3 (66.4)	70.2 (68.2)	1.9 (1.8)
Del Monte Blvd., South of Reservation Road	67.2 (65.2)	67.6 (65.7)	0.4 (0.5)

Note: XX(XX) = L_{dn} at 50 feet (L_{dn} at 75 feet) "Background" conditions in this table are equivalent to the background conditions specified in the traffic report, and refer to existing conditions plus approved project. "Project Conditions" refers to the Background plus the Proposed Project.

Source: EIP Associates, 2004.

Existing Receptors. As shown in the table, roadway noise would increase as a result of the Proposed Project along the roads analyzed. In only one case, however, does noise increase by more than 5 dBA L_{dn} over conditions prior to construction of the Proposed Project. This is along 2nd Avenue, where there are currently no residential uses. No residential uses exist closer than 75 feet to the center of Imjin Parkway in the vicinity of the Proposed Project.

Because the Proposed Project would not expose existing residential or other sensitive receptors to roadway noise levels that are significantly greater (more than 5 dBA L_{dn}) than background levels, there would be no impact to existing receptors.

New Receptors. Modeling indicates that new residential uses bordering Imjin Parkway or 2nd Avenue could be exposed to exterior traffic noise levels that exceed the 60 dBA L_{dn} acceptable level of exposure, but would be less than the "Conditionally Acceptable" level of 70 dBA L_{dn} at 75 feet as indicated in Table 3.8-9.

Section 4.110 of the Marina General Plan specifies that the maximum exterior noise exposure for new development shall not exceed the 60 dBA L_{dn} "acceptable use" standards found in Table 4.1 of the General Plan. However, development in areas where these noise levels would

be exceeded can still be approved only if appropriate mitigation measures are employed to reduce interior noise to the maximum allowable interior noise limits found in Table 4.1 of the General Plan. Compliance with this requirement must take the form of proof from a professional acoustical consultant (Marina General Plan Section 4.110, page 4-35, 36). Section 4.110 also states that development may be approved in areas where exterior noise limits at outdoor activity areas exceed "conditionally acceptable" levels, if the development is found to be in the public interest, and if an acoustical analysis shows that the interior noise levels in Table 4.1 of the General Plan would not be exceeded.

New residential uses including student housing (CSUMB North Campus housing) are also proposed to be built in the future east of 2nd Avenue and south of 8th street. This housing could be affected by new project-generated traffic along 2nd street. The student housing would most likely include outdoor activity areas. Consequently, the maximum acceptable exterior noise levels shown in Table 4.1 of the General Plan would apply. The student housing would have to meet the maximum interior noise limits shown in Table 4.1 of the General Plan. Interior noise limits would be a function of distance from 2nd Avenue. New student housing would be set back approximately 70 feet from the edge of 2nd Avenue, according to the CSUMB Master Plan EIR. When development is approved, the applicant would be required to show that interior limits would be met. According to Table 3.8-9, exterior noise levels at this use would be below 70 dBA L_{dn}.

Because noise modeling shows that new residential uses built along Imjin and along 2nd Avenue would be exposed to exterior noise levels at outdoor activity areas above both the maximum exterior 60 dBA L_{dn} "acceptable" standard for residential uses in the Marina General Plan, an acoustical analysis would be required to show that interior noise levels would be no more than 45 dBA L_{dn}. However, exterior noise levels at new outdoor activity areas would be less than the 70 dBA L_{dn} "conditionally acceptable" level. Also, levels at existing residences would not increase by more than 5 dBA L_{dn}. Consequently, this would be a ***less-than-significant impact***.

Cumulative Impacts

NE-4. The Proposed Project would contribute to cumulative on-site traffic noise levels. (CC)

It is expected that future noise levels experienced by residences built as part of the Proposed Project would be mostly due to transportation sources, rather than stationary sources. Consequently, ambient noise at these receptors could increase with increased traffic volumes associated with future development. Noise modeling for future year conditions was performed using the 2025 traffic volumes found in the traffic report. Table 3.8-10 shows noise levels along roadways where residential receptors would be built as part of the Proposed Project.

As shown in the table, noise levels at 75 feet from the center of Imjin Parkway would exceed the 70 dBA L_{dn} conditionally acceptable noise standard for residential development in 2025. The 70 dBA L_{dn} noise contour extends approximately 100 feet from the center of Imjin Parkway. While not all of the traffic on these roads would be caused by the Proposed Project,

Table 3.8-10
Cumulative 2025 Roadway Noise Levels (dB L_{dn})

Background	Background Conditions	Cumulative Conditions	Difference
Imjin Parkway, between 2nd Ave. and California Ave.	68.1 (66.2)	72.7 (70.7)	4.6 (4.5)
2nd Ave., between 3rd Street and 8th Street	58.0 (56.1)	69.6 (67.7)	11.6 (11.6)
4th Ave., between 9th Street and Imjin Parkway	56.4 (54.6)	63.0 (61.3)	6.6 (6.7)
Imjin Parkway, West of Abrams Drive	68.3 (66.4)	73.1 (71.2)	4.8 (4.8)
Del Monte Blvd, South of Reservation Road	67.2 (65.2)	69.3 (67.3)	2.1 (2.1)

Note: XX(XX) = L_{dn} at 50 feet (L_{dn} at 75 feet) "Background" in this table is identical to that in Table 3.8-9. "Cumulative Conditions" refers to the Background Conditions plus the Proposed Project and other expected development in 2025.
Source: EIP Associates, 2004.

a large enough amount of the traffic would be project-related that the Proposed Project's impact would be cumulatively considerable.

Because the Proposed Project would contribute to cumulative 2025 traffic noise that would create noise levels at project-related residences along Imjin Parkway would exceed the 70 dBA L_{dn} "conditionally acceptable" level, the Proposed Project would have a significant ***cumulatively considerable*** noise impact on new sensitive noise receptors in 2025.

MITIGATION MEASURES. Implementation of NE-4.1 would ensure that acceptable exterior and interior noise levels would be realized at all new Specific Plan residential development in 2025, consistent with General Plan Policies 4.110 and 4.112, which would reduce the cumulative impact on on-site land uses to a *less-than-significant level*. (LTS)

NE-4.1 *The applicant shall ensure that primary outdoor activity areas at new University Villages residences along Imjin Parkway are outside the 70 dBA L_{dn} noise contour.*

NE-4.2 *An acoustical analysis shall be performed to ensure all interior noise levels at new University Villages residences along Imjin Parkway meet the 45 dBA standard.*

NE-5. The Proposed Project would contribute to Year 2025 cumulative traffic noise levels off-site. (LTS)

As shown in Table 3.8-10, cumulative traffic noise levels are predicted to increase along roadway segments in the project vicinity. Noise levels would decrease as distance from the roadway center line increases, Off-site locations that could be affected by cumulative traffic noise levels would include existing and future development along the four of the five roadway segments listed in Table 3.8-10. These segments are: Imjin Parkway, between 2nd Avenue and California Avenue; 2nd Avenue, between 3rd Street and 8th Street, Imjin Parkway, west of Abrams Drive; and Del Monte Boulevard south of Reservation Road. The segment 4th Avenue

between 9th Street and Imjin Parkway is within the Proposed Project and is not addressed in this impact. Potential noise impacts for each of the four roadway segments listed above are discussed below.

Existing Receptors. The existing residences in Abrams Park will be demolished (except for the Abrams Park "B" area) to accommodate the new Marina Heights Specific Plan project housing, which was approved by the City Council (Lamphier-Gregory 2003). Because the existing residences in the Abrams "B" Housing would remain, the applicable criterion to determine whether the predicted noise increase would be significant is 5 dBA. As illustrated by the data in Table 3.8-10, the net L_{dn} increase is estimated to be 4.8 dBA at 50 feet (measured from roadway centerline) and 4.8 dBA at 75 feet (measured from roadway centerline). This would not exceed the 5 dBA criterion. This is a ***less-than-significant cumulative impact***, and no mitigation would be required.

Predicted noise levels at existing land uses along Imjin Parkway between 2nd Avenue and California Avenue would range from 72.7 dBA at 50 feet to 70.7 dBA at 75 feet (measured from roadway centerline). This would not exceed the 5 dBA criterion. This is a ***less-than-significant cumulative impact***, and no mitigation would be required. Impacts associated with planned future uses within the Cypress Knolls Retirement Community are discussed below.

New Receptors. Future (cumulative) noise levels along Imjin Parkway west of Abrams Drive that could affect new development in the Marina Heights Specific Plan would range from 73.1 dBA at 50 feet to 71.2 dbA at 75 feet (measured from roadway centerline).

The approved Tentative Map for the Marina Heights Specific Plan indicates that there is at least a 100-foot separation between the rear of the lots and the roadway centerline. At residential lot locations, there is also a 30-foot-wide landscape setback. Because noise levels decrease approximately 3 to 4.5 dBA for every doubling of distance (see "Fundamentals of Sound and Environmental Noise," in the Setting), the conditionally acceptable 70 dBA criterion that is applied to new development would not be exceeded at lots adjacent to Imjin Parkway. This is would be a ***less-than-significant cumulative impact***, and no mitigation is required.

A portion of the planned Cypress Knolls Retirement Community west of California Avenue borders Imjin Parkway on the north. The certified EIR for that project identified cumulative traffic noise as a significant impact and identified mitigation measures to reduce exterior noise levels at future senior residences between California and 4th Avenue to 65 dBA or less. Mitigation proposed in the EIR consisted of a constructing a sound wall on the north side of Imjin Parkway (identified as 12th Street in that EIR) between California Avenue and 4th Avenue and acoustic testing of structures to ensure interior noise levels would not exceed 45 dBA. Because the 70 dBA criterion would not be exceeded, this would be a ***less-than-significant cumulative impact***, and no additional mitigation is required.

Under future cumulative conditions, the data in Table 3.8-10 indicate that new residential uses along 2nd Avenue (CSUMB North Housing) would not exceed the 70 dBA criterion, so cumulative impacts would be ***less than significant.*** No mitigation is required.

3.9 PUBLIC UTILITIES

3.9 PUBLIC UTILITIES

Introduction

Development of the Proposed Project would increase the population and developed square footage in the City of Marina. These increases would generate increased demand for water supply and distribution systems, wastewater collection and treatment facilities, storm drain collection systems and solid waste disposal facilities. This section assesses whether the increased demand associated with implementation of the Proposed Project would exceed existing and projected water supply and wastewater infrastructure and treatment systems, and solid waste disposal facilities. Discussion of storm drain capacity is evaluated in Section 3.6, Hydrology and Water Quality.

The Initial Study (Appendix A) did not find any impacts to utilities and service systems to be less than significant; these issues are addressed in this section.

Comments on the NOP regarding utilities were received from the Department of Health Services. This section also addresses the City's obligation under Water Code Section 10910(b) and CEQA Guidelines Section 15083.5 to determine whether projected supplies are sufficient to satisfy projected demands for the Proposed Project.

Setting

Water Supply

The City of Marina potable water supply is provided by the Marina Coast Water District (MCWD). MCWD's current water and wastewater service area occupies an area of about 4.5 square miles at the northwest end of the Salinas Valley.[1] MCWD provides potable water service to all residential, commercial, industrial, and environmental and fire protection uses within the City of Marina. In 1997, the Fort Ord Reuse Authority (FORA) selected the MCWD from among other competing companies to receive the former Fort Ord water systems. In January 1998, FORA and MCWD entered into a Water/Wastewater Facilities Agreement governing the provision of water and wastewater services and facilities on Fort Ord. In March 2001, an Amendment to the Water/Wastewater Facilities Agreement was executed. The terms of this Agreement are discussed below. The conveyance process was completed in late October 2001 when the U.S. Army transferred the deeds conveying the existing water and wastewater infrastructure to FORA and FORA in turn transferred the property to MCWD.[2] MCWD derives most of its potable water from wells developed in the Salinas Valley Groundwater Basin.

[1] Marina Coast Water District, *2001 Urban Water Management Plan*, December 5, 2001.
[2] Marina Coast Water District, http://www.mcwd.org/html/faqs.html#25, Accessed December 21, 2004.

The following discussion of the regional hydrology is taken from the *Draft Environmental Impact Report/Environmental Impact Statement for the Salinas Valley Water Project*, June 2001. The Salinas Valley extends approximately 120 miles northwest from the mountain regions in San Luis Obispo County near Santa Margarita to Monterey Bay in Monterey County. The primary focus of the following discussion is on the Salinas Valley Ground Water Basin (generally, the Monterey County portion of the Salinas Valley) and the Nacimiento and San Antonio reservoirs. The Salinas Valley varies in width from approximately three miles near the City of Bradley to 10 miles at the Monterey Bay coast. The Valley is bounded on the east by the Gabilan and Diablo ranges, and on the west by the Sierra de Salinas and Santa Lucia Range.

The Salinas Valley Groundwater Basin consists of four hydrologic subareas as shown in Figure 3.9-1. These are known as the Pressure Subarea, East Side Subarea, Forebay Subarea, and Upper Valley Subarea. These subareas do not represent different groundwater subbasins, but are used to designate areas within the Basin with different hydrogeologic characteristics.

The Salinas Valley Integrated Ground and Surface Water Model (SVIGSM) was created by the Monterey County Water Resources Agency (MCWRA) to represent the Basin as four subareas that includes Fort Ord. Since Fort Ord is dependent on groundwater supplied from the Pressure Subarea, and until hydrogeologic conditions are better understood, MCWRA has considered it in the SVIGSM for planning purposes.

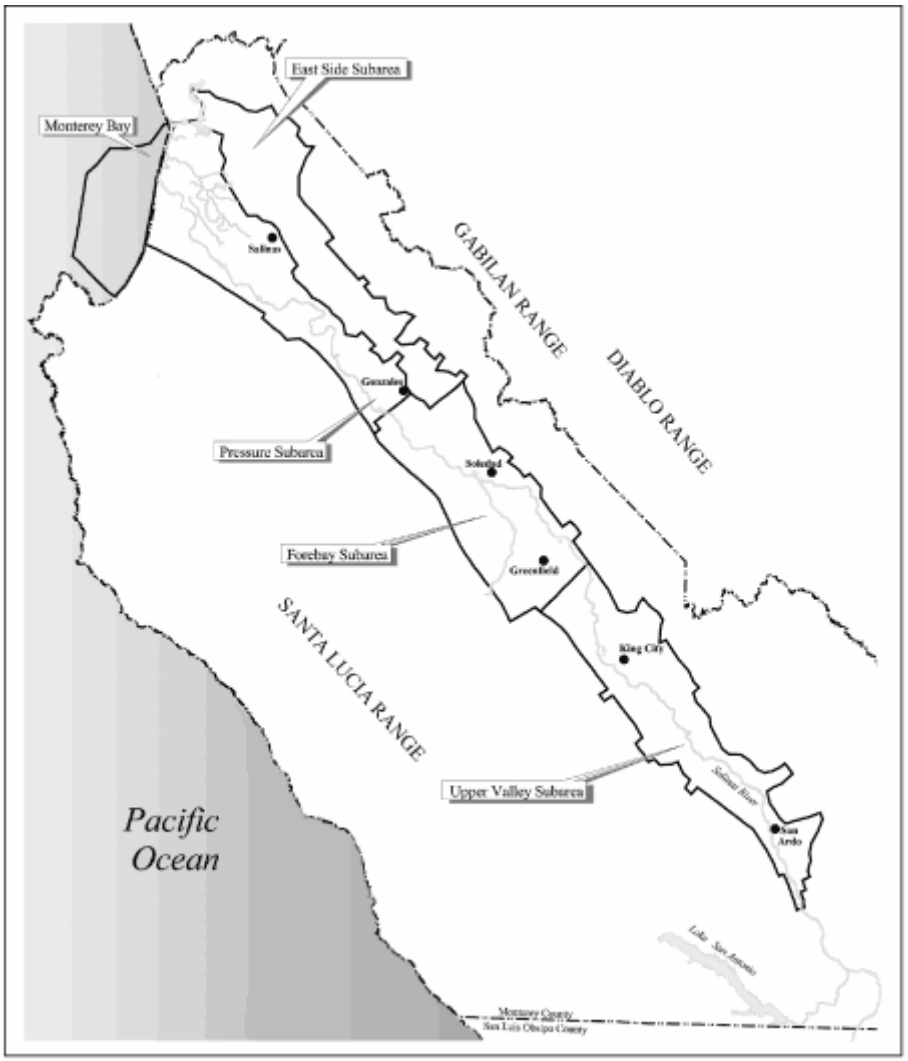
Pressure Subarea. In general, the Pressure Subarea, located in the northern portion of the Salinas Valley, is comprised of three main aquifers, the Pressure 180-Foot, the Pressure 400-Foot, and the Deep Aquifer, which occurs at approximate depths of between 900 and 1,700 feet below land surface. As a result of increasing groundwater production, as documented in Bulletin 52 (in 1946), groundwater levels have been declining below mean sea level. This decline has caused the intrusion of seawater into coastal aquifers. As the underground water supplies became intruded with seawater and to prevent further seawater intrusion, groundwater pumping in the Pressure 180-Foot Aquifer was shifted to the Pressure 400-Foot Aquifer in the mid-1970s and to the Deep Aquifer in the mid-1980s.

Based on the previous hydrologic investigations (Montgomery Watson, 1998) and the MCWRA groundwater monitoring program, it is believed that today in the Pressure Subarea north of Salinas, more than 90 percent of pumping occurs from the Pressure 400-Foot Aquifer, approximately 5 percent occurs from the Deep Aquifer, and a smaller amount is pumped from the Pressure 180-Foot Aquifer. In areas south of Salinas, it is estimated that approximately 60 percent of groundwater pumping occurs from the Pressure 400-Foot Aquifer, while 40 percent occurs in the Pressure 180-Foot Aquifer. Use of the Pressure 400-Foot Aquifer becomes more limited in the vicinity of Chualar to Gonzales.

Seawater intrusion into the Pressure Subarea was occurring at an annual rate of approximately 14,000 AFY prior to initiation of operations of the Monterey County Water Recycling Projects (MCWRP). The MCWRP delivers recycled water as irrigation water for the Castroville Seawater Intrusion Project (CSIP). As the MCWRP becomes fully operational, delivering approximately 13,300 AFY of recycled water, the annual rate of seawater intrusion is projected to decrease to approximately 8,800 AFY.

Figure 3.9-1

Salinas Valley Groundwater Basin Hydrologic Subareas



Source: Monterey County Water Resources Agency, 1997.

East Side Subarea. The East Side Subarea is in the northeast part of the Salinas Valley, east of the Pressure Subarea. This area consists mainly of three aquifer layers. Historically, a majority of groundwater pumping had occurred from the uppermost Shallow East Side Aquifer; currently approximately 40 percent of groundwater pumping is estimated to occur in this aquifer. The remaining groundwater pumping occurs in the intermediate Deep East Side Aquifer. The Deep Aquifer, as recognized in the Pressure Subarea, is also known to occur in the East Side Subarea.

Forebay Subarea. The Forebay Subarea is in the center of the Salinas Valley, southeast of the Pressure and East Side Subareas. The majority of groundwater pumping in this area occurs from the shallow aquifer zone. However, some of the deeper wells are believed to be pumping from the deeper Forebay aquifer zone. Although the Deep Aquifer in the Pressure and East Side areas is also known to extend to the Forebay Subarea, few wells are known to be pumping from this aquifer in the Forebay Subarea.

Upper Valley Subarea. The Upper Valley Subarea is in the southernmost part of the Salinas Valley, southeast of the Forebay Subarea. The Salinas River groundwater basin extends to the southern end of Monterey County, near Bradley. The aquifer layer in this area is in one unit. The majority of wells in this area are relatively shallow, and lie along the course of Salinas River.

The primary land use within the Salinas Valley is agricultural. Since the late 1940s, irrigated acreage within the Valley has increased substantially, with steady increases in the 1940s and 1950s, and more rapid increases in the 1960s and 1970s. Total irrigated acreage has remained relatively constant since the 1980s. Urban acreages have also experienced substantial growth, most of which has occurred in Castroville, Gonzales, Greenfield, King City, Marina, Salinas, and Soledad. As the agricultural and urban areas have expanded, so too have the water needs of the Valley.

Recharge to the groundwater basin occurs primarily from precipitation, return flows from irrigated lands, and stream recharge from the Arroyo Seco and Salinas River. It is estimated that stream recharge accounts for approximately half of the total basin recharge. Average precipitation in the Valley ranges from 15 to 60 inches in the mountain ranges on either side of the Valley, and 10 to 15 inches within the Salinas Valley itself. Most of the precipitation occurs in winter, from November through March. To help increase the use of Salinas River flows for groundwater recharge and to provide flood control benefits, Nacimiento and San Antonio Reservoirs began operations in 1957 and 1967, respectively. These reservoirs have been operated to optimize Salinas River recharge by storing winter runoff and making releases in a timely manner during the irrigation season, when the potential for recharge is highest.

Historically, groundwater conditions in the Salinas Valley have been declining due to the almost exclusive use of groundwater for agricultural and urban purposes. Declining groundwater levels in the Pressure and Eastside Subareas, basin overdraft, and seawater intrusion are a serious concern to the MCWRA and State Water Resources Control Board (SWRCB). Overdraft and seawater intrusion were

first documented in the Valley in 1946, in a report published by the then named State Department of Public Works, Division of Water Resources (Bulletin No. 52).

Wells serving the City of Marina draw from the deeper aquifer because seawater intrusion has forced MCWD to close its original wells in the upper and middle aquifers. Wells serving the former Fort Ord, on the other hand, draw from the upper and middle aquifers. The former Fort Ord's original wells, which were in the Salinas Valley Groundwater Basin also suffered seawater intrusion. These wells were destroyed by the U.S. Army as seawater intrusion advanced and new wells, located further inland, were drilled in the upper and middle aquifers.[3] A portion of the former Fort Ord is served by wells in the Seaside Groundwater Basin (approximately 400 acre-feet per year (AFY) for irrigation of the Bayonnet and Black Horse Golf Courses), which is not hydraulically connected to the Salinas Valley Groundwater Basin.[4,5]

Two regional water management agencies have jurisdiction over water supplies within the former Fort Ord. The MCWRA is responsible for the regulation of water from the Salinas Valley Groundwater Basin supplying the majority of the water to the former Fort Ord and all the MCWD's groundwater supplies, and the Monterey Peninsula Water Management District (MPWMD) is responsible for regulation and supply of the water from the Seaside Groundwater Basin. One of the main water issues faced by MCWRA and the community it serves has been the intrusion of seawater into the Salinas Valley Groundwater Basin as a result of extensive agricultural irrigation pumping near the coast.[6,7] However, there is no evidence of seawater intrusion into the developed portions of the deep 900-foot aquifer.[8] While there are no specific facts indicating intrusion will occur in the deep aquifer, and therefore, such conclusion is speculative, it is possible that intrusion may someday degrade the deep 900-foot aquifer. It is not currently possible to predict how long the deep wells will continue to provide water of an acceptably low salinity for Marina's water supply needs.[9] To address this issue with respect to Fort Ord, in September 1993, the MCWRA entered into an agreement with the U.S. Army to limit pumping from its wells in the Salinas Valley aquifer on Fort Ord to 6,600 acre feet per year, which is based upon the installation's peak annual withdrawal.[10] To retard the advancement of seawater intrusion, Monterey Regional Water Pollution Control Agency (MRWPCA), in partnership

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3 Marina Coast Water District, *2001 Urban Water Management Plan*, December 5, 2001.

4 Marina Coast Water District, *2001 Urban Water Management Plan*, December 5, 2001.

5 The Seaside Groundwater Basin and the Salinas Valley Groundwater Basin do not share a geologic interconnection or continuity and no water flows from one basin to the other.

6 Marina Coast Water District, http://www.mcwd.org/html/faqs.html#24, Accessed December 21, 2004.

7 Seawater intrusion background: When this part of the California coast had an undeveloped coastal groundwater basin, fresh water flowed in the aquifers toward the Monterey Bay and out into the Pacific Ocean. Since about 1945, the amount of water pumped from the ground in the Salinas Valley has exceeded the amount necessary to keep a steady flow of fresh water against the pressure of the salt water. Salt water has therefore forced its way into the 400-foot and 180-foot (middle and upper) fresh water aquifers and is moving inland. In some areas this salt water has reached to within a mile of Salinas. (*Source*: Marina Coast Water District, http://www.mcwd.org/html/faqs.html#24, Accessed January 25, 2005.)

8 Marina Coast Water District, *2001 Urban Water Management Plan*, December 5, 2001.

9 Marina Coast Water District, *2001 Urban Water Management Plan*, December 5, 2001.

10 Agreement No. A-06404, Agreement between the United States of America and the Monterey County Water Resources Agency concerning the Annexation of Fort Ord into Zones 2 and 2A of the MCWRA.

with MCWRA, built two projects: (1) a water recycling facility at the Regional Wastewater Treatment Plant (RWTP); and (2) a reclaimed water distribution system. These facilities are known as the Salinas Valley Reclamation Project (SVRP) and Castroville Seawater Intrusion Project (CSIP), respectively. The projects were completed in 1997 and are known collectively as the Monterey County Recycled Water Projects.[11] Monterey County Water Resources has also recently advanced its planned Salinas Valley Water Project which is intended to completely eliminate the saltwater intrusion problem in the Salinas Valley aquifer.[12]

In addition to potable groundwater, MCWD's available water supply is likely to be augmented by desalinized water and/or reclaimed water[13] as identified in its Regional Urban Water Augmentation Plan project. Such augmentation sources were identified in the MCWD's Program EIR for the Regional Urban Water Augmentation Project, certified October 27, 2004. The City considers these resources to be realistically available upon development, based on MCWD's own conclusions in the Program EIR. MCWD owns a seawater desalination plant, located at the end of Reservation Road between Dunes Drive and the Monterey Bay, that is presently not in operation. The desalination plant has a production capacity of about 0.27 million gallons per day (mgd) or about 300 AFY, assuming an on-line factor of 90 percent.[14] The desalination plant uses a reverse osmosis membrane process in which seawater is forced at high pressure through semi-permeable membranes. Potable water is recovered on the low-pressure side of the membranes, and salt and other impurities are removed in the reject water to a brine line at the rate of about 315 gallons per minute.[15]

MCWD's available water supply is also likely to be augmented by a future recycled water project. In a 1996 Agreement between MCWD, MCWRA, MRWPCA and several property owners, MCWD was granted a right to receive reclaimed water from the SVRP.[16] MCWD has options to take no more than 300 AFY of recycled water during the months of April through September. During the remainder of the year, MCWD is entitled to take a quantity of recycled water equal to the amount of wastewater MCWD sends to the regional wastewater treatment facility (RWTP).[17] MCWD plans to irrigate all City parks, ballfields and other public landscaped areas with recycled water supplied from the MRWPCA's wastewater treatment facility. Presently, the City's Gloria Jean Tate Park is piped for recycled water from a previous MCWD wastewater reclamation project. The external landscape of the Sea Breeze development at Beach and Marina Drive, the new 7-11, and Comfort Inn have also been

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11 Marina Coast Water District, *Regional Urban Water Augmentation Project Final Environmental Impact Report*, September 2004.

12 Monterey County Water Resources Agency, *Salinas Valley Water Project, Draft Environmental Impact Report/Environmental Impact Statement for the Salina Valley Water Project*, June 2001.

13 Marina Coast Water District, *Regional Urban Water Augmentation Project Final Environmental Impact Report*, September 2004.

14 Marina Coast Water District, *2001 Urban Water Management Plan*, December 5, 2001.

15 Marina Coast Water District, *2001 Urban Water Management Plan*, December 5, 2001.

16 Marina Coast Water District, *Regional Urban Water Augmentation Project Final Environmental Impact Report*, September 2004.

17 City of Marina, Planning Department, *Marina Heights Specific Plan/Abrams "B" Housing Project Draft Environmental Impact Report*, July 2003.

piped for recycled water.[18] There are no recycled water facilities currently within University Villages project site. However, MCWD is developing preliminary engineering plans for the construction of a new recycled water distribution system that includes service to University Villages through its Regional Urban Recycled Water Distribution Project. MCWD does not currently have recycled water distribution facilities in operation; however, as noted above, the MCWD's Program EIR identified recycled water distribution facilities as one augmentation resource available.

It is likely that some or all of the augmentation water will be available. Paragraph 3.2 of the Water/Wastewater Facilities Agreement between FORA and MCWD requires that MCWD cause to be planned such additional water and sewer facilities as FORA may reasonably determines are necessary for the service area, which includes the Proposed Project. FORA has committed in its EIR and Reuse Plan to develop additional water and sewer resources in order to serve the ultimate buildout of the Reuse Plan. The Fort Ord Capital Improvement Program funded by development impact fees identifies works of the augmentation project which are planned to be implemented. The FORA CIP requires the payment of development impacts fees as a condition of developing property and therefore these augmentation projects will have sufficient funding. The MCWD's own Capital Improvement Program also identifies funding for the augmentation projects. Taken together, it is highly likely that the augmentation supplies will be developed and available for use at the former Fort Ord and for the Proposed Project.

With respect to the augmented water allocations to the City of Marina, the first water allocations on Fort Ord were based in part, upon the ultimate buildout projections within the City's jurisdiction. Additionally, Paragraph 5.03 of FORA's Agreement with the U.S. Army recorded in June 2000, requires FORA to establish and apply a fair and equitable process to provide an equitable supply of the water available on the former Fort Ord.[19] At this point in time, there is no evidence to conclude that any augmented water supplies would be allocated on any other basis than the original water supplies. In this regard, existing and projected allocations to the City, as evidenced by FORA contractual requirements and MCWD augmentation projects are not speculative. It is therefore appropriate for the City to base its determination on the probable or likely availability of identified augmentation resources, even if such resources are not yet constructed or on-line.

Groundwater productions for uses within the City of Marina have been limited by two agreements with the MCWRA. The first agreement is between the MCWD and MCWRA and the second is the agreement between the U.S. Army and MCWRA, as administered by MCWD as the water purveyor for Fort Ord lands. Under the first agreement, MCWD agreed to limit its pumping to a total of 3,020 AFY for the City of Marina (outside of the Fort Ord Community). This agreement allows for an additional 920 and 500 AFY increase in future extractions for the Armstrong Ranch and the Lonestar properties, respectively (private properties within the District's LAFCO Sphere of Influence, but outside of the City of Marina) (MCWD, 2001). MCWD's groundwater production for the City of

[18] Marina Coast Water District, http://www.mcwd.org/html/recycling.html, Accessed December 21, 2004.
[19] Memorandum of Agreement between the United States and FORA, recorded June 23, 2000 at Document 2000040124.

Marina from 1998 to 2004 is shown in Figure 3.9-2. MCWD groundwater withdrawals over the last six years, not including water for the former Fort Ord, were about 2,200 to 2,300 AFY, or roughly 0.5 percent of the approximately 463,000 AFY of the total Salinas Valley Groundwater Basin withdrawals.[20]

The second agreement which limits groundwater pumping is the agreement between the MCWRA and the U.S. Army which limits groundwater pumping from Fort Ord wells to a maximum of 6,600 AFY. MCWD, pursuant to its contract with FORA, administers and monitors the groundwater pumping from the Fort Ord wells. MCWD withdrawals over the last 5 years for the former Fort Ord were about 2,100 to 2,400 AFY, or slightly over 0.5 percent of the total Salinas Valley Groundwater Basin withdrawals.[21]

Other likely sources of water supply include 300 AFY generated by the desalination plant and 300 AFY of recycled water generated by MRWPCA wastewater treatment facility.[22] As discussed below, the former Fort Ord lands have their own water allocations based upon an Agreement between the U.S. Army and the MCWRA.

The U.S. Army entered into a Memorandum of Agreement for the Annexation of Fort Ord into Special Benefit Zones 2 and 2A of the MCWRA. The agreement established a maximum withdrawal for the benefit of Fort Ord of 6,600 AFY of groundwater from the Salinas Valley Groundwater Basin, provided no more than 5,200 AFY are withdrawn from 180-foot and 400-foot aquifers, with the remaining 1,400 AFY coming from the 900-foot aquifer. As part of the Agreement with the U.S. Army, FORA received an allocation of 4,871 AFY and received a first right of refusal to acquire additional unutilized Governmental water rights which were retained by the U.S. Army.[23] As part of the *Fort Ord Reuse Plan*, an allocation from the 6,600 AFY was provided for each of the various jurisdictions on the basis of their proportionate build out under the Reuse Plan. FORA's allocation of water to the jurisdictions is set forth in Table 3.9-1. Under FORA's allocation program, it reserved to itself 431 AFY, as a strategic reserve amount to address issues of visitor serving, commercial or recreational projects. In 1998, the FORA Board authorized "loans" of the strategic reserve amount for a period of five years or until augmented water becomes available to serve those uses demonstrating FORA's belief that augmented water supplies will be available within five years.[24] The City of Marina original annual Acre-Feet allotment was 1,175.[25] However, the City of Marina has been granted a loan

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[20] Marina Coast Water District, *2001 Urban Water Management Plan*, December 5, 2001.

[21] Marina Coast Water District, *Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project*, January 21, 2005.

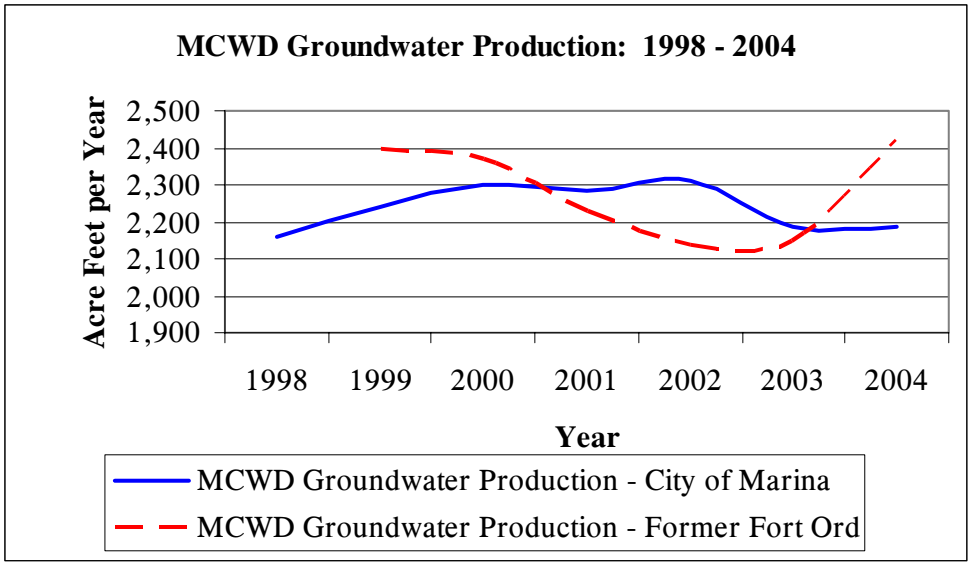
[22] Marina Coast Water District, *Regional Urban Water Augmentation Project Final Environmental Impact Report*, September 2004.

[23] Memorandum of Agreement between the United States and the Fort Ord Reuse Authority, recorded June 23, 2000.

[24] Appendix 1, Water Supply Assessment, dated January 26, 2005. Letter from FORA to Marina Coast Water District.

[25] Marina Coast Water District, *Regional Urban Water Augmentation Project Final Environmental Impact Report*, September 2004.

Figure 3.9-2



Source: Marina Coast Water District, *Regional Urban Water Augmentation Project Final Environmental Impact Report,* September 2004; Marina Coast Water District, *Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project,* January 21, 2005.

Note: Former Fort Ord data for 1998 is not available. Former Fort Ord Community figures include water that was used in the City of Marina's portion of the former Fort Ord.

Table 3.9-1
FORA Water Allocation for Ord Communities

FORA Allocation (2002)	Annual Acre-Feet Allotment or Supply
City of Marina	1175
City of Seaside	748
CSU Monterey Bay	1035
University of California MBEST	230
City of Del Rey Oaks	75
City of Monterey	65
County of Monterey	560
U.S. Army	1691
State Parks and Recreation	45
City of Marina (Sphere)	10
Allowance for Line Loss	532
FORA Strategic Reserve	431
Rounded Subtotal	6,600

Source: Marina Coast Water District, *2001 Urban Water Management Plan*, December 5, 2001.

of an additional 150 AFY from the FORA water reserve, bringing the total current water supply for the City of Marina on the former Fort Ord to 1,325 AFY.[26]

The allocation and projected water demand for the City of Marina Central Area and former Fort Ord is shown in Table 3.9-2. Based upon current land use plans through 2020, MCWD would have sufficient water supplies in total to accommodate potable demand, provided an aggressive recycled water program is developed to provide irrigation water for new large outdoor landscape uses.[27] The additional water supply could also be provided by increased seawater desalination or a combination of seawater desalination and recycled water. Specifically, the MCWD 2001 Urban Water Management Plan (UWMP) anticipated that by 2020, growth in the City of Marina's portion of the former Fort Ord would reach 1,444 AFY of water use per year, exceeding the City's allocation from FORA, noted then at 1,175 AFY, by 269 AFY.[28] As mentioned above, the City's allocation has increased to 1,325 AFY.

[26] Marina Coast Water District, *Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project*, January 21, 2005.

[27] Marina Coast Water District, *2001 Urban Water Management Plan*, December 5, 2001.

[28] The Urban Water Management Planning Act requires municipal water providers serving over 3,000 AFY of water or having 3,000 service connections to prepare Urban Water Management Plans on a five-year, ongoing basis. An Urban Water Management Plan must, among other things, demonstrate the continued ability to provide water supplies for current and future expected development under normal, single dry and multiple dry year scenarios. MCWD's most recent Urban Water Management Plan was adopted in December of 2001 and is being updated. (*Source*: Marina Coast Water District, *Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project*, January 21, 2005.)

Thus, based on anticipated growth in the City of Marina's portion of the former Fort Ord, MCWD estimates that by 2020 the water demand would exceed the City's allocation from FORA by 119 AFY (see Table 3.9-2) However, as discussed below, the City believes that MCWD's estimate of its water demand is flawed and is lower than reflected by these numbers because MCWD's estimate is not based

Table 3.9-2
Allocation and Projected Water Demand in Acre Feet per Year: 2000-2020

Area	2000	2005	2010	2015	2020	Current FORA 2015 Allocation	Surplus/ (Shortage)
City of Marina Central Area	2,063	2,129	2,175	2,206	2,231	3,020	789
City of Marina Former Fort Ord Area	188	696	1,140	1,387	1,444	1,175/1,325[1]	(269)/(119)[1]
Total	**2,251**	**2,825**	**3,315**	**3,593**	**3,675**	**4,195**	**520**

Source: Marina Coast Water District, *Regional Urban Water Augmentation Project Final Environmental Impact Report*, September 2004.
Note: 1. Since the adoption of the 2001 UWMP, the City has been granted a loan of water of an additional 150 AFY from the FORA water reserve, bringing the total current water supply for the City of Marina on the former Fort Ord to 1,325 AFY. Thus, based on anticipated growth in the City of Marina's portion of the former Fort Ord, the water demand would exceed the City's allocation from FORA by 119 AFY.

on the most recent reliable evidence and because MCWD's calculations are incorrect (as discussed below).

Nevertheless, a water demand and supply balance can be achieved by in a number of ways. FORA could adjust its water allocations among the Fort Ord land users based upon new information such as reduced line leakage or revisions to planned development within the Fort Ord lands, or by the additional allocation of augmented water supply as discussed above and below by the MCWD's proposed Regional Urban Water Augmentation Project.[29]

Because the bulk of MCWD's water supply is groundwater and the remainder is likely to come from either desalinated or recycled water, short and medium-term hydrologic conditions over a period of less than five years usually have little bearing on water availability.[30] Groundwater systems tend to have large recharge areas. Provided the groundwater is protected from contamination and long-term safe yields on the Salinas Valley Groundwater Basin are respected, water is available annually without regard to short–term droughts.[31] However, should water supply be affected by single and/or multiple dry-year conditions, MCWD has a water shortage contingency plan, which includes six stages of water conservation measures for the the customers of MCWD, including voluntary and mandatory conservation, fines for violators, and mandatory installation of water conservation devices.[32] It is important to note that the Salinas Valley Groundwater Basin is overdrafted by an estimated 9,000

29 Marina Coast Water District, *2001 Urban Water Management Plan*, December 5, 2001.
30 Marina Coast Water District, *2001 Urban Water Management Plan*, December 5, 2001.
31 Marina Coast Water District, *2001 Urban Water Management Plan*, December 5, 2001.
32 Marina Coast Water District, *2001 Urban Water Management Plan*, Section 6 Water Shortage Contingency Plan, December 5, 2001.

AFY.[33] The amount of overdraft has decreased in recent years and is expected to be eliminated for the basin as a whole through the implementation of the Salinas Valley Water Project.[34] MCWRA has other projects which have been effective in slowing the rate of seawater intrusion along the coast, particularly to the north of the District's service areas.[35] In conjunction with the CSIP project, MCWRA has been monitoring the groundwater elevations and a trend of increasing groundwater elevations have been noted since the implementation of the project. (See figures attached at the end of this document.)

The MCWD is currently proposing a Regional Urban Water Augmentation Project. The purpose of the Regional Urban Water Augmentation Project is to identify feasible water augmentation supplies capable of meeting the water demands for redevelopment requirements of the former Fort Ord. The Regional Urban Water Augmentation Project's key objective is to provide 2,400 AFY of water to meet anticipated demands in the former Fort Ord Area. In addition, providing 300 AFY for the Monterey Peninsula or as redevelopment water to the City of Marina is also being considered by this project.[36] As discussed above, the two supply alternatives being proposed are a new seawater desalination facility at the existing MCWD seawater desalination plant site and a recycled water project with seasonal surface storage at a location within the Armstrong Ranch property, or a combination as a hybrid alternative.

Water Quality. The City of Marina and former Fort Ord water supply is from groundwater wells. Water pumped from the source wells is generally clean and clear and meets the drinking water standards. It is disinfected with chlorine as a safeguard against microorganisms. Chlorine also treats the naturally occurring sulfides that can cause odor.[37] As mentioned above, wells serving the former Fort Ord are in the upper and middle aquifers. Before water from these aquifers actually reaches housing or facilities on the former Fort Ord, it is pumped into a collective distribution system where water from all three wells is blended together and treated with chlorine.[38]

Distribution Infrastructure. In 2003, MCWD had 3,785 service connections.[39] Potable water is currently delivered to the project site by a series of water transmission mains varying in sizes from 6- to 12-inches in diameter. An existing water main, running from MCWD's Reservoir B, follows 2nd Avenue north to Imjin Parkway, where it continues east to MCWD's Booster Station B, to the east of University Villages. The existing distribution system in the University Villages area loses about

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33 Marina Coast Water District, *Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project*, January 21, 2005.

34 Marina Coast Water District, *Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project*, January 21, 2005.

35 Final Draft Groundwater Inventory and Status Report March 18, 2004, Denise Duffy and Associates

36 Marina Coast Water District, *Regional Urban Water Augmentation Project Final Environmental Impact Report*, September 2004.

37 Marina Coast Water District, http://www.mcwd.org/html/water_quality.html, Accessed December 23, 2004.

38 Marina Coast Water District, *Drinking Water at the Former Fort Ord Fact Sheet*, August 2003, http://www.mcwd.org/DrinkingWaterFactsArmy8-03v2.pdf, Accessed December 23, 2004.

39 Marina Coast Water District, *2003 Consumer Confidence Report*, http://www.mcwd.org/marina_text03.pdf, Accessed December 23, 2004.

10 percent of its water due to the age of the facilities.[40] MCWD is in the process of making improvement to the former Fort Ord water system, and it is likely that improvements will be able to reduce or stop losses. For example, MCWD received a $959,000 grant from the California Department of Water Resources for a project that included replacement of one hundred control and pressure regulating valves (some dating back to the 1950s) that were transferred to MCWD with the closure of Fort Ord. The project is part of a system-wide project to upgrade the infrastructure on the former Fort Ord.[41] The MCWD Board of Directors has also accepted a Ord Community Water Distribution Master Plan for the former Fort Ord, which is intended to address, among other issues, the required water distribution facilities sufficient to meet the anticipated build-out of the Ord Community. Recommendations are made for new water distribution pipelines, water storage reservoirs and pumping stations.

As described above, there is an existing main running from MCWD's Reservoir B along 2nd Avenue north to Imjin Parkway. The Proposed Project would use existing tie-ins to 2nd Avenue water pipeline at 5th, 6th, 9th, and 10th Streets, and just south of Imjin Parkway. Additionally, four new tie-ins are proposed along Imjin, two new tie-ins are proposed along 8th Street, and a final tie-in is proposed on 1st Avenue, north of 3rd Street. It should be noted that the location and number of connections would ultimately be approved by the MCWD as part of the University Villages Water Master Plan.

Wastewater

MCWD provides wastewater collection service to all residential, commercial, and industrial development within the City of Marina and throughout the former Fort Ord. In 1997, the FORA selected MCWD to receive the Fort Ord wastewater collection systems. As mentioned above, the conveyance process was completed in late October 2001 when the U.S. Army transferred the deeds to FORA and FORA in turn transferred the wastewater facilities to MCWD.[42] Thus, MCWD owns and maintains the system of 65 miles of sewer mains and 18 lift stations used to collect and transport wastewater from the Ord Community, including facilities on the University Villages project site, to the MRWPCA regional sewer system.

MCWD also owns and maintains the system of sewer mains and lift stations in the City of Marina. However, this wastewater system is separate from that of the Fort Ord Community and is relatively new and compact, requiring a fraction of the maintenance and improvements compared to the Fort Ord Community system.[43] Installation of the sanitary sewer system at Fort Ord began in the early 1940s and although the system underwent expansion and some reconstruction when new housing areas were

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40 Marina Community Partners, *Draft Specific Plan University Villages in the City of Marina at Former Fort Ord*, September 28, 2004.

41 Marina Coast Water District, *Water Report*, August, 2004, http://www.mcwd.org/wr_aug04.pdf, Accessed December 23, 2004.

42 Marina Coast Water District, http://www.mcwd.org/html/faqs.html#25, Accessed October 13, 2004.

43 Marina Coast Water District, http://www.mcwd.org/html/faqs.html#25, Accessed October 13, 2004.

built after World War II, the original pipelines are still used.[44] Since the closure of Fort Ord, wastewater generation had decreased due to the population decrease and the existing collection system is underused within the Fort Ord Community. Low flows and resulting longer wastewater residence times in the pipelines have increased the generation of hydrogen sulfide gas, which in turn has created a more corrosive environment. As a result, much of the existing concrete wastewater piping has experienced pipe deterioration from hydrogen sulfide corrosion.[45]

As mentioned above, MCWD's sewer system transports wastewater generated by the City of Marina and the Fort Ord Community to the MRWPCA's regional sewer system. MRWPCA's service area encompasses Northern Monterey County including the cities of Pacific Grove, Monterey, Del Rey Oaks, Seaside, Sand City, Marina, Salinas, Fort Ord Community, and Monterey County communities of Castroville, Moss Landing, and Boronda.[46] MRWPCA's sewer system consists of interceptors, pump stations and force mains, which convey intercepted wastewater to the RTP, located two miles north of the City of Marina in the Monterey Regional Environmental Park. Secondary treatment wastewater 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 or is piped to the SVRP for recycling.[47] The RTP has a design capacity of 29.6 mgd but its use permit limits it to treat up to 27 mgd.[48] In 2004, the average dry weather flows were approximately 21.5 mgd. Based on regional population forecasts for the MRWPCA service area, the RTP has sufficient capacity to serve proposed uses and new development in Marina, including portion of the former Fort Ord for at least the next 10 to 15 years.[49] The MRWPCA has initiated the process to increase the permitted operational capacity of the RTP to the full 29.6 mgd and anticipates receiving the permit prior to reaching the RTP's existing permitted use of 27 mgd. Since the existing capacity of the RTP is sufficient, currently there are no capacity expansions planned. However, MRWPCA has a RTP Expansion Master Plan, which would be implemented when there is a need to expand the facility.[50]

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 RTP allocation available to member jurisdictions as a whole is 7,066 housing

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44 United States Army, Former Fort Ord Environmental Cleanup, http://www.fortordcleanup.com/foprimer/infrastructure.asp, Accessed October 14, 2004.

45 Marina Community Development Partners, *Draft Wet Utilities Conceptual Plan – University Villages*, August 2004.

46 Monterey Regional Water Pollution Control Agency, *Wastewater Allocation Plan Initial Study*, June 2004.

47 Monterey Regional Water Pollution Control Agency, http://www.mrwpca.org/html/about_mrwpca.html, Accessed October 13, 2004.

48 Bob Jaques, Engineer, Monterey Regional Pollution Control Agency, written communication with EIP Associates, November 2004.

49 Bob Jaques, Engineer, Monterey Regional Pollution Control Agency, written communication with EIP Associates, November 2004.

50 Bob Jaques, Engineer, Monterey Regional Pollution Control Agency, written communication with EIP Associates, November 2004.

units (Ordinance 2004-04 sunsets 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.[51] 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.[52]

MRWPCA also operates a water recycling facility at the RTP and manages the recycling distribution system under contract from the Monterey County Water Resources Agency. Starting in the spring of 1998, recycled water from this facility began being distributed to farms in the Castroville area and to a limited number of recharge wells to reduce groundwater pumping and seawater intrusion. When the Water Recycling Facility is in operation, from approximately March to October - depending on weather patterns and irrigation demands, there is essentially no flow discharged into the Monterey Bay.[53]

Within the University Villages area, the existing wastewater collection system consists of 4- to 30-inch diameter wastewater gravity pipelines that convey flows into four trunk pipelines that carry sewage under Highway 1 to a MRWPCA interceptor facility. MCWD is currently preparing a separate Wastewater System Master Plan for the former Fort Ord and for the City of Marina.

Solid Waste

Solid waste generated by the City of Marina and the former Fort Ord is collected by the Carmel-Marina Corporation and the Monterey Bay Disposal Corporation, respectively. Solid waste is deposited at the Monterey Regional Waste Management District's (MRWMD) facilities. MRWMD facilities are located on a 475-acre property, two miles north of Marina, at the Monterey Regional Environmental Park. The Environmental Park consists of a 315-acre permitted sanitary Monterey Peninsula Landfill, a 126-acre buffer area (mostly Salina River floodplain), and 20 acres for the administration building, scalehouse, recycling/resale facilities, maintenance buildings, landfill gas power project, household hazardous waste facility and a Materials Recovery Facility (MRF).[54] The MRF targets materials brought in from self-haul loads and commercial wastes, construction and

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51 Monterey Regional Water Pollution Control Agency, *Wastewater Allocation Plan Initial Study*, June 2004.

52 Bob Jaques, Engineer, Monterey Regional Pollution Control Agency, written communication with EIP Associates, November 2004.

53 Monterey Regional Water Pollution Control Agency, http://www.mrwpca.org/html/projects.php, Accessed October 13, 2004; Monterey Regional Water Pollution Control Agency, *Wastewater Allocation Plan Initial Study*, June 2004.

54 Monterey Regional Waste Management District, http://www.mrwmd.org/info/district.htm, Accessed October 15, 2004.

demolition debris, wood waste, and yard waste and diverts 64 percent of incoming material.[55] MRWMD's service area is approximately 850 square miles and the service population is 170,000.[56]

The Monterey Peninsula Landfill has a total estimated permitted capacity of 32 million tons, with an available capacity of 26 million tons.[57] If MRWMD continues to achieve a State-mandated 50 percent recycling goal, the landfill is expected to 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.[58]

During the 2002-2003 fiscal year, the Monterey Peninsula Landfill and MRF received 362,758 tons of solid waste, including 182,203 tons from the garbage companies, such as Carmel-Marina Corporation, 79,301 tons of commercial and industrial waste, 59,264 tons of waste from small businesses and individuals who haul their own trash, and 41,990 tons of dewatered sewage sludge.[59]

In 2000, the City of Marina sent 14,479 total tons to the landfill.[60] The City implements a curbside recycling program for single-family residential development through a franchise agreement with a private hauler.[61]

It is anticipated that some of the demolition material from the project site would be shipped to Kettleman City Class I/II Landfill. Kettleman City Landfill is located in unincorporated Kings County at 35251 Old Skyline Road in Kettleman City. The total estimated permitted landfill capacity is 4,200,000 cubic yards.[62] As of 2000, the total estimated capacity used was 825,587 cubic yards and the remaining estimated capacity was 3,374,413 cubic yards or 80.3 percent. The anticipated closure date for this facility is 2010. Kettleman City Landfill is permitted to dispose a maximum of 1,400 tons of solid waste a day. In 2001, Kettleman City Landfill received 191,359 tons of solid waste.[63]

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55 Marina Coast Water District, *Regional Urban Water Augmentation Project Final Environmental Impact Report*, September 2004.

56 California Integrated Waste Management Board, *Resource Recovery Parks Case Studies*, http://www.ciwmb.ca.gov/lglibrary/Innovations/recoverypark/CaseStudies1.htm, Accessed October 15, 2004.

57 City of Marina, Planning Department, *Marina Heights Specific Plan/Abrams "B" Housing Project Draft Environmental Impact Report*, July 2003.

58 Monterey Regional Waste Management District, http://www.mrwmd.org/info/district.htm, Accessed October 15, 2004.

59 Monterey Regional Waste Management District, http://www.mrwmd.org/info/district.htm, Accessed October 15, 2004.

60 California Integrated Waste Management Board, http://www.ciwmb.ca.gov/Profiles/Facility/Landfill/LFProfile2.asp?COID=27&FACID=27-AA-0010, Accessed October 15, 2004.

61 City of Marina, *Marina West and North University Villages Property Profile*, May 24, 2002.

62 California Integrated Waste Management Board, http://www.ciwmb.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=16&FACID=16-AA-0021, Accessed November 18, 2004.

63 California Integrated Waste Management Board, http://www.ciwmb.ca.gov/Landfills/tonnage/2001/Landfill.htm, Accessed November 18, 2004.

Regulatory Setting

Federal

There are no federal regulations pertaining to utilities that are applicable to the Proposed Project.

State

SB 610. Senate Bill (SB) 610, effective January 1, 2002, was enacted to advance water supply planning efforts in the State of California. The bill coordinates local water supply and land use decisions to help provide California's cities and counties with adequate water supplies. SB 610 requires that a water purveyor, at the request of a Lead Agency, prepare a water supply assessment (WSA) for specific projects subject to CEQA approval. The WSA must include, among other information, an identification of existing water entitlements, water rights, and water service contracts relevant to the identified water supply for the Proposed Project and water received in prior years pursuant to those entitlements, rights, and contracts. The WSA must also include a 20-year anticipated single dry year and multiple dry years supply analysis to assess projected water supplies. If the water demand for the proposed development has been accounted for in a recently adopted urban water management plan, the water supplier may incorporate information contained in that plan to satisfy certain requirements of a WSA. If the proposed development is not accounted for in a urban water management plan, then the supplier must discuss whether the water agency's projected supplies will meet the projected demand of the proposed development, in addition to other existing and planned future uses.

The WSA is required if a Proposed Project is: (1) a residential development of more than 500 dwelling units; (2) a shopping center or business employing more than 1,000 persons or having more than 500,000 square feet of floor space; (3) a commercial office building employing more than 1,000 persons or having more than 250,000 square feet; (4) a hotel or motel with more than 500 rooms; (5) an industrial or manufacturing establishment housing more than 1,000 persons or having more than 650,000 square feet or 40 acres; (6) a mixed use project containing any of the foregoing; or (7) any other project that would have a water demand at least equal to a 500 dwelling unit project.

Because the Proposed Project would include more than 500,000 square feet of retail space and would result in over 500 residential units, it would be subject to SB 610. In compliance with CEQA guideline Section 15083.5, in October 2004, the Lead Agency (City of Marina) requested the MCWD, as the public water supplier for the proposed development area, prepare a WSA. MCWD has prepared a WSA for the Proposed Project and provided it to the City for consideration. The city is required to determine, based on its own independent review of all relevant evidence, and based upon the entire record before it, whether there will be sufficient water supplies to satisfy the demands of the Proposed Project, in addition to other existing and planned future uses. The results of the WSA assessment are discussed under impacts UT-1 and UT-5 of this section and the WSA is presented in its entirety in Appendix E.

CEQA Guidelines Section 15083.5. CEQA Guidelines Section 15083.5 requires that when proposed projects meeting certain requirements, as set forth above, the City must request information about the existing water supply from water agencies serving the Proposed Project. If a water agency concludes that there would be insufficient water to serve the Proposed Project, then the water agency shall provide the City with its plans for acquiring the additional water supplies to serve the project. This information is then included within the environmental document and the City may evaluate the water system's information and shall determine, based upon the entire record and after considering all relevant evidence whether the projected water supplies will be sufficient to satisfy the demands of the Proposed Project, in addition to existing, and planned future uses. If the City determines there is insufficient water, then it must include findings for a project approval and possible statement of overriding considerations.

SB 221. SB 221 applies to the approval of large residential subdivisions (over 500 residential units) and requires an affirmative written verification or finding of sufficient water supply before the approval of the requested subdivision can be granted. The verification must demonstrate there are sufficient supplies available during the normal, single dry and multiple dry years to meet the projected demand for the Proposed Project within a 20-year projection, as well as other existing and planned future uses, including agricultural and industrial uses. Because the Proposed Project would include more than 500 residential units, it would be subject to SB 221. MCWD has prepared a WSA that contains a written verification of supply (see Appendix E).

AB 939. To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State Legislature passed Assembly Bill 939, the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties in California are required to divert 25 percent of all solid waste from landfill or transformation facilities by January 1, 1995, and 50 percent by January 1, 2000.

As of 1996, the City of Marina had diverted 52 percent of its waste from landfill disposal, surpassing the 50 percent diversion rate required by AB 939. Since then, the diversion rate has increased to 60 percent in 2002, the year for which the latest data are available.[64]

Local

There are no local policies pertaining to utilities that are applicable to the Proposed Project.

Impacts Assessment and Mitigation Measures

Significance Criteria

The Proposed Project would have a significant impact with regard to public utilities if it would:

[64] California Integrated Waste Management Board, http://www.ciwmb.ca.gov/Profiles/Juris/JurProfile2.asp?RG=C&JURID=289&JUR=Marina, Accessed October 26, 2004.

- Have insufficient water supplies available to serve the Proposed Project from existing entitlements and resources, or are new or expanded entitlements needed;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Exceed wastewater treatment or waste discharge requirements of the applicable Regional Water Quality Control Board;
- Result in a determination by the wastewater treatment provider, which serves or may serve the Proposed Project that it has inadequate capacity to serve the Proposed Project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with insufficient permitted capacity to accommodate the Proposed Project's solid waste disposal needs; or
- Fail to comply with federal, State, and local statues, and regulations related to solid waste.

Methodology for Analysis

The analysis applicable to public utilities is premised on gathering information from the sewer and water providers and from the landfill operators. As required by CEQA, most specifically CEQA Guidelines Section 15083.5, it is also based on the City's own independent evaluation of these resources based on the information provided by these operators and other information included in the public record. This information is then used to determine existing capacity, projected capacity and existing and projected future use of that capacity.

Baseline Conditions

This section is prepared using the 2004 baseline. The 1991 baseline is insufficient to use because the Water Supply Assessment promulgated by SB 610 and SB 221 was established in 2001 and requires new water supply information for projects of this size. The 1991 baseline is also insufficient because sewer capacity and landfill conditions have changed in the past 10 years.

Environmental Analysis

UT-1. Existing water entitlements and resources are sufficient to meet the projected water demand for the Proposed Project. (LTS)

The Proposed Project would result in development of residential, commercial/office and recreational uses, which would increase the existing water demand. MCWD has projected the

average annual water demand for the proposed land uses using water-use factors based on local climate and geography.[65,66]

The City must review the Proposed Project's impacts relating to the water supplies identified above, in the Setting section, and address whether the identified sources would satisfy the projected demand for the Proposed Project. This review is based on the entire record before the City, and is not merely based on a review of the factors relied upon by the MCWD in connection with its preparation of the WSA. As discussed below and in the Setting section, the City has identified existing and future water supplies that would adequately serve the Proposed Project, including the present allocation of 1,325 AFY to the City and the augmentation of this supply based on specifically identified resources. Further, the impacts on these supplies have been previously addressed in the MCWD Program EIR for the Regional Urban Water Augmentation Project, certified October 27, 2004.

The MCWD also conducted a review of water supply pursuant to a request made by the City pursuant to Water Code Section 10910 and CEQA Guidelines Section 150823.5. In the WSA the MCWD calculated that the single-family and multi-family residential land uses of the Proposed Project would require 199.33 AFY and 17.09 AFY of water, respectively, for a total residential land use water demand of 216.42 AFY. The WSA also estimated that commercial/office land uses of the Proposed Project would require 492.4 AFY. The recreational uses of the Proposed Project, such as parks, open spaces and other common areas, were estimated to require 23.6 AFY. Therefore, the WSA concluded that the Proposed Project would require a total of 732 AFY of water. MCWD also anticipated that Non-Application Parcel uses such as the mixed-use Monterey-Salinas Transit pending project, as well as open space areas, would require an additional 124 AFY of water (9 AFY of water for common areas and 114.9 AFY for all other Specific Plan development). Therefore, the MCWD took the position in the WSA that the Proposed Project would require a total of 856 AFY of water.[67] The City disagrees with the MCWD's calculation methods and asserts the following as the basis for determining that there is sufficient water supply for the Tentative Map Application and sufficient planned water augmentation supplies to meet the projected water demand for the entire Specific Plan area. The following table describes the City's corrections relating to the water consumption assumptions relied upon in the WSA. Following Table 3.9-3 is a textual discussion of why the WSA's assumptions are incorrect and why the City has made these conclusions.

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65 Marina Coast Water District, *Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project*, January 21, 2005.

66 For specific water-use factors used by MCWD to calculate water demand, please refer to the Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project in Appendix E. As discussed herein, the City believes the record establishes that the water demand and supply calculated by MCWD is incorrect.

67 Marina Coast Water District, *Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project*, January 21, 2005.

As described in Table 3.9-3, the WSA contains an improper calculation of water consumption for the Proposed Project. The incorrect calculations are related to (1) Hotel/ Motel demand estimates, (2) Interior Unit demand rates, and (3) Use of Non-Standard Unit water values. These issues are discussed below.

Table 3.9-3
Allocation of Water Consumption Calculations –
Differences Between City's Calculations and WSA Calculations

Land Use	MCWD	City
Residential	216.42	
Landscaping – Residential	23.6	
Retail	21.5	
Restaurant	67.34	
Fast Food Restaurant	79.8	
Gas Station/store	.75	
Grocery Store	21.45	
Service Oriented Business	14.25	
Cinema	2.10	
Office Above Retail	1.2	
Hotel	85.00	
Office/Light Industrial	114.02	
Office/cultural	14.05	
Landscaping	70.92	
Subtotal Tentative Map	732.4	
Outparcels within Specific Plan Area	114.9	
Outparcels Landscaping	9.0	
Total Specific Plan	856.3	
Credit for Requirement of Water Saving Fixtures not currently in MCWD Estimates (Non-standard Unit Water Values)		(40) As described below
Credit for Double Counting of Landscaping in Non-Residential Area		(49) As described below
Credit for Revised Hotel Room Estimate		(17.4) As described below
Total Specific Plan		**749.9** As described below

Source: MCWD values from Marina Coast Water District, *Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project,* January 21, 2005. City values determined by the City of Marina based on the information presented herein.

Hotel/Motel Water Demand Estimates. The MCWD used a demand factor for hotel motel/bed & breakfast of 0.17 AFY/room. This results in 59.5 AFY for the proposed 350 room hotel and 25.5 AFY for the propped 150 room hotel for a total estimate of 85 AFY for the hotel component of the Proposed Project. While the California Water Code does not require the use of a specific unit water demand factors, the City believes that the MCWD unit demand of 0.17 AFY/room is inaccurate and overestimates the actual water demand when compared to similar uses, as described below. For comparison purposes to similar uses, 0.17 AFY is higher than MCWD's acknowledged water demand for the project's residential uses in the following classifications: (1) Live/Work Town (0.13 AFY), Duet's (0.13 AFY), (2) Mixed-Use Town homes (0.166 AFY) and (3) Apartments (0.125 AFY). Each of these residential uses can be expected to house more people on average hotel/motel classification and include full kitchen and higher exterior water demands than the hotel/motel classification. In estimating the potential water demand that would result from a hotel/motel, a critical factor that requires consideration, but was apparently not taken into account in the WSA is the level of service of other interior uses commonly referred to as "back of house" water demands, including laundry facilities with restaurants typically being separately accounted for. The American Water Works Association Research Foundation has completed an extensive survey for end uses of commercial water demands. They have concluded in a range of demands from 60 to 115 gallons per day per occupied room (equivalent to 0.067 to 0.13 AFY/room), depending on the level of these additional services and water consuming features (spa, pools, laundry facilities etc.).

The City has used more detailed estimates for the Proposed Project to consider the impact of the in-room plus on-site laundry water consumption than were relied upon in the WSA:

> For the 150 Room (Modest) hotel:
> Assuming 14 lbs. Landry /day/room (2 beds per room) @ 100 percent occupancy
> Using 3@80 Lb. front loading washing machines (13 cubic foot units using 145 gap/cycle)
> Total Landry use = 4.1 AFY = 0.028 AFY/room for laundry
> 0.17-0.28= 0.142 AFY/room or 127 gallons/day/room remaining for in-room uses
>
> For the 350 Room (Luxury hotel or resort):
> Assuming 20 lbs. Landry /day/room (2 beds per room) @ 100 percent occupancy
> Using 5@120 Lb. front loading washing machines (19.24 cubic foot units using 203.5 gap/cycle)
> Total Landry use = 12.17 AFY = 0.035 AFY/room for laundry
> 0.17-0.035= 0.1352 AFY/room or 120 gallons/day/room remaining for in-room uses

These estimates are conservative based on a 100 percent occupancy rate on a 7-day week rate. Further, water consumption for laundering was based on standard usage; greater water savings could be realized by using more water efficient machines. This correction of the WSA results in the WSA overstating consumption by 17.4 AFY.

Interior Unit Demand Rates. Past estimates of water demand by the MCWD had applied the unit water demand factors without regard to the potential use of the water for interior or exterior applications, as a result, the WSA aggregates such demand rates. For the purposes of the City's estimate of the future potential uses of recycled water for exterior irrigation, estimates were made of both interior and exterior demands. The City's water demand estimate disaggregated the water demand into interior and exterior uses by considering the areas of turf and ornamental landscaping per the size of the planned lots. The Project WSA identifies "Interior Demand" factors for the non-residential land uses, which is inconsistent with all of MCWD's previous supply and demand estimates and with the MCWD's current adopted Procedures Guidelines and Design Requirements.

The result in the WSA of this change in the labeling of MCWD's unit demand factors is that there exists a double counting (i.e., a duplication of counting demand rate usage) in the estimates of the exterior water demands throughout the Table 2-2 in the WSA. This is inappropriate and does not reflect either MCWD prior methodology or the best method to make such an estimate. In total this double counting results in an over estimate of in the WSA 49 AFY of additional water demand, which is inconsistent with the City's estimates of water demand.

Use of Non-Standard Unit Water Values. The Project Applicant made independent analysis of the likely water demand resulting from the Proposed Project. This water demand estimate was provided to MCWD for use in discussions and to assist MCWD in the preparation of their WSA. However, differences of approximately 40 AFY have been identified between the MCWD WSA project water demand estimate and the demand estimate prepared by the Applicant. The source of this difference results from MCWD's use of new unit water demand factors not within MCWD's current adopted Procedures Guidelines and Design Requirements. In summary, the Proposed Project WSA uses non MCWD unit water demand factors for 41 percent of the total non-residential water demand presented in Table 2-2 of the WSA.

The California Water Code, Section 10910, does not require use of a standard set of unit water demand factors for the estimate of a project's water demand or the service area water demand in projects Water Supply Assessment (WSA). However, it is anticipated that as the water purveyor to the Proposed Project MCWD would make use of their unit water demand factors as provided in their current adopted Procedures Guidelines and Design Requirements. The need for consistency in the use of water demand factors by the water purveyor, while not specifically required by State law, is a logical assumption for several reasons:

1. The MCWD Urban Water Management Plan, Reuse Plan and EIR have projected the water demands and supply availability for the District based on a consistent set of unit demand factors. The introduction of new unit water demand factors may cause erroneous results if compared to these documents upon which the FORA allocation has been based. It does not appear that MCWD has applied these new unit factors throughout the City of Marina or across the entire Fort Ord Community to identify conformity with the total water demand

and supply availability. As a result, the City believes that it is better to use demand factors that are consistent with the current adopted Procedures Guidelines and Design Requirements.

2. Having prepared WSA's for the East Garrison and Marina Heights Projects, MCWD has already established a format for the determination of water demands through the application of a fairly consistent set of unit demand factors. The introduction of new unit demand factors for the Proposed Project WSA is inconsistent with these existing WSA's for other projects and, therefore, represents a new basis for the identification of the water demands of the individual projects as well as the total demand for the MCWD. No information has been provided by the MCWD that established that the MCWD has, by the introduction of new unit water demand factors, not unintentionally inflated the total water demand estimates. Additionally, it is unclear if the MCWD water demand in the Marina Heights and the East Garrison WSA's are consistent with the water demand now presented for the Proposed Project's WSA.

The Proposed Project would be required to pay a water capacity charge to the MCWD for each water hook-up. The District's Procedures Guidelines and Design Requirements established a series of unit water demands for this purpose. It is unclear how the Proposed Project will be assessed fees where the MCWD WSA uses unit demands that are not within the Procedures Guidelines and Design Requirements.

Water Supply. As discussed in the Setting section, the City of Marina has an allocation from FORA of 1,175 AFY plus a loan of 150 AFY from the FORA reserve. In December 2003, MCWD prepared a WSA for the Marina Heights Development, which was estimated to consume 349.5 AFY of the City's allocation, however, the City in its approval of the Marina Heights Development limited the water allocation to Marina Heights to 292 AFY.[68] This subsequent limitation by the City was not taken into account with respect to the MCWD's WSA for this Proposed Project, despite the City's provision of information to the MCWD. When considered with existing demands from the Abrams/Preston Park housing area at 270 AFY and 11.25 AFY for other existing uses, the MCWD, therefore, erroneously estimated the City's remaining balance of water for future projects to be 694.25 AFY.[69] According to the WSA, the MCWD's total estimated demand for the Proposed Project would be 732 AFY thereby, according to MCWD the City was "short" by 37.75 AFY for the Tentative Map Application. MCWD estimates that additional development within the University Villages Specific Plan area constitutes what is called "Non-Application Parcels" and would require 124 AFY of water. Given the remaining City balance of 694.25 AFY of water, there would be an approximate deficit, according to the MCWD, of 38 AFY for the Proposed Project and a 162 AFY deficit associated with the Proposed Project, plus the Non-Application Parcels.

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68 City of Marina Findings and Evidence After hearing 2004.

69 Marina Coast Water District, *Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project*, January 21, 2005.

However, as discussed above, MCWD's estimated City remaining balance should be revised by 57.5 AFY to take into account more relevant and factually correct assumptions as to water demand factors so the total adjusted allocation would be 751.75 AFY. The City's analysis revises the Tentative Map demand a minimum of 66.4 AFY (based on the 49.00 AFY credit for MCDW's double-counting of landscaping plus the 17.40 AFY allocation for revised hotel/motel room estimates) so that estimated demand for the Proposed Project would total 666.00 AFY. Further, an additional water savings would be allocated between the Proposed Project and the Non-Application Parcels (which is based on the correcting the MCWD's misuse of non-standard water values to standard factors based on the MCWD's Procedures Guidelines and Design Requirements), creating an additional 40 AFY savings such that demand for the entire project would be 749.9 AFY which falls within the revised City of Marina allocation.

As stated in the Setting subsection, the MCWD is currently proposing a Regional Urban Water Augmentation Project (Water Augmentation Project) with the objective to provide 2,400 AFY of water to meet anticipated demands in the former Fort Ord area. However, MCWD has taken the position that until such a time as the preferred Augmentation Project has been selected, specific plans for development of the additional 2,400 AFY of water have been developed, permits for development of the supply secured, and FORA has allocated the Augmentation Project supply among the jurisdictions on the former Fort Ord, MCWD does not consider the Augmentation Project supply to be "available" in its written verifications of supply under SB 610 and SB 221.

The City of Marina disagrees with the position taken by MCWD on the grounds stated below and, as discussed above in the Setting, asserts that both adequate augmented water supplies will be made available to the former Fort Ord and that FORA will make a fair and equitable allocation to the City of Marina in sufficient quantity to allow build out under the Reuse Plan. The City concludes on the basis of all the evidence in the record, including the studies cited herein, that the augmentation projects described in the Setting are reasonably probable.

CEQA Guidelines Section 15083.5 requires the City to review MCWD's information about water supply and reach its own independent conclusion about whether or not there are sufficient water supplies to satisfy the demands of the Proposed Project. For the reasons contained in this section, the City disagrees with the MCWD assessment that there are insufficient supplies available for several reasons. First, MCWD overestimated the approved water allocation to the Marina Heights subdivision, thereby overstating the accounting of water potentially required by Marina Heights. See the discussion above for a comparison of MCWD's accounting of the City's water allocation and the City's corresponding evaluation and reasons why the numbers are different. Additionally, the basis for the City's disagreement with the WSA as to the likelihood of future water supplies was summarized in written comments to the MCWD detailing the fact that augmentation supplies are sufficiently certain to

permit their being used for the purpose of estimating available future water supplies pursuant to Water Code Section 10910 and CEQA Guidelines Section 15083.5.[70]

To assist in water conservation efforts, the Proposed Project would include the following water conservation features as design elements:[71]

- Installation of high-efficiency clothes and dish washers;
- Construction of recirculating hot water systems;
- Construction of separate distribution system for conveyance of recycled water;[72]
- Installation of tankless hot water heaters;
- Landscaping that has low water requirements and inclusion of artificial turf for active play areas; and
- ETO-Evaporation transport-based irrigation controllers.

The above listed water conservation measures would reduce the water demand generated by the Proposed Project as summarized in Table 3.9-3.

In addition, the Proposed Project would reduce the amount of water used for landscaping irrigation by using conservation methods. Specifically, plant materials identified in the design guidelines for the Proposed Project have been selected to have low water requirements and thrive in the coastal conditions present on the project site. Outdoor areas would be landscaped using predominantly native and drought tolerant species, with a minimal use of turf. Furthermore, irrigation controls would minimize water use by providing localized information to control the application of water to match climatic requirements and plan needs.

In conclusion, based on the evidence contained in the record and supporting documentation prepared in connection with this DEIR, the City determines that the WSA prepared by MCWD is flawed in that the WSA overestimates water consumption for the Proposed Project, miscalculates water demand for existing projects and failed to take into account reasonably likely future water supplies. As discussed above, the design elements of the Proposed Project, the availability of water supply, the planned availability of augmented water supply coupled with the contractual agreements to provide such supply all lead to the conclusion that there is sufficient water supply available for the Proposed Project.

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70 Letter dated January 21, 2005 from City of Marina to MCWD re WSA Available for review City of Marina, Strategic Development Center, 265 Reservation Road, Suite E, Marina, California.

71 Marina Community Partners, *Draft Specific Plan University Villages in the City of Marina at Former Fort Ord*, September 28, 2004.

72 Subject to the potential availability of recycled water, a separate distribution system to deliver recycled water appropriate for irrigation of parks, streetscapes and commercial landscaping may be constructed.

Treatment Capacity and Distribution/Infrastructure Capacity. As part of the Proposed Project's design features, water pipelines shall be designed consistent with applicable requirements of the MCWD Procedures Guidelines and Design Requirements. Water facilities would be installed in accordance with the requirements and specifications of the State Health Department. All water pipelines would be placed underground and in the utilities right-of-way, located in both public roadways and private streets and alleys.

There are presently no recycled water facilities within University Villages. However, MCWD's Regional Urban Recycled Water Distribution Project (Recycled Water Project) has developed an engineering study for the construction of a new recycled water distribution system that includes service to University Villages. As part of the Recycled Water Project, recycled water pipelines and appurtenances are proposed to run parallel to 2nd Avenue and tie into the proposed regional network. The provision of recycled water would only occur at the discretion of MCWD and is not anticipated to occur in the near future. Should recycled water be made available to the project site, recycled water may be used to irrigate landscaped areas, medians, parks and playgrounds.

The existing water distribution system in the University Villages area loses about 10 percent of its water due to the age of the facilities.[73] This water loss is identified in part in the Fort Ord Water Allocation chart to amount to 578 AFY.[74] In order to reduce water use inefficiency, the Proposed Project would replace most of the existing water distribution system throughout the University Villages area. An existing water main runs north along 2nd Avenue and continues east along Imjin Parkway, connecting to the MCWD's Booster Station B, to the east of project site. It is anticipated that this pipeline would be preserved and the Proposed Project would construct several tie-ins into it. It is expected that the commercial and residential areas of University Villages would be serviced directly by a system of new 8-inch and 12-inch water pipelines. A ductile iron 12-inch line is proposed to follow the boundary of the Village Promenade retail's parking and common areas, in the northwest portion of the project site, while 8-inch PVC water pipelines and some 12-inch pipelines would thread through the residential area.[75] The water transmission network would have sufficient capacity to accommodate the Proposed Project.[76]

The construction of the water infrastructure shall occur in conjunction with site grading and development, which could result in physical environmental impacts such as noise and potential

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73 Fort Ord Reuse Authority, *Fort Ord Reuse Plan Final Environmental Impact Report, Chapter 4.4, Public Services, Utilities and Water Supply*, http://www.basereuse.org/reuseplan/ReusePln/Volume4.pdf, Accessed January 26, 2005.

74 Marina Coast Water District, *Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project*, January 21, 2005. (Table 3-2).

75 Polyvinyl Chloride (PVC) is a white, water-insoluble, thermoplastic resin, derived by the polymerization of vinyl chloride used chiefly for thin coatings, insulation, and piping.

76 Marina Coast Water District, *Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project*, January 21, 2005.

biological impacts. The noise impacts associated with the construction and development are discussed elsewhere in this document and would not be considered adverse. The biological impacts of the overall project, to include water pipelines, are discussed in Section 3.3, Biological Resources.

In summary, the water transmission infrastructure would have sufficient capacity to accommodate the Proposed Project. The impact to water supply would be ***potentially significant***.

IMPROVEMENT MEASURE. There is sufficient water supply for the Proposed Project, considering the elimination of water line loss, the contractual agreements and previous actions of the Marina City Council limiting other projects water usage, and the planned augmentation water supplies are sufficient to serve the anticipated water demand at Proposed Project buildout. While it is recognized that some unaccounted-for water will remain, it is anticipated that the construction of new water distribution facilities plus the proper management of the system by the MCWD will drastically reduce the 10 percent factor historically used by FORA for their purposes, a more reasonable estimate consistent with operations of similar systems is 2 percent. Therefore, with the implementation of the following improvement measures the impacts of the Proposed Project would remain *less than significant*.

UT-1.1 Implement the water conservation measures identified in the Specific Plan.

UT-1.2 Replace the water transmission infrastructure lines to drastically reduce the volume of unaccounted-for water throughout the project boundary.

UT-2. The Proposed Project would increase flows to the RTP but would not result in the need to construct a new wastewater treatment facility or the expansion of an existing facility. (LTS)

As discussed earlier in this section, the RTP has a use permit to treat 27 mgd of wastewater. In 2004, the average dry weather flow to the RTP was 21.5 mgd, which includes the U.S. Army's reservation, or 79.6 percent of its use permit capacity. The U.S. Army in 1998 paid for a reserve amount of 3.3 mgd of prepaid wastewater treatment capacity.[77] A portion of this reserve amount was transferred to FORA pursuant to the Memorandum of Agreement to transfer the base. Wastewater flows typically bear a close relationship to the amount of water consumed for residential and commercial uses. In general, wastewater generation is about 70 to 90 percent of the water consumed, the variance being largely attributed to the amount of landscaping on-site. In order to estimate conservatively the amount of wastewater generated, this analysis assumes that wastewater generation would be 90 percent of the water demand. As stated under impact UT-1, the Proposed Project would generate a water demand of 749.9 AFY. Therefore, the Proposed Project would generate 647 AFY, or 0.58 mgd, of wastewater.[78] This

[77] Memorandum of Understanding, Department of the Army and MRWPCA, dated June 22, 1998.

[78] 856 AFY x 0.9 = 770.4 AFY of wastewater. 770.4 AFY ÷ 365 days = 2.11 AF a day = 687,546.52 gallons per day = 0.69 million gallons per day.

represents 11 percent of the 2004 remaining RTP capacity and is well within the U.S. Army's original reservation of wastewater treatment capacity.[79]

Presently, there are short-term constraints to new residential development as a result of a MRWCPA requirement to limit wastewater treatment. Specifically, Ordinance 2004-04 stipulates that the total RTP allocation available to member jurisdictions on a first come first served basis is 6,006 housing units. Ordinance 2004-04 sunsets on September 30, 2008. Therefore, any residential development constructed prior to that date would be subject to the Ordinance and 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.

However, as described in the setting, the RTP has sufficient existing capacity to accommodate proposed new uses and new development in Marina, including portions of the former Fort Ord base, for the next 10 to 15 years, or through year 2015 to year 2020. Therefore, the Proposed Project would not result in the need to either construct a new wastewater treatment facility or expansion of an existing facility and the impact would be ***less than significant*** and mitigation is not warranted.

UT-3. The Proposed Project would not exceed the capacity of existing wastewater collection infrastructure resulting in the need to construct new infrastructure. (LTS)

The existing wastewater collection system is not adequate to accommodate the Proposed Project. However, as a component and design feature of the Proposed Project, the majority of existing sewer pipelines would be abandoned-in-place, or removed and replaced with new facilities. Only two existing pipelines, crossing both Imjin Road and 2nd Avenue are proposed to be retained as part of University Villages wastewater plan. The Proposed Project design feature wastewater infrastructure would be comprised of mains ranging in diameter from 8 to 48 inches. Tie-ins to existing trunk pipelines under Highway 1 would also be provided.[80] Ultimately, all wastewater generated by the Proposed Project would flow to a MRWPCA interceptor facility. The wastewater infrastructure would be designed with sufficient capacity to accommodate the Proposed Project, plus additional wastewater flows from upstream portions of the MCWD collection system.[81]

Construction of infrastructure generally has the potential to result in service disruptions. Off-site wastewater flows from development to the northeast of University Villages and CSUMB could flow through the project site. It is therefore possible that the construction of wastewater infrastructure for the Proposed Project could result in service disruptions. However, existing

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79 27 mgd – 21.5 mgd = 5.5 mgd remaining capacity. 0.69 mgd ÷ 5.5 mgd x 100 = 12.5 percent.

80 Marina Community Partners, *Draft Specific Plan University Villages in the City of Marina at Former Fort Ord*, September 28, 2004.

81 Marina Community Partners, *University Villages in the City of Marina at Former Fort Ord*, Wastewater Infrastructure Plans, September 22, 2004.

controls through MCWD require that all utility lines in the area be identified and marked on the ground so that disruption of services does not occur.

Construction of wastewater infrastructure has the potential to result in physical environmental impacts such as noise and potential biological impacts. The noise impacts, as discussed in more detail in Section 3.8, would be temporary and as such, would not be considered adverse. The biological impacts of the overall Proposed Project, including construction of wastewater pipelines, are discussed in Section 3.3, Biological Resources.

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. Because the Proposed Project would construct new infrastructure to serve the Proposed Project and would not exceed capacity of existing infrastructure, the impact is considered ***less than significant*** and mitigation is not required.

UT-4. The Proposed Project would not generate an increase in solid waste that could be in excess of available permitted landfill capacity resulting in the need to expand existing facilities. (LTS)

Change in solid waste streams generally results from population growth, successful diversion efforts, and substantial fluctuations in demolition and construction activities. The Proposed Project would result in a population increase as well as demolition and construction activities. As a result, it may have the potential to increase solid waste generation that could adversely affect local facilities that process or store solid waste.

The Proposed Project would generate solid waste related to the deconstruction and demolition of 943 vacant military buildings currently occupying the project site. Demolition of existing military buildings would produce an estimated 1,820 truck loads of building debris, which would be transported to the Monterey Peninsula Landfill and/or the Kettleman City Class I/II Landfill. It is possible that all the demolition material would be taken to Kettleman City Landfill depending upon the nature and extent of the Monterey Peninsula's ability to accept hazardous material debris. Monterey Peninsula's Landfill is a Class III landfill, however, there is a pending application by the Monterey Peninsula Landfill to be permitted to accept the Fort Ord hazardous materials as originally contemplated under the Reuse Plan. Some of the demolition debris is contaminated with hazardous materials such as asbestos. Non-contaminated debris can be taken to a Class III landfill, such as the Monterey Peninsula Landfill. Contaminated debris must be taken to a certified and permitted California Department of Toxic Substance Control Class I or II landfill, such as Kettleman City Landfill. Of the 1,820 truck trips, approximately 1,300 loads (about 26,000 tons) of non-friable asbestos materials would be trucked off-site to the Monterey Peninsula Landfill or Kettleman City Class

III Landfill and 520 loads (about 10,000 tons) of friable asbestos would go to the Kettleman City Class I or II Landfill.[82]

As discussed in the Setting, Kettleman City Landfill has a permitted capacity of 4,200,000 cubic yards with a remaining estimated capacity of 3,374,413 cubic yards as of 2000.[83] The California Integrated Waste Management Board estimates December 2010 as the closure date for Kettleman City Landfill. Deconstruction at the project site is expected to commence in the 3rd quarter of 2005 and continue at a steady pace over a period that may range up to five years, through about 2010. Since it is not likely the Kettleman City Landfill will close before 2010, it is reasonably foreseeable that there is sufficient capacity available to accommodate the deconstruction debris generated by the Proposed Project.

The Proposed Project would also generate solid waste related to project operations. Based on a solid waste generation rate of 5.4 pounds per person per day, used to evaluate the environmental impacts of the *Fort Ord Reuse Plan*, upon buildout, University Villages would generate about 16,664 pounds of solid waste a day, or 3,041 tons per year.[84] The solid waste generation rate of 5.4 pounds per person per day is a target rate mandated by AB 939 and assumes that solid waste reduction and recycling program would be implemented at the former Fort Ord. This assumption is appropriate for evaluating the Proposed Project because the City of Marina has met and exceeded its AB 939 goal since 1996 and it has a curbside recycling program for single-family residential developments. As discussed in the setting, the Monterey Peninsula Landfill has capacity to serve its present service area through the year 2090. Thus, the decrease of landfill life resulting from the increase in solid waste generated by operation of the Proposed Project would be considered a ***less-than-significant impact***.

IMPROVEMENT MEASURE. Implementation of the following improvement measure would ensure that the solid waste impacts remain *less than significant*. (LTS)

UT-4.1 *To ensure continued compliance with AB 939, the City of Marina shall expand the curbside recycling program to serve all properties within University Villages, including multi-family residences and commercial establishments. The project sponsor shall design multi-family and commercial sites to provide for trash enclosures of adequate size to accommodate the collection of both garbage and recyclable refuse. Recyclable refuse shall include cardboard, plastics, paper, metal, grass and whatever else is anticipated to be recycled.*

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[82] The ability of an asbestos-containing material to release fibers is called its friability. The legal definition of friable asbestos-containing material is: an asbestos-containing material that can be crumbled, pulverized or reduced to powder by hand pressure when dry.

[83] California Integrated Waste Management Board, http://www.ciwmb.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=16&FACID=16-AA-0021, Accessed November 8, 2004.

[84] 3,086 people x 5.4 pounds = 16,664 pounds per day x 365 days = 6,082,506 pounds = 3,041 tons.

Cumulative Impact

The cumulative analysis for public utilities involves a discussion of the impacts associated with current and probable future development projects within the vicinity of the Proposed Project when combined with Proposed Project buildout impacts. The cumulative context involves the service areas of the aforementioned utilities systems (water supply, wastewater, and solid waste).

UT-5. The Proposed Project, in combination with other current and proposed City of Marina development, could result in a water supply impact. (LTS)

The MCWD 2001 UWMP anticipated that water demand resulting from growth in the City of Marina's portion of the former Fort Ord would exceed the available supply. The 2001 UWMP did assume the level of development contemplated under the Proposed Project in evaluating the demands to be made on the MCWD water supplies.[85] However, as discussed above, the projected demands of the Proposed Project are not expected to exceed the currently available water supply and reasonably likely projected supplies. Additional properties within the City, such as the Cypress Knolls residential and retail development, elementary and secondary schools, the Monterey Peninsula College Satellite campus and the airport business park, may also be developed in the future. At this time it is not possible to fully determine the water supply needs of these potential developments; however, the Regional Urban Water Augmentation Project's has identified a key objective of providing 2,400 AFY of water to meet anticipated demands in the former Fort Ord. In addition, providing 300 AFY for the Monterey Peninsula or as redevelopment water to the City of Marina is also being considered by this project in connection with either the operation of the desalination facility or by way of increased use of recycled water. Accordingly, the Proposed Project, in combination with other probable City development, would result in a ***less-than-significant cumulative impact.***

UT-6. The Proposed Project, in combination with surrounding current and probable future development, would not warrant the construction of a new wastewater treatment facility or the expansion of an existing facility. (LTS)

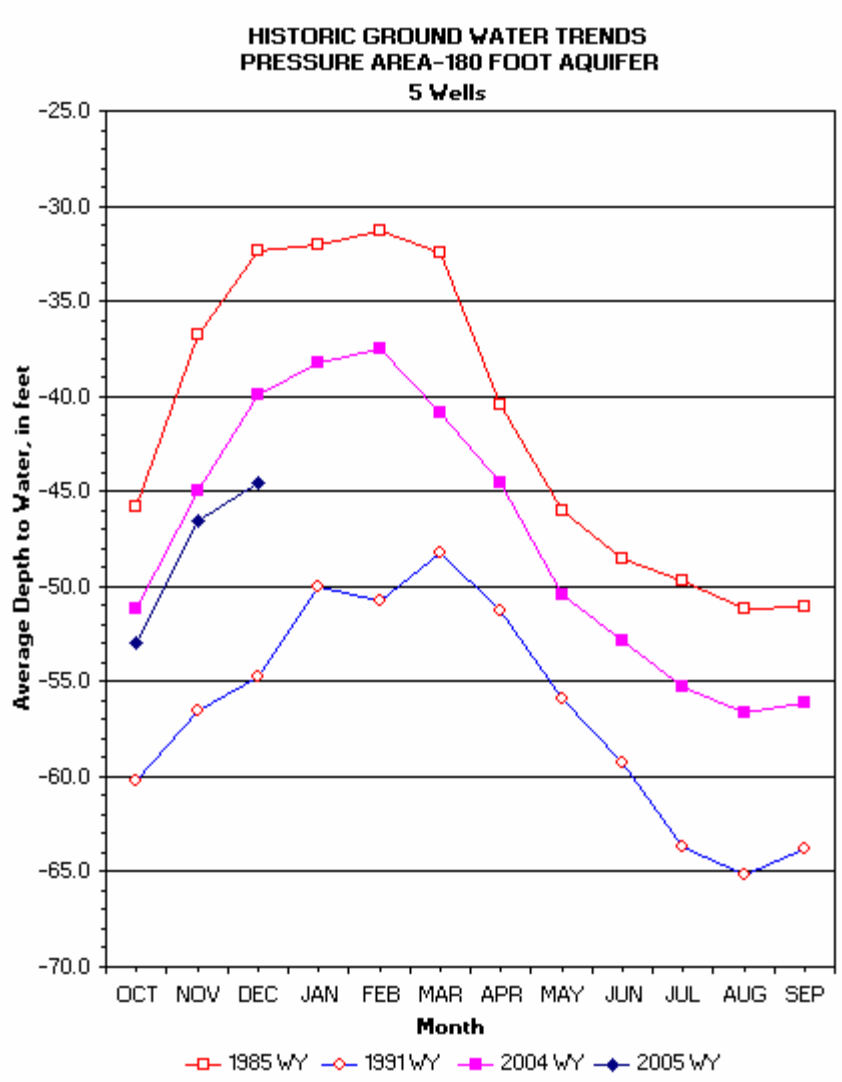
The RTP has a design capacity of 29.6 mgd and currently has a use permit to treat 27 mgd. Presently, RTP receives an average dry weather flow of approximately 21.5 mgd from current development, or 79.6 percent of its permitted capacity. The MRWPCA anticipates that the RTP has sufficient capacity to serve the Proposed Project as well as other probable development in Marina, including portion of the former Fort Ord for at least the next 10 to 15 years, until the year 2015 to 2020. In order to ensure that the RTP has sufficient capacity to serve future development, the MRWPCA has initiated the process to increase the permitted operational capacity of the RTP to the full 29.6 mgd and anticipates receiving the permit prior to reaching the RTP's existing permitted use of 27 mgd. Since the RTP has sufficient capacity

[85] Marina Coast Water District, *Water Supply Assessment and Written Verification of Supply for the Proposed University Villages Specific Plan Development and Marina Community Partners Project*, January 21, 2005.

to serve planned City of Marina and former Fort Ord development, the Proposed Project would not cumulatively contribute to the need for new wastewater treatment facilities. Accordingly, the Proposed Project would result in a ***less-than-significant cumulative impact***.

UT-7. The Proposed Project would result in a less-than-significant solid waste impact because it would be served by a landfill with sufficient permitted capacity to accommodate the project's and current and probable future development's solid waste disposal needs. (LTS)

The Monterey Peninsula Landfill has a capacity to service its present service area, which includes the City of Marina and the former Ford Ord, through the year 2090. Since the landfill has sufficient permitted capacity to accommodate the Proposed Project and other planned City of Marina and the former Ford Ord development, the Proposed Project would result in a ***less-than-significant cumulative*** solid waste impact.



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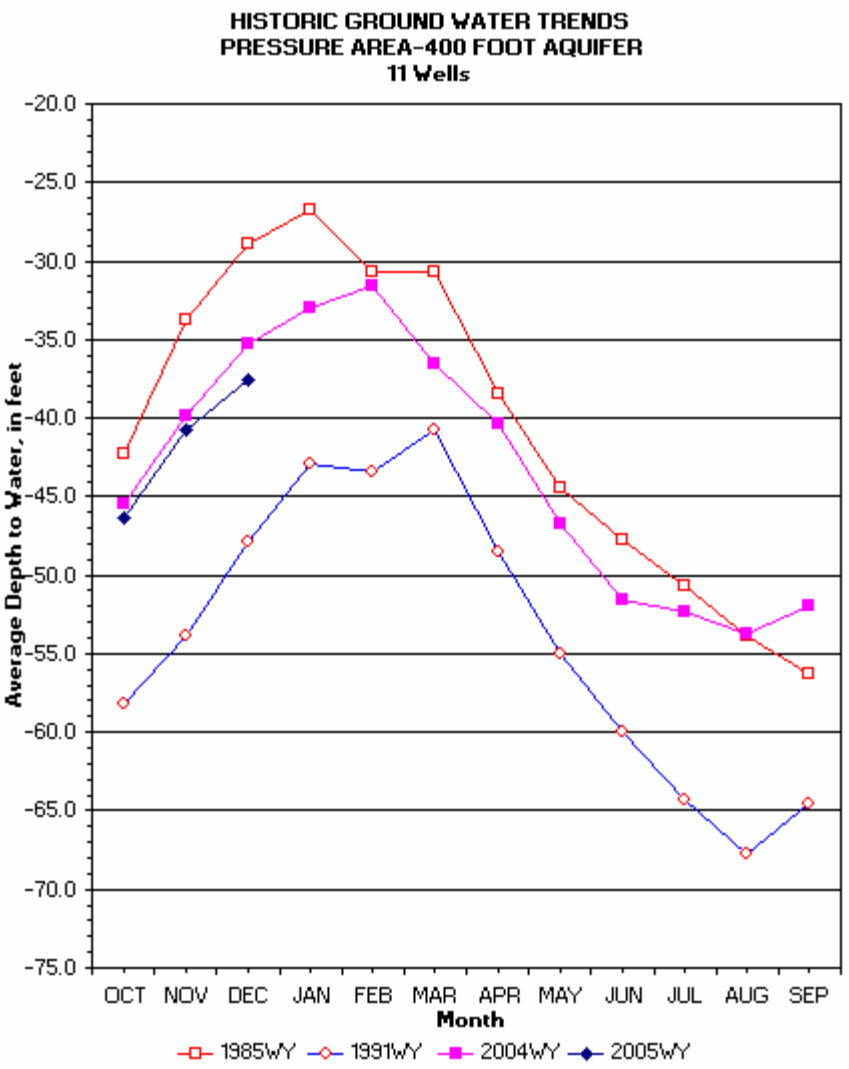

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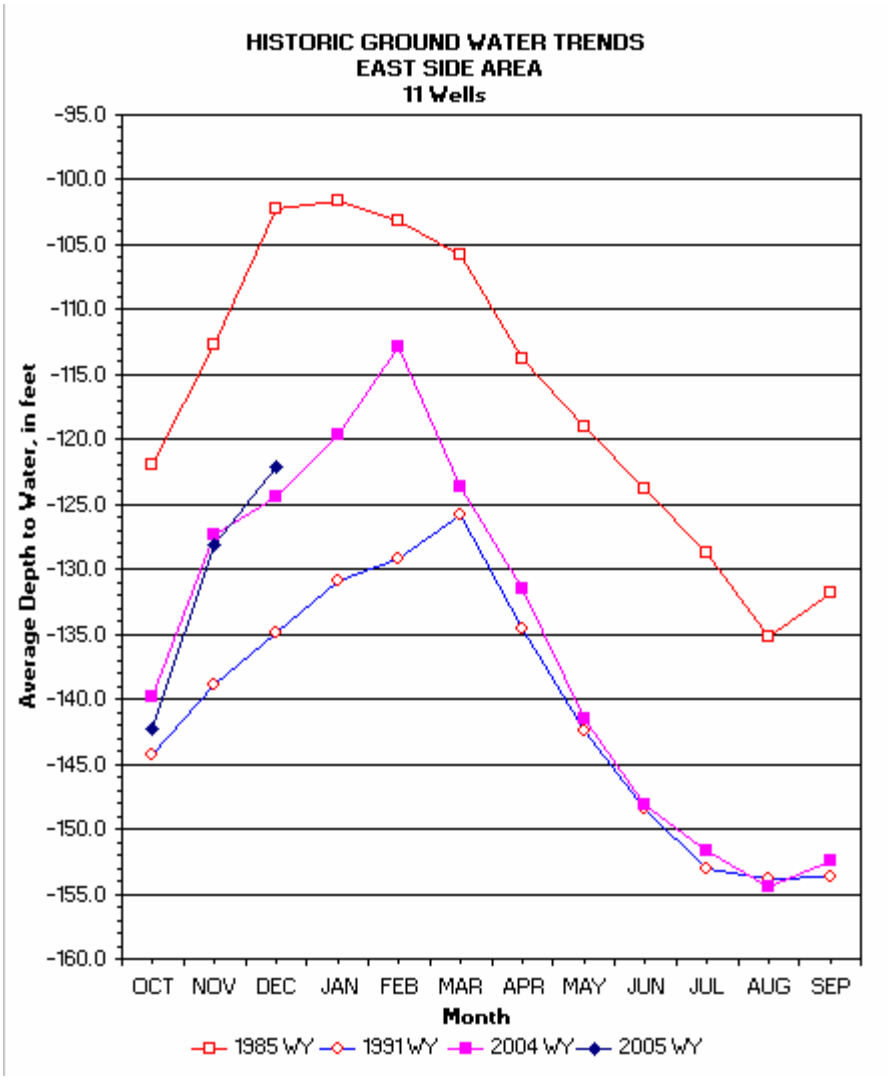

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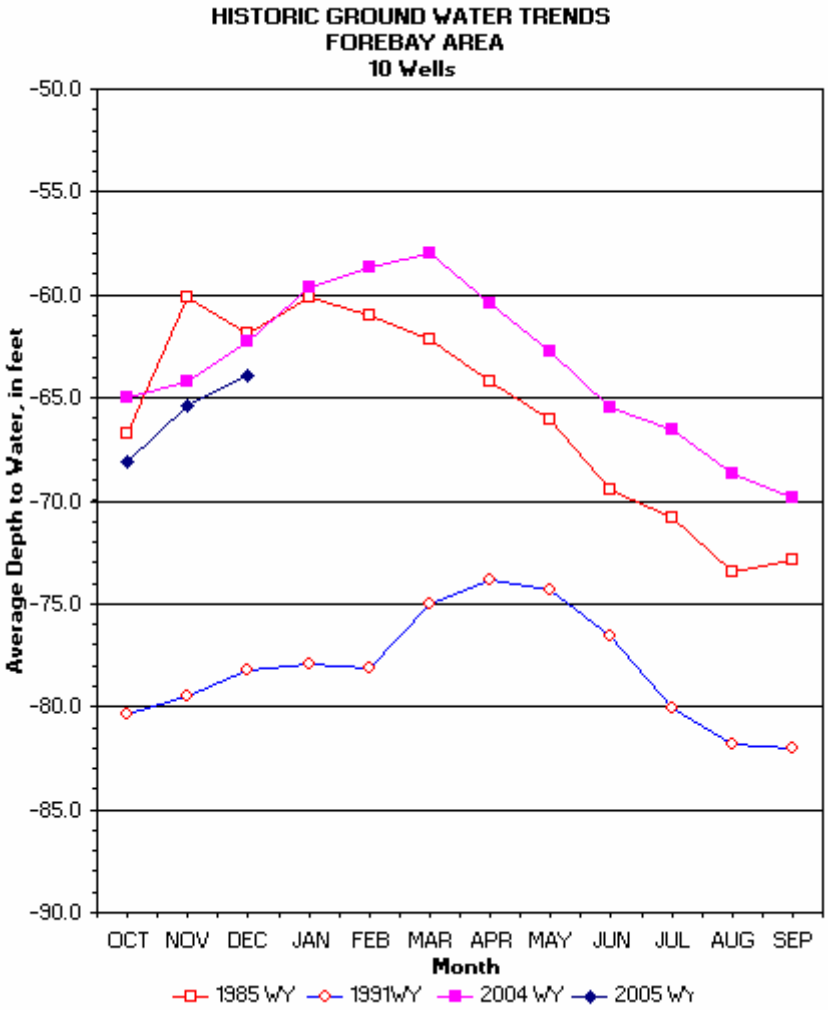

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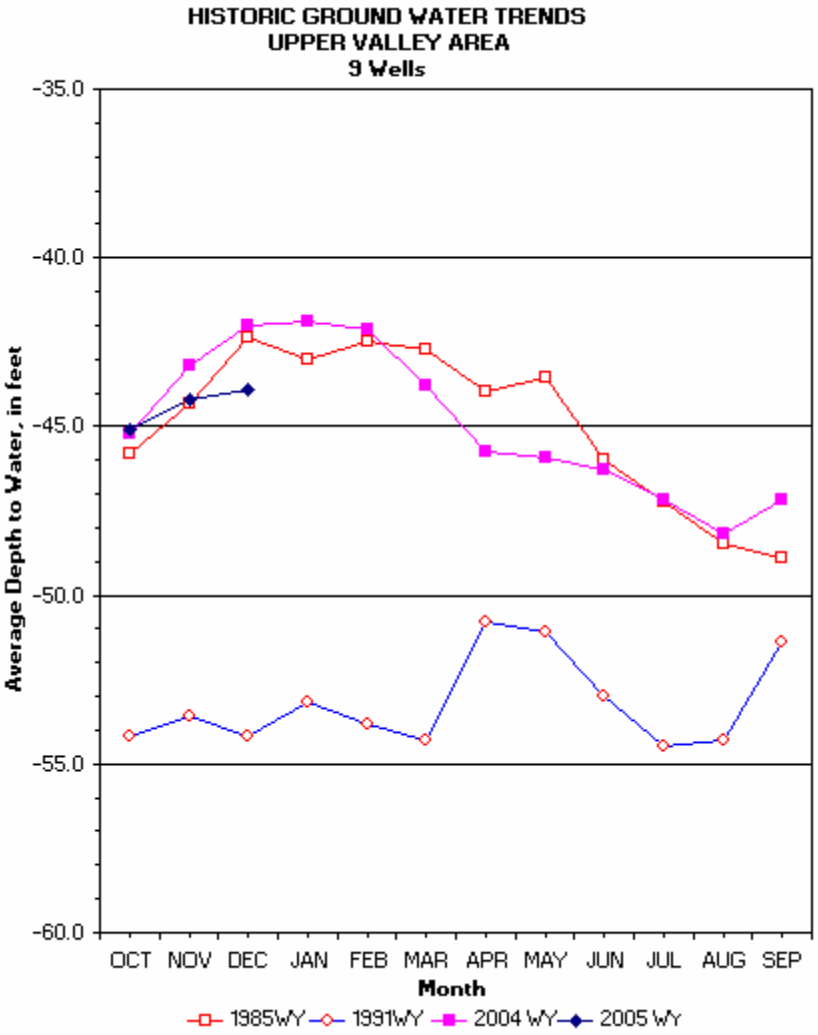

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3.10 TRANSPORTATION AND CIRCULATION

3.10 TRANSPORTATION AND CIRCULATION

Introduction

This traffic analysis was based on a report prepared by Higgins Associates dated December 17, 2004. The full text of this report and the worksheets that support the report are available in a separately bound Technical Appendix which is available at the City of Marina City Hall, City of Marina Planning Department, and City of Seaside and Monterey Libraries.

This analysis evaluated the project description specified in the Marina University Villages Specific Plan. Furthermore, the information regarding the vehicular traffic, access and circulation was provided by the Marina Community Partners.

The purpose of this analysis is to determine the potential traffic impacts from the buildout of the Proposed Project. The analysis presents the results from a series of analyses performed to determine the potential traffic impacts from not only the Proposed Project at buildout, but also at a first phase of the Proposed Project.

Comments related to transportation were received in response to the NOP from the following agencies: the Marina Department of Public Safety, California State University, Monterey Bay, the Transportation Agency for Monterey County (TAMC), the Monterey-Salinas Transit, and the California Department of Transportation, District 5. The comment letters are contained in Appendix B.

The Initial Study (Appendix A), determined that the Proposed Project would have no impact on air traffic patterns, and a less-than-significant impact on emergency access, parking capacity, and hazards due to incompatible uses. These issues are not addressed in the EIR.

Regional Access

The project site is located east of Highway 1, which runs in a north-south direction on the shore of Monterey Bay. Historically the main regional access to the site has been off Highway 1 via the Light Fighter Drive interchange and this will continue to be the access to the site from the south. The Highway 1 / 12th Street / Imjin Parkway interchange, completed during 2003, now provides the primary regional access to the project site from Highway 1 and Reservation Road. 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 of the Campus and Highway 68 to the south of the project site. Refer to Figure 3.10-1 for detail of the regional access to the project site.

FIGURE **3.10-1**
Regional Road Network

Not to Scale

10886-00

***Source*:** Higgins Associates, 2004

University Villages EIR

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Local Access

The northern and northeastern "gateway" access to the project site will be via the intersections of Imjin Parkway with 2nd Avenue and California Avenue. The southern "gateway" will be along 2nd Avenue from Light Fighter Drive. Other existing local streets that will provide access to the Proposed Project running north/south are 4th Avenue, 3rd Avenue, and 1st Avenue. Those running east/west are 1st Street, 3rd Street, 5th Street, and 6th through 10th Street. Refer to Figure 3.10-2 for detail of the local road network serving the project site.

Project Description

For this traffic analysis, the traffic volumes associated with the proposed development have been combined with those of the other agencies who have "Non-Application Parcels" within the Proposed Project boundary. It is relevant to note that while the *City of Marina University Villages Specific Plan* provides for 500 hotel rooms (350 units in polygon OP1A and 150 units in polygon T), alternative land uses have also been identified for Planning Area "T" and "OP1A". The three potential alternatives are as follows: 500 hotel rooms, or 160,000 square feet (sf) of retail, or 277,042 sf of office. Thus, three different trip generation tables were prepared for the Proposed Project and traffic analysis. From a trip generation perspective, the "retail" option for polygons T and OP1A would generate the highest number of daily and peak hour trips. To ensure that a "worse case scenario" was evaluated, Planning Area "T" and "OP1A" were treated as retail. Should Planning Area "T" and "OP1A" be developed as hotel or office, the number of trips that would be generated by these land uses would be substantially less than for retail. In terms of traffic volumes, a 500 room hotel would generate 4,460 average daily trips and a 160,000 square foot retail center would generate 15,200 average daily trips.

Other than the "Non-Application Parcels," the proposed development is planned in phases. The traffic impact on the surrounding road network will be determined at Project Phase 1 and Project Buildout. The estimated buildout timeframe for the Proposed Project, relevant to this traffic study is the year 2013. Figure 2-4 shows the Project Phasing Map relevant to this traffic study. Refer to Chapter 2, Project Description for a discussion of the Proposed Project phases.

Study Area

The study area for this traffic study was specifically developed to identify the potential traffic impacts that may be associated with the development of the Proposed Project at buildout level as well as for the near-term Phase 1 of the Proposed Project.

The traffic study includes a traffic impact analysis on intersection traffic operations at 25 intersections during typical weekday AM and PM peak hours, freeway segment and ramp analysis based on morning and evening peak hour traffic volumes, and a brief discussion of alternative means of transportation, such as transit and walking. Where required, mitigation measures were recommended to improve traffic operations due to the development of the Proposed Project and the surrounding areas. The following intersections, freeway segments, and freeway on- and off-ramps were analyzed in this study.

FIGURE **3.10-2**

Study Intersections and Local RoadNetwork

Not to Scale

10886-00

***Source*:** Higgins Associates, 2004

University Villages EIR

EIP ASSOCIATES

Note that the following numbering system coincides with the numbering in Figure 3.10-2 and later in this section in the various mitigations.

Intersections Evaluated:

1. Del Monte Boulevard/Reservation Road
2. California Avenue/Reservation Road
3. Imjin Road/Reservation Road
4. Blanco Road/Reservation Road
5. Del Monte Boulevard/Reindollar Avenue
6. California Avenue/Reindollar Avenue
7. Southbound Highway 1 off-ramp /12th Street
8. Northbound Highway 1 off-ramp/12th Street
9. 2nd Avenue/Imjin Parkway
10. 5th Avenue/California Avenue Extension/Imjin Parkway
11. Imjin Road/Imjin Parkway-Imjin Road
12. Abrams Drive/Imjin Road
13. 2nd Avenue/8th Street
14. 4th Avenue-Gen. Jim Moore Boulevard/8th Street
15. Imjin Road/8th Street
16. 2nd Avenue/3rd Street
17. 4th Avenue-General Jim Moore Boulevard/3rd Street
18. General Jim Moore Boulevard/1st Street
19. 1st Avenue/Light Fighter Drive
20. 2nd Avenue/Light Fighter Drive
21. General Jim Moore Boulevard/Light Fighter Drive
22. General Jim Moore Boulevard/Gigling Road
23. General Jim Moore Boulevard/Normandy Road
24. General Jim Moore Boulevard/Coe Road/Eucalyptus Road
25. General Jim Moore Boulevard/Broadway Avenue

Freeway Segments Evaluated:

1. Highway 1, south of Light Fighter Drive
2. Highway 1, between Light Fighter Drive and Imjin Parkway (12th Street)
3. Highway 1, north of Imjin Parkway (12th Street)

Freeway Ramps Evaluated:

1. Highway 1 northbound and southbound on- and off-ramps, at Light Fighter Drive interchange
2. Highway 1 northbound and southbound on- and off-ramps, at Imjin Parkway (12th Street) interchange

Road Segments Evaluated:

1. Blanco Road (north of Reservation Road)
2. Reservation Road (Between Imjin Road and Blanco Road)

Figure 3.10-2 shows the regional road network study intersections.

The area in which the project site is located is undeveloped at this point in time and does not generate substantial vehicle trips. Therefore, the scenarios evaluated in the traffic study were selected to comprehensively test the traffic impacts from the project itself, as well as from other proposed projects in the surrounding area. This traffic study thus analyzed the traffic impacts of the approved projects in the area, Phase 1 of the Proposed Project as well as buildout of the Proposed Project. This study also evaluates the anticipated traffic impacts that could be expected as a result of the total development of the former Fort Ord per the *Fort Ord Reuse Plan*, and other proposed projects in the region outside of the former Fort Ord boundary that would be expected to impact local roads as part of the cumulative (2025) traffic scenario.

The traffic scenarios evaluated as part of this traffic study are:

- Existing Traffic Conditions (2004),
- Background (i.e., Existing Plus Approved Projects) Traffic Conditions (± 2010),
- Background Plus Proposed Project Phase 1 Traffic Conditions (± 2005 - 2010),
- Background Plus Proposed Project Buildout Traffic Conditions (± 2013),
- Cumulative Traffic Conditions (2025) without 2nd Avenue North & South Extension, and
- Cumulative Traffic Conditions (2025) with 2nd Avenue North & South Extensions.

It should be noted that the traffic analysis was based on projections of traffic scenarios, particularly for cumulative scenarios of 2025. The actual development levels and timeframes are subject to market forces.

Existing Traffic Conditions

This section presents a description of the existing traffic network, existing traffic volumes, intersection levels of service, and an overview of traffic flow conditions within the study area under existing traffic conditions.

Existing Traffic Network. The primary regional access to the project site is provided by Highway 1; other significant regional highways are Highway 101, Highway 156 and Highway 68. Other important streets include Reservation Road, Blanco Road, General Jim Moore Boulevard, Del Monte Boulevard, Imjin Parkway, Imjin Road, 2nd Avenue, California Avenue, 8th Street, 4th Avenue, 3rd Street, Light Fighter Drive, and Gigling Road. Other roadways in the area include Reindollar Avenue, Abrams Drive, 1st Street and 1st Avenue. Figure 3.10-1 shows the regional road network. Figure 3.10-2 shows the study intersections and local road network. The following is a brief description of the most important streets in the network.

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 site, 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.

Reservation Road is a major arterial extending from Marina State Park 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 divided roadway. 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. For the remainder of its length, it is a two-lane rural highway.

General Jim Moore Boulevard is a major arterial within the Cities of Marina, Seaside and Del Rey Oaks. It connects the Proposed Project with Highway 68 via Highway 218. In the immediate project vicinity, General Jim Moore Boulevard is a two-lane, undivided roadway to the north of Light Fighter Drive, and south of Light Fighter Drive it is a four-lane divided arterial up to Bayonet Street. From Bayonet Street to Highway 218 it is a two-lane arterial. However, General Jim Moore Boulevard will

be widened to a four-lane arterial under the FORA CIP from Bayonet Street to just north of the General Jim Moore Boulevard /Highway 218 intersection.

Del Monte Boulevard is a major arterial within western City of Marina, extending from a partial interchange (SB on- and NB off-ramps only) with Highway 1 north of Imjin Parkway (12th Street) to Highway 1 north of Marina. In the project vicinity, Del Monte Boulevard is a four-lane divided roadway.

Imjin Parkway is an arterial roadway within the City of Marina city limits. Imjin Parkway is a two-lane road at its interchange with Highway 1 and a four-lane divided roadway with left turn channelization east of the interchange. It should be noted that the exit signing from Highway 1 currently misidentifies Imjin Parkway as 12th Street, the former name of the roadway prior to its reconstruction. For the purpose of clarity within this report, the roadway will be referred to as "Imjin Parkway (12th Street)" at the two intersections that compose the Highway 1 interchange with Imjin Parkway. In the remainder of its length, existing City of Marina signing correctly designates the roadway as "Imjin Parkway," and therefore this report uses that terminology for that segment of the roadway.

Imjin Road is a two-lane arterial between Reservation Road and 8th Street. Imjin Road provides access to the Marina Municipal Airport and the UC-MBEST development located north of Reservation Road, the Proposed Project and CSUMB located in southern Marina, and residential developments in between.

2nd Avenue is currently under construction as a four-lane divided arterial between Light Fighter Drive and Imjin Parkway, and as a result is currently closed. This study has analyzed the 2nd Avenue corridor based upon prior traffic volumes and projections from before the start of the widening, and the intersection lane configurations after construction is complete, based on the Proposed Project Circulation Plan.

California Avenue is a two-lane roadway connecting the former Fort Ord area with central City of Marina. At present there is a disconnected portion of California Avenue between Carmel Avenue and Reindollar Avenue. This missing connection will be constructed no later than 2006 to enable California Avenue to link Reservation Road to Imjin Parkway.

8th Street is a two-lane east-west arterial through the former Fort Ord. Eighth Street will become an important east-west link between the Proposed Project, CSUMB, and the proposed development to the east of the CSUMB campus and 2nd Avenue, as part of the future development of the FORA area.

4th Avenue is a northerly extension of General Jim Moore Boulevard, serving as the primary north-south roadway through the CSUMB campus and has been functioning as an important two-lane arterial in the former Fort Ord road network. However, although it will function as a connector between the project site and the CSUMB campus, it will not play a major role in the trip distribution of the Proposed Project.

3rd Street is an east-west, two-lane arterial through the southern portion of the project site and it continues through the CSUMB campus. East of 7th Street, 3rd Street becomes Inter Garrison Road, which traverses eastward towards Reservation Road.

Light Fighter Drive is an important four-lane arterial within the former Fort Ord road network. Light Fighter Drive connects with Highway 1 as the primary freeway access for the existing military neighborhoods south of Gigling Road and also serves as the main entrance to the CSUMB campus. Light Fighter Drive will provide the southern gateway to project site through 2nd Avenue.

Gigling Road is an east-west two-lane arterial roadway. West of General Jim Moore Boulevard, it provides access to military services and residences within the Presidio of Monterey Annex area, a part of the City of Seaside still under the control of the U.S. Army. East of General Jim Moore, it provides access to additional military housing and administrative buildings, as well as providing a southern entrance to CSUMB.

Reindollar Avenue is a two-lane roadway within the southern portion of central City of Marina, providing access to adjacent businesses and residential neighborhoods.

Abrams Drive is a two-lane roadway within former Fort Ord military housing areas. Much of the housing has remained unoccupied since the closure of the army base. However, some of the homes are currently on CSUMB property and are being used for student, staff, and faculty housing.

1st Street is an east-west roadway at the southern boundary of the project site. It also provides access to the Central CSUMB Campus housing, student services administration and academic buildings.

1st Avenue is a north-south roadway in the former Fort Ord. North of 1st Street and south of Imjin Parkway, 1st Avenue is a two-lane roadway. Between 1st Street and Light Fighter Drive, 1st Avenue is a two-lane, one-way roadway in the southbound direction. Due to the current closure of 2nd Avenue for construction, this latter section of 1st Avenue is temporarily signed as two-way traffic flow. However, as this is a temporary condition, this section of the roadway was analyzed as in its previous and future configuration, as a two-lane, one-way southbound roadway described above.

Existing Transit Systems. The public transit provider in Monterey County is the Monterey-Salinas Transit (MST). The MST operates from five key transit centers, the Monterey Transit Plaza, Salinas Transit Center, Watsonville Transit Center, Edgewater Transit Exchange, 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 two public bus routes that service the project site. Route 16 utilizes 9th Street, 2nd Avenue, 3rd Street and 6th Avenue and route 17 travels on General Jim Moore Boulevard, 4th Avenue and Imjin Road. However, neither bus route provides direct connections to Monterey or Salinas from Proposed Project, nor is it convenient to access these routes from the Eastern project site. MST route 20 provides a direct link to Salinas from the Marina Transit Center. In the future, it is

anticipated that an MST transit Center will be located on the south-western side of the project site. The future Caltrain Monterey Station is planned to the west of Highway 1, south-west of the project site.

It is anticipated that there will be a significant link between the university students and staff and the variety of services and retail opportunities that will be offered as part of the Proposed Project development. Further, it is anticipated that the CSUMB Transportation and Parking Services (TAPS) campus shuttle service available to all members of the campus community also serving all housing areas and the major campus locations will provide a transit link between the Proposed Project and CSUMB campus. The shuttle service is free to CSUMB students with a university identification card and run every fifteen minutes on weekdays between 6:50 a.m. and 7:12 p.m. The 6:50 a.m. shuttle is an express shuttle that connects with MST. Service is not provided on weekends or holidays.

Existing Bikeway and Pedestrian Facilities. There are three basic types of bicycle facilities in the Monterey Peninsula. 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;
- 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. Through travel by motor vehicles or pedestrians is prohibited, but crossing by pedestrians and motorists is permitted; and
- Bike route (Class III) - Provides shared use of the roadway, designated by signs or permanent markings and shared with motorists.

Bike facilities. The majority of the Proposed Project roadways would not have dedicated bicycle lanes, nor do they allow enough room for vehicles and bicycles to comfortably share the roadway. In the project vicinity there are only three bikeways; a Class 1 bikeway is located along Imjin Parkway from Imjin Road to Highway 1; and, Class 2 bikeways are located along Inter Garrison Road, California Avenue from Imjin Parkway to its current terminus and 2nd Avenue.

*Pedestrian facilities***.** The distances between the Proposed Project residential units and some of the primary destination points are greater than a comfortable walking distance. Although the rationale for the project site design was to encourage non-transit trips, few pedestrian routes are pleasant because they lack wind protection and amenities. In addition, existing sidewalks between Proposed Project retail components and the CSUMB campus destinations are in poor condition or non-existent. Sidewalks tend to be narrow and discontinuous. Furthermore, few paths offer shelter from the elements, which would encourage people to drive from one location to another. This issue would be addressed at project design approval level.

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 five intersection traffic volumes used in this traffic study were based on new traffic data collected during 2004.

Furthermore, intersection traffic data for four of the study intersections were obtained from the *CSUMB East Campus Housing Traffic Study* (Wilber Smith Associates, January 2004) and were counted in March 2003; this included the 2nd Avenue study intersections due to the current construction of 2nd Avenue. The traffic counts for one of the study intersections were obtained from the *Marina Heights Environmental Impact Report Traffic Study* (Higgins Associates, May 2003) and were counted in February 2003. Traffic volumes for the 2nd Avenue study intersections were obtained from estimates based upon other study intersections and segment counts from the two previously named traffic studies. A table summarizing the dates, sources and methods for obtaining the existing traffic volumes is presented in Appendix B of the traffic report.

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. All of the traffic volumes were balanced in order to account for variations between subsequent counts. The existing peak hour traffic volumes are presented in Figures 3.10-3a and 3.10-3b.

The following discussion provides an evaluation of operating conditions for the study intersections, freeway segments and ramps under existing traffic conditions.

Existing Conditions-Intersection Operations. Existing conditions AM and PM intersection levels of service are summarized in Figures 3.10-4a and 3.10-4b. Recommended intersection improvements are summarized in Figures 3.10-5a and 3.10-5b. The LOS calculation sheets for existing traffic conditions can be found in Appendix C of the traffic report. The traffic signal warrant and channelization warrant worksheets are included as Appendix J of the traffic report.

Ten of the twenty five study intersections are currently signalized, nine are all-way stop controlled and six are one-way or two-way stop-controlled.

Nineteen of the study intersections operate at or better than their jurisdiction's operational LOS standard (the City of Seaside's LOS C, Monterey County's LOS C, the City of Marina's LOS D, and Caltrans' LOS C/D).

A discussion of the operations for each individual intersection operational LOS that exceed the jurisdiction's standards is included below. For a reference of the location of each of the intersections please see Figure 3.10-2.

California/Reservation Road Intersection # 2 (un-signalized) currently operates at LOS A during both the weekday AM and PM peak hour (average delay of 1.4 and 1.7 seconds, respectively). The worst movement operates at LOS F with an average approach delay of 69.5 seconds during the PM peak hour.

Southbound Highway 1 Ramps/12th Street-Imjin Parkway Intersection # 7 (un-signalized) currently operates at LOS F during the weekday AM peak hour and LOS A during the weekday PM peak hour

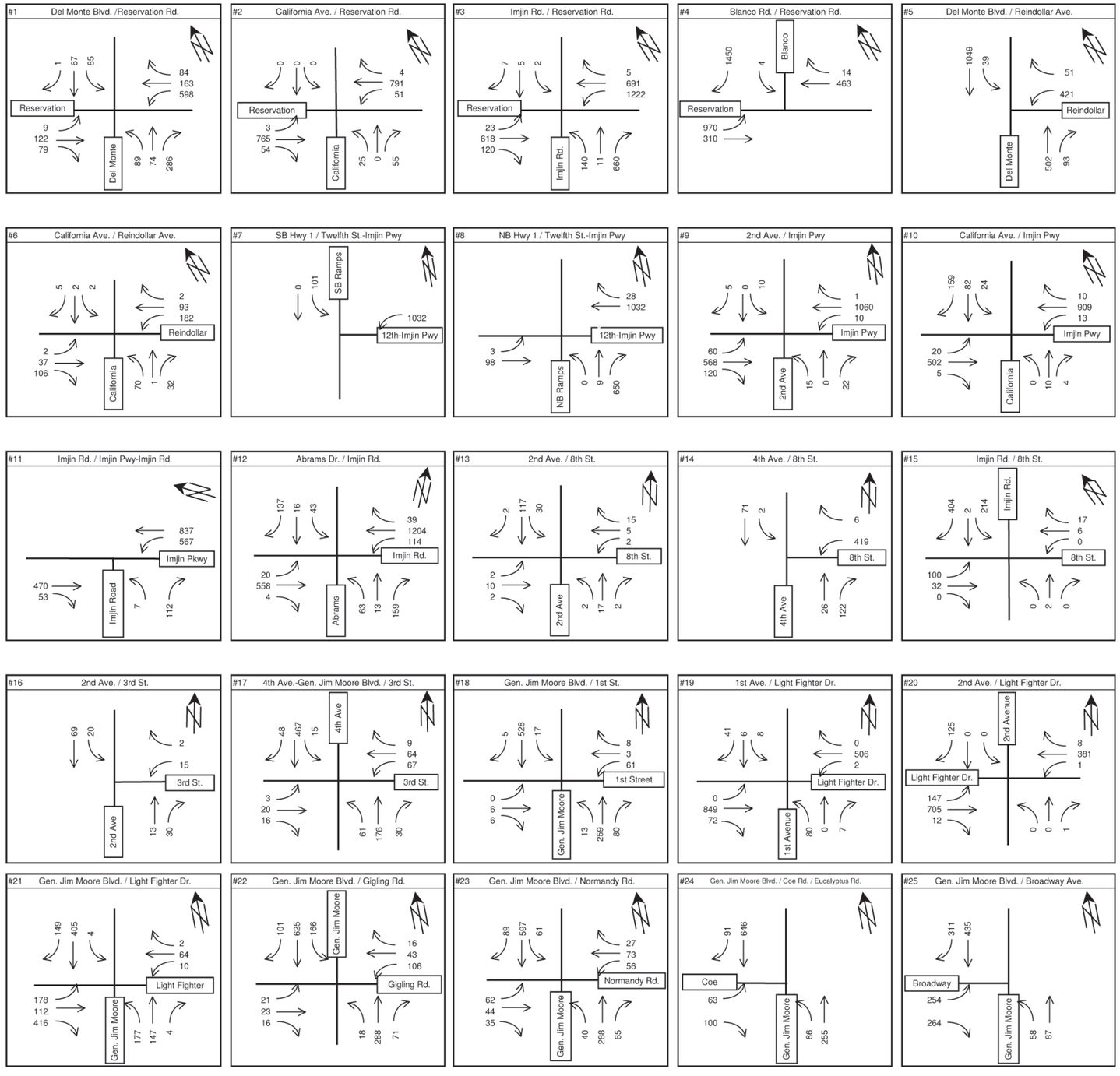

FIGURE **3.10-3A**

Existing Conditions AM Peak Hour Volumes

Not to Scale

10886-00

***Source*:** Higgins Associates, 2004

City of Marina

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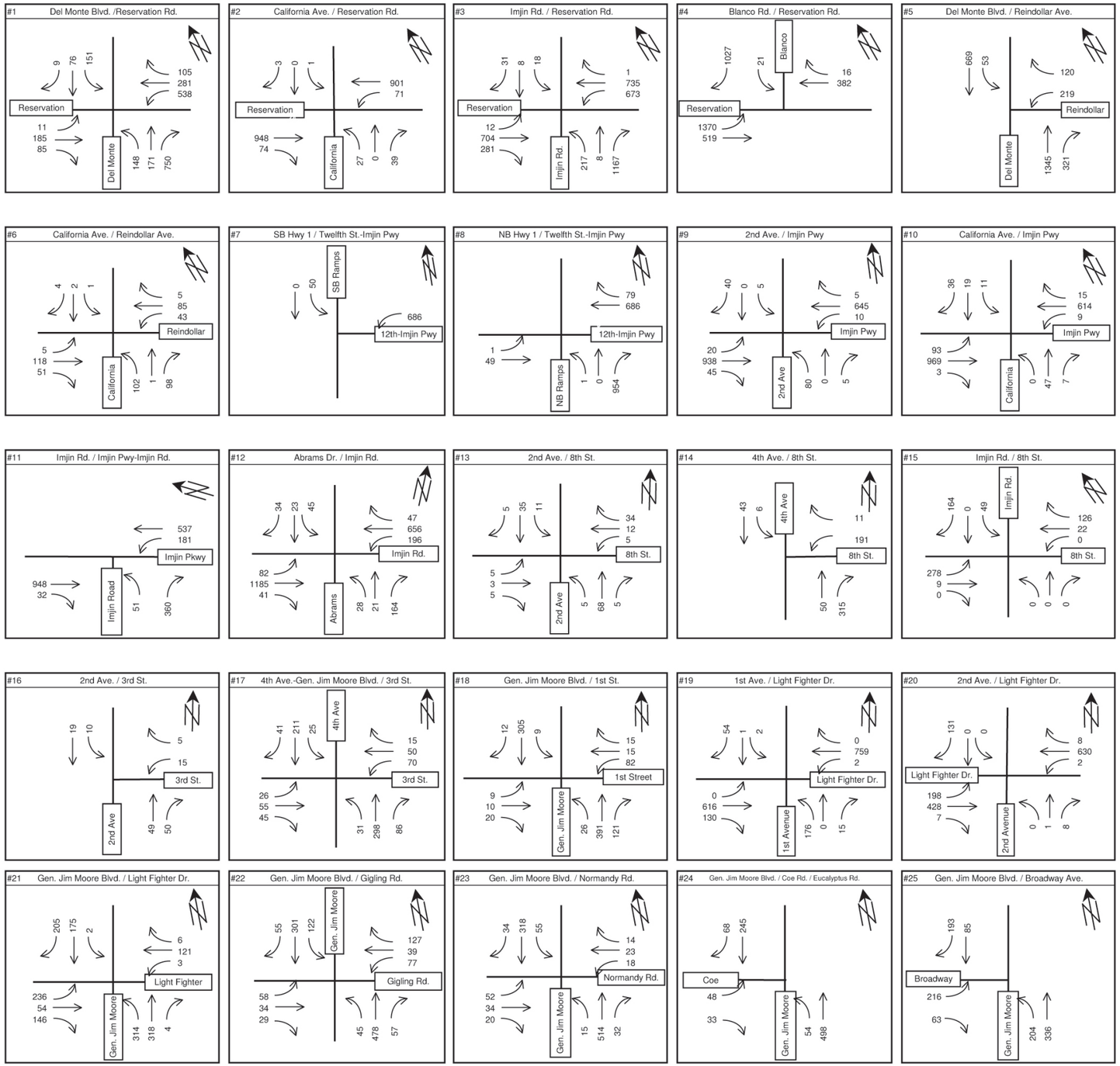

FIGURE **3.10-3B**

Existing Conditions PM Peak Hour Volumes

Not to Scale

10886-00

***Source*:** Higgins Associates, 2004

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	N-S Street	E-W Street	Existing Lane Configuration	Existing Intersection Control	LOS Standard	Existing Conditions AM Peak Hr Delay (sec)	Existing Conditions AM Peak Hr LOS	Existing Conditions PM Peak Hr Delay (sec)	Existing Conditions PM Peak Hr LOS	Background Conditions AM Peak Hr Delay (sec)	Background Conditions AM Peak Hr LOS	Background Conditions PM Peak Hr Delay (sec)	Background Conditions PM Peak Hr LOS	Background + Project Phase 1 Conditions AM Peak Hr Delay (sec)	Background + Project Phase 1 Conditions AM Peak Hr LOS	Background + Project Phase 1 Conditions PM Peak Hr Delay (sec)	Background + Project Phase 1 Conditions PM Peak Hr LOS	Background + Project Buildout Conditions AM Peak Hr Delay (sec)	Background + Project Buildout Conditions AM Peak Hr LOS	Background + Project Buildout Conditions PM Peak Hr Delay (sec)	Background + Project Buildout Conditions PM Peak Hr LOS	Cumulative Conditions Without 2nd Avenue Extensions AM Peak Hr Delay (sec)	Cumulative Conditions Without 2nd Avenue Extensions AM Peak Hr LOS	Cumulative Conditions Without 2nd Avenue Extensions PM Peak Hr Delay (sec)	Cumulative Conditions Without 2nd Avenue Extensions PM Peak Hr LOS	Cumulative Conditions With 2nd Avenue Extensions AM Peak Hr Delay (sec)	Cumulative Conditions With 2nd Avenue Extensions AM Peak Hr LOS	Cumulative Conditions With 2nd Avenue Extensions PM Peak Hr Delay (sec)	Cumulative Conditions With 2nd Avenue Extensions PM Peak Hr LOS
1	Del Monte Blvd.	Reservation Road	NB 1-L, 1-T, 2-R SB 2-L, 1-T, 1-T/R EB 1-L/T, 1-T/R WB 2-L, 1-T, 1-R	Signal	D	**18.2**	**B**	**20.8**	**C**	**18.2**	**B**	**21.0**	**C**	**19.0**	**B**	**21.7**	**C**	**20.5**	**C**	**22.7**	**C**	**24.1**	**C**	**32.1**	**C**	**24.3**	**C**	**34.7**	**C**
2	California Avenue	Reservation Road	NB 1-L/T, 1-R SB 1-L/T/R EB 1-L, 1-T, 1-T/R WB 1-L, 1-T, 1-T/R	Stop Sign WA *Mitigation 1*	D	**1.4** 22.7	**A** C	**2.7** 69.5	**A** F	**20.0** *	**C** F	**32.4** *	**D** F	**25.9** 286.4 *10.2*	**D** F *B*	**56.5** * *9.5*	**F** F *A*	**43.9** * **11.0**	**E** F **B**	**152.3** * **11.7**	**F** F **B**	**276.2** * **18.6**	**F** F **B**	* * **28.4**	**F** F **C**	**276.2** * **18.6**	**F** F **B**	* * **28.4**	**F** F **C**
3	Imjin Road	Reservation Road	NB 2-L, 1-T/R, 1-R SB 1-L, 1-T, 1-R EB 2-L, 2-T, 1-R WB 2-L, 2-T, 1-R	Signal *Mitigation 2* *Mitigation 26*	D	**30.4**	**C**	**44.9**	**D**	**51.7**	**D**	**79.0**	**E**	**89.7** *23.4*	**F** *C*	**169.5** *42.7*	**F** *D*	**188.7** **19.7**	**F** **B**	* **33.7**	**F** **C**	* **34.0** *18.0*	**F** **C** *B*	* **191.5** *28.6*	**F** **F** *C*	* **34.0** *18.0*	**F** **C** *B*	* **191.5** *28.6*	**F** **F** *C*
4	Blanco Road	Reservation Road	SB 2-L, 2-R EB 2-L, 2-T WB 1-T, 1-R	Signal *Mitigation 16* *Mitigation 27*	C	**17.4**	**B**	**14.9**	**B**	**18.6**	**B**	**16.7**	**B**	**22.1**	**C**	**31.6**	**C**	**51.2** *23.3*	**D** *C*	**129.3** *37.7*	**F** *D*	**145.5** **65.4** *19.5*	**F** **E** *B*	**269.2** **125.6** *37.1*	**F** **F** *D*	**145.5** **65.4** *19.5*	**F** **C** *B*	**269.2** **125.6** *37.1*	**F** **F** *D*
5	Del Monte Blvd.	Reindollar Avenue	NB 1-L, 2-T, 1-R SB 1-L, 2-T WB 1-L, 1-L/T/R	Signal	D	**15.8**	**B**	**12.9**	**B**	**15.5**	**B**	**12.6**	**B**	**15.5**	**B**	**12.8**	**B**	**15.2**	**B**	**12.8**	**B**	**16.1**	**B**	**15.0**	**B**	**16.1**	**B**	**15.3**	**B**
6	California Avenue	Reindollar Avenue	NB 1-L/T/R SB 1-L/T/R EB 1-L, 1-T/R WB 1-L, 1-T/R	All-Way Stop *Mitigation 28*	D	**9.2**	**A**	**9.2**	**A**	**9.5**	**A**	**9.4**	**A**	**10.1**	**B**	**10.8**	**B**	**13.7**	**B**	**20.3**	**C**	**25.7** *14.8*	**D** *B*	**81.7** *15.5*	**F** *B*	**25.7** *21.9*	**D** *C*	**81.7** *22.0*	**F** *C*
7	SB Hwy 1 Ramps	Twelfth St.-Imjin Pwy	SB 1-L/T WB 1-L	Stop Sign WA *Mitigation 3* *Mitigation 17*	D	**95.2** *	**F** F	**3.3** 48.2	**A** E	* *	**F** F	**119.0** *	**F** F	* * *16.4*	**F** F *B*	* * *23.4*	**F** F *C*	* * **66.2** *N/A*	**F** F **E**	* * **133.9** *N/A*	**F** F **F**	* * **N/A**	**F** F	* * **N/A**	**F** F	* * **N/A**	**F** F	* * **N/A**	**F** F
8	NB Hwy 1 Ramps	Twelfth St.-Imjin Pwy	NB 1-L/T, 1-R EB 1-L/T WB 1-T, 1-R	Stop Sign WA *Mitigation 4*	D	**0.3** 29.8	**A** D	**0.0** 15.8	**A** C	**0.3** 51.3	**A** F	**0.0** 21.8	**A** C	**0.6** 125.2 *N/A*	**A** F	**0.0** 77.4 *N/A*	**A** F	**2.6** * **N/A**	**A** F	**0.2** * **N/A**	**A** F	**4.1** * **N/A**	**A** F	**0.3** 8.0 **N/A**	**A** F	**2.4** * **N/A**	**A** F	**0.2** * **N/A**	**A** F
9	2nd Avenue	Imjin Pwy	NB 1-L, 1-T, 1-T/R SB 1-L, 1-T, 1-T/R EB 1-L, 1-T, 1-T/R WB 1-L, 1-T, 1-T/R	All-Way Stop Signal *Mitigation 5* *Mitigation 18*	D	**70.5**	**F**	**52.6**	**F**	**172.7** **6.1**	**F** **A**	**169.2** **7.6**	**F** **A**	**42.7** *22.2*	**D** *C*	* *51.9*	**F** *D*	**267.1** **46.8** *27.3*	**F** **D** *C*	* **203.6** *47.2*	**F** **F** *D*	* **28.3**	**F** **C**	* **64.4**	**F** **E**	* **37.3**	**F** **D**	* **62.4**	**F** **E**
10	California Avenue	Imjin Pwy	NB 1-L/T/R SB 1-L/T/R EB 1-L, 1-T, 1-T/R WB 1-L, 1-T, 1-T/R	Stop Sign WA Signal *Mitigation 19* *Mitigation 29*	D	**116.3** *	**F** F	**32.6** *	**D** F	* * **20.7**	**F** F **C**	* * **12.1**	**F** F **B**	**39.2**	**D**	**23.8**	**C**	**174.1** *33.7*	**F** *C*	**205.7** *30.2*	**F** *C*	**261.5** **47.4** *44.3*	**F** **D** *D*	* **90.9** *47.3*	**F** **F** *D*	**261.4** **47.3** *44.3*	**F** **D** *D*	* **90.9** *47.3*	**F** **F** *D*
11	Imjin Road	Imjin Parkway	NB 2-L, 1-R EB 1-T, 1-T/R WB 1-L, 2-T	Stop Sign WA Signal *Mitigation 6* *Mitigation 20* *Mitigation 30*	D	**6.3** 34.9	**A** D	**11.3** 52.6	**B** F	**21.3** 227.5 **17.2**	**C** F **B**	**36.6** 176.9 **24.4**	**E** F **C**	**17.3** *11.6*	**B** *B*	**37.6** *25.5*	**D** *C*	**27.3** **16.1** *10.0*	**C** **B** *B*	**120.1** **124.1** *17.9*	**F** **F** *B*	**139.9** **26.1** *18.2*	**F** **C** *B*	* **101.6** *51.5*	**F** **F** *D*	**140.0** **20.4** *18.1*	**F** **C** *B*	* **121.2** *51.4*	**F** **F** *D*
12	Abrams Drive	Imjin Road	NB 1-L/T, 1-R SB 1-L/T, 1-R EB 1-L, 1-T, 1-R WB 1-L, 1-T, 1-R	Signal *Mitigation 7* *Mitigation 21* *Mitigation 31*	D	**16.5**	**B**	**54.1**	**D**	**25.8**	**C**	**74.1**	**E**	**61.9** *11.7*	**E** *B*	**127.0** *22.2*	**F** *C*	**193.6** **24.8** *18.8*	**F** **C** *B*	* **99.7** *29.2*	**F** **F** *C*	* **32.3** *23.8*	**F** **C** *C*	* **167.4** *95.6*	**F** **F** *F*	* **32.3** *23.8*	**F** **C** *C*	* **167.4** *95.6*	**F** **F** *F*
13	2nd Avenue	8th Street	NB 1-L, 1-T, 1-T/R SB 1-L, 1-T, 1-T/R EB 1-L, 1-T, 1-R WB 1-L, 1-T, 1-R	All-Way Stop	D	**7.8**	**A**	**7.6**	**A**	**8.0**	**A**	**8.0**	**A**	**9.6**	**A**	**8.7**	**A**	**8.6**	**A**	**14.9**	**B**	**8.3**	**A**	**42.4**	**D**	**8.4**	**A**	**48.6**	**D**

Notes:
1. L, T, R = Left, Through, Right
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
3. WA = Worst Approach
4. * = Delay greater than 300 seconds.
5. N/A = Not Applicable. With recommended improvement at this intersection under this scenario, the intersection will no longer exist.
6. Levels of service shown in bold type represent the level of service with existing lane configurations and intersection controls, or what the level of service would be assuming all previous mitigation measures have been implemented.
7. Levels of service shown in italics represent what the level of service would be during each scenario once a mitigation measure has been implemented.

Text in red represents what the level of service and delay would be if the mitigation measure in the previous scenario were not implemented.

FIGURE **3.10-4A**

Intersection Levels of Service Intersection 1 - 13

Not to Scale

***Source*:** Higgins Associates, 2004

	N-S Street	E-W Street	Existing Lane Configuration	Existing Intersection Control	LOS Standard	Existing Conditions AM Peak Hr Delay (sec)	Existing Conditions AM Peak Hr LOS	Existing Conditions PM Peak Hr Delay (sec)	Existing Conditions PM Peak Hr LOS	Background Conditions AM Peak Hr Delay (sec)	Background Conditions AM Peak Hr LOS	Background Conditions PM Peak Hr Delay (sec)	Background Conditions PM Peak Hr LOS	Background + Project Phase 1 Conditions AM Peak Hr Delay (sec)	Background + Project Phase 1 Conditions AM Peak Hr LOS	Background + Project Phase 1 Conditions PM Peak Hr Delay (sec)	Background + Project Phase 1 Conditions PM Peak Hr LOS	Background + Project Buildout Conditions AM Peak Hr Delay (sec)	Background + Project Buildout Conditions AM Peak Hr LOS	Background + Project Buildout Conditions PM Peak Hr Delay (sec)	Background + Project Buildout Conditions PM Peak Hr LOS	Cumulative Conditions Without 2nd Avenue Extensions AM Peak Hr Delay (sec)	Cumulative Conditions Without 2nd Avenue Extensions AM Peak Hr LOS	Cumulative Conditions Without 2nd Avenue Extensions PM Peak Hr Delay (sec)	Cumulative Conditions Without 2nd Avenue Extensions PM Peak Hr LOS	Cumulative Conditions With 2nd Avenue Extensions AM Peak Hr Delay (sec)	Cumulative Conditions With 2nd Avenue Extensions AM Peak Hr LOS	Cumulative Conditions With 2nd Avenue Extensions PM Peak Hr Delay (sec)	Cumulative Conditions With 2nd Avenue Extensions PM Peak Hr LOS
14	4th Avenue	8th Street	NB 1-T/R SB 1-L/T WB 1-L/T/R	All-Way Stop	D	**17.7**	**C**	**9.9**	**A**	**28.9**	**D**	**11.9**	**B**	**5.9**	**A**	**4.6**	**A**	**7.0**	**A**	**5.3**	**A**	**8.5**	**A**	**13.5**	**B**	**4.5**	**A**	**6.7**	**A**
15	Imjin Road	8th Street	NB 1-L/T/R SB 1-L/T, 1-R EB 1-L, 1-T/R WB 1-L, 1-T, 1-R	All-Way Stop *Mitigation 32*	D	**12.4**	**B**	**11.1**	**B**	**15.0**	**B**	**12.6**	**B**	**15.6**	**C**	**12.9**	**B**	**17.2**	**C**	**13.5**	**B**	**67.5** *15.1*	**F** *C*	**53.2** *8.7*	**F** *A*	**67.2** *15.1*	**F** *C*	**53.1** *8.7*	**F** *A*
16	2nd Avenue	3rd Street	NB 1-L, 1-T, 1-T/R SB 1-L, 1-T, 1-T/R WB 1-L, 1-R	All-Way Stop *Mitigation 33* *Mitigation 45*	D	**7.6**	**A**	**7.5**	**A**	**7.9**	**A**	**7.9**	**A**	**9.9**	**A**	**10.9**	**B**	**22.9**	**C**	**45.0**	**D**	**26.9** *27.1*	**C** *C*	**111.7** *53.5*	**F** *D*	**31.5** *25.2*	**C** *C*	**139.7** *52.9*	**F** *D*
17	4th Avenue	3rd Street	NB 1-L/T/R SB 1-L/T/R EB 1-L/T/R WB 1-L/T/R	All-Way Stop *Mitigation 8A* *Mitigation 8B* *Mitigation 22* *Mitigation 34A* *Mitigation 34B*	D	**24.6**	**C**	**13.8**	**B**	**73.5**	**F**	**21.4**	**C**	**109.5** *10.0* *11.0*	**F** *A* *B*	**42.7** *11.9* *5.8*	**E** *B* *A*	**214.0** **14.1** **18.2** *20.6*	**F** **B** **C** *C*	**162.0** **13.9** **8.0** *18.2*	**F** **B** **A** *B*	* **69.5** **47.6** *37.6* *7.9*	**F** **F** **D** *D* *A*	* **117.0** **140.8** *54.1* *34.8*	**F** **F** **F** *D* *D*	* **67.5** **46.3** *37.3* *7.7*	**F** **F** **D** *D* *A*	* **110.0** **134.7** *52.4* *32.9*	**F** **F** **F** *D* *D*
18	General Jim Moore Blvd.	1st Street	NB 1-L, 1-T/R SB 1-L, 1-T/R EB 1-L/T/R WB 1-L/T/R	All-Way Stop *Mitigation 9A* *Mitigation 9B* *Mitigation 35*	D	**33.7**	**D**	**17.5**	**C**	**41.2**	**E**	**20.7**	**C**	**49.0** *4.7* *7.4*	**E** *A* *A*	**21.3** *7.0* *5.4*	**C** *A* *A*	**69.7** **8.8** **8.4**	**F** **A** **A**	**37.6** **10.1** **6.2**	**E** **B** **A**	* **17.5** **44.8** *3.3*	**F** **B** **E** *A*	* **32.2** **61.8** *4.0*	**F** **C** **F** *A*	* **17.2** **42.6** *3.3*	**F** **B** **E** *A*	* **31.3** **57.5** *4.0*	**F** **C** **F** *A*
19	1st Avenue	Light Fighter Drive	NB 1-L, 1-R SB 1-L/T, 1-R EB 2-T, 1-R WB 1-L, 2-T	Signal *Mitigation 23*	C	**10.1**	**B**	**20.8**	**C**	**10.3**	**B**	**21.7**	**C**	**10.5**	**B**	**23.7**	**C**	**13.4** *7.3*	**B** *A*	**50.4** *20.3*	**D** *C*	**23.5** **10.8**	**C** **B**	**74.8** **18.8**	**E** **B**	**23.5** **10.8**	**C** **B**	**74.8** **18.8**	**E** **B**
20	2nd Avenue	Light Fighter Drive	NB 1-L/T/R SB 1-L, 1-T, 1-R EB 1-L, 1-T, 1-T/R WB 1-L, 1-T, 1-T/R	Signal *Mitigation 24* *Mitigation 36* *Mitigation 46*	C	**11.1**	**B**	**12.2**	**B**	**12.1**	**B**	**12.9**	**B**	**13.0**	**B**	**20.1**	**C**	**33.5** *14.1*	**C** *B*	**117.1** *21.5*	**F** *C*	**73.4** **23.0** *20.4*	**E** **C** *C*	* **181.8** *33.2*	**F** **F** *C*	**131.6** **119.6** *23.4*	**F** **F** *C*	* * *34.9*	**F** **F** *C*
21	General Jim Moore Blvd.	Light Fighter Drive	NB 2-L, 1-T/R SB 1-L, 1-T, 1-T/R EB 1-L, 1-T, 1-R WB 1-L, 1-T/R	Signal *Mitigation 37* *Mitigation 47*	C	**23.4**	**C**	**26.8**	**C**	**24.1**	**C**	**27.3**	**C**	**25.7**	**C**	**29.2**	**C**	**27.9**	**C**	**34.1**	**C**	**73.7** *27.7*	**E** *C*	**227.3** *34.6*	**F** *C*	**30.0** *20.1*	**C** *C*	**60.2** *21.9*	**E** *C*
22	General Jim Moore Blvd.	Gigling Road	NB 1-L, 2-T, 1-R SB 1-L, 2-T, 1-R EB 1-L, 1-T/R WB 1-L, 1-T, 1-R	Signal *Mitigation 38* *Mitigation 48*	C	**16.4**	**B**	**17.5**	**B**	**16.3**	**B**	**17.1**	**B**	**16.2**	**B**	**15.2**	**B**	**16.6**	**B**	**14.4**	**B**	**50.0** *26.3*	**D** *C*	**165.1** *31.5*	**F** *C*	**47.0** *25.8*	**D** *C*	**145.5** *33.8*	**F** *C*
23	General Jim Moore Blvd.	Normandy Road	NB 1-L/T/R SB 1-L, 2-T, 1-R EB 1-L/T/R WB 1-L/T/R	Signal *Mitigation 39*	C	**14.3**	**B**	**11.5**	**B**	**14.1**	**B**	**11.1**	**B**	**14.8**	**B**	**12.0**	**B**	**18.3**	**B**	**15.0**	**B**	**78.4** *27.8*	**E** *C*	**150.2** *34.1*	**F** *C*	**78.4** *27.8*	**E** *C*	**150.8** *34.1*	**F** *C*
24	General Jim Moore Blvd.	Coe Road Eucalyptus Rd.	NB 1-L, 1-T/R SB 1-L/T, 1-R EB 1-L/T, 1-T/R WB 1-L/T/R	Stop Sign WA *Mitigation 10* *Mitigation 40*	C	**3.6** 22.3	**A** C	**1.8** 15.6	**A** C	**8.5** 48.9	**A** E	**4.3** 27.0	**A** D	**13.6** 85.5 *6.6*	**B** F *A*	**9.0** 73.8 *5.6*	**A** F *A*	**45.0** * **12.8**	**E** F **B**	**49.6** * **9.9**	**E** F **A**	* * **19.2** *18.9*	**F** F **B** *B*	* * **131.6** *22.4*	**F** F **F** *C*	* * **36.8** *17.5*	**F** F **D** *B*	* * **143.6** *22.2*	**F** F **F** *C*
25	General Jim Moore Blvd.	Broadway Avenue	NB 1-L/T SB 1-T, 1-R EB 1-L, 1-R	All-Way Stop *Mitigation 11* *Mitigation 41*	C	**26.2**	**D**	**30.1**	**D**	**30.7**	**D**	**38.0**	**E**	**40.2** *14.0*	**E** *B*	**71.1** *14.2*	**F** *B*	**64.6** **15.9**	**F** **B**	**127.3** **16.2**	**F** **B**	**231.9** **36.4** *22.5*	**F** **D** *C*	* **61.5** *24.5*	**F** **E** *C*	**231.9** **36.4** *22.5*	**F** **D** *C*	* **61.5** *24.5*	**F** **E** *C*

1. L, T, R = Left, Through, Right
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
3. WA = Worst Approach
4. * = Delay greater than 300 seconds.
5. Levels of service shown in bold type represent the level of service with existing lane configurations and intersection controls, or what the level of service would be assuming all previous mitigation measures have been implemented.
6. Levels of service shown in italics represent what the level of service would be during each scenario once a mitigation measure has been implemented.

Text in red represents what the level of service and delay would be if the mitigation measure in the previous scenario were not implemented.

FIGURE **3.10-4B**

Intersection Levels of Service Intersection 14 - 25

***Source*:** Higgins Associates, 2004

Not to Scale

City of Marina

10886-00

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	Intersections					Background + Project Phase 1 Conditions	Background + Project Buildout Conditions	Cumulative Conditions Without 2nd Avenue Extensions	Cumulative Conditions With 2nd Avenue Extensions
	N-S Street	E-W Street	Existing Lane Configuration	Existing Intersection Control	LOS Standard				
1	Del Monte Blvd.	Reservation Road	NB 1-L, 1-T, 2-R SB 2-L, 1-T, 1-T/R EB 1-L/T, 1-T/R WB 2-L, 1-T, 1-R	Signal	D	None Recommended	None Recommended	None Recommended	None Recommended
2	California Avenue	Reservation Road	NB 1-L/T, 1-R SB 1-L/T/R EB 1-L, 1-T, 1-T/R WB 1-L, 1-T, 1-T/R	Stop Sign	D	#1. Signalize	None Recommended	None Recommended	None Recommended
3	Imjin Road	Reservation Road	NB 2-L, 1-T/R, 1-R SB 1-L, 1-T, 1-R EB 2-L, 2-T, 1-R WB 2-L, 2-T, 1-R	Signal	D	#2. Widen, restripe NB as 1-L, 1-T, 3-R, add 3rd EBT, 3rd WBT, 3rd WBL, optimize cycle length	None Recommended	#26. Add Westbound to Southbound flyover ramp, restripe NB as 1-L, 1-T, 2-R, convert NBR to free right-turn, add 3rd EBT and 3rd WBT	#26. Add Westbound to Southbound flyover ramp, restripe NB as 1-L, 1-T, 2-R, convert NBR to free right-turn, add 3rd EBT and 3rd WBT
4	Blanco Road	Reservation Road	SB 2-L, 2-R EB 2-L, 2-T WB 1-T, 1-R	Signal	C	None Recommended	#16. Add 3rd EBL and 3rd NB receiving lane on Blanco Rd.	#27. add 2nd WBT	#27. add 2nd WBT
5	Del Monte Blvd.	Reindollar Avenue	NB 1-L, 2-T, 1-R SB 1-L, 2-T WB 1-L, 1-L/T/R	Signal	D	None Recommended	None Recommended	None Recommended	None Recommended
6	California Avenue	Reindollar Avenue	NB 1-L/T/R SB 1-L/T/R EB 1-L, 1-T/R WB 1-L, 1-T/R	All-Way Stop	D	None Recommended	None Recommended	#28. Signalize	#28. Signalize
7	SB Hwy 1 Ramps	Twelfth St.	SB 1-L/T WB 1-L	Stop Sign	D	#3. Signalize, restripe 12th St. bridge over Hwy. 1 to accommodate two WB left-turn lanes and one EB lane	#17. Reconfigure Southbound ramps at interchange	None Recommended	None Recommended
8	NB Hwy 1 Ramps	Twelfth St.	NB 1-L/T, 1-R EB 1-L/T WB 1-T, 1-R	Stop Sign	D	#4. Close Median	None Recommended	None Recommended	None Recommended
9	2nd Avenue	Imjin Pwy	NB 1-L, 1-T, 1-T/R SB 1-L, 1-T, 1-T/R EB 1-L, 1-T, 1-T/R WB 1-L, 1-T, 1-T/R	Stop Sign	D	#5. Add 2nd NBL, 2nd WBL, NBR, EBR, & change NBR & EBR to RTO	#18. Add 3rd NBL, 2nd NBR, 2nd SBL, SBR, 2nd EBL, 2nd EBR, 3rd EBT, 3rd WBT, 3rd WBL, WBR, SB & WB RTO, optimize cycle length	None Recommended	None Recommended
10	California Avenue	Imjin Pwy	NB 1-L/T/R SB 1-L/T/R EB 1-L, 1-T, 1-T/R WB 1-L, 1-T, 1-T/R	Stop Sign	D	None Recommended	#19. Add NBR, add SBR, change SBR to RTO, add 3rd EBT, add 3rd WBT, add EBR, optimize cycle length	#29. Change NBR to RTO, add 2nd EBL and WBL	#29. Change NBR to RTO, add 2nd EBL and WBL
11	Imjin Road	Imjin Pwy-Imjin Road	NB 2-L, 1-R EB 1-T, 1-T/R WB 1-L, 2-T	Stop Sign	D	#6. Add 2nd WBL	#20. Restripe NB as 1-L, 2-R, and add 3rd EBT & 3rd WBT	#30. Change NBR to RTO	#30. Change NBR to RTO
12	Abrams Drive	Imjin Road	NB 1-L/T, 1-R SB 1-L/T, 1-R EB 1-L, 1-T, 1-R WB 1-L, 1-T, 1-R	Signal	D	#7. Widen EB & WB to accommodate 2nd EBT & 2nd WBT, add EB & WB protected phasing	#21. Add 3rd EBT & add 3rd WBT, optimize cycle length	#31. Add 2nd WBL, Add NB L, change NBR to RTO	#31. Add 2nd WBL, Add NB L, change NBR to RTO
13	2nd Avenue	8th Street	NB 1-L, 1-T, 1-T/R SB 1-L, 1-T, 1-T/R EB 1-L, 1-T, 1-R WB 1-L, 1-T, 1-R	Stop Sign	D	None Recommended	None Recommended	None Recommended	None Recommended

Notes:

1. L, T, R = Left, Through, Right
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
3. NBL = Northbound Left-Turn Lane, NBR = Northbound Right-Turn Lane, NBT = Northbound Through Lane, etc.
4. RTO = Right turn overlap phasing

FIGURE **3.10-5A**

Intersection Mitigations Intersection 1 - 13

Not to Scale

Source: Higgins Associates, 2004

City of Marina

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Intersections						Background + Project Phase 1 Conditions	Background + Project Buildout Conditions	Cumulative Conditions Without 2nd Avenue Extensions	Cumulative Conditions With 2nd Avenue Extensions
	N-S Street	E-W Street	Existing Lane Configuration	Existing Intersection Control	LOS Standard				
14	4th Avenue	8th Street	NB 1-T/R SB 1-L/T WB 1-L/T/R	Stop Sign	D	None Recommended	None Recommended	None Recommended	None Recommended
15	Imjin Road	8th Street	NB 1-L/T/R SB 1-L/T, 1-R EB 1-L, 1-T/R WB 1-L, 1-T, 1-R	Stop Sign	D	None Recommended	None Recommended	#32. Add Roundabout	#32. Add Roundabout
16	2nd Avenue	3rd Street	NB 1-T, 1-T/R SB 1-L, 2-T WB 1-L, 1-R	Stop Sign	D	None Recommended	None Recommended	#33. Add 2nd EBL, change E/W phasing to protected	#45. Add SBR
17	4th Avenue	3rd Street	NB 1-L/T/R SB 1-L/T/R EB 1-L/T/R WB 1-L/T/R	Stop Sign	D	#8A. Signalize, add NBL, add SBL OR #8B. Add Roundabout	#22. Add EBL, add WBL if signal chosen under Background + Project Phase 1	#34A. Add NBR, SBR, EBR & WBR if signal chosen under Background + Project Phase 1 OR #34B. Add Roundabout (2 circulating lanes)	#34A. Add NBR, SBR, EBR & WBR if signal chosen under Background + Project Phase 1 OR #34B. Add Roundabout (2 circulating lanes)
18	General Jim Moore Blvd.	1st Street	NB 1-L, 1-T/R SB 1-L, 1-T/R EB 1-L/T/R WB 1-L/T/R	Stop Sign	D	#9A. Signalize OR #9B. Add Roundabout	None Recommended	#35. Add Roundabout (2 circulating lanes) if roundabout chosen under Background + Project Phase 1	#35. Add Roundabout (2 circulating lanes) if roundabout chosen under Background + Project Phase 2
19	1st Avenue	Light Fighter Drive	NB 1-L, 1-R SB 1-L/T, 1-R EB 2-T, 1-R WB 1-L, 2-T	Signal	C	None Recommended	#23. Widen and restripe SB as 1-L, 1-T, 1-R, change N/S phasing to permitted	None Recommended	None Recommended
20	2nd Avenue	Light Fighter Drive	NB 1-L/T/R SB 1-L, 1-T, 1-R EB 1-L, 1-T, 1-T/R WB 1-L, 1-T, 1-T/R	Signal	C	None Recommended	#24. Add 2nd EBL, change SBR to RTO, change N/S phasing to split phasing, restripe SB as 1-L, 1-L/T, 1-R, add WBR	#36. Add 2nd SBR, add 3rd SBL and EB Light Fighter receiving lane, widen & restripe NB as 1-L, 1-L/T, 1-R, add EBR, add 2nd WBR, change NBR & WBR to RTO	#46. Add 2 NBL's, 2 NBT's, restripe NB as 2-L, 2-T, 1-T/R, add 2nd SBL, add 2nd & 3rd SBT, add SB RTO, add 2nd EBL, add 2nd EBR, add 2nd WBL, add WBR, optimize cycle length
21	General Jim Moore Blvd.	Light Fighter Drive	NB 2-L, 1-T/R SB 1-L, 1-T, 1-T/R EB 1-L, 1-T, 1-R WB 1-L, 1-T/R	Signal	C	None Recommended	None Recommended	#37. Add 3rd NBL, add 2nd NBT, add SBR, change SBR to RTO, add 2nd EBL, add 2nd WBT, restripe WB as 1-L, 1-T, 1-T/R, optimize cycle length	#47. Restripe NB as 1-L, 1-T, 1-T/R, add 2nd EBL, add SBR
22	General Jim Moore Blvd.	Gigling Road	NB 1-L, 2-T, 1-R SB 1-L, 2-T, 1-R EB 1-L, 1-T/R WB 1-L, 1-T, 1-R	Signal	C	None Recommended	None Recommended	#38. Add 3rd NBT, 3rd SBT, add EBR, add 2nd NBL, 2nd SBL, change EBR to RTO, optimize cycle length	#48. Add EBR, 3rd NBT, 3rd SBT, 2nd NBL, 2nd SBL
23	General Jim Moore Blvd.	Normandy Road	NB 1-L/T/R SB 1-L, 2-T, 1-R EB 1-L/T/R WB 1-L/T/R	Signal	C	None Recommended	None Recommended	#39. Add 3rd NBT, 3rd SBT, optimize cycle length	#39. Add 3rd NBT, 3rd SBT, optimize cycle length
24	General Jim Moore Blvd.	Coe Road Eucalyptus Rd.	NB 1-L, 1-T/R SB 1-L/T, 1-R EB 1-L/T, 1-T/R WB 1-L/T/R	Stop Sign	C	#10. Signalize & add SBL	None Recommended	#40. Add 2nd NBT, 2nd SBT, add NBR, restripe EB as 1-L, 1-T/R, add WBL	#40. Add 2nd NBT, 2nd SBT, add NBR, restripe EB as 1-L, 1-T/R, add WBL
25	General Jim Moore Blvd.	Broadway Avenue	NB 1-L/T SB 1-T, 1-R EB 1-L, 1-R	All-Way Stop	C	#11. Signalize & add NBL	None Recommended	#41. Add 2nd NBT, 2nd EBL	#41. Add 2nd NBT, 2nd EBL

Notes:

1. L, T, R = Left, Through, Right
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
3. NBL = Northbound Left-Turn Lane, NBR = Northbound Right-Turn Lane, NBT = Northbound Through Lane, etc.
4. RTO = Right turn overlap phasing

FIGURE **3.10-5B**

Intersection Mitigations Intersection 14 - 25

Not to Scale

Source: Higgins Associates, 2004

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Southbound Highway 1 Ramps/12th Street-Imjin Parkway Intersection # 7 (un-signalized) currently operates at LOS F during the weekday AM peak hour and LOS A during the weekday PM peak hour (average delay of 95.2 and 3.3 seconds, respectively). The worst movement operates at LOS F with an average approach delay of >300.0 seconds during the AM peak hour and LOS E with 48.2 seconds delay during the PM peak hour.

2nd Avenue/Imjin Parkway Intersection # 9 (un-signalized) currently operates at LOS F during the weekday AM and PM peak hours (average delay of 70.5 and 52.6 seconds, respectively).

California Avenue/Imjin Parkway Intersection # 10 (un-signalized) currently operates at LOS F during the weekday AM peak hour and LOS D during the weekday PM peak hour (average delay of 116.3 and 32.6 seconds, respectively). The worst approach operates at LOS F with an average approach delay of >300 seconds during the AM and PM peak hours.

Imjin Road/Imjin Parkway-Imjin Road Intersection # 11 (un-signalized) currently operates at LOS A during the weekday AM and LOS B during the PM peak hours (average delay of 6.3 and 11.3 seconds, respectively). The worst approach operates at LOS F with an average approach delay of 52.6 seconds during the PM peak hour.

General Jim Moore Boulevard/Broadway Avenue Intersection # 25 (un-signalized) currently operates at LOS D during the both weekday peak hours (average delay of 26.2 and 30.1 seconds, respectively).

Existing Conditions - Roadway Segment Operations. Existing morning and evening peak hour volumes on the study street segments are tabulated on the LOS Table in Figure 3.10-6. These are based upon the turning volumes illustrated in Figures 3.10-3a and 3.10-3b. Figure 3.10-7 also tabulates mitigation measures descriptions required, if any.

Threshold volumes provided in Appendix A4 of the traffic study are approximate in nature and 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.

Furthermore, urban street LOS is based on through-vehicle travel speed for the segment or for the entire street under consideration. Travel speed is the basic service measure for urban streets and with closely spaced intersections as in a downtown area, the level of service for road segments are mostly influenced and controlled by the levels of service of the adjacent intersections.

All of the study road segments and freeway ramps evaluated currently operate at acceptable levels of service.

Freeway Segments		Type	Direction	LOS Std.	Existing Conditions						Background Conditions						Background + Project Phase 1 Conditions						Background + Project Buildout Conditions						Cumulative without 2nd Avenue Extensions Conditions						Cumulative with 2nd Avenue Extensions 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		
					Volume	Density[1]	LOS	Volume	Density[1]	LOS	Volume	Density[1]	LOS	Volume	Density[1]	LOS	Volume	Density[1]	LOS	Volume	Density[1]	LOS	Volume	Density[1]	LOS	Volume	Density[1]	LOS	Volume	Density[1]	LOS	Volume	Density[1]	LOS	Volume	Density[1]	LOS	Volume	Density[1]	LOS
1 Highway 1	South of Light Fighter Dr.	6-Lane Freeway	NB	D	2653	14	B	5404	28	D	2758	14	B	5654	29	D	3023	16	B	6203	32	D	3753	19	C	6918	35	E	4606	24	C	7926	41	E	4606	24	C	7926	41	E
		8-Lane Freeway	*NB*																				*3753*	*14*	*B*	*6918*	*27*	*D*	4606	18	B	7926	30	D	4606	18	B	7926	30	D
		6-Lane Freeway	SB	D	4574	23	C	3498	18	B	4797	25	C	3665	19	C	5022	26	C	4187	21	C	5373	28	D	5118	26	D	5982	31	D	6373	33	D	5982	31	D	6373	33	D
		8-Lane Freeway	*SB*																				*5373*	*21*	*C*	*5118*	*20*	*C*	5982	23	C	6373	25	C	5982	23	C	6373	25	C
2 Highway 1	Between Light Fighter Dr.	6-Lane Freeway	NB	D	2121	11	A	5085	26	C	2208	11	B	5307	27	D	2428	12	B	5778	30	D	2841	15	B	6326	32	D	3475	18	B	7022	36	E	3475	18	B	7022	36	E
		NB																											*3475*	*13*	*B*	*7022*	*27*	*D*	3475	13	B	7022	27	D
	and Twelfth St.		SB	D	4338	22	C	2936	15	B	4526	23	C	3083	16	B	4718	24	C	3534	18	C	4952	25	C	4157	21	C	5459	28	D	5056	26	C	5459	28	D	5056	26	C
		SB																											*5459*	*21*	*C*	*5056*	*19*	*C*	5459	21	C	5056	19	C
3 Highway 1	North of Twelfth St.	6-Lane Freeway	NB	D	1499	8	A	4210	22	C	1667	9	A	4329	22	C	1801	9	A	4641	24	C	1992	10	A	5146	26	D	2511	13	B	5775	30	D	2396	12	B	5505	28	D
			SB	D	3407	17	B	2300	12	B	3478	18	B	2484	13	B	3636	19	C	2812	14	B	4030	21	C	3201	16	B	4543	23	C	3926	20	C	4359	22	C	3680	19	C
Freeway Ramps[3]					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		
					Volume		LOS	Volume		LOS	Volume		LOS	Volume		LOS	Volume		LOS	Volume		LOS	Volume		LOS	Volume		LOS	Volume		LOS	Volume		LOS	Volume		LOS	Volume		LOS
4 Hwy 1 NB Onramp	At Twelfth St.	1-Lane Ramp	NB	D	40		A	80		A	175		A	166		A	309		A	478		A	500		A	983		C	567		B	1,076		D	452		A	806		C
5 Hwy 1 NB Offramp	At Twelfth St.	1-Lane Ramp	NB	D	659		B	955		C	713		B	1,144		D	934		C	1,616		F	1,346		E	2,163		F	1,528		F	2,322		F	1,528		F	2,322		F
		2-Lane Ramp															*934*		*A*	*1,616*		*C*	1,346		B	2,163		D	1,528		C	2,322		D	1,528		C	2,322		D
6 Hwy 1 SB Onramp	At Twelfth St.	1-Lane Ramp	SB	D	1,032		C	686		B	1,200		D	791		C	1,392		E	1,242		D	1,626		F	1,865		F	1,715		F	2,113		F	1,715		F	2,113		F
		2-Lane Ramp															*1,392*		*B*	*1,242*		*B*	1,626		C	1,865		C	1,715		C	2,113		D	1,715		C	2,113		D
7 Hwy 1 SB Offramp	At Twelfth St.	1-Lane Ramp	SB	D	101		A	50		A	152		A	192		A	310		A	520		B	704		B	909		C	799		C	983		C	615		B	737		B
8 Hwy 1 NB Onramp	At Light Fighter Dr.	1-Lane Ramp	NB	D	171		A	247		A	181		A	261		A	181		A	261		A	181		A	261		A	235		A	416		A	235		A	416		A
9 Hwy 1 NB Offramp	At Light Fighter Dr.	1-Lane Ramp	NB	D	703		B	566		B	732		B	608		B	776		C	686		B	1,094		D	853		C	1,366		E	1,320		E	1,366		E	1,320		E
		2-Lane Ramp																											*1,366*		*B*	*1,320*		*B*	1,366		B	1,320		B
10 Hwy 1 SB Onramp	At Light Fighter Dr.	1-Lane Ramp	SB	D	454		A	742		B	498		A	776		C	532		B	847		C	649		B	1,156		D	817		C	1,671		F	817		C	1,671		F
		2-Lane Ramp																											*817*		*A*	*1,671*		*C*	817		A	1,671		C
11 Hwy 1 SB Offramp	At Light Fighter Dr.	1-Lane Ramp	SB	D	218		A	180		A	227		A	194		A	227		A	194		A	227		A	194		A	295		A	354		A	295		A	354		A
Road Segments																																								
12 Blanco Road	North of Reservation Rd.	4-Lane Arterial w/left-turn lane	Two-Way	C	2438		B	2434		B	2678		C	2737		C	3050		D	3551		E	3871		F	4802		F	4715		F	6143		F	4715		F	6143		F
		6-Lane Arterial w/left-turn lane															*3050*		*A*	*3551*		*B*	3871		C	4802		D	4715		D	6143		F	4715		D	6143		F
13 Reservation Rd.	Between Imjin Rd. and Blanco Rd	4-Lane Expressway	Two-Way	C	3198		C	3298		C	3565		C	3769		D	4035		D	4797		E	5074		F	6377		F	6631		F	8902		F	6631		F	8902		F
		6-Lane Expressway															*4035*		*B*	*4797*		*C*	5074		C	6377		D	6631		D	8902		F	6631		D	8902		F

Notes:
1. Vehicle density is measured in passenger cars per mile per lane during the specific noted peak hour period.
2. Capacities given for each service level assume the same level of service for the adjoining merging roadway as well as level of service being determined by volume-to-capacity and not attainable speed. Level of service will be controlled by freeway leve

	LOS A	LOS B	LOS C	LOS D	LOS E
1-Lane Freeway Ramp[2]	500	750	1,050	1,300	1,500
2-Lane Freeway Ramp[2]	1,000	1,500	2,100	2,600	2,800

3. Based on the Caltrans Highway Design Manual, Section 504.4 (5) & (6) and 504.5.
4. 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.
5. Levels of service shown in italics represent what the level of service would be during each scenario once a mitigation measure has been implemented.
Text in red represents what the level of service would be if the mitigation measure in the previous scenario were not implemented.

FIGURE **3.10-6**
Levels of Service Road Segment

Source: Higgins Associates, 2004

Not to Scale

	Road Segments		Background + Project Phase 1 Conditions	Background + Project Buildout Conditions	Cumulative without 2nd Avenue Extension Conditions	Cumulative with 2nd Avenue Extension Conditions
1	Highway 1	South of Light Fighter Dr.	None Recommended	#25. 8-Lane Freeway	None Recommended	None Recommended
2	Highway 1	Between Light Fighter Dr. and Twelfth St.	None Recommended	None Recommended	#42. 8-Lane Freeway	None Recommended
3	Highway 1	North of Twelfth St.	None Recommended	None Recommended	None Recommended	None Recommended
4	Hwy 1 NB Onramp	At Twelfth St.	None Recommended	None Recommended	None Recommended	None Recommended
5	Hwy 1 NB Offramp	At Twelfth St.	#12. 2-Lane Ramp	None Recommended	None Recommended	None Recommended
6	Hwy 1 SB Onramp	At Twelfth St.	#13. 2-Lane Ramp	None Recommended	None Recommended	None Recommended
7	Hwy 1 SB Offramp	At Twelfth St.	None Recommended	None Recommended	None Recommended	None Recommended
8	Hwy 1 NB Onramp	At Light Fighter Dr.	None Recommended	None Recommended	None Recommended	None Recommended
9	Hwy 1 NB Offramp	At Light Fighter Dr.	None Recommended	None Recommended	#43. 2-Lane Ramp	None Recommended
10	Hwy 1 SB Onramp	At Light Fighter Dr.	None Recommended	None Recommended	#44. 2-Lane Ramp	None Recommended
11	Hwy 1 SB Offramp	At Light Fighter Dr.	None Recommended	None Recommended	None Recommended	None Recommended
12	Blanco Road	North of Reservation Rd.	#14. 6-Lane Arterial	None Recommended	None Recommended	None Recommended
13	Reservation Rd.	Between Imjin Rd. and Blanco Rd.	#15. 6-Lane Expressway	None Recommended	None Recommended	None Recommended

FIGURE **3.10-7**
Segment Mitigations

***Source*:** Higgins Associates, 2004

Not to Scale

Existing Plus Approved Projects

This section 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.

Approved Projects Description. A number of other projects have been approved within the study area that have not yet been constructed (Appendix D1 of the traffic report includes a trip generation table of those projects and Appendix D2 of the traffic report shows their location). These projects will impact the study street network prior to impacts being experienced by the Proposed Project. Included in the background projects is an account for the anticipated growth of the university and the number of trips that would be generated. An estimation of the CSUMB trip generation under background conditions was based on the phased student and staff growth provided by the university. The approved projects, as well as CSUMB at the background level, would generate a total of 21,440 daily trips, with 1,682 trips (644 in, 1,038 excluded) during the AM peak hour, and 2,134 trips (1,221 in, 913 excluded) during the PM peak hour. These trips were assigned to the area road network and subsequently added to the existing traffic volumes to create the background traffic volumes depicted in Figures 3.10-8a and 3.10-8b.

The study intersections and road network shown in Figure 3.10-2 remains the same for background traffic conditions as under existing traffic conditions. It is assumed that the construction of 2nd Avenue would be completed. For the background study intersection traffic control, it was assumed that the intersections, where signalization already has been commissioned by the City of Marina (i.e., Imjin Parkway intersection with 2nd Avenue, California Avenue, and Imjin Road), would have been implemented by the background traffic condition timeframe.

Existing Plus Approved Projects - Intersection Operations. The traffic that would be generated by the approved projects was combined with the existing traffic to provide background traffic conditions. Background morning and evening peak hour turning volumes are illustrated in Figures 3.10-8a and 3.10-8b. Figures 3.10-4a and 3.10-4b tabulate corresponding morning and evening peak hour levels of service, the details of which are presented in Appendix E of the traffic report.

Seventeen of the study intersections would operate at or better than their jurisdiction's operational LOS standard under background traffic conditions. A discussion of the operations for each individual intersection that exceed jurisdiction's operational standards is included below. For a reference of the location of each of the intersections see Figure 3.10-2.

California/Reservation Road Intersection # 2 (un-signalized) would operate at LOS C during the weekday AM and LOS D during the PM peak hour (average delay of 20.0 and 32.4 seconds, respectively). The worst movement would operate at LOS F with an average approach delay of >300 seconds during both peak hours.

Imjin Road/Reservation Road Intersection # 3 (signalized) would operate at LOS D during the weekday AM and LOS E during the PM peak hours (average delay of 51.7 and 79.0 seconds, respectively).

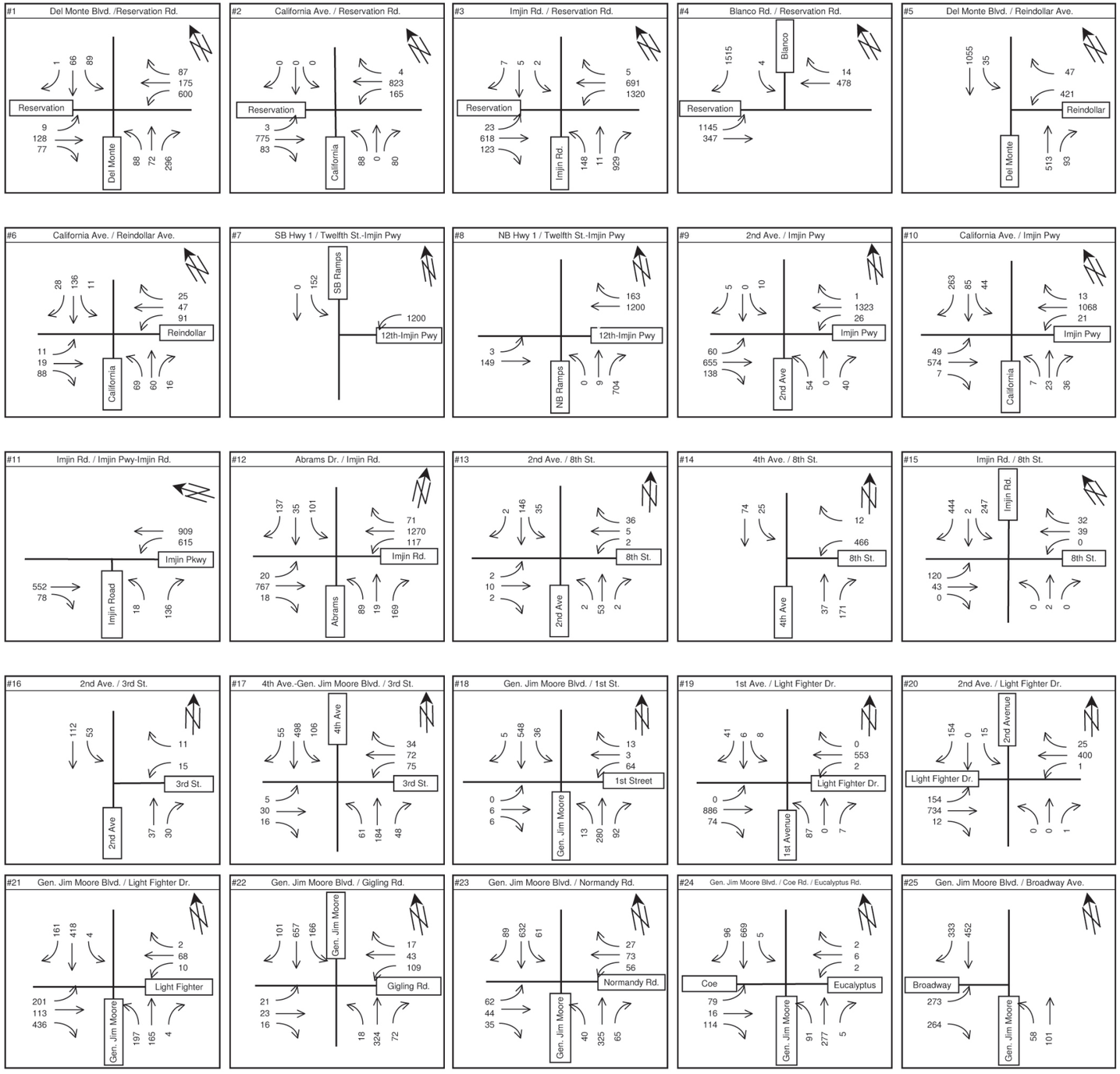

FIGURE **3.10-8A**

Background Condition AM Peak Hour Volumes

***Source*:** Higgins Associates, 2004

Not to Scale

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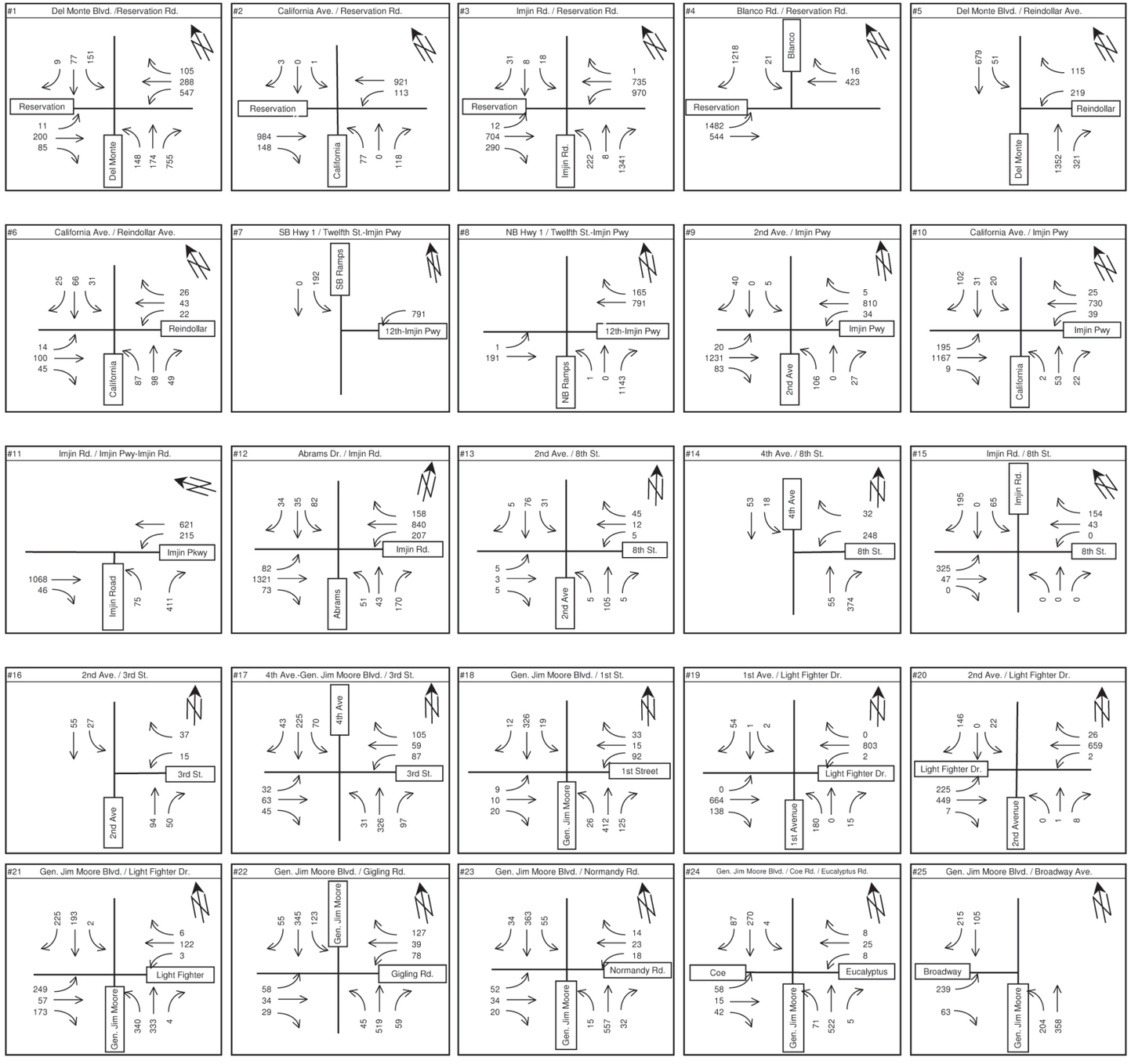

FIGURE **3.10-8B**

Background Condition PM Peak Hour Volumes

***Source*:** Higgins Associates, 2004

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The widening of this intersection to accommodate 2 NB left, 1 NB through and 2 NB right turn lanes will improve the LOS to A during both peak hours.

Southbound Highway 1 Ramps/12th Street-Imjin Parkway Intersection # 7 (un-signalized) would operate at LOS F during both the weekday peak hours (average delay of >300 and 119.0 seconds, respectively). The worst movement would operate at LOS F with an average approach delay of >300.0 seconds during both peak hours.

Northbound Highway 1 Ramps/12th Street-Imjin Parkway Intersection # 8 (un-signalized) would operate at LOS A during both the weekday peak hours (average delay of 0.3 and 0.0 seconds, respectively). The worst movement would operate at LOS F with an average approach delay of 51.3 seconds during the PM peak hour.

Abrams Drive/Imjin Road Intersection # 12 (signalized) would operate at LOS C during the weekday AM and LOS E during the PM peak hours (average delay of 25.8 and 74.1 seconds, respectively).

4th Avenue/3rd Street Intersection # 17 (un-signalized) would operate at LOS F during the weekday AM and LOS C during the PM peak hours (average delay of 73.5 and 21.4 seconds, respectively).

General Jim Moore Boulevard/1st Street Intersection # 18 (un-signalized) would operate at LOS E during the weekday AM and LOS C during the PM peak hours (average delay of 41.2 and 20.7 seconds, respectively).

General Jim Moore Boulevard/Broadway Avenue Intersection # 25 (un-signalized) would operate at LOS D during the AM weekday peak hour and LOS E during the PM peak hour (average delay of 30.7 and 38.0 seconds, respectively).

Existing Plus Approved Projects - Road Segments. Background morning and evening peak hour volumes on the study street segments are tabulated on the LOS Table in Figure 3.10-6. These are based upon turning volumes illustrated in Figures 3.10-8a and 3.10-8b. Figure 3.10-6 also tabulates corresponding street segment levels of service. The roadway segment level of service is based on the threshold volumes as shown in Appendix A4 and the HCM 2000 methodologies.

All but one of the study road segments evaluated would operate at acceptable levels of service. The only exception is the Reservation Road segment between Imjin Road and Blanco Road that would operate at a LOS D during PM peak hour (segment 13 on the LOS Summary Table in Figure 3.10-6).

Regulatory Setting

Federal

There are no federal transportation policies that are applicable to the Proposed Project.

State

There are no State transportation policies that are applicable to the Proposed Project.

Local

The study area covers the jurisdiction of multiple local agencies; they are the Cities of Marina and Seaside and Monterey County. The local agencies and the State agency, Caltrans District 5, all have different level of service standards.

The City of Marina has established LOS D as the general threshold for acceptable overall traffic operations for both signalized and un-signalized intersections (MGP Policy 3.9). The City of Seaside and County of Monterey have both established LOS C as their level of service standards. These standards will apply to the study intersections within each agency's jurisdiction. The Caltrans level of service standard is LOS C/D threshold – LOS C is acceptable in all cases, and LOS D is acceptable on a case-by-case basis. This standard would normally apply to the intersections, freeway segments and ramps analyzed as part of this study that fall under Caltrans jurisdiction. However, the regional road network that was evaluated as part of this study also falls within the County of Monterey's Congestion Management Program (CMP) road network where LOS D has been identified as the acceptable level of operation in urban areas.

Impacts Assessment and Mitigation Measures

Significance Criteria

In accordance with CEQA and agency and professional standards, specific impact criteria have been applied to the study intersections and road segments to determine if a significant impact would occur due to the implementation of the project. These criteria reflect the significant impact criteria identified by the City of Seaside and the County of Monterey. The City of Marina has not identified a set of significance impact criteria and it is recommended that for the purpose of this traffic study, the significance criteria listed in the sections below be used. It should be noted that for the intersections within the City of Marina city limits the acceptable level of service will be taken as D and not C as in the case for the City of Seaside and the County of Monterey.

A significant impact at a *signalized study intersection* is defined to occur under the following conditions:

- The addition of Proposed Project traffic causes operations to deteriorate from acceptable level of service in that jurisdiction to an unacceptable level of service in that jurisdiction, or
- The addition of Proposed Project traffic increases the average delay by more than 1.0 second at intersections operating at LOS E or LOS F.

A significant impact at an *un-signalized study intersection* is defined to occur under the following scenarios:

- The addition of Proposed Project traffic causes operations to deteriorate from an acceptable level (LOS E or better for two-way stop control, LOS D or better for all-way stop control) to an unacceptable level (LOS F for two-way stop control, LOS E for all-way stop control);
- The addition of Proposed Project traffic exacerbates the unacceptable operations (LOS F for two-way stop control or LOS D for all-way stop control); or
- The Caltrans peak-hour volume signal warrant is met.

A significant impact on a *roadway segment* is defined to occur under the following scenarios:

- The addition of Proposed 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);
- The addition of Proposed Project traffic causes a roadway segment operating at LOS E or LOS D to degrade one service level; or
- The addition of one Proposed Project trip to a segment already operating at LOS F.

It should be noted that the LOS standard for the study intersections and road segments within the City of Seaside and the County of Monterey is LOS C and LOS C/D for Caltrans. The LOS requirement for the study intersections and road segments within those jurisdictions would be LOS C instead of LOS D.

Furthermore, standards have been defined by TAMC for roadway Levels of Service that specify a goal of LOS C for county arterials and State highways. However, LOS D is considered minimally acceptable for urban roads under the county Congestion Management Plan (CMP). Deterioration from LOS A, B, C or D to LOS E or F is considered significant. For roadways with an existing LOS E or F, a 2 percent increase in the traffic volume is considered significant. These significance criteria apply to intersections, arterial segments and to freeway segments and ramps.

Methodology for Analysis

Intersection traffic operations were evaluated based on the 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. However, contemporary planning considerations may argue that LOS F, for short and limited periods during the day might be considered acceptable, when the objective is to create a more pedestrian friendly environment and reduce the emphasis on the automobile as the primary transportation mode, as is the case with the Proposed Project.

Intersection operations were evaluated using technical procedures documented in the *2000 Highway Capacity Manual* (HCM). For signalized intersections, average control delay per vehicle is used 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 of the traffic report shows the relationship between vehicle delay and the signalized intersection level of service categories. The TRAFFIX 7.6 software program 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 of the traffic report 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 of the traffic report 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.

The volume threshold planning methodology based on HCM was used in the evaluation of operating conditions on freeway segments and ramps. A description of levels of service thresholds for freeway segments and ramps is included as Appendix A4 of the traffic report. It should be noted that the evaluation of the road segments (except for the freeway segments) was based on a planning level methodology and that the traffic analysis was based on projections of traffic scenarios, particularly for cumulative scenarios of 2025. The development forecasts and timeframes are uncertain due to market conditions and uncertainties regarding proposed cumulative buildout and the ultimate road networks and development constraints. Therefore, the specific mitigation measures that are recommended for road segments and ramps on Highway 1 should be considered preliminary and subject to further studies along the Highway 1 corridor.

Modeling of Right Turn on Red (RTOR). 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. The Traffix software does not allow any options to model right turn on red and the only method prescribed by the HCM for modeling RTOR is to reduce the input volumes to account for right turns on red. The number of right turning vehicles at intersections could be reduced based on the following criteria at each intersection:

- Number of vehicles making a right turn while facing a red signal;
- Approach lane allocation (shared or exclusive right turn lane);
- Demand for right turn movements;

- Sight distance at the intersection approach;
- Degree of saturation of the conflicting through movement;
- Left turn signal phasing on the conflicting through movement; or
- Conflict with pedestrians.

For this study no allowance was made for RTOR, as insufficient information was available regarding the percentage of vehicles turning right on red. Furthermore, right turn overlap signal phasing has been installed at some of the intersections that facilitate right turns. The results of the intersection analyses can thus be seen as reflecting a "worst case" scenario.

Baseline Conditions

This section is prepared using the 2004 baseline. The 1991 baseline is insufficient to use because it does not reflect the changed traffic characteristics on area roads since 1991. In addition, as noted in the Base Reuse EIR, there was no current LOS analysis for the relevant intersections at that time.

Environmental Analysis

Existing Plus Approved Projects Plus Proposed Project Phase 1 Traffic Conditions. This section of the report describes the analyses of the study road network traffic conditions under background (existing plus approved projects) plus Phase 1 of the Proposed Project. The section includes the analysis of Proposed Project trip generation, distribution, and assignment.

Proposed Project Phase 1 Description. The Proposed Project would consist of a variety of residential and commercial land uses. The residential component of the Phase 1 would be a total of 521 residential units comprising of single family, condominium / town homes and apartments. The rest of Phase 1 would include 739,500 sf of various retail shops and restaurants, 10,000 sf of general office, 81,300 sf of government type Offices/Services and a variety of other uses such as a Multiplex Theater, Gas Station and a Church. Included in Phase 1 of the traffic impact assessment are approximately 7.6 acres of "Non-Application Parcels" with Government Service/Public Facilities development proposals and church that are not under the control of Marina Community Partners. The reasoning behind including these "Non-Application Parcels" is that these parcels form an integral part of the project site and will have an influence on the road and intersection operating conditions. Figure 2-4 in Chapter 2, Project Description shows the project phasing relevant to this traffic study.[1]

The Phase 1 area north boundary line is Imjin Parkway. The east boundary is between 4th Avenue and California Avenue. The south boundary includes 9th and 8th Street east of 2nd Avenue and 9th Street

[1] It should be noted that there are three potential land uses that were identified for land parcels "T" and "OP1A"; they are 500 hotel rooms, 160,000 sf of retail or 277,042 sf of office). From a trip generation perspective, the "retail" option would generate the most number of daily and peak hour trips. To ensure that a "worse case scenario" was evaluated, land Parcels "T" and "OP1A" were treated as retail. Should land Parcels "T" and "OP1A" be developed as hotel or office, the number of trips that would be generated by the developments will be less than for retail.

west of 2nd Avenue. The western boundary is 1st Street. A Greenbelt linkage from the Village Square (at the western terminus of 9th Street) would connect to the 8th Street boardwalk link to the beach. Retail/Service would largely occur west of 2nd and north of 9th Street. The residential components of Phase 1 would include apartment units fronting 9th Street on the west side of 2nd Avenue. Market rate single-family and attached housing would be constructed between 2nd Avenue and 4th Avenue, north of 8th Street and south of Imjin Parkway.

Proposed Project Phase 1 Trip Generation. Figure 3.10-9 contains the trip generation estimate for Phase 1, which is based upon trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation*, 7th Edition, 2003 and San Diego Association of Governments (SANDAG) *Vehicular Traffic Generation Rates*, 2003.

Based on the Caltrans *Guide for the Preparation of Traffic Impact Studies* a five percent reduction was applied to the number of trips generated by the Proposed Project to account for captured trips. Captured trips are trips that do not enter or leave the roadways of a project's boundary within a mixed-use development such as the Proposed Project. Furthermore, an additional five percent internal trip reduction was applied 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.

In total, Phase 1 would generate 48,241 daily trips; 1,957 trips (1,056 in, 902 excluded) during the AM peak hour, and 4,282 trips (2,195 in, 2,087 excluded) during the PM peak hour (refer to Figure 3.10-9 for detail of the Proposed Project trip generation).

Proposed Project Trip Distribution and Assignment. The distribution of the estimated project trips from the FORA Marina traffic zone (in which the Proposed Project falls) 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 project site boundaries were considered in the Proposed Project trip distribution. Figure 3.10-10 shows the Proposed Project trip distribution graphically, while the information provided by AMBAG is included in Appendices R, S, and T of the traffic report.

Furthermore, it is anticipated that a considerable number of linked trips would occur between the residential and commercial uses within the project site as well as the CSUMB campus, and existing and planned surrounding residential developments. The linked trips have been taken into consideration in the Proposed Project trip distribution to avoid double counting of trips on the study intersections and road network.

Figures 3.10-11a and 3.10-11b represent the Proposed Project trips assigned to the 25 study intersections. The Proposed Project trips in Figures 3.10-11a and 3.10-11b were added to the background traffic volumes to create background plus project Phase 1 traffic volumes. These traffic volumes are shown in Figures 3.10-11c and 3.10-11d.

TRIP GENERATION RATES	ITE LAND USE CODE	PROJECT SIZE	PEAK HOUR TRIP RATES & DISTRIBUTION								
				AM PEAK HOUR				PM PEAK HOUR			
			DAILY TRIP RATES	PEAK HOUR RATES	% OF DAILY RATE	% IN	% OUT	PEAK HOUR RATE	% OF DAILY RATE	% IN	% OUT
Single Family Detached Housing	210	614 Homes	9.57	0.75	8%	0.25	0.75	1.01	11%	0.63	0.37
Condominiums/Town Homes	231	515 Units	5.86	0.67	11%	0.25	0.75	0.78	13%	0.58	0.42
Apartments	220	108 Units	6.72	0.51	8%	0.20	0.80	0.62	9%	0.65	0.35
Retail - Specialty Retail	814	32,500 SF	44.32	0.00	0%	0.00	0.00	2.71	6%	0.44	0.56
- Shopping Center	820	550,000 SF	42.94	1.03	2%	0.61	0.39	3.75	9%	0.48	0.52
- Supermarket	850	55,000 SF	102.24	3.25	3%	0.61	0.39	10.45	10%	0.51	0.49
- Strip Commercial	SANDAG	117,500 SF	40.00	1.20	3%	0.60	0.40	3.60	9%	0.50	0.50
- Neighborhood Shopping Center	SANDAG	269,300 SF	120.00	4.80	4%	0.60	0.40	12.00	10%	0.50	0.50
Restaurants - Quality	931	58,725 SF	89.95	0.81	1%	0.50	0.50	7.49	8%	0.67	0.33
- High Turnover	932	24,000 SF	127.15	11.52	9%	0.52	0.48	10.92	9%	0.61	0.39
- Fast Food with Drive Through Window	934	12,500 SF	496.12	53.11	11%	0.51	0.49	34.64	7%	0.52	0.48
Convenience Market (15 to 16 hours)	852	2,530 SF	492.00	31.02	6%	0.50	0.50	34.57	7%	0.49	0.51
Gas Station with Convenience Market (12 Fueling Positions)	945	12 Position	162.78	10.06	6%	0.50	0.50	13.38	8%	0.50	0.50
General Offices	710	10,000 SF	11.01	1.55	14%	0.88	0.12	1.49	14%	0.17	0.83
Business Park	770	809,171 SF	12.76	1.43	11%	0.84	0.16	1.29	10%	0.23	0.77
Multiplex Movie Theater	445	10 Screens	292.50	0.00	0%	0.00	0.00	23.02	8%	0.60	0.40
Community Building/Facilities	495	80,000 SF	22.88	1.62	7%	0.61	0.39	1.64	7%	0.29	0.71
Soccer Complex	488	4 Fields	71.33	1.40	2%	0.50	0.50	20.67	29%	0.69	0.31
City Park	SANDAG	7.8 Acres	50.00	2.00	4%	0.50	0.50	4.00	8%	0.50	0.50
Government Office	733	561,850 SF	27.92	2.21	8%	0.89	0.11	2.85	10%	0.31	0.69
Transit Center	CUSTOM	- -	1400.00	160.00	11%	0.50	0.50	140.00	10%	0.43	0.57
Church	560	55,300 SF	9.11	0.72	8%	0.54	0.46	0.66	7%	0.31	0.69

PROJECT TRIPS GENERATED - PHASE 1 (2005 to 2009)	LAND USE PARCEL NUMBER	ITE LAND USE CODE	PROJECT SIZE	NUMBER OF TRIPS GENERATED								
					AM PEAK HOUR				PM PEAK HOUR			
				DAILY TRIPS	PEAK HOUR TRIPS	% OF DAILY TRIPS	NUMBER TRIPS IN	NUMBER TRIPS OUT	TOTAL PEAK HOUR	% OF DAILY TRIPS	NUMBER TRIPS IN	NUMBER TRIPS OUT
Single Family Detached Housing	K, L & P1	210	221 Homes	2,115	166	8%	42	124	223	11%	140	83
Town Homes / Condominiums	K, L, P1 & B1	231	195 Units	1,143	131	11%	33	98	152	13%	88	64
Apartments	B2	220	108 Units	726	55	8%	11	44	67	9%	44	23
Retail - Shopping Center	A, B1	820	550,000 SF	23,617	567	2%	346	221	2063	9%	990	1073
- Specialty Retail	J	814	17,000 SF	753	0	0%	0	0	46	6%	20	26
- Supermarket	J	850	55,000 SF	5,623	179	3%	109	70	575	10%	293	282
- Strip Commercial	T	SANDAG	50,000 SF	2,000	60	3%	36	24	180	9%	90	90
Restaurants - Quality	A, B1	931	40,000 SF	3,598	32	1%	16	16	300	8%	201	99
- High Turnover	A, B1	932	20,000 SF	2,543	230	9%	120	110	218	9%	133	85
- Fast Food with Drive Through Window	A, B1	934	7,500 SF	3,721	398	11%	203	195	260	7%	135	125
Multiplex Movie Theater	B1	445	10 Screens	2,925	0	0%	0	0	230	8%	138	92
Gas Station with Convenience Market (12 Fueling Positions)	J	945	12 Positions	1,953	121	6%	61	60	161	8%	81	80
General Offices	B1	710	10,000 SF	110	16	15%	14	2	15	14%	3	12
Church	T	560	55,300 SF	504	40	8%	22	18	36	7%	11	25
Government Office/Services	T	733	81,300 SF	2,270	180	8%	160	20	232	10%	72	160
Sub-Total Project Phase 1 Trips				**53,601**	**2,175**	**4%**	**1,173**	**1,002**	**4,758**	**9%**	**2,439**	**2,319**
Internal Trip Reduction[1] (-10%)				5,360	218	4%	117	100	476	9%	244	232
TOTAL PRIMARY PROJECT PHASE 1 TRIPS				**48,241**	**1,957**	**4%**	**1,056**	**902**	**4,282**	**9%**	**2,195**	**2,087**

Notes:
Trip generation rates published by Institute of Transportation Engineers, "Trip Generation," 7th Edition, 2003, unless otherwise noted
1. Internal capture rate of non-residential trips DUE TO Neighborhood District Land Use
2. OP1 and T assumed to be "Retail" 110,000sf and 50,000sf respectively

524
739,500
146,600

FIGURE **3.10-9**

Project Phase 1 Trip Generation

Not to Scale

10886-00

Source: Higgins Associates, 2004

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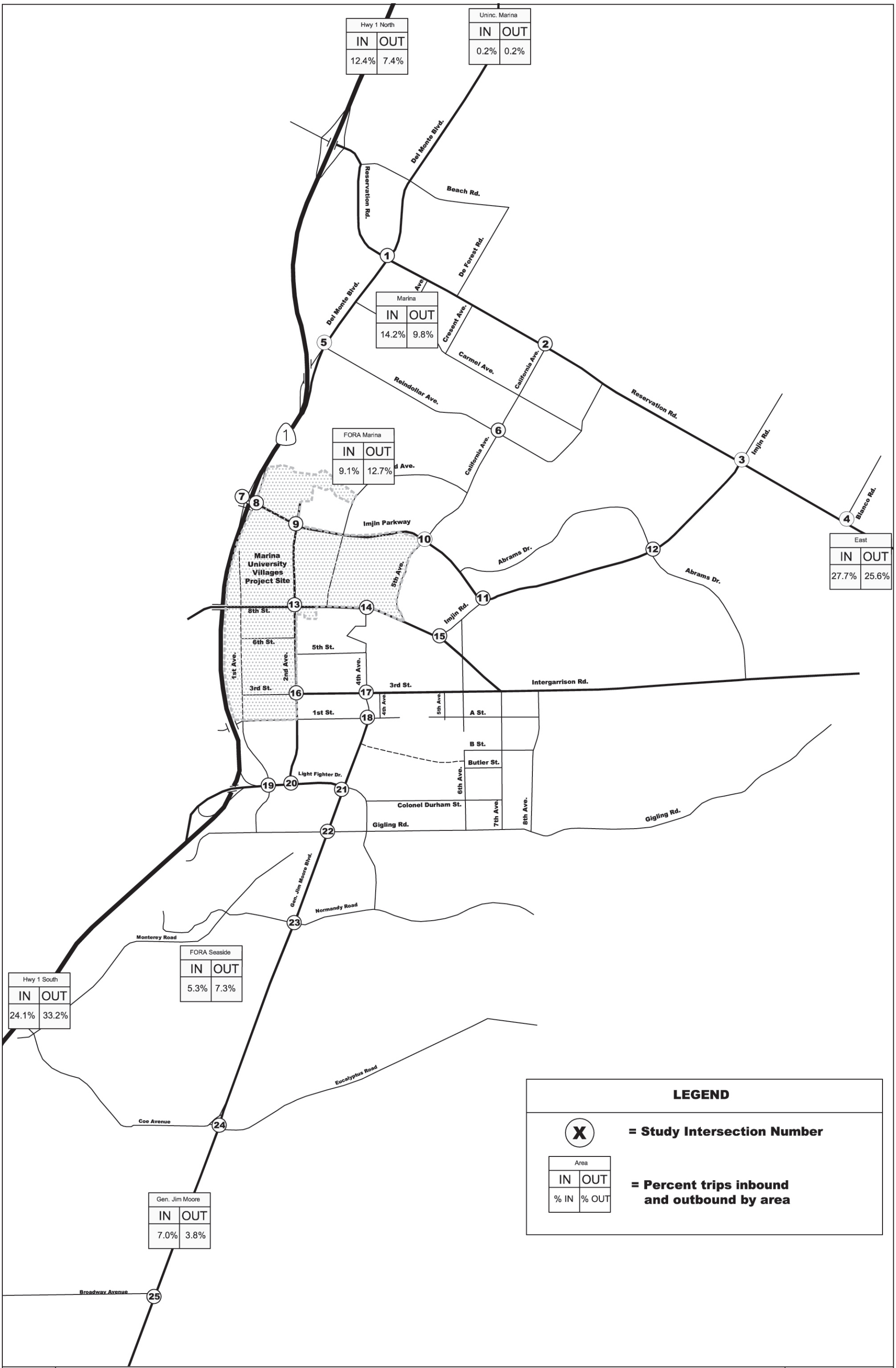

FIGURE **3.10-10**

Project Trip Distribution (Phase 1 and Project Buildout)

***Source*:** Higgins Associates, 2004

City of Marina

Not to Scale

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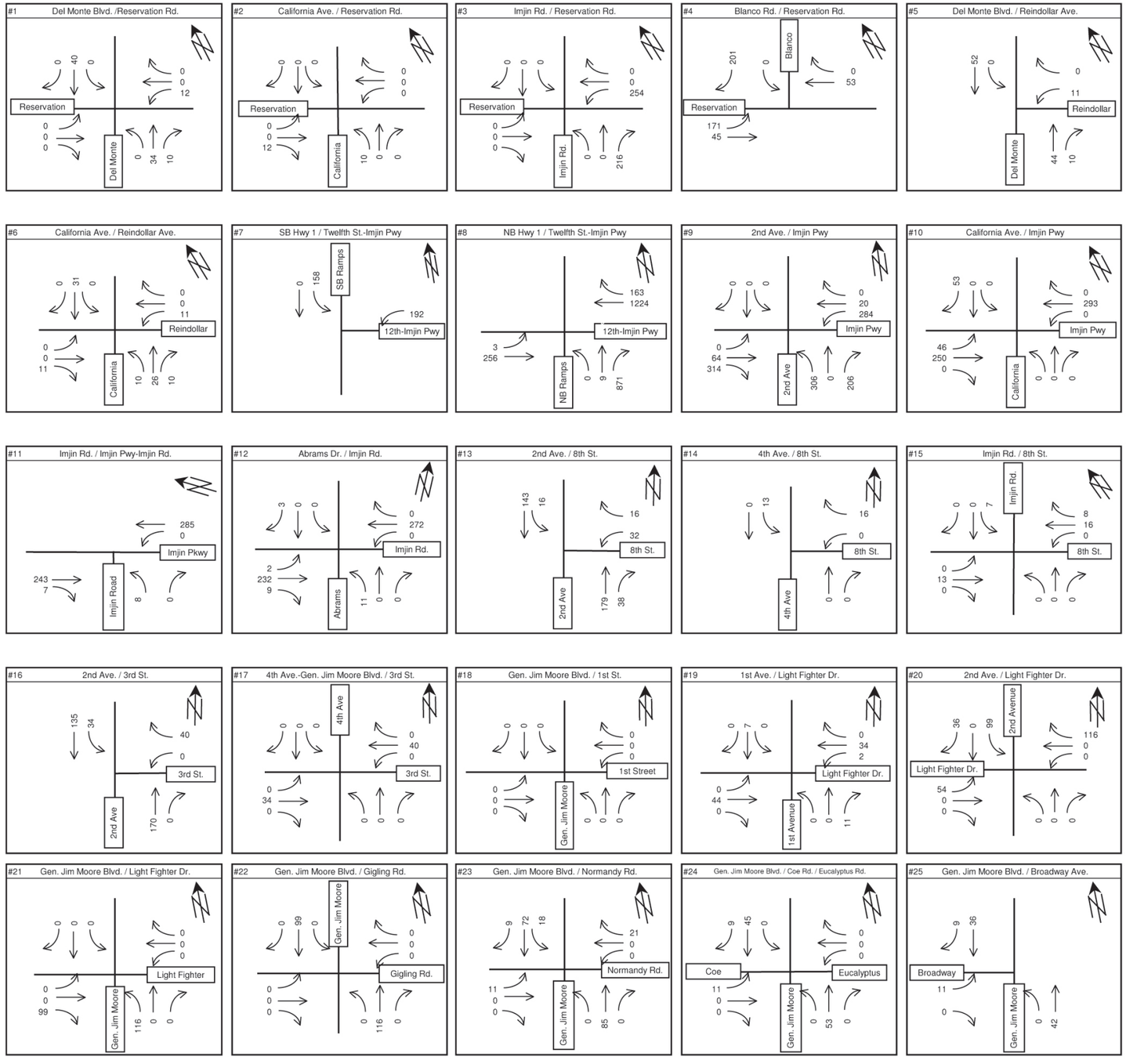

FIGURE **3.10-11A**

Project Phase 1 Trip Assignment AM Peak Hour Volumes

Not to Scale

10886-00

Source: Higgins Associates, 2004

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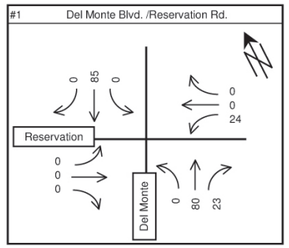

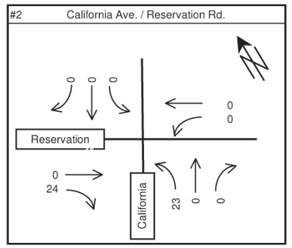

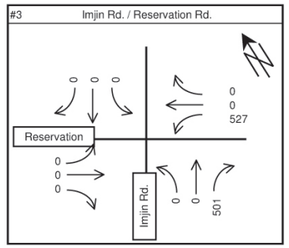

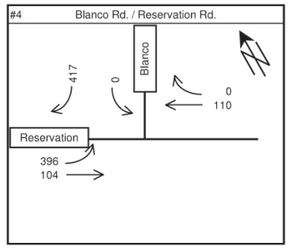

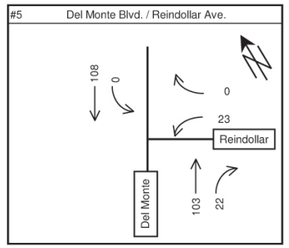

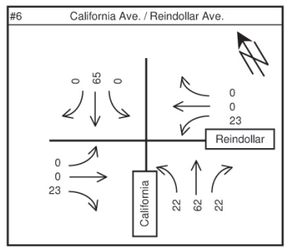

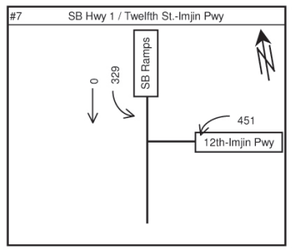

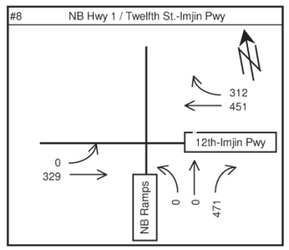

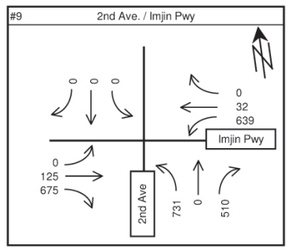

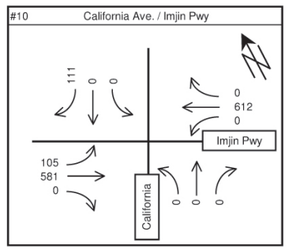

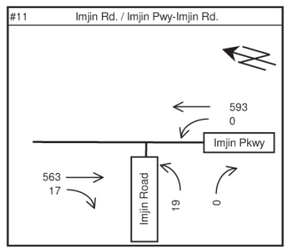

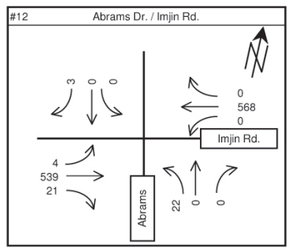

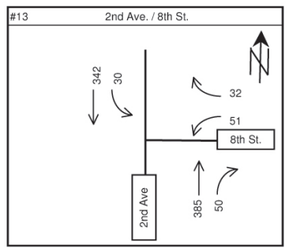

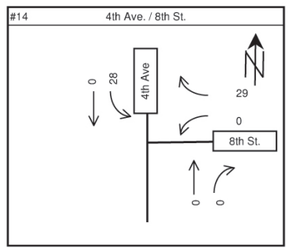

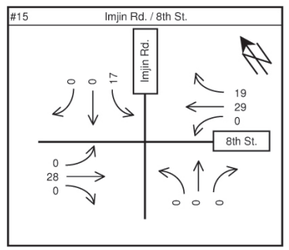

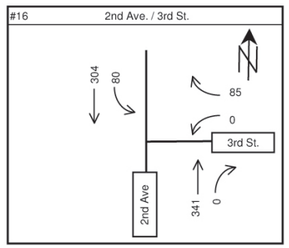

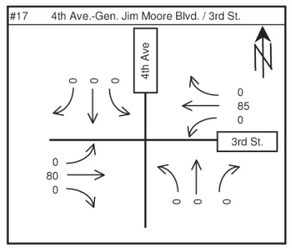

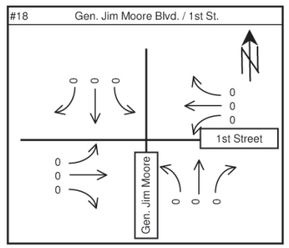

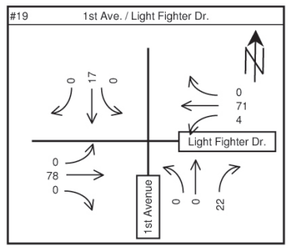

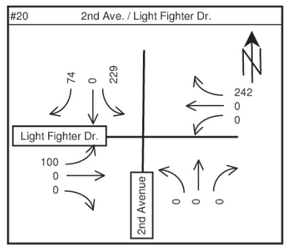

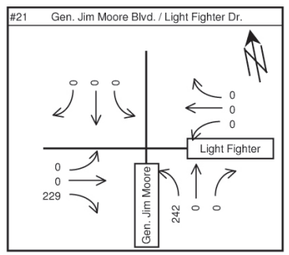

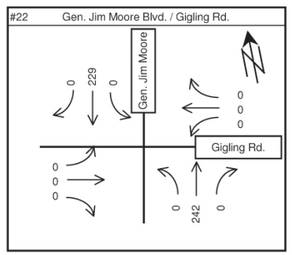

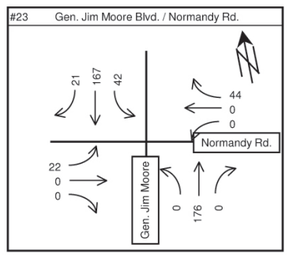

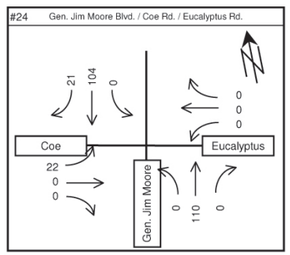

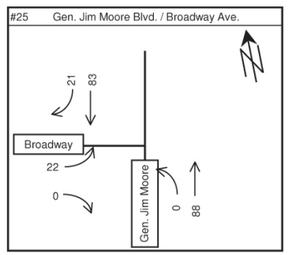

FIGURE **3.10-11B**

Project Phase 1 Trip Assignment PM Peak Hour Volumes

Not to Scale

Source: Higgins Associates, 2004

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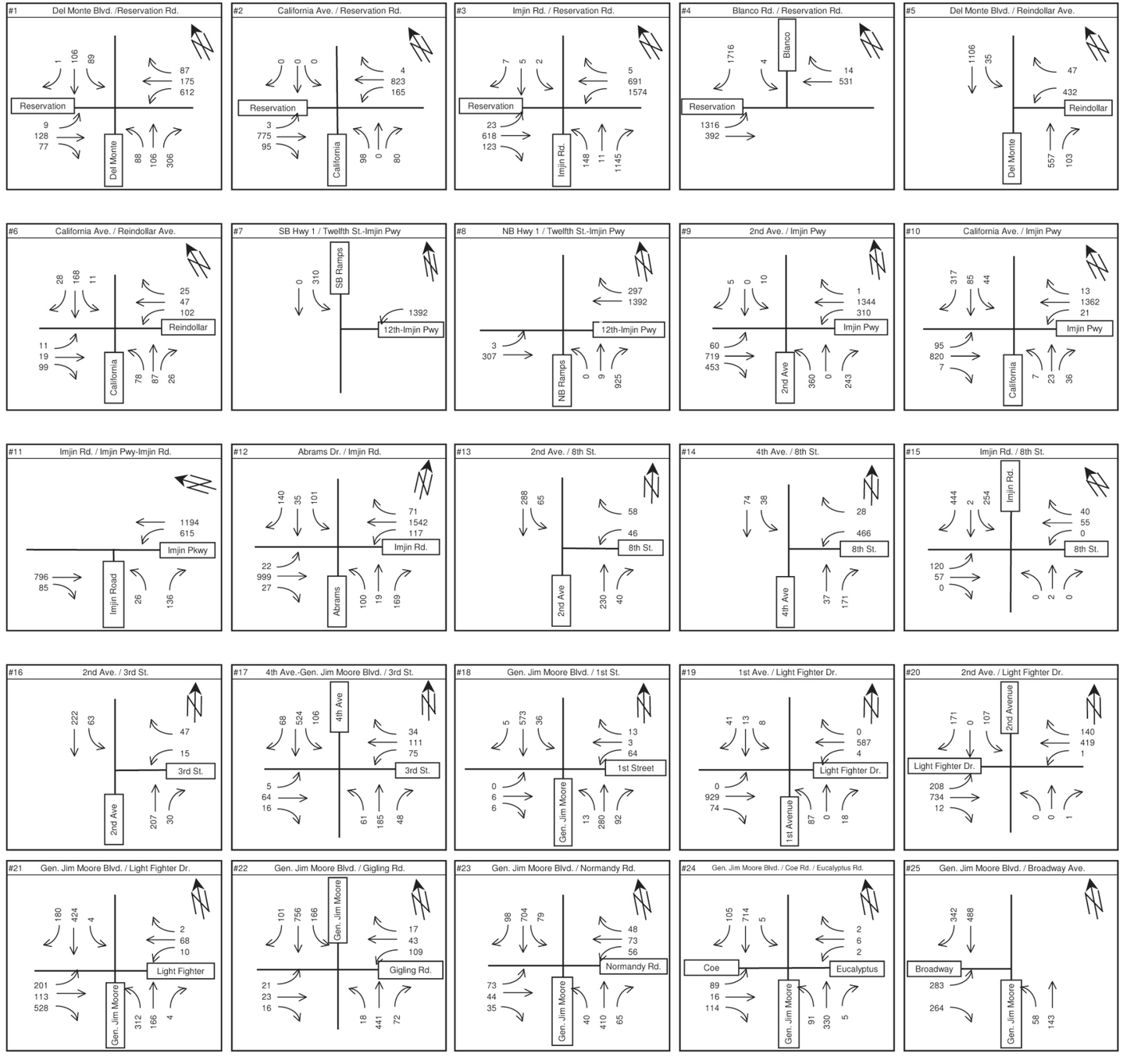

FIGURE **3.10-11C**

Background + Project Phase 1 Conditions AM Peak Hour Volumes

Not to Scale

***Source*:** Higgins Associates, 2004

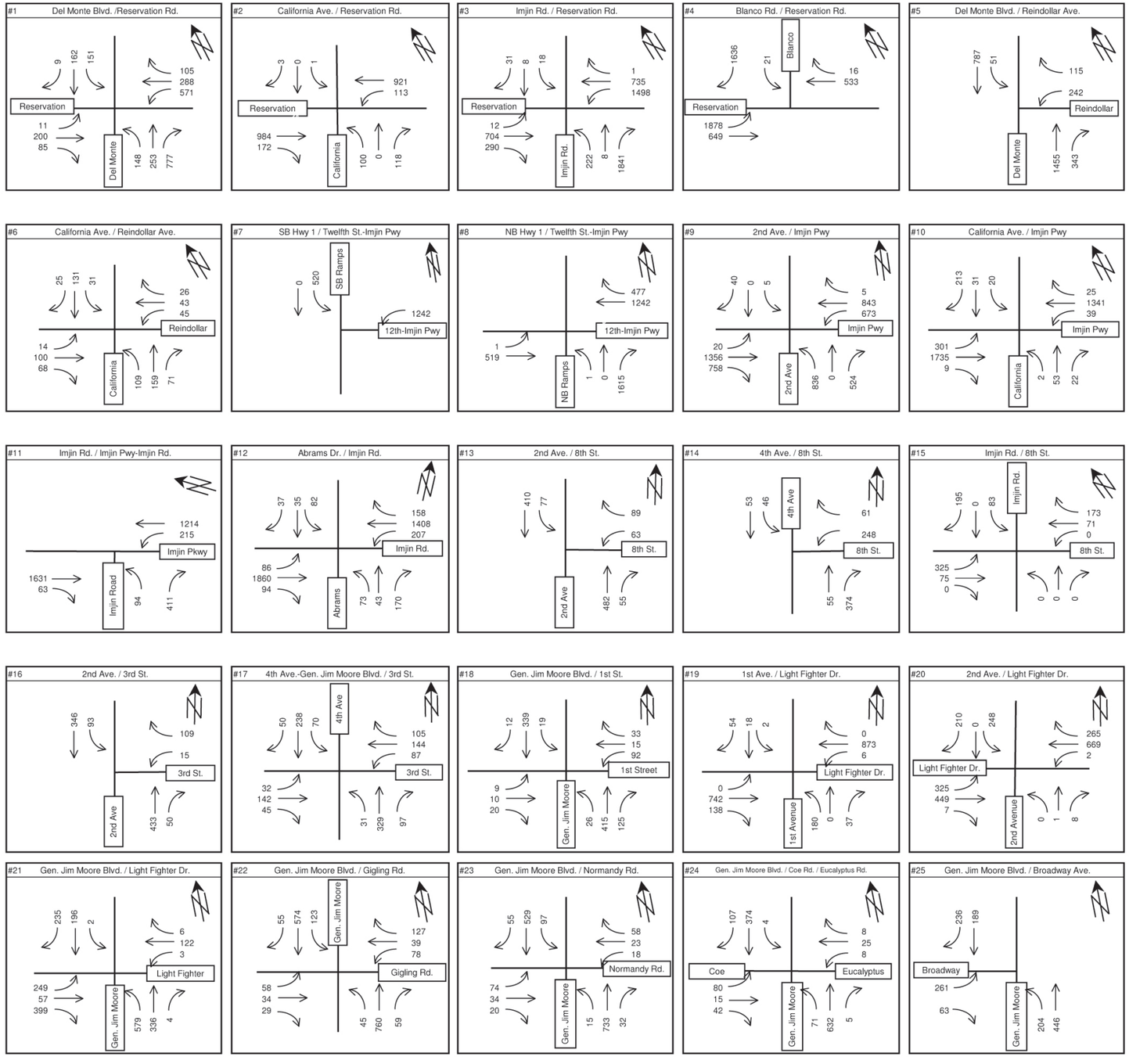

FIGURE **3.10-11D**

Background + Project Phase 1 Conditions PM Peak Hour Volumes

Not to Scale

***Source*:** Higgins Associates, 2004

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Proposed Project Access and Circulation. The regional and local access roads described previously in this section are relevant to this Proposed Project. A detailed road hierarchy is proposed for the Figure development and it was fully described in the Specific Plan for the Proposed Project. The proposed road hierarchy and access points are shown in Figure 3.10-12 while the Proposed Project Phase I traffic control at the study intersections are shown in Figure 3.10-13.

Primary access to Phase 1 would be from Imjin Parkway and 2nd Avenue. Newly constructed infrastructure would include local residential roadways, alleyways and parking to support the Phase I development. The study road network for the Proposed Project is shown in Figure 3.10-14 and Figure 3.10-13 shows the traffic control at the study intersections under Proposed Project traffic conditions. It is assumed that the construction of 2nd Avenue would be completed prior to project development.

Based on the Circulation Exhibit provided by the project development team, signalization is planned at the intersections of 2nd Avenue with Imjin Parkway, Commercial Driveway, 10th Street, 8th Street, 3rd Street and 1st Street. For the purpose of the traffic analysis, the traffic control at the relevant study intersections proposed in the Circulation Exhibit (Figure 3.10-12) was assumed to be in place.

To confirm the traffic control devices proposed and the proposed lane configurations, traffic control and channelization warrant assessments were performed at all the study intersections as well as for the project specific intersections along 2nd Avenue, namely Commercial Driveway, 10th Street, 9th Street, 5th Street, 3rd Street, 1st Street, and the Imjin Parkway/3rd Street intersection.

Signal and channelization warrants for Phase 1 are based on the traffic volumes shown in Figures 3.10-15, 3.10-16, 3.10-17 and 3.10-18. Under background plus Proposed Project Phase 1 traffic conditions, the channelization assessment showed that left turn channelization and signalization would be warranted at several of the project specific study intersections. The signal warrant and channelization results for Phase 1 are summarized in Figure 3.10-19. It should be noted that signal warrants are not met for the 2nd Avenue intersections with 8th Street and 3rd Street until Proposed Project buildout traffic conditions. However, the intersections were analyzed as signalized intersections based on the information provided by the project team.

Project Level Transit Systems. The MST would continue to provide transit opportunities at the project site. Furthermore, MST has land located on the south-western side of the Marina University Villages site off 1st Avenue and a transit center could be developed on that land although no proposals have been formalized. The future Caltrain Monterey Station is planned to the west of Highway 1, south-west of the Marina University Villages project site.

The Specific Plan identified an east/west corridor (9th Street) intended to form a regional link between the TAMC and MST future facilities located within University Villages and areas to the east, potentially all the way to Salinas. While the nature and location of the facilities have yet to be determined, a wide enough (94 foot) right of way has been provided for the transit corridor. However, the detail of the 2nd Avenue/9th Street intersection configuration (i.e. no through movements) shown in the circulation exhibit shown in Figure 3.10-12 and 3.10-14, should be adjusted to support the transit corridor.

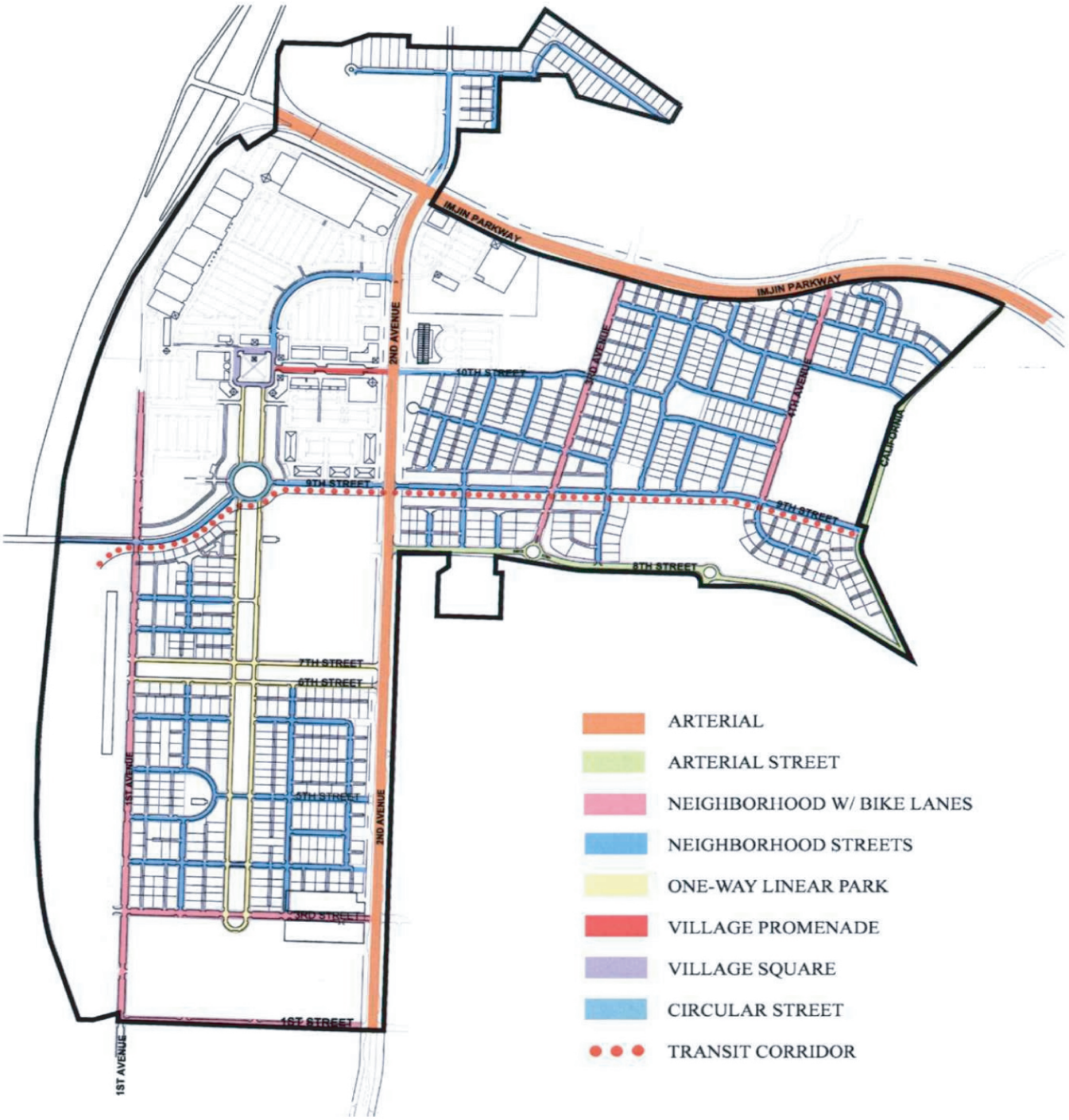

FIGURE **3.10-12**

Project Road Hierarchy at Project Buildout

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***Source*:** Higgins Associates, 2004

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Del Monte Blvd.
Reservation Rd.
Beach Rd.
De Forest Rd.
Del Monte Blvd.
Seacrest Ave.
Crescent Ave.
Carmel Ave.
California Ave.
Reindollar Ave.
Reservation Rd.
Imjin Rd.
Blanco Rd.
1
8
3rd Ave.
California Ave.
Imjin Parkway
Abrams Dr.
Abrams Dr.
Marina
University
Villages
Project Site
5th Ave.
Imjin Rd.
8th St.
6th St.
5th St.
1st Ave.
2nd Ave.
3rd St.
1st St.
OR
OR
3rd St.
Intergarrison Rd.
5th Ave.
A St.
B St.
Butler St.
4th Ave.
6th Ave.
Light Fighter
Colonel Durham St.
7th Ave.
8th Ave.
Gigling Rd.
Gigling Rd.
Gen. Jim Moore Blvd.
Normandy Road
Monterey Road
Eucalyptus Road
Coe Avenue
Gen. Jim Moore Blvd.
Broadway Avenue
STOP
STOP
STOP

LEGEND

= Signalized Intersection

= 1 - Way, 2 - Way or All - Way Stop

= Roundabout

N

10886-00

FIGURE **3.10-13**

Traffic Control at Study Intersection at Project Buildout Level

Not to Scale

***Source*:** Higgins Associates, 2004

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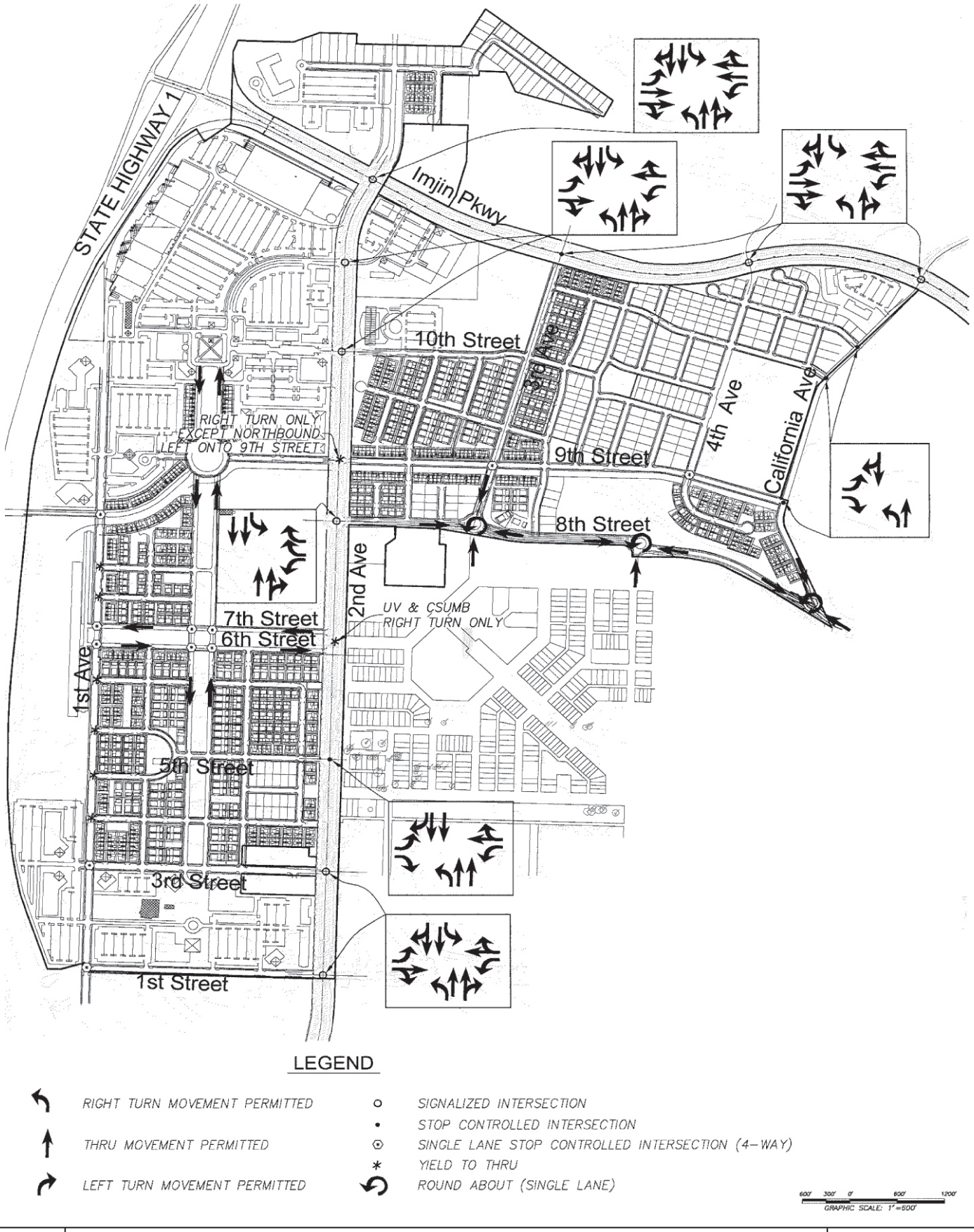

FIGURE **3.10-14**

Project Phase 1 Road Network

10886-00

***Source*:** Higgins Associates, 2004

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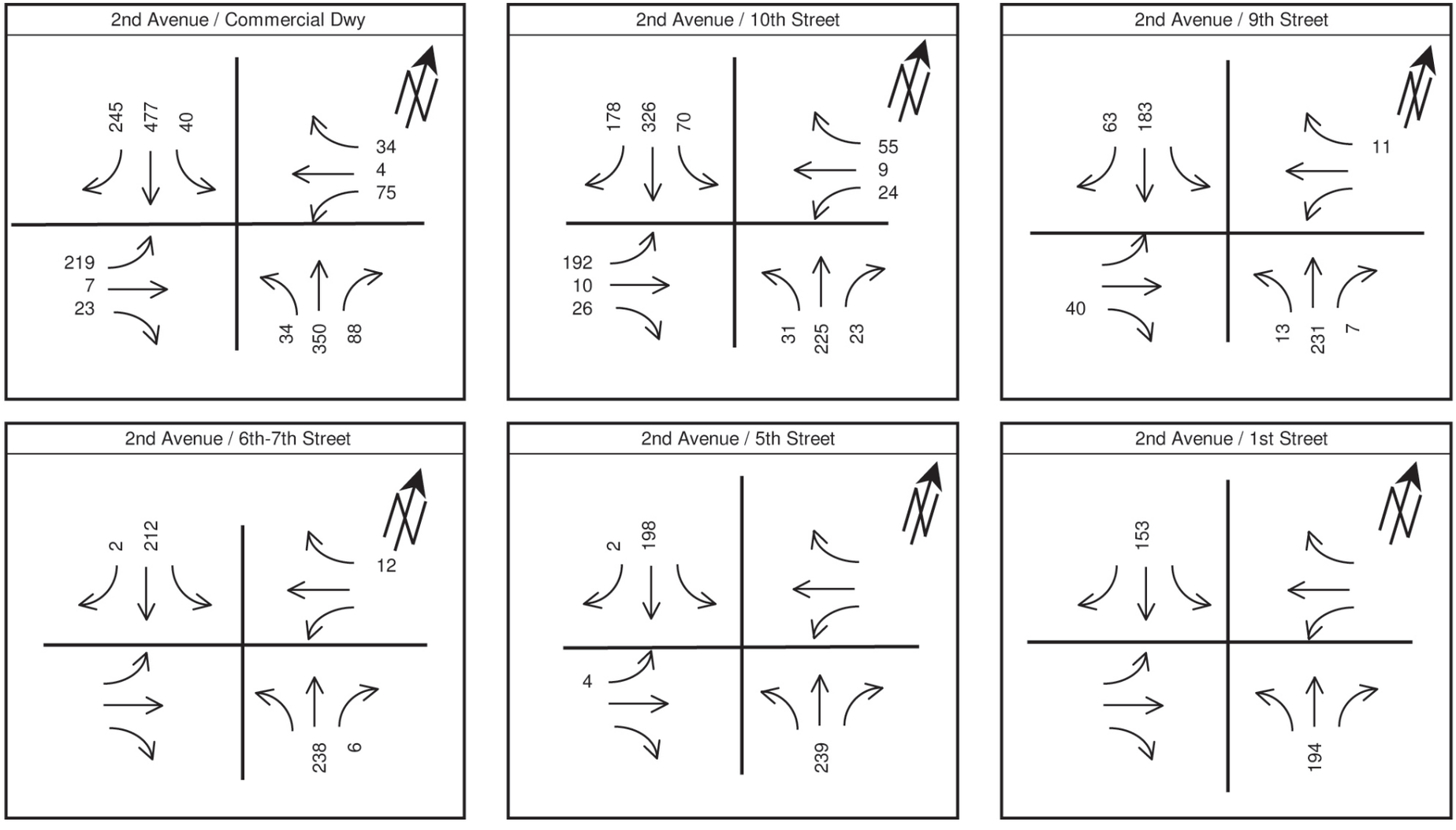

FIGURE **3.10-15**

Background + Phase 1 AM Volumes at Non-Study Intersections with 2nd Avenue

Not to Scale

10886-00

***Source*:** Higgins Associates, 2004

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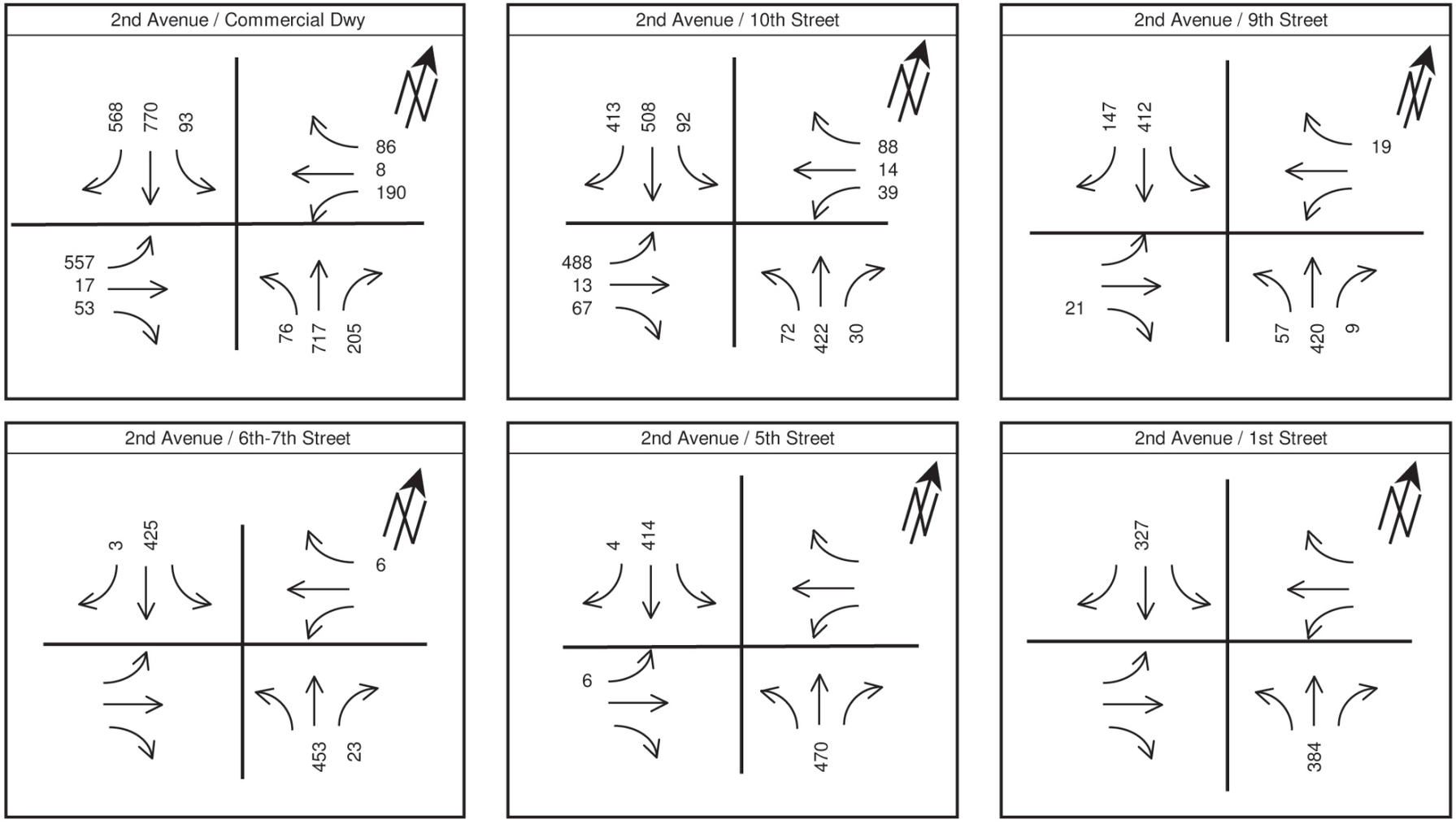

FIGURE **3.10-16**

Background + Phase 1 PM Volumes at Non-Study Intersections with 2nd Avenue

Not to Scale

10886-00

***Source*:** Higgins Associates, 2004

City of Marina

EIP ASSOCIATES

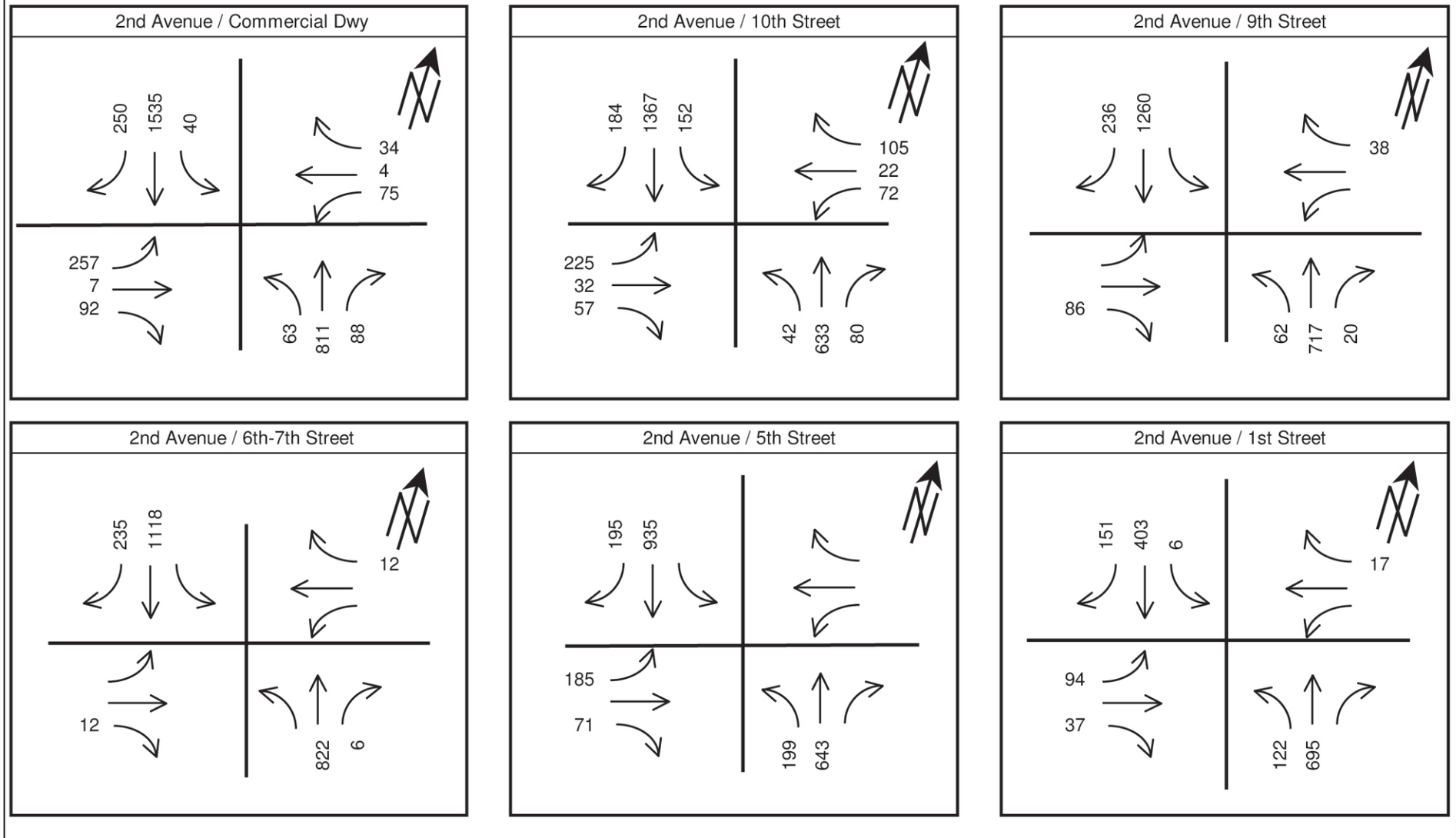

FIGURE **3.10-17**

Background + Project Buildout AM Volumes at Non-Study Intersections with 2nd Avenue

Not to Scale

***Source*:** Higgins Associates, 2004

City of Marina

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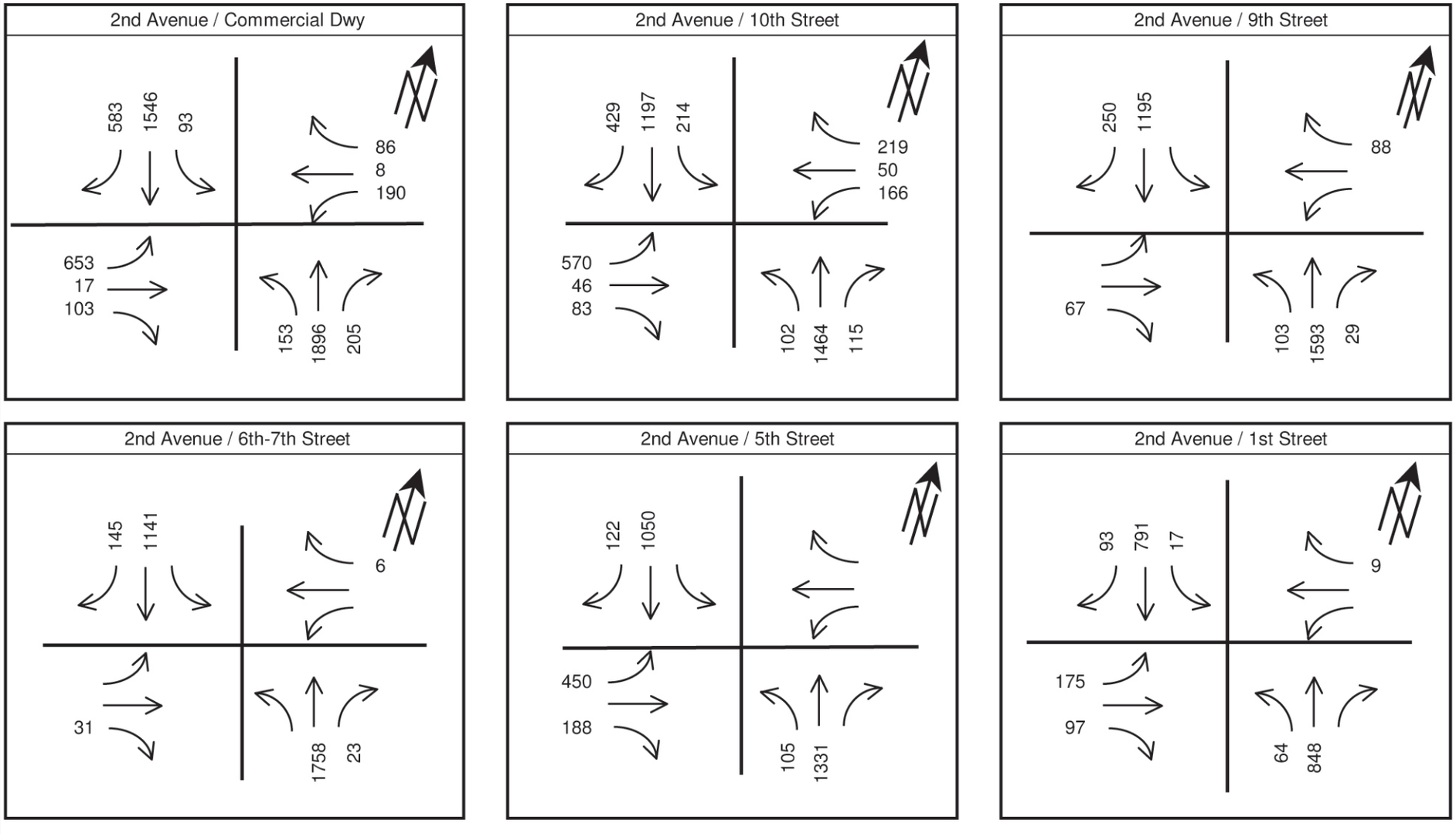

FIGURE **3.10-18**

Background + Project Buildout PM Volumes at Non-Study Intersections with 2nd Avenue

Not to Scale

***Source*:** Higgins Associates, 2004

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N-S Street	E-W Street	Proposed Lane Configuration per Circulation Exhibit	Proposed Intersection Control	Warrant	Background + Project Phase 1 Conditions		Background + Project Buildout Conditions	
					AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr
2nd Avenue	Commercial Driveway	NB 1-L, 1-T, 1-T/R SB 1-L, 1-T, 1-T/R EB 1-L, 1-T/R WB 1-L, 1-T/R	Signal	Signal Northbound Right-Turn Southbound Right-Turn Eastbound Dual Left-Turns	Yes Taper Met Lane Met No	Yes Lane Met Lane Met Dual Left-Turns	Yes Lane Met Lane Met No	Yes Lane Met Lane Met Dual Left-Turns
2nd Avenue	10th Street	NB 1-L, 1-T, 1-T/R SB 1-L, 1-T, 1-T/R EB 1-L, 1-T/R WB 1-L, 1-T/R	Signal	Signal Northbound Right-Turn Southbound Right-Turn Eastbound Dual Left-Turns	No No Lane Met No	Yes Taper Met Lane Met Dual Left-Turns	Yes Lane Met Lane Met No	Yes Lane Met Lane Met Dual Left-Turns
2nd Avenue	9th Street	NB 1-L, 1-T, 1-T/R SB 1-T, 1-R EB 1-R WB 1-R	Signal	Signal Northbound Right-Turn Southbound Right-Turn	No No Taper Met	No No Lane Met	No Taper Met Lane Met	No Taper Met Lane Met
2nd Avenue	8th Street	NB 1-T, 1-T/R SB 1-L, 2-T WB 1-L, 2-R	Signal	Signal Northbound Right-Turn	Yes Taper Met	No Taper Met	Yes Lane Met	Yes Lane Met
2nd Avenue	6th-7th Street	NB 1-T, 1-R SB 1-T, 1-R EB 1-R WB 1-R	Stop Sign	Signal Northbound Right-Turn Southbound Right-Turn	No No No	No No No	No No Lane Met	No Taper Met Lane Met
2nd Avenue	5th Street	NB 1-L, 2-R SB 2-T, 1-R EB 1-L, 1-R WB 1-L, 1-T/R	Signal	Signal Eastbound Dual Left-Turns	No No	No No	Yes No	Yes Dual Left-Turns
2nd Avenue	3rd Street	NB 1-L, 1-T, 1-T/R SB 1-L, 1-T, 1-T/R EB 1-L, 1-T/R WB 1-L, 1-T/R	Signal	Signal Northbound Right-Turn Southbound Right-Turn Eastbound Dual Left-Turns	Yes No No No	No Taper Met No No	Yes Taper Met Lane Met No	Yes Taper Met Lane Met Possible
2nd Avenue	1st Street	NB 1-L, 1-T, 1-T/R SB 1-L, 1-T, 1-T/R EB 1-L, 1-T/R WB 1-L, 1-T/R	Signal	Signal Southbound Right-Turn	No No	No No	No Lane Met	Yes Lane Met

Notes: 1. L, T, R = Left, Through, Right
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound

FIGURE **3.10-19**

Project Intersections Phase 1 and Project Buildout Warrant Summary

***Source*:** Higgins Associates, 2004

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Furthermore, it is anticipated that there will be a significant link between the university students and staff and the variety of services and retail opportunities that will be offered as part of the Marina University Villages development. It is anticipated that the CSUMB Transportation and Parking Services (TAPS) campus shuttle service available to all members of the campus community (also serving all housing areas and the major campus locations) will provide a transit link between Marina University Villages and CSUMB campus.

Project Level Bikeway and Pedestrian Facilities. The design of the University Villages endeavored to encourage alternative modes of transportation including bicycle and pedestrian friendly designs through an integrated system of roads, transit, footpaths and bikeways. Detail of the street hierarchy plan for the Marina University Villages Specific Plan is shown in Figure 3.10-12. A brief discussion on pedestrian movement and bicycle routes follows below.

Bike Facilities. As is the case for vehicle facilities, bike facilities should be standardized throughout the City and inter-regionally, in order to reduce confusion among drivers and cyclists and increase the level of safety on the roads and bikeways. Bike infrastructure should also be based on the California Highway Design Manual standards. The Marina University Villages Specific Plan provides guidelines for the circulation elements to accommodate bicycles.

Apart from the existing Class 1 bikeway along Imjin Parkway, a bikeway also exists along 2nd Avenue. Furthermore, the Marina University Villages neighborhood collector roadways (1st Avenue, 3rd Avenue, 4th Avenue, 1st Street and 3rd Street) will have dedicated bicycle lanes as can be seen on Figure 3.10-12. The other neighborhood streets do not allow enough room for vehicles and bicycles to comfortably share the roadway, but they will carry low traffic volumes.

A 12-foot multi-purpose trail would be created along the one-way linear park streets and along 8th Avenue; however, as a bikeway it will not be continuous and bicycles will have to stop at every cross street. For urban areas Class 2 bikeways are substantially more safe and practical for cyclists because they allow the cyclist to flow with the vehicle traffic and provide safer turn movements. It is that Class 2 bikeways should also be considered on the Marina University Villages arterial roads, namely 2nd Avenue, California Avenue and 8th Street.

Pedestrian Facilities. Five-foot pedestrian walkways would be provided on both sides of the street system for Marina University Villages as indicated in the Specific Plan. It was endeavored in the Marina University Villages site design to provide retail/service elements within 0.5 mile walking distances from the Marina University Villages residential components (refer to the graphic in Appendix L) in line with the rationale to encourage non-transit trips. However, the pedestrian routes would not be pleasant during the winter season because they lack wind and rain protection.

Existing Plus Approved Projects Plus Proposed Project Phase 1 Traffic Conditions - Intersection Operations (Note to reader – the traffic consultant refers to this scenario as "Background Plus Project Phase I Traffic Conditions"). The traffic that would be generated by Phase 1 was combined with the background traffic to provide background (existing plus approved projects) plus project Phase 1 traffic

conditions. Background plus project Phase 1 morning and evening peak hour turning volumes are illustrated Figures 3.10-11c and 3.10-11d. Figures 3.10-4a and 3.10-4b tabulate corresponding morning and evening peak hour levels of service, the details of which are presented in Appendix F of the traffic report.

TR-1. Ten intersections would operate at an unacceptable LOS under background plus project phase 1 traffic conditions. (S)

Based on the significance impact criteria discussed above, implementation of the Proposed Project Phase 1 would have a ***significant impact*** on study intersections number 2, 3, 7, 8, 9, 12, 17, 18, 24 and 25.

A discussion of the traffic operations for each individual intersection requiring mitigation follows below. Also included is a concluding statement regarding mitigation improvements under background plus project Phase 1 traffic conditions. For a reference of the location of each of the intersections please see Figure 3.10-2.

California/Reservation Road Intersection # 2 (un-signalized) would operate at LOS D during the weekday AM and LOS F during the PM peak hour (average delay of 25.9 and 56.5 seconds, respectively). The worst movement would operate at LOS F with an average approach delay of 286.4 and >300 seconds during the AM and PM peak hours respectively. The signalization of this intersection would improve the LOS to B during the AM and LOS A during the PM peak hours.

Imjin Road/Reservation Road Intersection # 3 (signalized) would operate at LOS F during both the weekday peak hours (average delay of 89.7 and 169.5 seconds, respectively). The widening of this intersection to accommodate one NB left, one NB through and three NB right turn lanes as well as three EB and WB through lanes would improve the LOS to C during the AM and LOS D during the PM peak hours.

Southbound Highway 1 Ramps/12th Street-Imjin Parkway Intersection # 7 (signalized) would operate at LOS F during both the weekday peak hours (average delay of >300 seconds, respectively). The worst movement would also operate at LOS F with an average approach delay of >300.0 seconds during both peak hours. The signalization of this intersection would improve the LOS to B during the AM and LOS C during the PM peak hours. However, to implement this mitigation measure the WB approach across the bridge would have to be re-striped for two WB left turn lanes due to the number of queuing vehicles. To accommodate the two WB left turn lanes, the SB on Ramp would have to be widened to two receiving lanes (refer to mitigation measure #13).

Northbound Highway 1 Ramps/12th Street-Imjin Parkway Intersection # 8 (un-signalized) would operate at LOS A during both the weekday peak hours (average delay of 0.3 and 0.0 seconds, respectively). The worst movement would operate at LOS F with an average approach delay of 125.2 and 77.4 seconds, respectively during the peak hours. The closure of the median

on Imjin Parkway to prohibit left turning movements at this intersection would improve the LOS to A during both peak hours.

2nd Avenue/Imjin Parkway Intersection # 9 (signalized) would operate at LOS D during the AM and LOS F during the weekday PM peak hours (average delay of 42.7 and >300 seconds, respectively). The widening of this intersection to provide second left turn lanes on the NB and WB approaches as well as providing NB and EB right turn lanes with NB and EB right turn overlap signal phasing would improve the LOS to C during the AM and LOS D during the PM peak hours.

Imjin Road/Imjin Parkway-Imjin Road Intersection # 11 (signalized) would operate at LOS B during the AM and LOS D during the PM peak hours (average delay of 17.3 and 37.6 seconds, respectively). The adding of a second westbound left turn lane at this intersection will improve the LOS to B during the AM and LOS C during the PM peak hours.

Abrams Drive/Imjin Road Intersection # 12 (signalized) would operate at LOS E during the weekday AM and LOS F during the PM peak hours (average delay of 61.9 and 127.0 seconds, respectively). The widening of the east and west bound approaches of this intersection to accommodate 2 EB and WB through lanes and installing EB and WB protected signal phasing would improve the LOS to B during the AM and LOS C during the PM peak hours.

4th Avenue/3rd Street Intersection # 17 (un-signalized) would operate at LOS F during the weekday AM and LOS E during the PM peak hours (average delay of 109.5 and 42.7 seconds, respectively). The signalization of this intersection or the implementation of a modern roundabout would improve the LOS to A during the AM peak hour and LOS B for signals and LOS B for a roundabout during the AM and LOS A during the PM peak hour.

General Jim Moore Boulevard/1st Street Intersection # 18 (un-signalized) would operate at LOS E during the weekday AM and LOS C during the PM peak hours (average delay of 49.0 and 21.3 seconds, respectively). The signalization of this intersection or the implementation of a modern roundabout would improve the LOS to A during both peak hours.

General Jim Moore Boulevard/Coe Road/Eucalyptus Road Intersection # 24 (un-signalized) would operate at LOS B during the weekday AM and LOS A during the PM peak hours (average delay of 13.6 and 9.0 seconds, respectively). The worst movement would operate at LOS F with an average approach delay of 85.5 and 73.8 seconds, respectively during the AM and PM peak hours. The signalization of this intersection and the adding of a southbound left turn lane would improve the LOS to A during both peak hours.

General Jim Moore Boulevard/Broadway Avenue Intersection # 25 (un-signalized) would operate at LOS E during the AM weekday peak hour and LOS F during the PM peak hour (average delay of 40.2 and 71.1 seconds, respectively). The signalization of this intersection and the adding of a northbound left turn lane would improve the LOS to B during both peak hours.

MITIGATION MEASURES. The following mitigation measures would reduce this impact to a less-than-significant level and are believed at this time to be feasible, but as stated below, many of the intersections are not controlled by the City of Marina. Some of these measures were previously identified as mitigation measures under the CSUMB Master Plan EIR. Measures TR-1.1 through TR-1.9 either have been or will be added to the City of Marina CIP program. The City of Seaside has indicated that TR-1.10 and TR-1.11 will be added to the City of Seaside's CIP program. It is anticipated that these improvements would be in place by 2010. The developer would be required to construct TR-1.2, TR-1.5, and TR-1.10. As to the other improvements, the developer is required to fund its proportionate share. However, implementation of Mitigation Measures TR-1.3, TR-1.4, and TR-1.8 through TR-1.11 would require cooperation from an agency or jurisdiction other than the City of Marina and are, therefore, outside the jurisdiction of the City of Marina to implement, enforce and monitor.

Therefore, as to Caltrans intersections (Nos. 3and 4), CSUMB intersections (Nos. 17 and 18) and the City of Seaside (Nos. 24and 25), if the controlling agency choosesnot to implement the measures, the intersections would be significantly impacted by the Proposed Project. The City concludes that the measures either have been adopted or can and should be adopted by those agencies.

Therefore, the impact to all intersections except Numbers 3, 4, 17, 18, 24, and 25 would be less-than-significant. The impact to intersections 3, 4, 17, 18, 24, and 25, however, would remain *significant and unavoidable*. (SU)

TR-1.1 *Signalize the California Avenue/Reservation Road intersection (#2).*

TR-1.2 *Widen Imjin Road and Reservation Road at the Imjin Road/Reservation Road intersection (#3) to provide one NB left, one NB through and three NB right turn lanes. A third WB and EB through lane as well as a third WB left turn lane would also be required.*

The widening of Reservation Road to three EB and WB through lanes was identified as a FORA CIP.

TR-1.3 *Signalize the SB Highway 1 Ramps/12th Street/Imjin Parkway intersection (#7) and restripe the 12th Street/Imjin Parkway bridge over Highway 1 to accommodate two WB left turn lanes and one EB lane. (Shared Contribution)*

TR-1.4 *Close the median at the Highway 1 NB Ramps/Imjin Parkway intersection (#8). (Shared Contribution)*

This mitigation would have a secondary impact whereby public safety vehicles would be hindered by this median.

TR-1.5 Widen Imjin Parkway and 2nd Avenue at the 2nd Avenue/Imjin Parkway intersection (#9) to provide a second NB and WB left turn lane, add a NB and EB right turn lane and convert the NB and EB signal phasing to a right turn overlap.

TR-1.6 Add a second westbound left turn lane at the Imjin Road/Imjin Parkway intersection (#11). (Shared Contribution)

TR-1.7 Widen the east and westbound approaches of the Abrams Drive/Imjin Road intersection (#12) and convert the EB-WB signal phasing to provide EB-WB protected left-turn phasing.

TR-1.8 (a) Signalize 4th Avenue/1st Street intersection (#17) and add a NB and SB left turn lane. (Shared Contribution)

OR

(b) Install a modern roundabout at the 4th Avenue/1st Street intersection (#17). (Shared Contribution)

TR-1.9 (a) Signalize the General Jim Moore Boulevard/1st Street intersection (#18). (Shared Contribution)

OR

(b) Install a modern roundabout at the General Jim Moore Boulevard/1st Street intersection (#18). (Shared Contribution)

TR-1.10 Signalize General Jim Moore Boulevard/Coe Road/Eucalyptus Road intersection (#24) and add a SB left turn lane. (Shared Contribution)

TR-1.11 Signalize General Jim Moore Boulevard/Broadway Avenue intersection (#25) and add a NB left turn lane. (Shared Contribution)

TR-2. Four of the study roadway segments would operate at an unacceptable LOS under background plus project Phase 1 traffic conditions. (S)

Background (existing plus approved projects) plus Proposed Project Phase 1 AM and PM peak hour volumes on the study Road/Street Segments are tabulated on the LOS Table in Figure 3.10-6. These are based upon turning volumes illustrated in Figures 3.10-11c and 3.10-11d. Figure 3.10-6 also shows tabulation of corresponding street segment levels of service. The roadway segment level of service is based on the threshold volumes as shown in Appendix A4 and the HCM 2000 methodologies.

Most of the study Road/Street Segments evaluated would operate at acceptable LOS. The exceptions are the Highway 1 NB off-ramp at 12th Street that would operate at LOS F during the PM peak hour, the Highway 1 SB on-ramp that would operate at LOS E during the AM

peak hour, Blanco Road North of Reservation Road that would operate at LOS D during the AM peak hour and LOS E during the PM peak hour and Reservation Road between Imjin Road and Blanco Road that would operate at a LOS E during the AM peak hour and LOS F during both peak hours. This would be a ***significant impact***.

The widening of Reservation Road between Imjin Road and Blanco Road was already identified under existing traffic conditions and will thus not be repeated here. Refer to Figures 3.10-5a, 3.10-5b and Figure 3.10-7 for the Mitigation Summary Table.

MITIGATION MEASURES. The following mitigation measures would reduce this impact to a less-than-significant leveland are believed at this time to be feasible, but as stated below, some of the segments are not controlled by the City of Marnina. Measures TR-2.1, TR-2.2, and TR-2.4 either have been or will be added to the City of Marina CIP program. As to TR-2.1, there is some overlap with mitigation measures under the CSUMB Master Plan EIR. The County of Monterey has been requested to add TR-2.3 to the CIP program. It is anticipated that these improvements would be in place by 2010. The developer would be required to construct TR-2.1, TR-2.2, and TR-2.3 and its proportional share of the TR-2.4. However, implementation of some mitigation measures would require cooperation from an agency or jurisdiction other than the City of Marina and are, therefore, outside the jurisdiction of the City of Marina to implement, enforce and monitor. If Caltrans (Segments 5, 6), or the County of Monterey (Segments 12 and 13), if the controlling agency chooses not to implement the measures, the segments would be significantly impacted by the project. The City concludes that the measures either have been adopted or can and should be adopted by those agencies. Therefore, the impact to all roadway segments except Numbers 5, 6, 12 and 13 would be less than significant. The impact to segments 5, 6 and 12 would be remain *significant and unavoidable*. (SU)

TR-2.1 Widen Highway 1 NB off-ramp at 12th Street (#5) to a two-lane ramp.

TR-2.2 Widen Highway 1 SB on-ramp at 12th Street (#6) to a two-lane ramp.

This would be required to provide two receiving lanes for the two westbound left turn lanes at the intersection required to improve the level of service.

TR-2.3 Widen Blanco Road North of Reservation Road (#12) to a six-lane arterial.

It should be noted that the section just north of Reservation Road is a 4-lane facility, but the section further east towards Salinas is only one lane in each direction. The widening of Blanco Road to 4-lanes was identified as a FORA CIP. However, the widening of Blanco Road from four to six lanes just north of Reservation Road would be required.

A secondary impact associated with this mitigation would be an impact on agricultural land.

TR-2.4 Reservation Road between Imjin Road and Blanco Road should be widened to a six-lane expressway (segment #13). The widening of Reservation Road to three EB and WB through lanes was identified as a FORA CIP. (Shared Contribution)

Secondary Impacts. A secondary impact associated with each of the above prescribed mitigations, TR-1.1 – TR-2.4 would be stopping traffic, increased vehicle emissions and more frequent accidents. Stopped and idling traffic would result in higher emissions as compared to free-flowing traffic associated with roundabouts. Signalized and un-signalized intersections also have a higher probability to cause more frequent and more violent vehicle collisions because they have more conflict points than a roundabout intersection configuration and are structured at ninety degree angles.

To reduce secondary impacts, the City of Marina and the Proposed Project applicant should consider high capacity roundabouts as an alternative to standard intersections, as the roundabout will accommodate better intersection operation, reduce vehicle emissions and reduce the frequency of vehicle collisions. Roundabouts are proven to be safer and are generally cheaper to construct and maintain than intersections with traffic signals.

Existing Plus Approved Projects Plus Proposed Project Buildout Traffic Conditions. This section describes the analysis results of the study intersection and roadway segment operations under background (existing plus approved projects) plus Proposed Project buildout traffic conditions. This traffic condition is defined as traffic conditions roughly eight to ten years beyond existing conditions, or the Year 2013 – 2015. It should be noted that for the background plus Proposed Project Buildout traffic scenario traffic analyses, this section assumes that all mitigation measures listed in the background plus Proposed Project Phase 1 traffic scenario have been implemented. The operational deficiencies and recommended mitigation measures outlined in this section are based upon this assumption. However, in order to fully assess and disclose the project's traffic impacts both with and without mitigation, this study also reports how each of the study intersections and road segments would operate at buildout without the recommended improvements. For ease of reference, the LOS results from the analyses without mitigation improvements, where applicable, are reported in bold red font on the LOS Summary Tables shown in Figures 3.10-4a, 3.10-4b, and 3.10-6.

Proposed Project Buildout Description. The Proposed Project would consist of a variety of residential and commercial land uses. The residential component of the Proposed Project would be a total of 1,237 residential units comprised of single family, condominium / town homes and apartments.

The remainder of the Proposed Project would include 1,122,055 sf of various retail shops and restaurants, 10,000 sf of general office, 809,171 sf of Business Park, 561,850 sf of government type offices and a variety of other uses such as Multiplex Theater, Gas Station, Community Building, Soccer Fields, a Transit Center and a Church. Included in the traffic impact assessment are approximately 40 acres of Multiple Use, Public Facilities and Office Research development proposals that are not under the jurisdiction of Marina Community Partners managing the Proposed Project. The reasoning behind this is that these land parcels form an integral part of the project site and will have an influence on the road and intersection operating conditions. Figure 2-4 shows the Project Phasing Map relevant to this traffic study.

Under the Proposed Project buildout traffic scenario all project phases were evaluated at full development level. This included project Phases 1, 2, 3 and Opportunity Phase development proposals. Detail of the project Phase 1 development proposals have thoroughly been discussed herein

and will thus not be repeated here. As stated previously in this section, the traffic analysis included a "worst case scenario" for parcels "T" and "OP1A," such that there would be 277,042 square feet of retail.

Phase 2 would be situated between Imjin Parkway and 8th Street and the western boundary is halfway between 3rd Avenue and California Avenue and extends to 3rd Avenue. The east boundary is California Avenue. The south boundary is 8th Street. This phase consists of housing and retail/service, and includes an approximately 20-acre park north of 8th Street and at the terminus of 4th Avenue. The retail and service uses are proposed on the southwest corner of California Avenue and Imjin Parkway. The Greenbelt Park from 9th Street to 7th Street and from 1st Avenue to 2nd Avenue would be constructed as part of this phase. Primary access would be from Imjin Parkway, and newly constructed roadways to include 3rd Avenue, California Avenue and 8th Street. Improvement of these roadways would be coordinated with FORA and implemented to support Phase 2 development.

Phase 3 would consist primarily of the residential portion between 2nd Avenue and 3rd Street, north of 2nd Street and south of 7th Street and bounded by 2nd Avenue on the east. This phase would include the remainder of the Greenbelt Park area from 7th to 3rd Street. Additional housing close to Imjin Parkway and California Avenue would be built as part of this phase. Primary access would be from 2nd Avenue, and newly constructed roadways, alleyways and parking to support new development.

The areas designated as "Opportunity Phases" in the Proposed Project would be developed together with supporting infrastructure at such time as market demand establishes the need. However, the anticipated number of trips that would be generated by these opportunity phase developments were included at the same timeframe as project buildout.

Proposed Project Buildout Trip Generation. Figure 3.10-20 contains the trip generation estimate for the Proposed Project buildout, which is based upon trip rates published in the ITE *Trip Generation*, 7th Edition, 2003 and SANDAG *Vehicular Traffic Generation Rates*, 2003.

Based on the Caltrans *Guide for the Preparation of Traffic Impact Studies* a five percent reduction was applied to the number of trips generated by the Proposed 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 Project. Furthermore, an additional five percent internal trip reduction was applied 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.

In total, the Proposed Project buildout including the estimated trips for the development proposals for the Opportunity Phases, MST, TAMC, MCWD and Young Nak Church and Goodwill parcels, would generate 114,586 daily trips; 6,285 trips (3,974 in, 2,312 excluded) during the AM peak hour, and 10,860 trips (5,053 in, 5,807 excluded) during the PM peak hour (refer to Figure 3.10-20 for detail of the project trip generation at buildout level).

TRIP GENERATION RATES	ITE LAND USE CODE	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	210	614 Homes	9.57	0.75	8%	0.25	0.75	1.01	11%	0.63	0.37
Condominiums/Town Homes	231	515 Units	5.86	0.67	11%	0.25	0.75	0.78	13%	0.58	0.42
Apartments	220	108 Units	6.72	0.51	8%	0.20	0.80	0.62	9%	0.65	0.35
Retail - Specialty Retail	814	32,500 SF	44.32	0.00	0%	0.00	0.00	2.71	6%	0.44	0.56
- Shopping Center	820	550,000 SF	42.94	1.03	2%	0.61	0.39	3.75	9%	0.48	0.52
- Supermarket	850	55,000 SF	102.24	3.25	3%	0.61	0.39	10.45	10%	0.51	0.49
- Strip Commercial	SANDAG	117,500 SF	40.00	1.20	3%	0.60	0.40	3.60	9%	0.50	0.50
- Neighborhood Shopping Center	SANDAG	269,300 SF	120.00	4.80	4%	0.60	0.40	12.00	10%	0.50	0.50
Restaurants - Quality	931	58,725 SF	89.95	0.81	1%	0.50	0.50	7.49	8%	0.67	0.33
- High Turnover	932	24,000 SF	127.15	11.52	9%	0.52	0.48	10.92	9%	0.61	0.39
- Fast Food with Drive Through Window	934	12,500 SF	496.12	53.11	11%	0.51	0.49	34.64	7%	0.52	0.48
Convenience Market (15 to 16 hours)	852	2,530 SF	492.00	31.02	6%	0.50	0.50	34.57	7%	0.49	0.51
Gas Station with Convenience Market (12 Fueling Positions)	945	12 Position	162.78	10.06	6%	0.50	0.50	13.38	8%	0.50	0.50
General Offices	710	10,000 SF	11.01	1.55	14%	0.88	0.12	1.49	14%	0.17	0.83
Business Park	770	809,171 SF	12.76	1.43	11%	0.84	0.16	1.29	10%	0.23	0.77
Multiplex Movie Theater	445	10 Screens	292.50	0.00	0%	0.00	0.00	23.02	8%	0.60	0.40
Community Building/Facilities	495	80,000 SF	22.88	1.62	7%	0.61	0.39	1.64	7%	0.29	0.71
Soccer Complex	488	4 Fields	71.33	1.40	2%	0.50	0.50	20.67	29%	0.69	0.31
City Park	SANDAG	7.8 Acres	50.00	2.00	4%	0.50	0.50	4.00	8%	0.50	0.50
Government Office	733	561,850 SF	27.92	2.21	8%	0.89	0.11	2.85	10%	0.31	0.69
Transit Center	CUSTOM	- -	1400.00	160.00	11%	0.50	0.50	140.00	10%	0.43	0.57
Church	560	55,300 SF	9.11	0.72	8%	0.54	0.46	0.66	7%	0.31	0.69

PROJECT TRIPS GENERATED - PHASE 1 (2005 to 2009)	LAND USE PARCEL NUMBER	ITE LAND USE CODE	PROJECT SIZE	NUMBER OF TRIPS GENERATED								
				DAILY TRIPS	AM PEAK HOUR				PM PEAK HOUR			
					PEAK HOUR TRIPS	% OF DAILY TRIPS	NUMBER TRIPS IN	NUMBER TRIPS OUT	TOTAL PEAK HOUR	% OF DAILY TRIPS	NUMBER TRIPS IN	NUMBER TRIPS OUT
Single Family Detached Housing	K, L & P1	210	221 Homes	2,115	166	8%	42	124	223	11%	140	83
Town Homes / Condominiums	K, L, P1 & B1	231	195 Units	1,143	131	11%	33	98	152	13%	88	64
Apartments	B2	220	108 Units	726	55	8%	11	44	67	9%	44	23
Retail - Shopping Center	A, B1	820	550,000 SF	23,617	567	2%	346	221	2063	9%	990	1073
- Specialty Retail	J	814	17,000 SF	753	0	0%	0	0	46	6%	20	26
- Supermarket	J	850	55,000 SF	5,623	179	3%	109	70	575	10%	293	282
- Strip Commercial	T	SANDAG	50,000 SF	2,000	60	3%	36	24	180	9%	90	90
Restaurants - Quality	A, B1	931	40,000 SF	3,598	32	1%	16	16	300	8%	201	99
- High Turnover	A, B1	932	20,000 SF	2,543	230	9%	120	110	218	9%	133	85
- Fast Food with Drive Through Window	A, B1	934	7,500 SF	3,721	398	11%	203	195	260	7%	135	125
Multiplex Movie Theater	B1	445	10 Screens	2,925	0	0%	0	0	230	8%	138	92
Gas Station with Convenience Market (12 Fueling Positions)	J	945	12 Positions	1,953	121	6%	61	60	161	8%	81	80
General Offices	B1	710	10,000 SF	110	16	15%	14	2	15	14%	3	12
Church	T	560	55,300 SF	504	40	8%	22	18	36	7%	11	25
Government Office/Services	T	733	81,300 SF	2,270	180	8%	160	20	232	10%	72	160
Sub-Total Project Phase 1 Trips				**53,601**	**2,175**	**4%**	**1,173**	**1,002**	**4,758**	**9%**	**2,439**	**2,319**
Internal Trip Reduction[1] (-10%)				5,360	218	4%	117	100	476	9%	244	232
TOTAL PRIMARY PROJECT PHASE 1 TRIPS				**48,241**	**1,957**	**4%**	**1,056**	**902**	**4,282**	**9%**	**2,195**	**2,087**
PROJECT TRIPS GENERATED - PHASE 2, 3 AND OPPORTUNITY PHASES (2009 to 2013)												
Single Family Detached Housing	C, E, F, G, H, I, M, O, Q, P2, OPR, OPS	210	393 Homes	3,761	295	8%	74	221	397	11%	250	147
Town Homes / Condominiums	C, E, F, H, I, M, O, Q, P2, OPS	231	320 Units	1,875	214	11%	54	160	250	13%	145	105
Retail - Specialty Retail	Z, OP3	814	14,500 SF	643	0	0%	0	0	39	6%	17	22
- Strip Commercial	V	SANDAG	67,500 SF	2,700	81	3%	49	32	243	9%	122	121
- Neighborhood Shopping Center	X, OP1, MCWD	SANDAG	269,300 SF	32,316	1293	4%	776	517	3232	10%	1616	1616
Restaurants - Quality	V, Z	931	6,000 SF	540	5	1%	3	2	45	8%	30	15
- High Turnover	V, Z	932	4,000 SF	509	46	9%	24	22	44	9%	27	17
- Fast Food with Drive Through Window	V, Z	934	5,000 SF	2,481	266	11%	136	130	173	7%	90	83
Convenience Market (15 to 16 hours)	OP3	852	2,530 SF	1,245	78	6%	39	39	87	7%	43	44
Business Park	OP2, OP3, OP4, OP5	770	809,171 SF	10,325	1157	11%	972	185	1044	10%	240	804
Transit Center	MST	CUSTOM	- -	1,400	160	11%	80	80	140	10%	60	80
Government Office	TAMC, MCWD	733	480,550 SF	13,417	1062	8%	945	117	1370	10%	425	945
Soccer Complex	U	488	4 Fields	285	6	2%	3	3	83	29%	57	26
City Park	N	SANDAG	7.8 Acres	390	16	4%	8	8	31	8%	16	15
Community Building/Facilities	W	495	80,000 SF	1,830	130	7%	79	51	131	7%	38	93
Sub-Total Project Phases 2, 3 andOpportuniuty Phases Trips				**73,717**	**4,809**	**7%**	**3,242**	**1,567**	**7,309**	**10%**	**3,176**	**4,133**
Internal Trip Reduction[1] (-10%)				7,372	481	7%	324	157	731	10%	318	413
TOTAL PRIMARY PROJECT PHASE 2, 3 AND OPPORTUNITY PHASES (2009 to 2013) TRIPS				**66,345**	**4,328**	**7%**	**2,918**	**1,410**	**6,578**	**10%**	**2,858**	**3,720**
TOTAL PRIMARY PROJECT TRIPS				**114,586**	**6,285**	**5%**	**3,974**	**2,312**	**10,860**	**9%**	**5,053**	**5,807**

NOTE:

Trip generation rates published by Institute of Transportation Engineers, "Trip Generation," 7th Edition, 2003 unless otherwise noted

1. Internal capture rate of non-residential trips DUE to neighborhood District Land Use
2. OP1 and T assumed to be "Retail" 110,000sf and 50,000sf respectively
3. It should be noted that there are three potential land uses that were identified for land parcels "T" and "OP1"; they are 500 hotel rooms, 160,000 sf of retail or 277,042 sf of office). From a trip generation perspective, the "retail" option would generate the most number of daily and peak hour trips. To ensure that a "worse case scenario" was evaluated, land Parcels "T" and "OP1" were treated as retail. Should land Parcels "T" and "OP1" be developed as hotel or office, the number of trips that would be generated by the developments will be less than for retail.

FIGURE **3.10-20**

Project Buildout Trip Generation

10886-00

***Source*:** Higgins Associates, 2004

City of Marina

EIP ASSOCIATES

Proposed Project Trip Distribution and Assignment. The distribution of the estimated project trips from the FORA Marina traffic zone (in which the Proposed Project falls) 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 project site boundaries were considered in the project trip distribution. Figure 3.10-10 shows the project trip distribution graphically.

Furthermore, it is anticipated that a considerable number of linked trips would occur between the residential and commercial uses within the project site as well as the CSUMB campus, and existing and planned surrounding residential developments. The linked trips have been taken into consideration in the project trip distribution to avoid double counting of trips on the study intersections and road network.

Figures 3.10-21a and 3.10-21b represent the Proposed Project buildout trips assigned to the 25 study intersections. The Proposed Project trips in the figures were added to the background traffic volumes to create background plus project buildout traffic volumes. These traffic volumes are shown on Figures 3.10-22a and 3.10-22b.

Project Access and Circulation. Access and circulation for background plus Proposed Project buildout was assumed to be the same as that for the background plus Phase 1, described previously in this section. However, signal and channelization warrants for project buildout were based on the traffic volumes shown in Figures 3.10-17 and 3.10-18. Under background plus Proposed Project buildout conditions, the channelization assessment showed that left turn channelization and signalization would be warranted at several of the project specific study intersections. The signal warrant and channelization results for background plus Proposed Project buildout are presented in Figure 3.10-19.

TR-3. *Eight intersections would operate at unacceptable LOS under background plus Proposed Project buildout traffic conditions*. (S)

The traffic that would be generated by project buildout was combined with the background (existing plus approved projects) traffic to provide background plus Proposed Project buildout traffic conditions. Background plus Proposed Project buildout morning and evening peak hour turning volumes are illustrated in Figures 3.10-22a and 3.10-22b. Figures 3.10-4a and 3.10-4b tabulate corresponding morning and evening peak hour levels of service, the details of which are presented in Appendix G of the traffic report.

A discussion of the traffic operations for each individual intersection requiring mitigation follows below. Also included is a concluding statement regarding mitigation improvements under background plus Proposed Project buildout traffic conditions. For a reference of the location of each of the intersections please see Figure 3.10-2.

Blanco Road/Reservation Road Intersection # 4 (signalized) would operate at LOS D during the weekday AM and LOS F during the PM peak hours (average delay of 51.2 and 129.3 seconds,

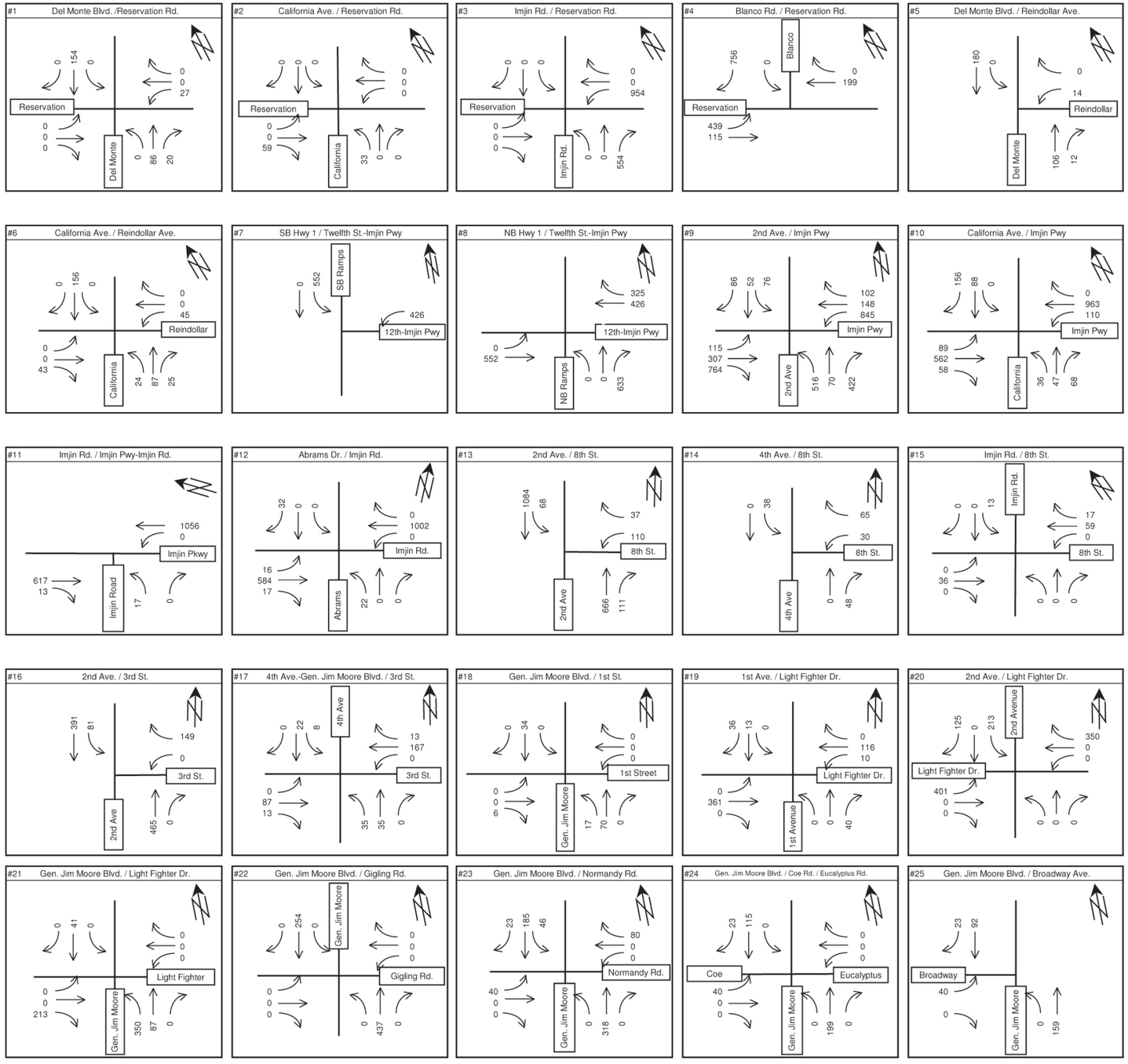
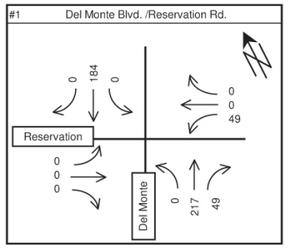


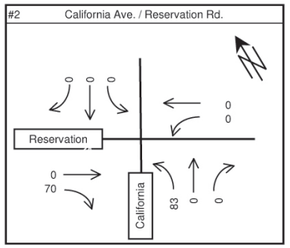
FIGURE **3.10-21A**

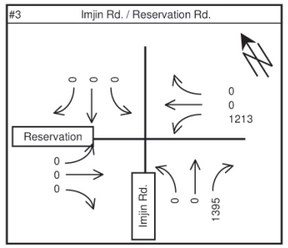
Project Buildout Trip Assignment AM Peak Hour Volumes

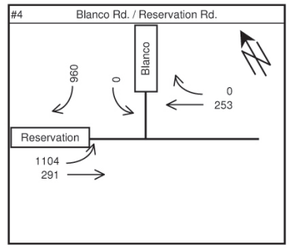
Not to Scale

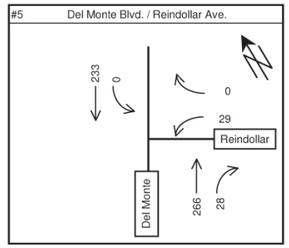
***Source*:** Higgins Associates, 2004

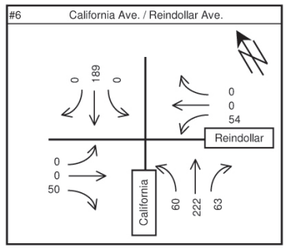


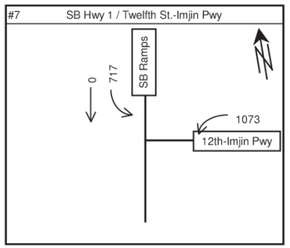


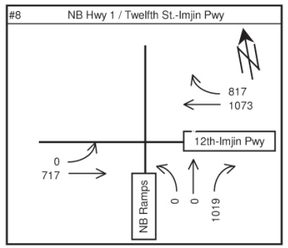


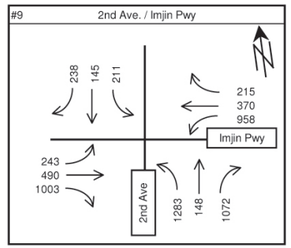


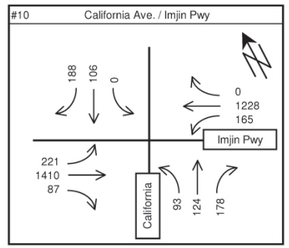


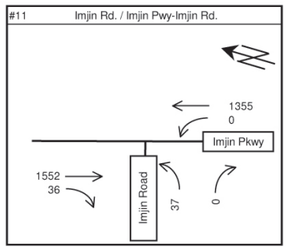


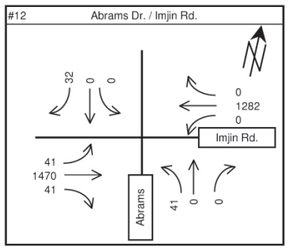


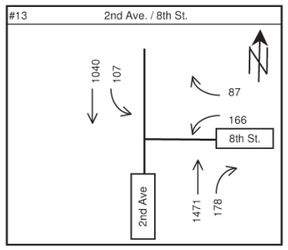


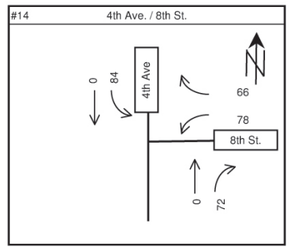


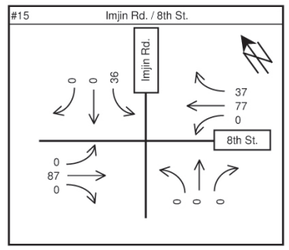


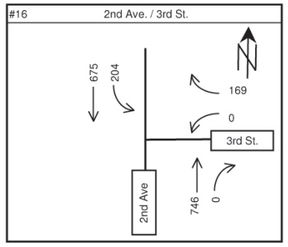


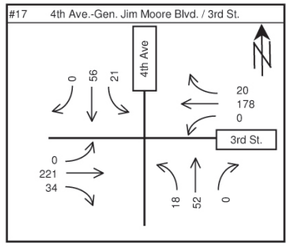


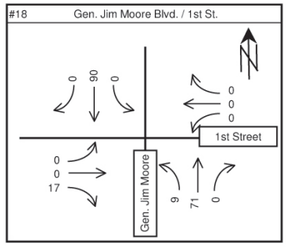


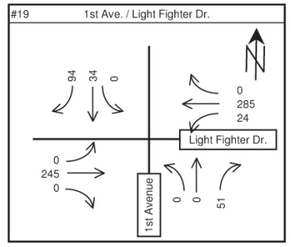


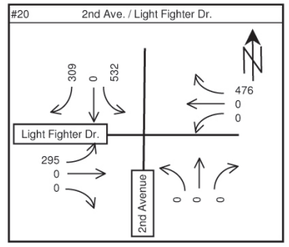


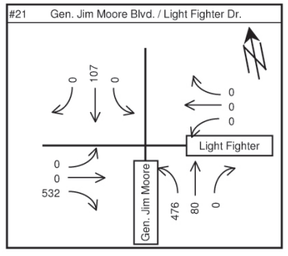


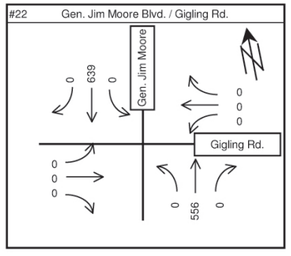


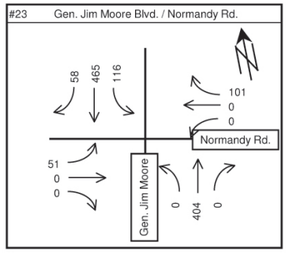


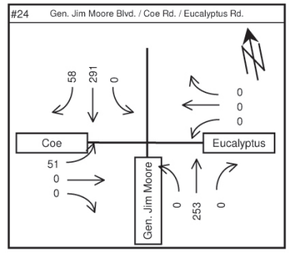












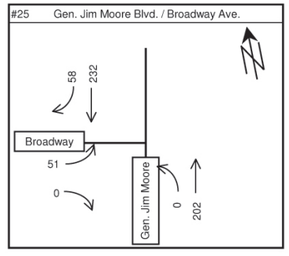


FIGURE **3.10-21B**

Project Buildout Trip Assignment PM Peak Hour Volumes

***Source*:** Higgins Associates, 2004

Not to Scale

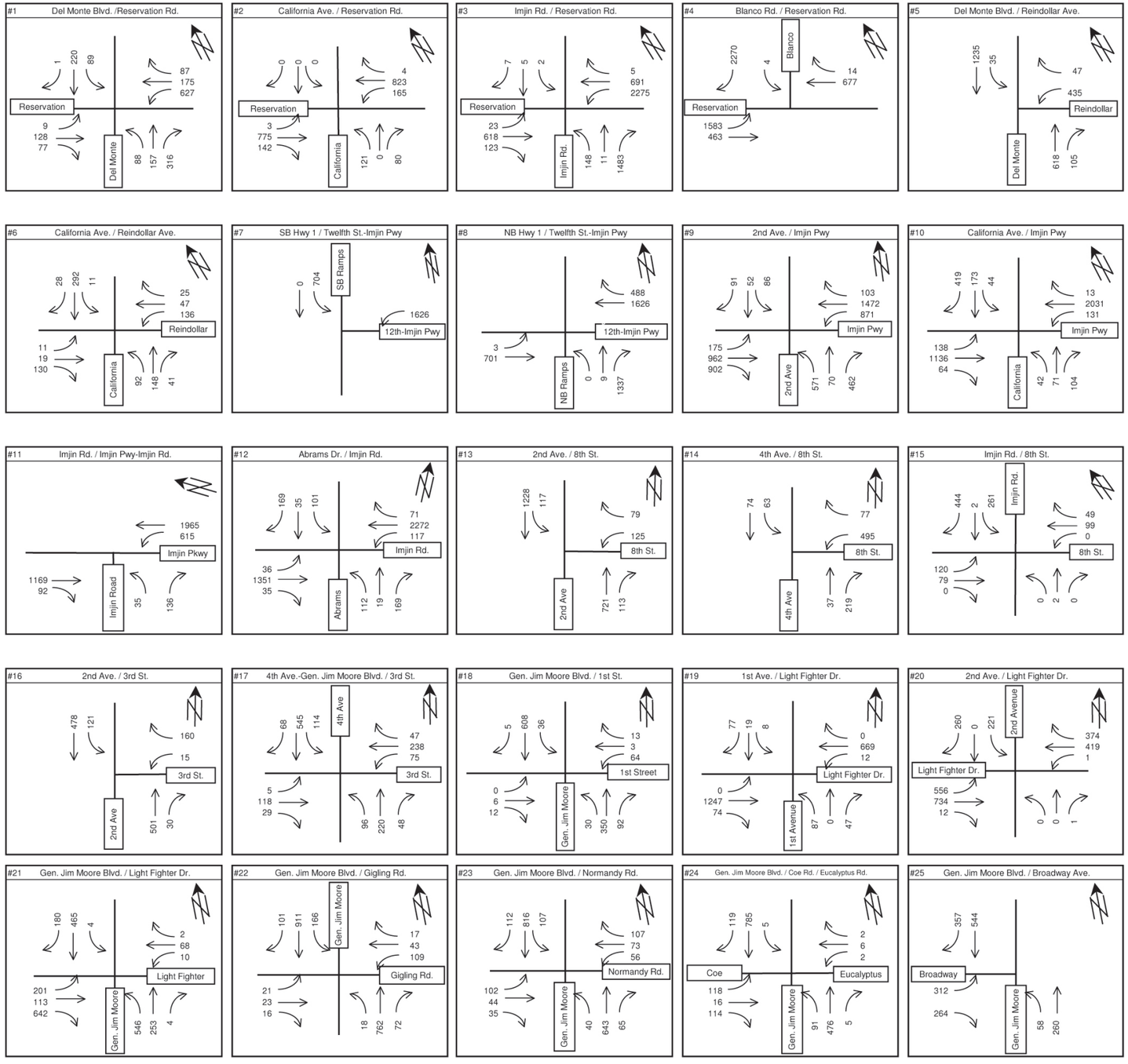


FIGURE **3.10-22A**

Background + Project Buildout Conditions AM Peak Hour Volumes

Not to Scale

10886-00

***Source*:** Higgins Associates, 2004

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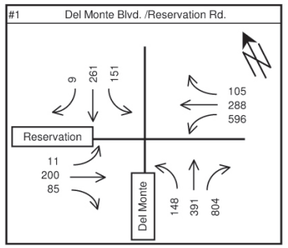

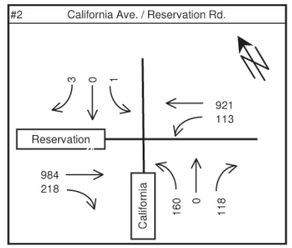

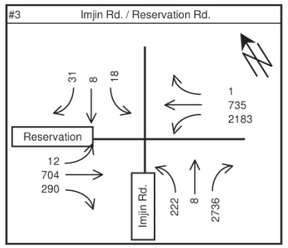

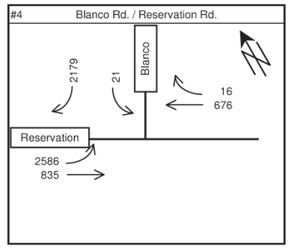

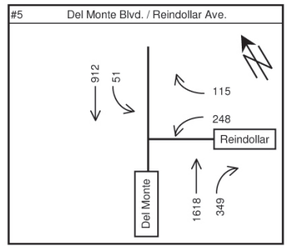

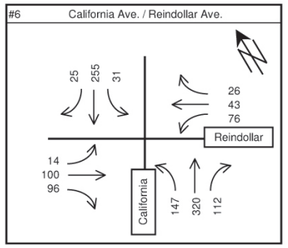

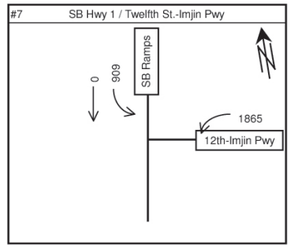

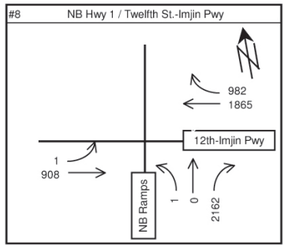

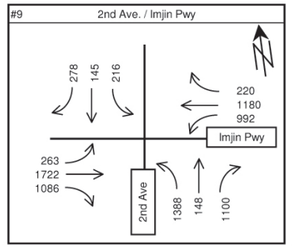

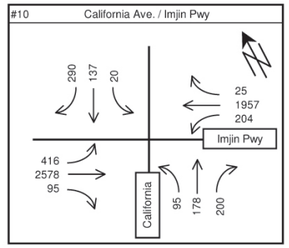

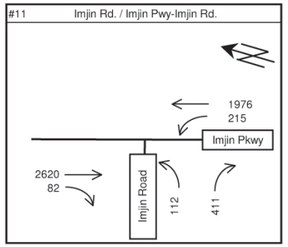

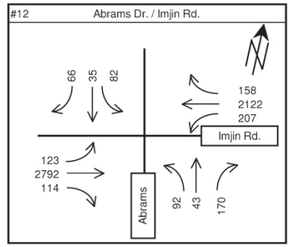

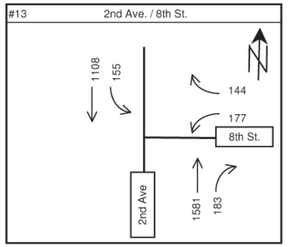

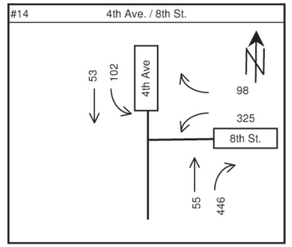

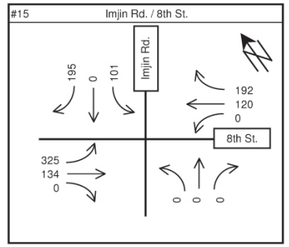

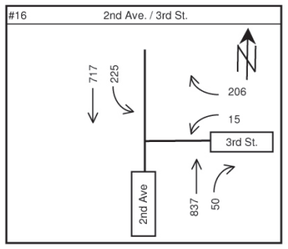

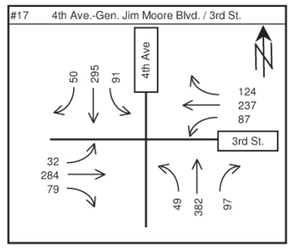

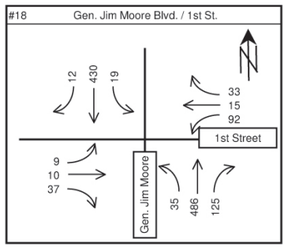

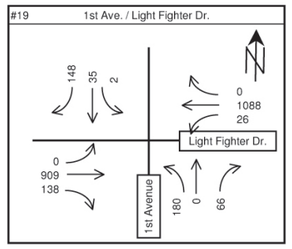

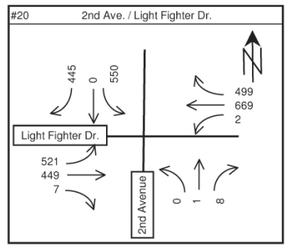

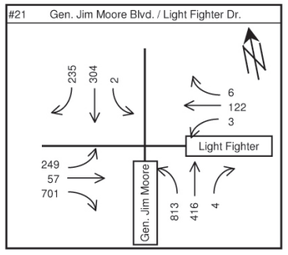

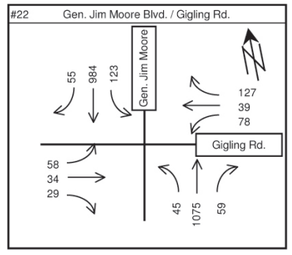

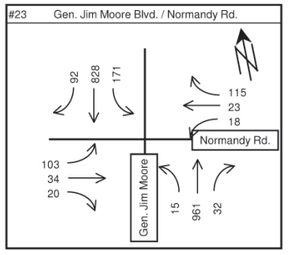

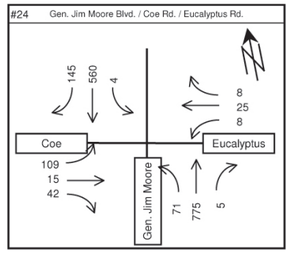

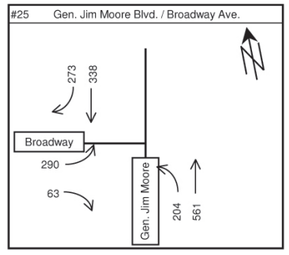

FIGURE **3.10-22B**

Background + Project Buildout Conditions PM Peak Hour Volumes

Not to Scale

***Source*:** Higgins Associates, 2004

City of Marina

10886-00

EIP ASSOCIATES

respectively). The widening of this intersection to accommodate a third EB left turn lane and a third NB receiving lane on Blanco Road would improve the LOS to C during the AM and LOS D during the PM peak hours.

Southbound Highway 1 Ramps/12th Street-Imjin Parkway Intersection # 7 (signalized) would operate at LOS E during the AM and LOS F during the PM weekday peak hours (average delay of 66.2 and 133.9 seconds, respectively). However, the SB off-ramp left turn queue would start to overflow onto, and impact the traffic flow on southbound Highway 1. The SB off ramp would have to be converted to an off-ramp loop, similar to the Light Fighter Drive interchange.

2nd Avenue/Imjin Parkway Intersection # 9 (signalized) would operate at LOS D during the AM and LOS F during the PM weekday peak hours (average delay of 46.8 and 203.6 seconds, respectively). The widening of this intersection is required to provide a third NB left turn lane, a second NB right turn lane, second SB right and SB left turn lanes, second EB right turn lane, a third EB and WB through lane, a third WB left turn lane, a WB right turn lane with Right turn overlap signal phasing for the WB and SB right turn movements would be required which would improve the LOS to C during the AM and LOS D during the PM peak hours.

California Avenue/Imjin Parkway Intersection # 10 (signalized) would operate at LOS F during both the weekday peak hours (average delay of 174.1 and 205.7 seconds, respectively). The adding of a NB and EB right turn lane, a third EB and WB through lane and the changing of the SB to include right turn overlap phasing would improve the LOS to C during both peak hours.

Imjin Road/Imjin Parkway-Imjin Road Intersection # 11 (signalized) would operate at LOS B during the AM and LOS F during the PM peak hours (average delay of 16.1 and 124.1 seconds, respectively). The re-striping of this intersection to have one NB left turn lane and two NB right turn lanes and the adding of the third EB and WB through lanes would improve the LOS to B during both peak hours.

Abrams Drive/Imjin Road Intersection # 12 (signalized) would operate at LOS C during the AM and LOS F during PM peak hours (average delay of 24.8 and 99.7 seconds, respectively). The widening of the east and west bound approaches of this intersection to accommodate 3 EB and WB through lanes and installing EB and WB protected signal phasing would improve the LOS to B during the AM and LOS C during the PM peak hours.

4th Avenue/3rd Street Intersection # 17 (signalized or roundabout) would operate at LOS C or better during all weekday peak hours with the signalization or the implementation of the modern roundabout. However, should the signalization of this intersection be chosen as the appropriate traffic control, disproportionate queuing would occur and the implementation of a WB and EB left turn lane would be required. This would improve the LOS to C during the

AM peak hour and LOS B for the PM peak for signals and LOS C for a roundabout during the AM and LOS A during the PM peak hour.

2nd Avenue/Light Fighter Drive Intersection # 20 (signalized) would operate at LOS C during the AM weekday peak hour and LOS F during the PM peak hour (average delay of 33.5 and 117.1 seconds, respectively). The adding of a second EB left turn lane and a WB right turn lane, changing the N-S signal phasing to split phasing and change the SB right turn signal phasing to right turn overlap and re-striping the SB as one left, one through/right and one right turn lane would improve the LOS to B during the AM and LOS C during the PM peak hours.

Based on the significance impact criteria discussed above, implementation of the Proposed Project would have a ***significant impact*** on study intersections number 4, 7, 9, 10, 11, 12, 17, and 20, as well as on the NB Highway 1 freeway south of Light Fighter Drive.

As stated above, these conclusions are based upon the assumption that Mitigation Measures 1.1 through 2.4 have all been implemented. If the measures are not implemented, then in addition to the intersections outlined above, the following additional intersections would also not operate at an acceptable LOS: Nos. 2, 3, 7, 8, 9, 11, 12, 17, 18, 24 and 25. Refer to Figures 3.10-4a and 3.10-4b where the unmitigated LOS are reported in bold red print.

MITIGATION MEASURES. The following mitigation measures would reduce this impact to a less-than-significant level and are believed at this time to be feasible, but as stated below, many of the intersections are not controlled by the City of Marina. Measures TR-3.2-TR-3.6 either have been or will be added to the City of Marina CIP program. The City of Seaside has indicated that TR-3.8 will be added to the City of Seaside's CIP program. The City of Marina has requested that the County of Monterey add TR 3.1 to its CIP program. There is also some overlap between these measures and the measures which were also imposed as mitigation measures under the CSUMB Master Plan EIR. It is anticipated that these improvements would be in place by 2013. The developer would be required to construct these improvements. However, implementation of Mitigation Measures TR-3.1, TR-3.2, TR-3.7 through TR-3.9 would require cooperation from an agency or jurisdiction other than the City of Marina and are, therefore, outside the jurisdiction of the City of Marina to implement, enforce and monitor. Therefore, as to Monterey County's intersection (No. 4), Caltrans' intersection (No. 7), CSUMB's intersection (No. 17) or the City of Seaside's intersections (Nos. 19 and 20), if the controlling agency chooses not to implement the measures, the Intersections would remain significantly impacted by the project. The City concludes that the measures either have been adopted or can and should be adopted by those agencies.

Therefore, this impact would remain *significant and unavoidable*. (SU)

TR-3.1 Widen Blanco Road/Reservation Road intersection (#4) to provide a third EB left turn lane and a third NB receiving lane on Blanco Road.

TR-3.2 Convert SB Highway 1 off-ramp to become an off-ramp loop at the Highway 1 SB ramps/Imjin Parkway intersection (#7).

TR-3.3 Widen Imjin Parkway and 2nd Avenue at the 2nd Avenue/Imjin Parkway intersection (#9) to provide third NB and WB left turn lanes; add a second NB and EB right turn lanes, add a second EB left turn lane, a third EB and WB through lane, and add a SB right turn lane and convert the SB and NB signal phasing to a right turn overlap.

TR-3.4 Widen Imjin Parkway and California Avenue at the California Avenue/Imjin Parkway intersection (#10) to provide one NB and EB right, three EB and WB through lanes. The signal setting should be optimized and right turn overlap phasing installed for the SB right turn.

TR-3.5 Widen Imjin Parkway and the re-striping of Imjin Road at the Imjin Road/Imjin Parkway intersection (#11) to provide three EB and WB through lanes and the re-striping of the NB as one NB left and two NB right turn lanes.

TR-3.6 Widen the Abrams Drive/Imjin Road intersection (#12) to provide three EB and WB through lanes with optimized signal phasing.

TR-3.7 Widen the 4th Avenue/3rd Street intersection (#17) to provide EB and WB left turn lanes.

TR-3.8 Widen the SB approach at the 1st Avenue/Light Fighter Drive intersection (#19) to provide one right, one through and one left turn lane and change the N/S signal phasing to permitted.

TR-3.9 Widen the EB and WB approach at the 2nd Avenue/Light Fighter Drive intersection (#20) to provide a second EB left turn lane and a WB right turn lane; re-stripe the SB approach to one left, one through and left and one right turn lane and change the N/S signal phasing to split phasing and SB right turn overlap phasing.

TR-4. Five road segments would operate at an unacceptable LOS under background plus Proposed Project buildout traffic conditions. (S)

Background plus Proposed Project buildout morning and evening peak hour volumes on the study street segments are tabulated on the LOS Table in Figure 3.10-6. These are based upon turning volumes illustrated in Figures 3.10-22a and 3.10-22b. Figure 3.10-6 also tabulates corresponding street segment levels of service. The roadway segment level of service is based on the threshold volumes as shown in Appendix A4 of the traffic report and the HCM 2000 methodologies.

Most of the study road segments evaluated would operate at acceptable levels of service. The exception is NB Highway 1 south of Light Fighter Drive interchange that would operate at

LOS E during the PM peak hour. This would be a ***significant impact***. As stated above, this conclusion is based upon the assumption that mitigation measures TR-2.1 through TR-2.4 have all been implemented. If the measures are not implemented, then in addition to the NB Highway 1 segment, segments 5, 6, 12 and 13 would also operate at an unacceptable LOS. Refer to Figure 3.10-6 for unmitigated LOS levels in red print.

Some of the road segment mitigations were already identified under previous traffic conditions and are assumed to be implemented for this traffic scenario. Refer to Figures 3.10-5a, 3.10-5b and 3.10-7 for the Mitigation Summary Table.

Mitigations Measures TR-1.1 through TR-2.4 have already been identified under previous traffic conditions and will thus not be repeated here for background plus project buildout traffic conditions.

MITIGATION MEASURES. The following mitigation measures would reduce this impact to a less-than-significant level. However, the feasibility of these measures at this point in time is unknown. While widening Highway 1 may be possible at some point in the future, it is speculative at this point in time to assess the potential funding for such improvements. In addition, implementation of these mitigation measures would require cooperation from CALTRANs, and the measures are, therefore, outside the jurisdiction of the City of Marina to implement, enforce and monitor. Therefore, this impact would remain *significant and unavoidable*. (SU)

TR-4.1 *(a) Widen Highway 1 south of Light Fighter Drive interchange (segment #1) to an eight-lane freeway.*

OR

(b) If the widening of Highway 1 is not considered feasible, construct a northbound auxiliary lane.

Secondary Impacts. A secondary impact associated with each of the above prescribed mitigations TR-3.1 through TR-3.9 would be stopping of traffic, increased vehicle emissions and more frequent accidents. Stopped and idling traffic would result in higher emissions as compared to free-flowing traffic associated with roundabouts. Signalized and un-signalized intersections also have a higher probability to cause more frequent and more violent vehicle collisions because they have more conflict points than a roundabout intersection configuration and are structured at ninety degree angles.

To reduce secondary impacts, the City of Marina and the Proposed Project applicant should consider high capacity roundabouts as an alternative to standard intersections, as the roundabout will accommodate better intersection operation, reduce vehicle emissions and reduce the frequency of vehicle collisions. Roundabouts are proven to be safer and are generally cheaper to construct and maintain than intersections with traffic signals.

Cumulative Impact Without 2nd Avenue Northerly and Southerly Extensions

This section describes the analysis results of the study intersection and roadway segment operations under cumulative traffic conditions without any direct connection of 2nd Avenue to Del Monte Boulevard in the north and General Jim Moore Boulevard in the south. The cumulative traffic condition is defined as traffic conditions roughly twenty years beyond existing conditions, or the Year 2025. Refer to Figure 3.10-23.

It should be noted that for the cumulative without 2nd Avenue extensions traffic scenario traffic analyses, it was assumed that all mitigation measures listed in the previous traffic scenarios (background plus project Phase 1 and background plus Proposed Project buildout) have been implemented. The operational deficiencies and recommended mitigation measures outlined in this section are based upon this assumption. However, in order to fully assess and disclose the Proposed Project's traffic impacts both with and without mitigation, this study also reports how each of the study intersections and road segments would operate at cumulative level without the recommended improvements.

Cumulative Conditions Without 2nd Avenue Extension Projects Trip Generation

For this cumulative scenario it was assumed that most of the Fort Ord Reuse projects would be fully builtout except for the MBEST project that was assumed to be builtout to 75 percent and the East Garrison development to be 50 percent builtout by 2025. It should be noted that these assumptions are based on a conservative approach for the buildout of these cumulative projects and would likely change over time due to market conditions, development decisions and other conditions beyond this traffic study. Figures 3.10-24 and 3.10-25 depict the cumulative trip distribution and locations of the approved and Proposed Projects evaluated under this traffic scenario, respectively. Furthermore, the expected number of students at CSUMB Master Plan level was used to determine the anticipated number of trips that would be generated by CSUMB. Where the specific phased implementation plans were not available for the adjacent developments, assumptions were made to estimate a percentage at buildout.

The Proposed Project and other cumulative projects would generate a total of 193,120 daily trips, with 11,291 trips (6,400 in, 4,891 excluded) during the AM peak hour, and 18,224 trips (8,361 in, 9,863 excluded) during the PM peak hour. Cumulative condition traffic volumes are depicted in Figures 3.10-26a and 3.10-26b.

Cumulative Conditions Without 2nd Avenue Extension Project Trip Distribution and Assignment

For the purpose of this traffic scenario, the distribution of the estimated Proposed Project trips from the FORA traffic zone 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 project

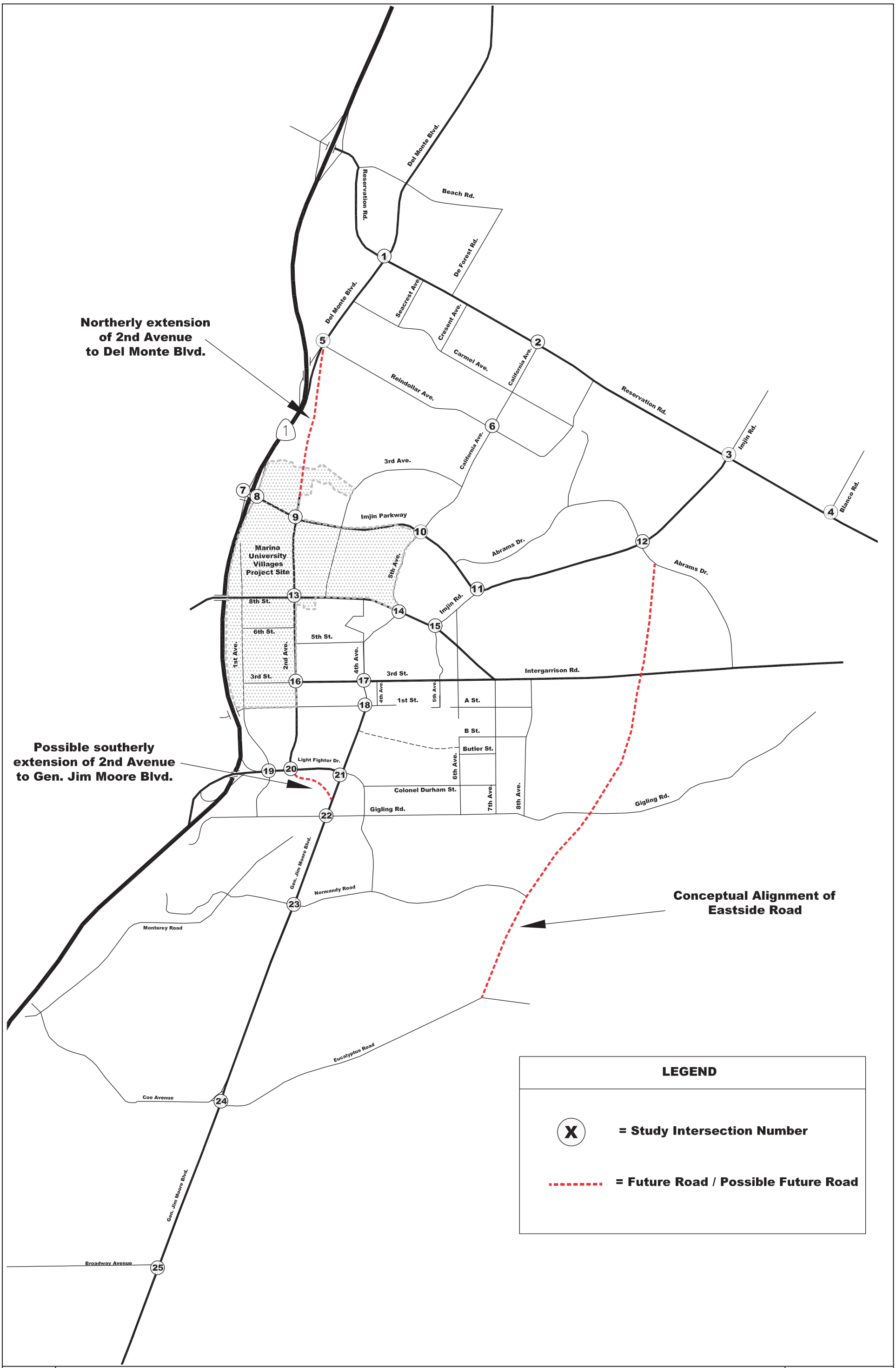

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FIGURE **3.10-23**

Cumulative Traffic Scenarios Road Network

***Source*:** Higgins Associates, 2004

City of Marina

Not to Scale

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PROJECT	SIZE	DAILY TRIP RATE	DAILY TRIPS	AM PEAK HOUR PEAK HOUR VOL.	(% OF DAILY)	IN	OUT	PM PEAK HOUR PEAK HOUR VOL.	(% OF DAILY)	IN	OUT
1. University of California MBEST [2]	- -	-	16,894	1,155	(7%)	902	253	1,813	(11%)	603	1,210
2. Cypress Knolls [3]	- -	-	4,221	331	(8%)	83	248	425	(10%)	272	153
3. Main Gate Shopping Center	- -	-	25,897	538	(2%)	328	210	2,437	(9%)	1,170	1,267
4. Monterey School of Law	- -	-	-	16	(-)	13	3	63	(-)	50	13
5. East Garrison Residential [4]	- -	-	7,550	604	(8%)	288	316	755	(10%)	360	395
6. Ord Military Housing											
Single Family Detached Housing	610 Homes	9.57	5,838	458	(8%)	115	343	616	(11%)	388	228
Retail-Community Shopping Ctr.	295,000 SF	70	20,650	620	(3%)	372	248	2,065	(10%)	1,033	1,032
Retail-Community Shopping Ctr.	120,000 SF	70	8,400	252	(3%)	151	101	840	(10%)	420	420
Sports Park/Soccer Complex	2 Fields	71.33	143	3	(2%)	2	1	41	(29%)	28	13
7. Seaside Resort											
Resort Homes	125 Homes	9.57	1,196	94	(8%)	24	70	126	(11%)	81	45
Seaside Resort Hotel [9]	330 Rooms	8.00	2,640	102	(4%)	73	29	139	(5%)	60	79
Seaside Resort Timeshare Units	255 Units	7.20	1,836	71	(4%)	48	23	97	(5%)	39	58
8. Marina Station											
Apartments	300 Units	6.63	1,989	153	(8%)	24	129	186	(9%)	125	61
Single-Family Dwelling Units	650 Units	9.57	6,221	488	(8%)	122	366	657	(11%)	420	237
Light Industrial	876,000 SQ. FT.	6.97	6,106	806	(13%)	709	97	858	(14%)	103	755
Retail	310,000 SQ. FT.	44.32	13,739	412	(3%)	177	235	840	(6%)	370	470
Middle School	1,000 Students	1.62	1,620	530	(33%)	292	238	150	(9%)	78	72
9. Monterey Horse Park [13]	- -	-	1,507	151	(10%)	132	19	204	(14%)	20	184
10. Del Rey Oaks Hotel	350 Rooms	8.23	2,881	182	(6%)	100	82	214	(7%)	124	90
11. Del Rey Oaks Shopping Center [5]	27,000 S.F.	-	2,900	66	(2%)	41	25	238	(8%)	114	124
12. North of Playa Shopping Center [6]	70,000 S.F.	-	5,400	65	(1%)	40	25	246	(5%)	117	129
13. Marriott Courtyard Hotel	143 Rooms	8.23	1,177	74	(6%)	41	33	87	(7%)	51	36
Seaside Redevelopment Projects [10]											
14. Embassy Suites Site - Hotel	125 Rooms	9.11	1,139	80	(7%)	29	51	73	(6%)	39	34
15. Outback Steakhouse - Restaurant	220 Seats	4.83	1,063	103	(10%)	54	49	92	(9%)	53	39
16. West Broadway Corridor											
Retail Commercial [11]	50,000 SQ. FT.	40.67	2,034	61	(3%)	26	35	130	(6%)	56	74
Professional Office	50,000 SQ. FT.	-	779	107	(14%)	94	13	135	(17%)	23	112
Multi-Family Residential	100 Units	6.63	663	51	(8%)	8	43	62	(9%)	42	20
Restaurant	220 Seats	4.83	1,063	103	(10%)	54	49	92	(9%)	53	39
17. Fremont/Broadway Area											
Retail Commercial [11]	50,000 SQ. FT.	40.67	2,034	61	(3%)	26	35	130	(6%)	56	74
Professional Office	50,000 SQ. FT.	-	779	107	(14%)	94	13	135	(17%)	23	112
Multi-Family Residential	100 Units	6.63	663	51	(8%)	8	43	62	(9%)	42	20
18. East Broadway Corridor											
Library	33,000 SQ. FT.	-	1,676	38	(2%)	27	11	206	(12%)	99	107
Retail Commercial [11]	20,000 SQ. FT.	40.67	813	24	(3%)	10	14	52	(6%)	22	30
Family Health Center [12]	20,000 SQ. FT.	31.45	629	49	(8%)	25	24	104	(17%)	52	52
19. East Fremont Corridor											
Retail Commercial [11]	40,000 SQ. FT.	40.67	1,627	49	(3%)	21	28	104	(6%)	45	59
Professional Office	40,000 SQ. FT.	-	657	90	(14%)	79	11	124	(19%)	21	103
20. Old McGraw-Hill Site - Retail/Com.	30,000 SQ. FT.	40.67	1,220	37	(3%)	16	21	78	(6%)	34	44
21. Chili's - Restaurant	250 Seats	4.83	1,208	118	(10%)	61	57	105	(9%)	61	44
22. CSUMB Students (2015-2025)	8,383 Students	-	14,830	1,309	(9%)	1,047	262	1,309	(9%)	393	916
TOTAL NEW CUMULATIVE PROJECT TRIPS			171,679	9,609	(6%)	5,756	3,853	16,090	(9%)	7,140	8,950
TOTAL APPROVED TRIPS			21,440	1,682	(8%)	644	1,038	2,134	(10%)	1,221	913
TOTAL CUMULATIVE TRIPS IN CUMULATIVE SCENARIOS			193,120	11,291	(6%)	6,400	4,891	18,224	(9%)	8,361	9,863

Notes:

1. Traffic volumes are based on trip generation rates quoted by the Institute of Transportation Engineers, *Trip Generation*, 6th Edition, 1997, or 7th Edition, 2003, unless otherwise noted.
2. *University of California Monterey Bay Education, Science and Technology Center (UCMBEST Center) Traffic Analysis Report*, Higgins Associates, October 31, 2003. Assumes 75% of project is built out by year 2015.
3. *Cypress Knolls Traffic Analysis Report*, Higgins Associates, August 12, 1999.
4. Full Buildout of East Garrison development will not occur until 2030. Fifty percent of the development is assumed to be constructed by 2015. Trip generation represents trips external to the development itself.
5. AM Peak Hour volumes are based on trip generation rates quoted by the Institute of Transportation Engineers, *Trip Generation*, 6th Edition, 1997. PM Peak Hour volumes are from State Route 68 Corridor Study, TAMC 1999.
6. ITE Shopping Center Category 820 used. Assumes 10% pass-by of Del Rey Oaks Hotel trips.
7. ITE 820, assumes only 30% trips generated are primary trips. The rest (70%) is assumed to be pass-by or local serving traffic
8. ITE 820, assumes only 50% trips generated are primary trips. The rest (50%) is assumed to be pass-by traffic.
9. Daily trip generation rate for Resort Hotel published by San Diego Association of Governments, *San Diego Trip Generators*, June 1998. Assumes 100% occupancy of hotel.
10. Project definitions and daily and PM peak hour trip generation for projects 15-22 from *Seaside Redevelopment Agency Grant Application - Technical Supporting Information Associated With Traffic*, Higgins Associates, April 29, 2002. AM rates from ITE for same land use type, unless otherwise noted.
11. AM rates from Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, San Diego Association of Governments, 1998.
12. AM peak hour trip generation not available - estimated by using Medical-Dental Office Building trip generation (Land Use 720).
13. Letter to D. Munn, *Monterey Horse Park, Monterey County, California - Estimated Trip Generation of Proposed New Facility*, Higgins Associates, January 14, 2004.

FIGURE **3.10-24**

Trip Generation for Cumulative Projects

10886-00

Source: Higgins Associates, 2004

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List of Cumulative Projects

1. MBEST-Research & Development, Light Industrial/Service, Commercial, Hotel/Conference Center
2. Cypress Knolls - Senior Housing
3. Main Gate - Retail
4. Monterey School of Law - Law School (Evening Classes)
5. East Garrison - Residential/Limited Commercial
6. Ord Military Housing
7. Seaside Resort
8. Marina Station - Residential, Commercial, Industrial, Middle School
9. Monterey Horse Park - Equestrian Center

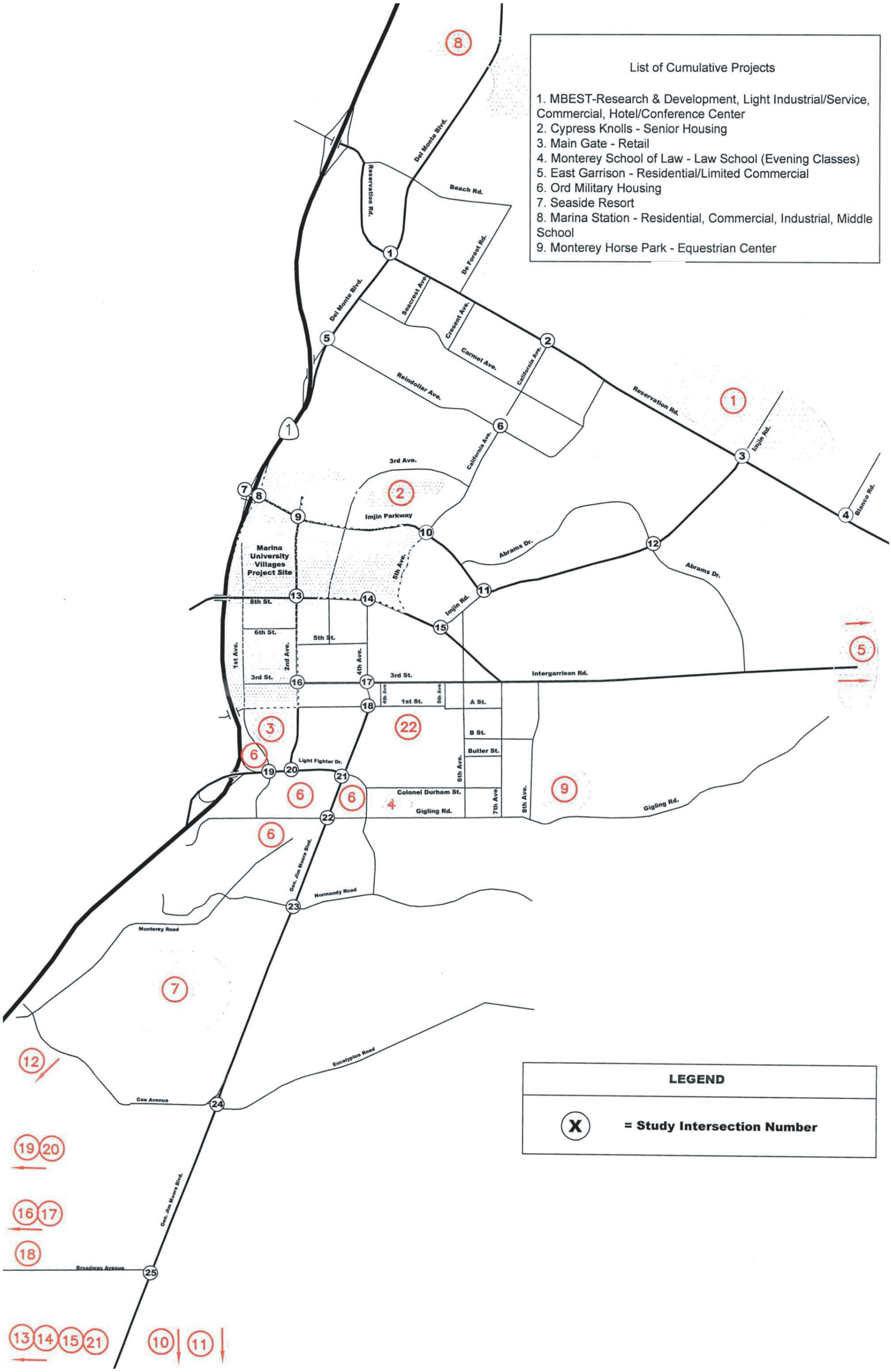

FIGURE **3.10-25**
Cumulative Traffic Scenarios Road Network

Not to Scale

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***Source*:** Higgins Associates, 2004

City of Marina

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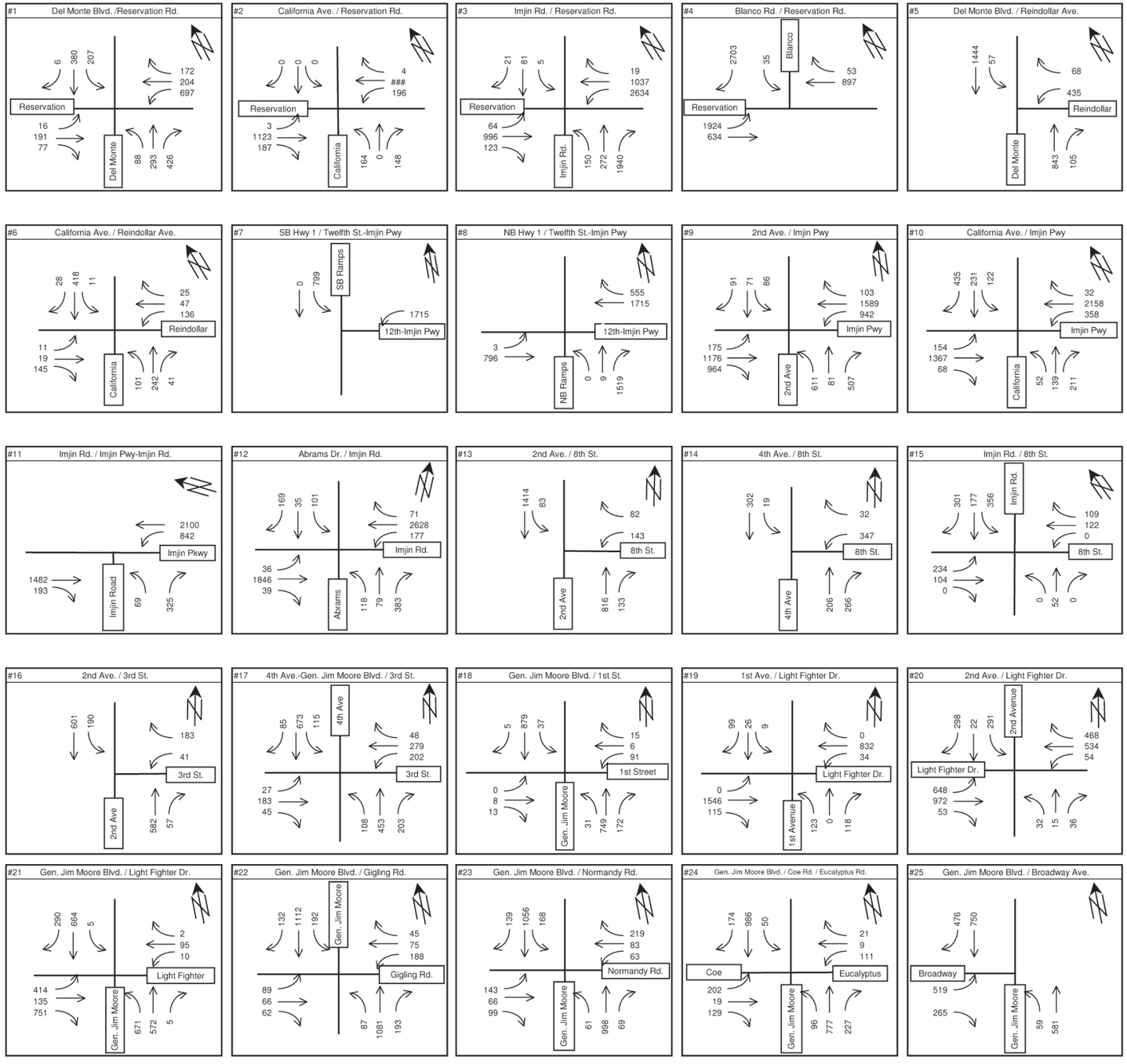

FIGURE **3.10-26A**

Cumulative 2025 without 2nd Avenue Extension Conditions AM Peak Hour Volumes

***Source*:** Higgins Associates, 2004

Not to Scale

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City of Marina

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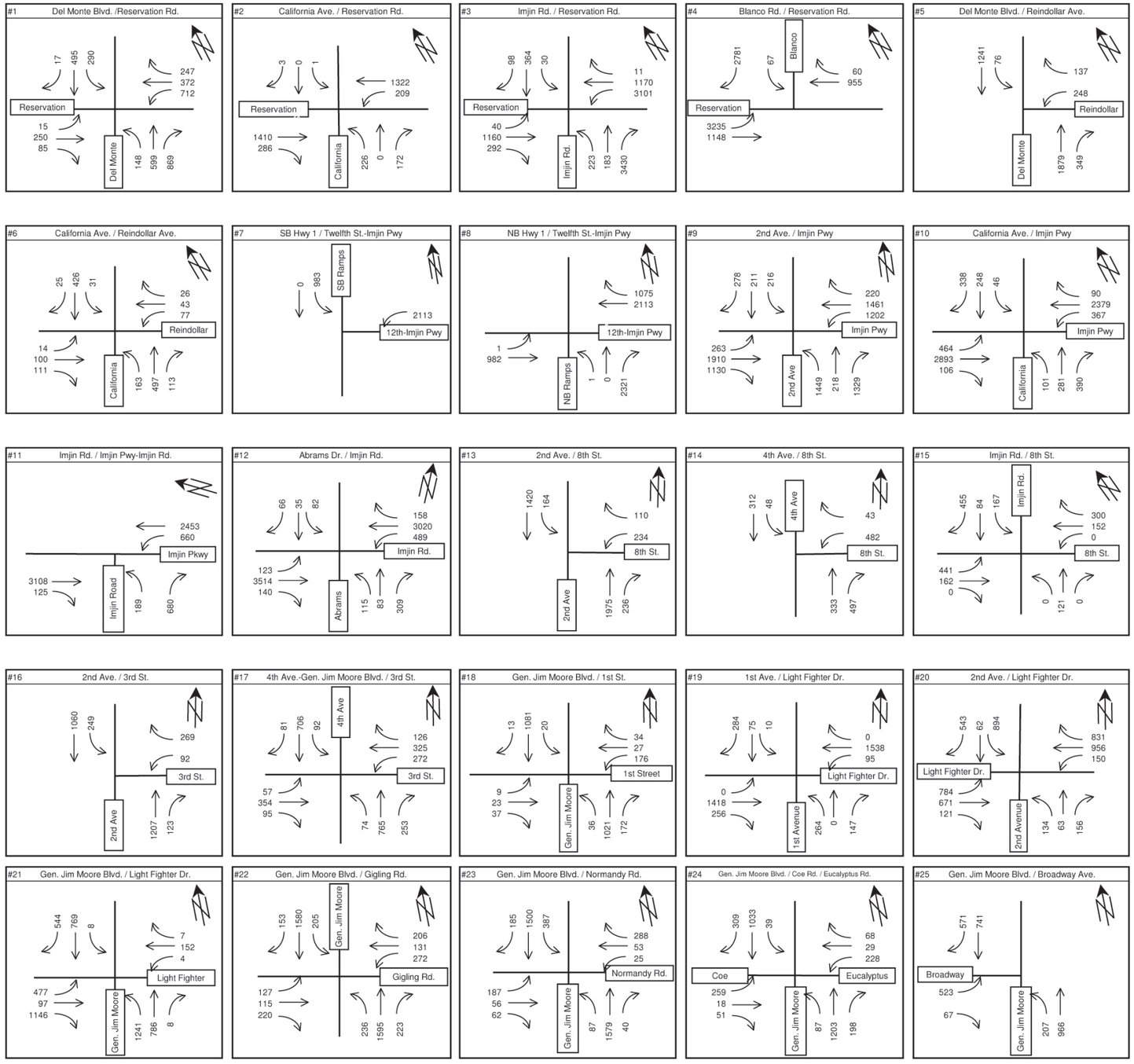

FIGURE **3.10-26B**

Cumulative 2025 without 2nd Avenue Extension Conditions PM Peak Hour Volumes

Not to Scale

Source: Higgins Associates, 2004

site boundaries were considered in the project trip distribution. Table 3.10-1 shows the cumulative projects trip distribution graphically, while the information provided by AMBAG is included in Appendices R & T of the traffic report.

Table 3.10-1
Marina University Villages - Cumulative Trip Distribution

Area	Outbound	Inbound	Average
Hwy 1 North	5.04%	2.91%	3.98%
Unincorporated Marina	0.07%	0.09%	0.08%
Marina	7.25%	6.20%	6.73%
FORA – Marina	15.85%	21.82%	18.83%
FORA – Seaside	18.10%	23.46%	20.78%
Hwy 1 South	18.24%	17.19%	17.72%
General Jim Moore	20.68%	15.57%	18.13%
East	14.76%	12.76%	13.76%
Total	**100.00%**	**100.00%**	**100.00%**

Furthermore, it is anticipated that a considerable number of linked trips would occur between the residential and commercial uses within the Proposed Project and vicinity, as well as the CSUMB campus, and existing and planned surrounding residential developments as part of the *Fort Ord 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. Figures 3.10-26a and 3.10-26b represent the cumulative projects trips assigned to the 25 study intersections.

Cumulative Conditions Without 2nd Avenue Extension 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 FORA Capital Improvement Program (CIP) network, the Proposed Project road network proposals, as well as changes recommended in the 2004 CSUMB Master Plan Transportation and Circulation section. However, the extension of 2nd Avenue in a northerly direction to connect to Del Monte Boulevard and south to connect directly with General Jim Moore Boulevard was not included as part of this traffic scenario. The 2nd Avenue extension was evaluated in a separate traffic scenario that follows on this one.

As part of the CSUMB network changes, 4th Avenue would be realigned to intersect 8th Street at the existing intersection with California Avenue. Fifth Avenue would be realigned to the intersection of Imjin Road and 8th Street to create the primary access to the CSUMB campus from the north. Refer to Figure 3.10-23 for the future study road network used in the traffic analysis for the cumulative traffic scenario.

The FORA CIP sets forth the *Fort Ord Reuse Plan* required improvements. The primary sources of revenue expected to cover these costs are Development Fees and Land Sale/Lease proceeds. The current FORA Development Fee has been structured to cover costs of five obligations, one of which are Transportation/Transit Projects to the value of $123,502,882. Furthermore, Traffic Impact Fees would be collected by FORA for on and off base improvements identified in the *Fort Ord Reuse Plan*.

The cumulative traffic scenario street network included improvements as identified in the FORA CIP for Financial Year 2002/03 through 2021/22. The roadway network in the FORA CIP includes the following new or upgraded facilities:

- 12th Street re-alignment and widening to a 4-lane arterial from Highway 1 to Imjin Road (this improvement has been completed);
- Re-alignment of the 12th/Imjin intersection (this improvement has been completed);
- Widening of Imjin Road from 2 to 4 lanes between 12th Street and Reservation Road;
- Upgrading/construction of a 2-lane arterial from Hwy 1 Overpass to Inter Garrison (8th Street "Cutoff");
- Upgrading of Inter Garrison Road to a 2-lane arterial from 8th Street Cutoff easterly to Reservation Road;
- Upgrading/construction of a new 4-lane arterial from General Jim Moore Boulevard easterly to Eastside Road (Gigling Road);
- Extend 2nd Avenue from Light Fighter Drive to Del Monte Blvd and construct as a 4-lane arterial (For this traffic scenario it was assumed that this extension would not be in place);
- Widening of General Jim Moore Boulevard from 2 lanes to 4 lanes from Normandy Road to Coe Avenue. Upgrading and reconstruction as 2-lane arterial from Coe Avenue to Highway 218;
- Extension of California Avenue from Reindollar to Carmel Avenue, creating a two-lane arterial from Reservation Road to the CSUMB campus;
- Extension of Carmel Avenue south to Abrams Drive;
- 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 Imjin Road (the final alignment of this road has not yet been agreed on).

It should be recognized that the FORA CIP focused more on specific improvements required on the routes as listed above. The specific local network improvements will be identified with the project development scenarios.

TR-5. The Proposed Project, in addition to cumulative conditions in the region, without the 2nd Avenue extension, would result in unacceptable intersection LOS. (CC)

The traffic that would be generated by the cumulative projects was combined with the background traffic and the Proposed Project buildout traffic to provide cumulative without 2nd Avenue extension traffic conditions. Cumulative morning and evening peak hour turning volumes are illustrated in Figures 3.10-26a and 3.10-26b. Figures 3.10-4a and 3.10-4b tabulate corresponding morning and evening peak hour levels of service, the details of which are presented in Appendix J of the traffic report.

Only nine of the study intersections would operate at or better than their jurisdiction's operational LOS standard under cumulative conditions without 2nd Avenue extension traffic conditions. A discussion of the traffic operations for each individual intersection requiring mitigation follows below. Also included is a concluding statement regarding mitigation improvements under cumulative without 2nd Avenue extension traffic conditions. For a reference of the location of each of the intersections please see Figure 3.10-2.

Imjin Road/Reservation Road Intersection # 3 (signalized) would operate at LOS C during the AM and LOS F during the PM weekday peak hours (average delay of 34.0 and 191.5 seconds, respectively). The modification of this intersection to provide a grade separated fly-over from Reservation Road to Imjin Road to accommodate the WB to SB left turn movements would improve the LOS to B during the AM and LOS C during the PM peak hours.

Blanco Road/Reservation Road Intersection # 4 (signalized) would operate at LOS E during the AM and LOS F during the PM weekday peak hours (average delay of 65.4 and 125.6 seconds, respectively). The widening of this intersection to accommodate a second WB through lane, a third EB left turn lane and a third NB receiving lane on Blanco Road would improve the LOS to B during the AM and LOS D during the PM peak hours.

California Avenue/Reindollar Avenue Intersection # 6 (un-signalized) would operate at LOS D during the weekday AM and LOS F during the PM peak hours (average delay of 25.7and 81.7 seconds, respectively). The signalization of this intersection would improve the LOS to B during both the peak hours.

2nd Avenue/Imjin Parkway Intersection # 9 (signalized) would operate at LOS C during the AM and LOS E during the PM weekday peak hours (average delay of 28.3 and 64.4 seconds, respectively). There are no feasible at grade mitigation measures to recommend that would improve the LOS to within the required standards; the operating conditions for this intersection would be LOS E. Only the grade separating of these two roads would improve the operating conditions to acceptable level. If grade separating is not possible this would be identified as an unavoidable significant impact.

Imjin Road/Imjin Parkway-Imjin Road Intersection # 11 (signalized) would operate at LOS C during the AM and LOS F during the PM peak hours (average delay of 26.1 and 101.6

seconds, respectively). The re-striping of this intersection to have one NB left turn lane and two NB right turn lanes with right turn overlap phasing and the adding of the third EB and WB through lanes would improve the LOS to C during the AM and LOS D during the PM peak hours.

Abrams Drive/Imjin Road Intersection # 12 (signalized) would operate at LOS C during the AM and LOS F during the PM peak hours (average delay of 26.7 and 163.9 seconds, respectively). The widening of the east and west bound approaches of this intersection to accommodate 3 EB and WB through lanes, adding a second WB left turn lane and installing EB and WB protected signal phasing with NB right turn overlap would improve the LOS to C during the AM and LOS F during the PM peak hours. To mitigate this operational deficiency to within the required standards would require the widening to four EB and WB through lanes which is not considered to be feasible. This operational deficiency should be considered as an unavoidable significant impact.

Imjin Road/8th Street Intersection # 15 (un-signalized) would operate at LOS F during both the weekday peak hours (average delay of 67.5 and 53.2 seconds, respectively). The implementation of a modern roundabout at this intersection would improve the LOS to C during the AM and LOS A during the PM peak hours.

2nd Avenue/3rd Street Intersection # 16 (signalized) would operate at LOS C during the weekday AM and LOS F during the PM peak hours (average delay of 26.9 and 111.7 seconds, respectively). Adding a second EB left turn lane and add a WB and SB right turn lane at this intersection would improve the LOS to C during the AM and LOS D during the PM peak hours.

4th Avenue/3rd Street Intersection # 17 (signalized or roundabout) would operate at LOS F during both weekday peak hours (average delay of 69.5 and 117.0 seconds, respectively). The adding of a EB and WB left turn lane and a right turn lane on all four approaches as a signalized intersection or the implementation of a 2-lane modern roundabout would improve the LOS to D during both peak hours for signals and LOS A for a roundabout during the AM and LOS D during the PM peak hour.

General Jim Moore Boulevard/1st Street Intersection # 18 (signalized or roundabout) would operate at LOS E during the AM and LOS F during the PM weekday peak hours (average delay of 42.6 and 57.5 seconds, respectively) if the roundabout was chosen in the previous traffic scenario. If the signalization of this intersection was chosen in the previous traffic scenario, it would still be acceptable LOS. The implementation of a 2-lane modern roundabout would improve the LOS to A during both peak hours for the roundabout.

2nd Avenue/Light Fighter Drive Intersection # 20 (signalized) would operate at LOS C during the AM weekday peak hour and LOS F during the PM peak hour (average delay of 23.0 and 181.8 seconds, respectively). The widening and adding of a second SB right turn lane and a third SB right turn lane and an additional receiving lane on Light Fighter Drive, widening and

re-striping the NB as one left, one through/left and one right turn lane, adding a EB right and a second WB right turn lane with overlap phasing for the NB and WB right turns would improve the LOS to C during both peak hours.

General Jim Moore Boulevard/Light Fighter Drive Intersection # 21 (signalized) would operate at LOS E during the AM weekday peak hour and LOS F during the PM peak hour (average delay of 73.7 and 227.3 seconds, respectively). The adding of a second EB left turn lane, a third NB left turn lane, a second WB through lane and a SB right turn lane with right turn overlap phasing will improve the LOS to C during both peak hours.

General Jim Moore Boulevard/Gigling Road Intersection # 22 (signalized) would operate at LOS D during the AM and LOS F during the PM peak hours (average delay of 50.0 and 165.1 seconds, respectively). Adding a third NB and SB through lane, a second NB and SB left turn lane and changing the EB right to right turn overlap phasing would improve the LOS to C during both peak hours.

General Jim Moore Boulevard/Normandy Road Intersection # 23 (signalized) would operate at LOS E during the AM and LOS F during the PM peak hours (average delay of 78.4 and 150.2 seconds, respectively). Adding a third NB and SB through lane and optimizing the signal phasing would improve the LOS to C during both peak hours.

General Jim Moore Boulevard/Coe Road/Eucalyptus Road Intersection # 24 (un-signalized) would operate at LOS B during the AM and LOS F during the PM weekday peak hours (average delay of 19.2 and 131.6 seconds, respectively). Adding a second NB and SB through lane, WB and SB left turn lanes, adding a NB right turn and re-striping EB as one left and one through/right would improve the LOS to B during the AM and LOS C during the PM peak hours.

General Jim Moore Boulevard/Broadway Avenue Intersection # 25 (un-signalized) would operate at LOS D during the AM and LOS E during the PM peak hours (average delay of 36.4 and 61.5 seconds, respectively). Adding a northbound left turn lane, a second NB through and a second EB left turn lane would improve the LOS to C during both peak hours.

Only nine of the study intersections would continue to operate at or better than their jurisdiction's operational LOS standard under cumulative without 2nd Avenue extension traffic conditions. This would be a significant ***cumulatively considerable impact***. Intersection mitigation measures are thus required at 15 of the study intersections. However, most of these improvements were already identified under previous traffic conditions and will thus not be repeated here.

Mitigations TR-1.1 through TR-4.1 have already been identified under previous traffic conditions and will thus not be repeated for cumulative without 2nd Avenue extension traffic conditions. If these mitigations are not implemented intersection Nos. 2, 3, 4, 7, 8, 9, 10, 11,

12, 17, 18, 19, 20, 24 and 25 would operate at unacceptable LOS. Refer to Figures 3.10-4A, 3.10-4B and 3.10-6.

MITIGATION MEASURES. The following mitigation measures would reduce this impact to a less-than-significant level, and are believed at this time to be feasible, but as stated below, many of the intersections are not controlled by the City of Marina. Regarding mitigation TR-5.2, the County of Monterey has been requested by the City of Marina to include this mitigation in its CIP Program. As for mitigations TR-5.12 through TR-5.17, the City of Marina has requested that Seaside include these in its CIP Program. It is anticipated that these improvements would be in place by 2013. The developer is required to fund its proportionate share of these mitigations. However, implementation of Mitigation Measures TR-5.9 through TR-5.17 would require cooperation from an agency or jurisdiction other than the City of Marina and are, therefore, outside the jurisdiction of the City of Marina to implement, enforce and monitor. Therefore, as to intersection Nos. 4, 17-18, and 20 through 25, if Monterey County (No. 4), CSUMB (Nos. 17-18) or the City of Seaside (Nos. 20-25) chooses not to implement the measures, the intersections would remain significantly impacted by the Proposed Project. The City concludes that the measures either have been adopted or can and should be adopted by those agencies. Therefore, this impact would remain *significant and unavoidable*. (SU)

TR-5.1 *(a) Widen Imjin Road/Reservation Road intersection (#3) to provide for a WB to SB flyover ramp, and re-stripe of the NB approach to one left, one through and two free right turn lanes.*

OR

(b) The Blanco Road connector between Imjin Parkway and Reservation Road could be constructed as a six lane arterial, although the FORA CIP identifies this as a four-lane road. (Shared Contribution)

This fly-over ramp has potentially significant and adverse secondary impacts associated with aesthetics and biological impacts.

TR-5.2 *Widen Blanco Road/Reservation Road intersection (#4) to provide a second WB through lane. (Shared Contribution)*

TR-5.3 *Signalize the California Avenue/Reindollar Avenue intersection (#6). (Shared Contribution)*

TR-5.4 *Widen Imjin Parkway and California Avenue at the California Avenue/Imjin Parkway intersection (#10) to provide a second EB left turn lane, a WB left turn lane and NB right turn overlap signal phasing. (Shared Contribution)*

TR-5.5 *Signal phase the Imjin Road/Imjin Parkway intersection (#11) to provide NB right turn overlap phasing. (Shared Contribution)*

TR-5.6 Widen the Abrams Drive/Imjin Road intersection (#12) to provide a second WB left lane, a NB left turn lane and NB right turn overlap signal phasing.

TR-5.7 Construct a modern roundabout at the Imjin Road/8th Street intersection (#15). (Shared Contribution)

TR-5.8 Widen 3rd Street at the 2nd Avenue/3rd Street intersection (#16) to provide a second EB left lane, WB and SB right turn lanes and optimized signal phasing. (Shared Contribution)

TR-5.9 Widen 3rd Street and 4th Avenue at the 4th Avenue/3rd Street intersection (#17) to provide right turn lanes on all four approaches would be required. (Shared Contribution)

OR

TR-5.10 Construct a modern roundabout at the 4th Avenue/3rd Street intersection (#17). (Shared Contribution)

TR-5.11 Construct a modern roundabout at the General Jim Moore Boulevard/1st Street intersection (#18). (Shared Contribution)

TR-5.12 Widen the SB approach at the 2nd Avenue/Light Fighter Drive intersection (#20) to provide a second SB right turn lane, third left turn lane and EB receiving lane on Light Fighter Drive; also, widen and re-stripe the NB lane to one left, one through/left and one right, EB right turn lane, a second WB right turn lane and NB and WB right turn overlap signal phasing. (Shared Contribution)

TR-5.13 Widen the General Jim Moore/Light Fighter Drive intersection (#21) to provide a third NB left turn lane, a second EB left turn lane, a second WB through lane, and a SB right turn lane with right turn overlap phasing. (Shared Contribution)

TR-5.14 Widen the General Jim Moore/Gigling Road intersection (#22) to provide third NB and SB through lanes, a second NB left turn lane, a second SB left turn lane and a EB right turn lane with right turn overlap phasing would be required. (Shared Contribution)

TR-5.15 Widen the General Jim Moore/Normandy Road intersection (#23) to provide third NB and SB through lanes and optimized signal phasing. (Shared Contribution)

TR-5.16 Widen the General Jim Moore/Coe Road intersection (#24) to provide second NB and SB through lanes, a NB right turn lane, the re-striping of the EB lane as one left and one through/right turn lane and a WB left turn lane. (Shared Contribution)

TR-5.17 Widen the General Jim Moore/Broadway Avenue intersection (#25) to provide a second NB through lane and a second EB left turn lane. (Shared Contribution)

TR-6. The Proposed Project, in addition to cumulative buildout conditions in the region, without the 2nd Avenue extension, would result in unacceptable LOS along road segments. (CC)

Cumulative without 2nd Avenue extension morning and evening peak hour volumes on the study street segments are tabulated on the LOS Table in Figure 3.10-6. These are based upon turning volumes illustrated Figures 3.10-26a and 3.10-26b. Figure 3.10-6 also tabulates corresponding street segment levels of service. The roadway segment level of service is based on the threshold volumes as shown in Appendix A4 of the traffic report and the HCM 2000 methodologies.

Only five of the study road segments evaluated would operate at acceptable LOS. The segments that would operate at unacceptable LOS are NB Highway 1 between Light Fighter Drive interchange and 12th Street interchange the Highway 1 NB off-ramp and SB on-ramp at the Light Fighter Drive interchange, Blanco Road north of Reservation Road, and Reservation Road between Imjin Road and Blanco Road. This would be a significant ***cumulatively considerable impact***. Improvements are thus required under cumulative without 2nd Avenue extension traffic conditions for four road segments. Some of the required road segment widening were already identified under previous traffic conditions and will thus not be repeated here. Refer to Figures 3.10-5a, 3.10-5b, and 3.10-7 for the Mitigation Summary Table.

If the mitigations recommended in the background plus project phase 1 are not implemented (i.e., TR-2.1, 2.1, 2.3 and 2.4), road segments 1, 5 and 6 would also operate at unacceptable Levels of Service. Refer to Figures 3.10-4A, 3.10-4B and 3.10-6.

MITIGATION MEASURES. The following mitigation measures would reduce this impact to a less-than-significant level. The feasibility of these measures at this point in time is unknown. While widening Highway 1 may be possible at some point in the future, it is speculative at this point in time to assess the potential funding for such improvements. In addition, implementation of Mitigation Measures TR-6.1 through TR-6.3 would require cooperation from CALTRANS, and is, therefore, outside the jurisdiction of the City of Marina to implement, enforce and monitor. Therefore, this impact would remain *significant and unavoidable*. (SU)

TR-6.1 (a) Widen Highway 1 between Light Fighter Drive interchange (segment #2) and 12th Street interchange to an eight-lane freeway would be required.

OR

(b) If the widening of Highway 1 is not considered feasible, the implementation of a northbound auxiliary lane could be constructed. (Shared Contribution)

TR-6.2 Widen of the Highway 1 NB off-ramp at Light Fighter Drive (segment #9) to a two-lane ramp. (Shared Contribution)

TR-6.3 Widen the Highway 1 SB on-ramp at Light Fighter Drive (segment #10) to a two-lane ramp. (Shared Contribution)

Based on the significance impact criteria described in section 1.7 of this report, the implementation of all the cumulative projects in the area including the Marina University Villages project would have a significant impact on study intersections number 3, 4, 6, 9, 10, 11, 12, 15, 16, 17, 18, 20 21, 22, 23, 24 and 25, as well as on the NB Highway 1 freeway between Light Fighter Drive interchange and Twelfth Street interchange (road segment #2), Highway 1 NB and SB off- and on-ramps at Light Fighter Drive interchange (road segments #9 & #10), Blanco Road north of Reservation Road and Reservation Road between Imjin Parkway and Blanco Road (road segments #12 & #13). This is based on the assumption that all mitigation measures recommended under background plus Proposed Project Buildout have been implemented.

Cumulative Impact Traffic Conditions with 2nd Avenue Northerly and Southerly Extensions

This section describes the analysis results of the study intersection and roadway segment operations under cumulative traffic conditions with a northerly and southerly direct connection of 2nd Avenue to Del Monte Boulevard in the north and General Jim Moore Boulevard in the south. The cumulative traffic condition is defined as traffic conditions roughly twenty years beyond existing conditions, or the Year 2025. The reasoning behind the evaluation of the direct connections of 2nd Avenue is to determine if 2nd Avenue would be an acceptable alternative parallel north-south link to Highway 1.

Cumulative Projects Trip Generation

For this traffic scenario the same trip generation was used as for the cumulative scenario without the 2nd Avenue connections. Cumulative with 2nd Avenue extensions traffic volumes are depicted in Figures 3.10-27a and 3.10-27b.

Cumulative With 2nd Avenue Extension Project Trip Distribution and Assignment

For the purpose of this traffic scenario, the regional distribution of the estimated project trips from the FORA traffic zone (in which most of the cumulative projects listed in Figures 3.10-24 and 3.10-25) 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 project site boundaries were considered in the project trip distribution. Table 3.10-1 shows the cumulative projects regional trip distribution graphically, while the information provided by AMBAG is included in Appendices R, S, and T of the traffic report.

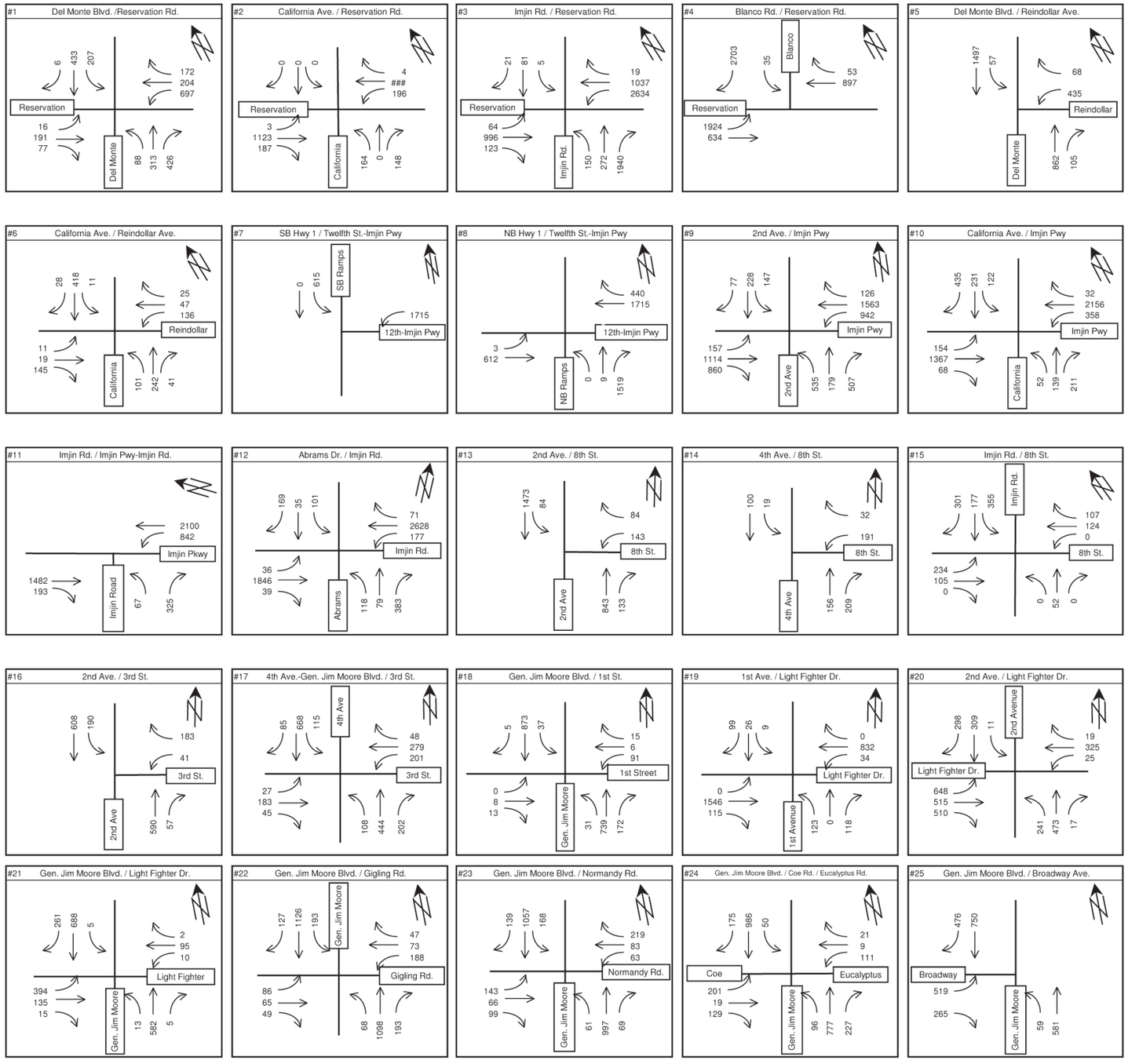

FIGURE **3.10-27A**

Cumulative 2025 with 2nd Avenue Extension Conditions AM Peak Hour Volumes

Not to Scale

***Source*:** Higgins Associates, 2004

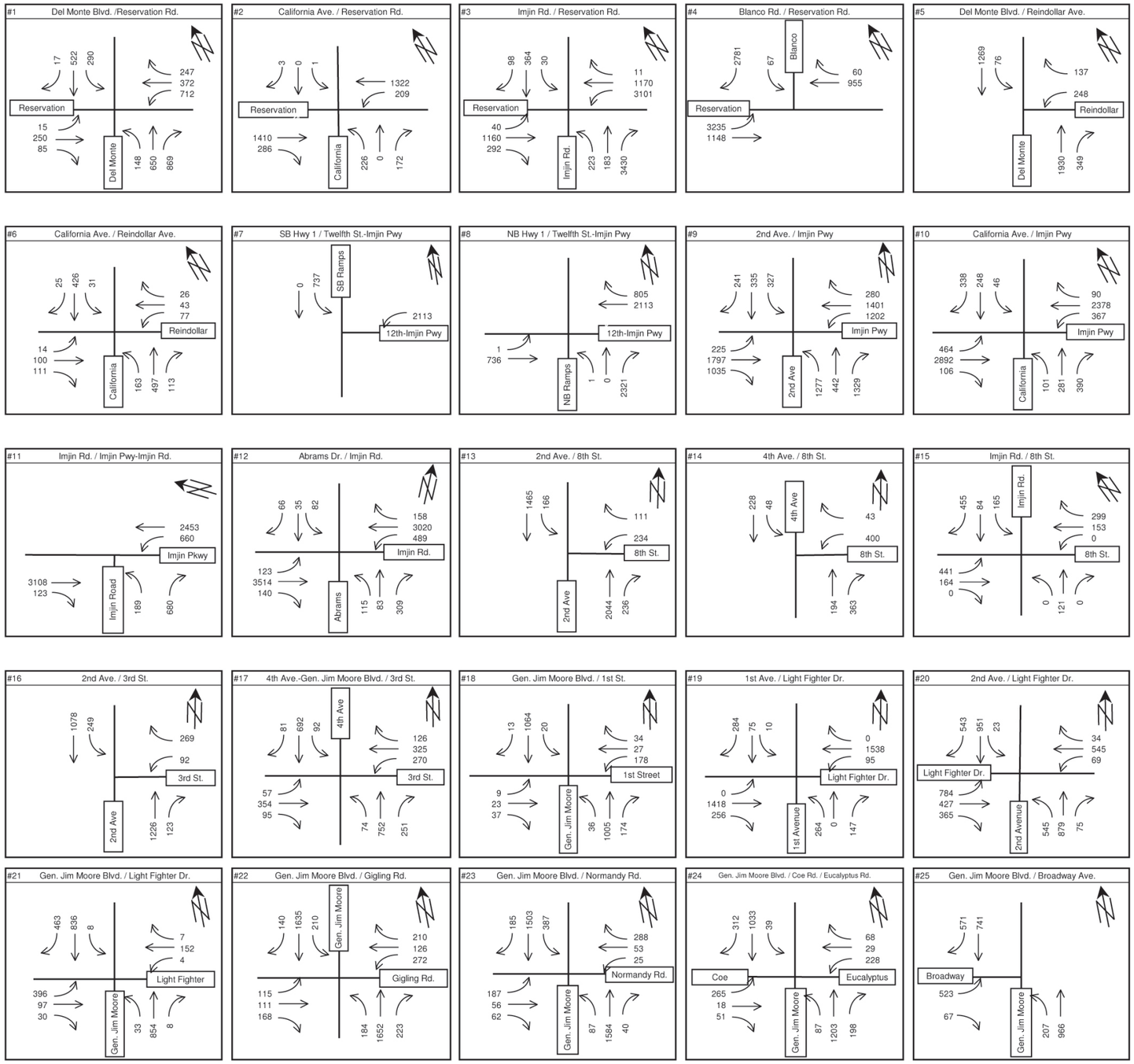

FIGURE **3.10-27B**

Cumulative 2025 with 2nd Avenue Extension Conditions PM Peak Hour Volumes

Not to Scale

***Source*:** Higgins Associates, 2004

Furthermore, it is anticipated that a considerable number of linked trips would occur between the residential and commercial uses within the Proposed Project as well as the CSUMB campus, and existing and planned surrounding residential developments as part of the *Fort Ord 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.

Furthermore, to account for the possible reassignment of trips that could be expected with a northerly and southerly direct connection of 2nd Avenue to Del Monte Boulevard in the north and General Jim Furthermore, to account for the possible reassignment of trips that could be expected with a northerly and southerly direct connection of 2nd Avenue to Del Monte Boulevard in the north and General Jim Moore Boulevard in the south, a manual trip reassignment was performed. This reassignment should be seen as a rudimentary, first order estimate of the redistribution of traffic that could be expected with the northerly and southerly extensions of 2nd Avenue. It is recommended that the AMBAG TRANSCAD model be used to validate the reassignment of the traffic by testing the impact of the network alternatives, once it becomes available in 2005. Figures 3.10-27a and 3.10-27b represent the cumulative with 2nd Avenue extensions volumes assigned to the 25 study intersections.

Cumulative Conditions With 2nd Avenue Extension 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 FORA CIP network, the Proposed Project's road network proposals, as well as changes recommended in the 2004 CSUMB Master Plan Transportation and Circulation section. Furthermore, the extension of 2nd Avenue in a northerly direction to connect to Del Monte Boulevard and south to connect directly with General Jim Moore Boulevard was included as part of this traffic scenario. As part of the CSUMB network changes 4th Avenue would be realigned to intersect 8th Street at the existing intersection with California Avenue. Fifth Avenue would be realigned to the intersection of Imjin Road and 8th Street to create the primary access to the CSUMB campus from the north. Refer to Figure 3.10-23 for the future study road network used in the traffic analysis for the cumulative traffic scenario.

Cumulative Conditions With 2nd Avenue Extension Traffic Conditions - Intersection Operations

Existing traffic and the traffic that would be generated by the cumulative projects was reassigned and then combined with the background traffic and the Proposed Project buildout traffic to provide the traffic volumes for the cumulative with 2nd Avenue extension traffic conditions. Cumulative with 2nd Avenue extension morning and evening peak hour turning volumes are illustrated on Figures 3.10-27a and 3.10-27b. These figures tabulate corresponding morning and evening peak hour levels of service, the details of which are presented in Appendix Q of the traffic report.

At most of the intersections no or a marginal difference was noted for the operating conditions at the study intersections as a result of the northerly and southerly extensions of 2nd Avenue to Del Monte

Boulevard and General Jim Moore Boulevard. The 2nd Avenue intersections would be mostly affected due to the fact that more trips were distributed over a larger road network.

TR-7. The Proposed Project, in combination with cumulative buildout conditions in the region, with 2nd Avenue extension, would result in unacceptable intersection LOS. (CC)

2nd Avenue/Imjin Parkway Intersection # 9 (signalized) Would operate at LOS D during the weekday AM and LOS E during the PM peak hours (average delay of 37.3 and 62.4 seconds, respectively). There are no feasible at grade mitigation measures to recommend that would improve the LOS to within the required standards; the operating conditions for this intersection would be LOS E. Only the grade separating of these two roads would improve the operating conditions to acceptable level. If grade separating is not possible this would be identified as an unavoidable significant impact.

2nd Avenue/3rd Street Intersection # 16 (signalized) would operate at LOS C during the weekday AM and LOS F during the PM peak hours (average delay of 31.5 and 139.7 seconds, respectively). Adding a SB right turn lane at this intersection would improve the LOS to C during the AM and LOS D during the PM peak hours.

2nd Avenue/Light Fighter Drive Intersection # 20 (signalized) would operate at LOS F during both the peak hours (average delay of 119.6 and >300 seconds, respectively). The widening and re-striping of the NB as two left, two through and one through/right turn lane, adding a second EB right and second EB left, a second SB left and a second and third SB through lane, a second WB left turn, a WB right turn lane and overlap phasing for the SB and WB right turns would improve the LOS to C during both peak hours.

General Jim Moore Boulevard/Light Fighter Drive Intersection # 21 (signalized) would operate at LOS C during the AM weekday peak hour and LOS E during the PM peak hour (average delay of 30.0 and 60.2 seconds, respectively). Re-striping the NB approach to one left, one through/right turn lane, the adding of a second EB left turn lane and a SB right turn lane would improve the LOS to C during both peak hours.

General Jim Moore Boulevard/Gigling Road Intersection # 22 (signalized) would operate at LOS D during the AM and LOS F during the PM peak hours (average delay of 47.0 and 145.1 seconds, respectively). Adding a third NB and SB through lane, a second NB and SB left turn lane and changing the EB right to right turn overlap phasing would improve the LOS to C during both peak hours.

Only one of the study intersections would require additional mitigation under cumulative with 2nd Avenue extension traffic conditions. This would be a significant ***cumulatively considerable impact***. Intersection mitigation measures at most of the study intersections stay the same as for the traffic scenario without the 2nd Avenue connection and will thus not be repeated here.

Mitigations TR-1.1 through TR-6.3 have already been identified under previous traffic conditions and will thus not be repeated for cumulative with 2nd Avenue extension traffic conditions.

MITIGATION MEASURES. The following mitigation measures would reduce this impact to a less-than-significant level, and are believed at this time to be feasible, but as stated below, some of the roadway segments are not controlled by the City of Marina. Some of these measures overlap with mitigation measures identified within the CSUMB Master Plan EIR. Measure TR 7.1 will be added to City of Marina CIP program. In addition, the City of Marina will request that Measures TR 7.2 to 7.4 be added to the City of Seaside CIP. Implementation of Mitigation Measures TR-7.2 through TR-7.4 would require cooperation from an agency or jurisdiction other than the City of Marina and are, therefore, outside the jurisdiction of the City of Marina to implement, enforce and monitor. Therefore, this impact would remain *significant and unavoidable*. (SU)

TR-7.1 *Add a SB right turn lane at the 2nd Avenue/3rd Street intersection (#16). (Shared Contribution)*

TR-7.2 *Widen and re-stripe the NB lane as two left, two through and one through/right turn lane, adding a second EB right and second EB left, a second SB left and a second and third SB through lane, a second WB left turn, a WB right turn lane and overlap phasing for the SB and WB right turns at the 2nd Avenue/Light Fighter Drive intersection (#20). (Shared Contribution)*

TR-7.3 *Re-stripe the NB approach to one left, one through/right turn lane, the adding of a second EB left turn lane and a SB right turn lane at the General Jim Moore/Light Fighter Drive intersection (#21) would be required. (Shared Contribution)*

TR-7.4 *Add a third NB and SB through lane, EB right turn lane and second NB and SB left turn lanes at the General Jim Moore/Gigling Road intersection (#22). (Shared Contribution)*

Based on the significance impact criteria described in section 1.7 of this report, the implementation of all the cumulative projects in the area including the Marina University Villages project will have a significant impact on study intersections number 3, 4, 6, 9, 10, 11, 12, 15, 16, 17, 18, 20 21, 22, 23, 24 and 25, as well as on the NB Highway 1 freeway between Light Fighter Drive interchange and Twelfth Street interchange (road segment #2), Highway 1 NB and SB off and on ramps at Light Fighter Drive interchange (road segments #9 & #10), Blanco Road north of Reservation Road and Reservation Road between Imjin Parkway and Blanco Road (road segments #12 & #13). This is based on the assumption that all mitigation measures recommended under background plus project Buildout have been implemented.

Cumulative Conditions With 2nd Avenue Extension Traffic Conditions - Roadway Segment Operations

Cumulative with 2nd Avenue extension morning and evening peak hour volumes on the study street segments are tabulated on the LOS Table in Figure 3.10-6. These are based upon turning volumes illustrated in Figures 3.10-27a and 3.10-27b. Figure 3.10-6 also tabulates corresponding street segment levels of service. The roadway segment LOS is based on the threshold volumes as shown in Appendix A4 and the HCM 2000 methodologies included in the Technical Appendix.

All the study road segments would continue to operate at the same LOS as they would under cumulative without the 2nd Avenue extensions. No additional mitigation measures would be required, but it should also be noted that there were also no segment LOS improvements due to the 2nd Avenue extensions.

Secondary Impacts. A secondary impact associated with each of the above prescribed mitigations would be stopping traffic, increased vehicle emissions and more frequent accidents. Stopped and idling traffic would result in higher emissions as compared to free-flowing traffic associated with roundabouts. Signalized and un-signalized intersections also have a higher probability to cause more frequent and more violent vehicle collisions because they have more conflict points than a roundabout intersection configuration.

To reduce secondary impacts, the City of Marina and the Proposed Project applicant should consider high capacity roundabouts as an alternative to standard intersections, as the roundabout will accommodate better intersection operation, reduce vehicle emissions and reduce the frequency of vehicle collisions. Roundabouts are proven to be safer and are generally cheaper to construct and maintain than intersections with traffic signals.

4.0 OTHER CEQA CONSIDERATIONS

4.0 CEQA CONSIDERATIONS

Significant And Unavoidable Impacts

This section summarizes project specific environmental impacts determined to be significant and unavoidable [CEQA Guidelines Section 15126.2(b)].

Significant and unavoidable project-specific impacts identified in this DEIR include the following:

- The Proposed Project would generate emissions of criteria air pollutants. (AQ-6)
- The Proposed Project would temporarily increase noise levels. (NE-1)
- Ten intersections would operate at an unacceptable LOS under background plus project phase 1 traffic conditions. (TR-1)
- Four of the study segments would operate at an unacceptable LOS under background plus project Phase 1 traffic conditions. (TR-2)
- Eight intersections would operate at unacceptable LOS under background plus Proposed Project buildout traffic conditions. (TR-3)
- Five road segments would operate at an unacceptable LOS under background plus Proposed Project buildout traffic conditions. (TR-4)

These impacts are discussed in detail in Sections 3.2, Air Quality; 3.8, Noise; 3.9, Public Utilities; and 3.10, Transportation and Circulation.

Significant Irreversible Environmental Impacts

Under CEQA, an EIR must analyze the extent to which a project's primary and secondary effects would commit resources to uses that future generations will probably be unable to reverse and only in connection with any of the following activities [CEQA Guidelines Section 15126.2(c); 15127]:

a. The adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency;

b. The adoption by a local agency formation commission of a resolution making determinations; or

c. A project which will be subject to the requirement for preparing an environmental impact statement pursuant to the requirements of the National Environmental Policy Act of 1969.

Section 21100(b)(2)(B) of CEQA requires that an EIR identify any significant effect on the environment that would be irreversible if the project were implemented. Section 15126.2(c) of the

CEQA Guidelines identifies irreversible environmental changes as those involving a large commitment of nonrenewable resources or irreversible damage resulting from environmental accidents.

The Proposed Project would include the demolition of existing structures (about 943 buildings) and the construction of new buildings. Approximately 420 acres of land, which was already developed in military base uses, would be committed to a more extensive mixed-use development. In both the short term and long term, the Proposed Project would involve a commitment of non-renewable resources, including building materials and fossil fuels. However, when measured against the availability of these resources, the commitment would not be large.

Accidents, such as the release of hazardous materials, may trigger irreversible environmental damage. As described in Section 3.5**,** there is the potential for the disturbance of hazardous materials during site demolition. Consequently, there exists a potential for an accidental release that could affect the surrounding environment, although it is unlikely any damage would be irreversible. State safety requirements and the regulations adopted by the city would reduce the public health and safety risks to reasonably prudent levels, so that significant irreversible changes from accidental releases would not be anticipated.

Growth-Inducing Impacts

To comply with CEQA, an EIR must discuss the ways in which the Proposed Project will affect economic and commercial growth in the vicinity of the project and how that growth will, in turn, affect the surrounding environment [CEQA Guidelines Section 15126.2(d)]. Under CEQA, this growth is not to be considered necessarily detrimental, beneficial, or of significant consequence. Induced growth is considered a significant impact only if it affects (directly or indirectly) the ability of agencies to provide needed public services, or if it can be demonstrated that the potential growth, in some other way, significantly affects the environment.

Introduction to Growth Inducement Issues. Growth can be induced in a number of ways, including the direct construction of new homes and businesses, the elimination of obstacles to growth, or through the stimulation of economic activity within the region. The discussion of the removal of obstacles to growth relates directly to the removal of infrastructure limitations (typically through the provision of additional capacity or supply), or the reduction or elimination of regulatory constraints on growth that could result in growth unforeseen at the time of project approval.

Elimination of Obstacles to Growth. The elimination of either physical or regulatory obstacles to growth is considered to be a growth-inducing effect. A physical obstacle to growth typically involves the lack of public service infrastructure. The extension of public service infrastructure, including roadways, water mains, and sewer lines, into areas that are not currently provided with these services would be expected to support new development. Similarly, the elimination or change to a regulatory obstacle, including existing growth and development policies, could result in new growth.

Economic Effects

Increased Demand on Secondary Markets. Development (residential or employment-generating uses) typically generates a secondary or indirect demand for other goods and services. The secondary or economic change can be quantified by an economic multiplier, which is an economic term used to describe inter-relationships among various sectors of the economy. One aspect of the multiplier effect is the potential catalytic force a project can have on satellite or follow-up development because it creates a demand or market to be served (e.g., neighborhood commercial development around residential development).

Increased Pressure on Land Use Intensification. Unforeseen future development can be spurred by the construction of certain projects that have the effect of creating unique and currently unmet market demands, or by creating economic incentive for future projects by substantially increasing surrounding property values. These types of impacts are most often identified for projects developed in areas that are currently lacking a full spectrum of economic activity. For example, newly developing office areas may be lacking in a full range of support commercial uses; this support commercial demand can cause increased pressure for rezones or general plan amendments aimed at providing adequate land to accommodate businesses seeking to serve the unmet demand.

Demographics

CEQA Guidelines Appendix G is an Environmental Checklist form, which, among other issues, discusses population in the context of inducing population growth, and as this falls under growth inducement category of discussion, the population and housing issue is contained in the growth inducement section in Chapter 4 of this EIR. Appendix G also references displacement of housing and people and it is determined that there would be no impact in this regard. (Refer to the Initial Study checklist in Appendix A.)

Population. During its operation as a military facility, Fort Ord reached a peak population of 50,000 during World War II and was near 34,000 in the late 1980s. The 1991 baseline population on Fort Ord was 31,270 (*Fort Ord Reuse Plan EIR*, May 1996). Buildout of former Fort Ord according to the *Fort Ord Reuse Plan Final EIR* (March 1997) would result in a total population of approximately 37,370 persons. Implementation of the Proposed Project would directly induce population growth with the construction of new housing units. Assuming an average household factor of 2.79 persons per unit,[1] the Proposed Project would generate approximately 3,451 residents. The environmental impacts associated with the increased population on the project site are discussed in each technical section of this EIR (see Sections 3.1 through 3.10). The indirect growth-inducing impacts of the increased population are discussed below.

[1] U.S. Census Bureau, 2000.

Housing. Barracks on the project site previously provided housing for enlisted troops. Currently, however, all barracks on site are vacant. The *Fort Ord Reuse Plan Final EIR* anticipated buildout of the former Fort Ord to include approximately 10,816 units. Implementation of the Proposed Project would result in the construction of 1,237 housing units on the project site. The environmental impacts associated with the construction of the new housing units on the project site are discussed in each technical section of this EIR.

The type of housing units proposed is presented in Table 4-1. The City of Marina's Housing Element Inclusionary Housing Program and the *Fort Ord Reuse Plan* established requirements for the City's Redevelopment Areas and the former Fort Ord, respectively, for the provision of a minimum level of residential housing units to be built and sold or rented within the relevant boundaries. The Proposed Project is subject to these requirements. The Marina Housing Element (per the *City of Marina General Plan* Policy 2.3.1) and Base Reuse Plan require that 20 percent[2] of new residential development be affordable to certain income groups, as defined and administered by the California Redevelopment Law and the U.S. Department of Housing and Urban Development. An additional 10 percent of new residential development will be "Workplace Housing", per the Marina Housing Element for a total of 30 percent (Marina Housing Element, page 6-8, Table 6-1).

The Proposed Project meets these requirements by proposing a mix of housing. In total, 20 percent of the proposed residential units would be for Very Low, Low and Moderate housing; 10 percent would be provided for affordable workforce housing. See Table 4-2, below.

Employment. According to the *Fort Ord Reuse Plan Final EIR,* buildout of former Fort Ord would generate approximately 18,342 employment opportunities. It is estimated that the Proposed Project could create over 4,000 employment opportunities.[3] The day-time population of the Proposed Project, which includes employees, visitors, and clients, was included in the technical analysis of environmental impacts and is reflected in the assumptions of the traffic, air quality, and noise analyses.

Jobs-Housing Ratio. A jobs-housing ratio is a numeric representation of the relationship between the total number of jobs and the total number of residential units in a region. This ratio is an indicator of the ability of a region to provide both adequate employment and housing opportunities for its existing and projected population. A balance of jobs and housing can benefit the environment of an area by reducing commute times and distances between residential areas and employment centers. Longer commutes result in increased vehicle trip length, which creates environmental effects associated with transportation, air quality, and noise. With a lower jobs-housing ratio, there are fewer jobs for residents, which result in workers commuting out of the area. A higher number means there are more jobs than housing units, suggesting that workers are commuting into the area. Because, on average, there is more than one worker per household, a jobs-housing ratio of 1 to 1.5 is generally considered balanced (so that there is little in- or out-commuting), depending on local condition.

[2] City of Marina, *Housing Element,* January 2004, Page 6-2.

[3] Employment estimate is based on data presented in the *Fort Ord Reuse Plan,* Table 3.3-1, Summary Land Use Capacity: Ultimate Development, May 1996, Page 3-42.

Table 4-1
University Villages
Housing Mix by Planning Area

Planning Area/Phase	Residential Acreage	Product types									Total Units	Multiple Use Residential Acreage	Density
		45 x 75 Alley	45 x 110 Carriage	45 x 80 Glens	55 x 100 Standard	Duets	Live/Work Townhomes	Mixed-Use Townhomes	Affordable Duets	Affordable Apartments			
B1/1	0.0							24			**24**	1.2	20.0
B2/1	0.0						50			108	**158**	7.6	20.7
C/2	8.4	33				40	13				**86**	1.2	8.9
E/3	7.0		20			38					**58**	0.0	8.2
F/3	11.2	48	20			20					**88**	0.0	7.8
G/3	1.8	20									**20**	0.0	11.0
H/3	7.3		24			34					**58**	0.0	7.9
I/3	10.1	11	11	24		32					**78**	0.0	7.7
K/1	12.7	23	43			30	26				**122**	1.6	8.5
L/1	4.3	18		14			26				**58**	1.4	10.2
M/2	3.4		8		5		9				**22**	0.5	5.6
O/2	7.1	12.0				56					**68**	0.0	9.6
P1/1	18.5	48		75		24	15				**162**	0.9	8.3
P2/2	13.6	29		18	47	1			5		**100**	0.0	7.4
Q/2	8.2				20				48		**68**	0.0	8.3
OP1B	0.0				9						**9**	2.3	3.9
OP1C	9.8				34	24					**58**	0.0	5.9
Total units	**123.6**	**242**	**126**	**131**	**115**	**299**	**139**	**24**	**53**	**108**	**1,237**	**16.7**	**8.8**

Source: Dahlin Group, January 24, 2005.

Table Sample 4-2
Proposed Project Percentage Income Mix/Units Types

	Very Low (≤ 50% Median Income)	Low (50–80% Median Income)		Moderate (80-120% Median Income)	Workforce
% of New or Rehabilitated Housing required by Inclusionary Housing Program	6%	7%		7%	
% of New Residential Development by Proposed Project	6%	7%		7%	10%
Housing Units	75	33	53	87	124
Unit Type	Rental	Rental	For-sale	For-sale	For-sale

Source: Marina Community Partners, *University Villages Specific Plan,* September 28, 2004; and The City of Marina Housing Element, *January 2004,* Page 6-8.

Although the job-housing ratio is a planning concept, because the jobs-housing ratio does not characterize how the jobs and housing units are matched, it is limited in its usefulness. For example, the ratio does not take into account the wage level of the jobs or the cost of the housing units. A region that is characterized as having an adequate jobs-housing ratio could have mostly low-wage jobs and up-scale housing. The result would be employees commuting to the area and residents commuting to jobs outside the area, thereby exacerbating traffic and air quality problems. Similarly, a region with high-wage jobs and low-cost housing would also have commute patterns that would not be reflected in the jobs-housing ratio. In addition, as the distance that people are willing to commute increases, its usefulness is further diminished when attempting to characterize the jobs-housing balance in smaller areas, as opposed to regions.

The *Fort Ord Reuse Plan Draft EIR* (May 1996) estimated that buildout of the former Fort Ord would result in a jobs/housing ratio of 2.05 within Fort Ord; the subsequent jobs and housing estimates in the *Fort Ord Reuse Plan Final EIR* (March 1997) would result in a revised jobs-housing ratio of 1.70. Implementation of the Proposed Project would produce a jobs-housing ratio of approximately 3.5 within the project site. As stated in the *Fort Ord Reuse Plan Draft EIR* (Page 4-21) the relatively high jobs-housing ratio would reverse the historically imbalanced jobs-housing ratios for the City of Seaside (0.55 in 1991) and the City of Marina (0.13 in 1991). It would create a surplus of jobs for the Fort Ord population and reverse the strong local job shortage, while improving the overall housing supply. Thus, it is considered a beneficial impact.[4]

[4] Fort Ord Reuse Authority, *Fort Ord Reuse Plan Draft EIR,* May 1996, Page 4-25.

Growth-Inducing Effects of the Proposed Project

As discussed above, a project can induce growth in an area either directly (by constructing new homes and businesses) or indirectly (through the extension of infrastructure).

Elimination of Obstacles to Growth. Reuse of Fort Ord is not anticipated to eliminate any existing obstacles to growth outside of the Specific Plan area. The development of Fort Ord into a civilian urban area is considered "in-fill" in that the property is currently developed with vacant military structures. The Proposed Project would not result in the extension of existing sewer and water lines to the site. Lines are already present on the site from its previous use, but they would have to be replaced to accommodate the civilian standards and the different demands associated with civilian use. Providing this infrastructure to the site is not considered growth inducing but is part of the planned development of this area of the City as allowed in the existing General Plan.

Increased Demand on Secondary Markets. Future residents who would reside in Fort Ord would require secondary support uses, including neighborhood commercial and personal services. In general, an additional dollar spent in the City for these goods and services is re-spent on additional goods and services (due to the "multiplier" effect). Therefore, the anticipated increase in spending on secondary and support services could increase growth pressures in the region. However, because the project site is in an urbanized area, and includes large retail facilities, most goods and services will be available on-site, thus absorbing most of the secondary spending on-site.

Increased Pressure on Land Use Intensification. In the case of the Fort Ord reuse, the Proposed Project is considered both "in-fill" and "reuse" because of the existing urban footprint and extensive infrastructure left behind by the military.

Development of the Proposed Project would result in the construction of new residences, regional and neighborhood commercial uses, and substantial employment generating uses, such as retail, office and visitor serving uses. Adjacent properties are and will be developed with institutional, residential and commercial uses, and would not be subject to increased development pressures as they are already planned. Vacant properties to the south are currently proposed for commercial uses. Therefore, the development of the Proposed Project site would not increase pressure on the City to intensify the land use designations and zoning on adjacent or nearby properties. However, the Proposed Project is expected to encourage population growth as the residential and commercial development would create employment and housing opportunities. This would ultimately fulfill development as allowed in the City's General Plan.

Cumulative Impacts

CEQA requires that an EIR contain an assessment of the cumulative impacts that could be associated with the Proposed Project. This assessment involves examining project-related effects on the environment in the context of similar effects that have been caused by past or existing projects, and the

anticipated effects of future projects. Even when project-related impacts are individually minor, the cumulative effects of these impacts, in combination with the impacts of other projects, could be significant under CEQA and must be addressed [CEQA Guidelines, section 15130 and 15355(b)].

An EIR must discuss the "cumulative impacts" of a project when its incremental effect will be cumulatively considerable. This means that the incremental effects of the individual project would be considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (section 15065(c)).

CEQA Guidelines section 15355 defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." This section states further that "[I]individual effects may be changes resulting from a single project or a number of separate projects." "The cumulative impact from several projects is [defined as] the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time."

Section 15130(a)(3) states also that an EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

Section 15130(b) indicates that the level of detail of the cumulative analysis need not be as great as for the project impact analyses, that it should reflect the severity of the impacts and their likelihood of occurrence, and that it should be focused, practical, and reasonable.

To be adequate, a discussion of cumulative effects must include the following elements:

1. Either (a) a list of past, present and probable future projects, including, if necessary, those outside the agency's control, or (b) a summary of projections contained in an adopted general plan or related planning document, or in a prior adopted or certified environmental document, which described or evaluated regional or area-wide conditions contributing to the cumulative impact, provided that such documents are referenced and made available for public inspection at a specified location;

2. A summary of the individual projects' expected environmental effects, with specific reference to additional information stating where such information is available; and

3. A reasonable analysis of all of the relevant projects' cumulative impacts, with an examination of reasonable, feasible options for mitigating or avoiding the project's contribution to such effects (section 15130[b]).

For some projects, the only feasible mitigation measures will involve the adoption of ordinances or regulations, rather than the imposition of conditions on a project-by-project basis (section 15130[c]).

Cumulative Impact Analysis

For this cumulative analysis a "summary of projections" approach is used combined with a project list of known projects. This section considers growth in the region as represented by the adopted General Plan or other planning document such as the *Fort Ord Reuse Plan* (i.e. "Summary of Projections"). The list of known projects is included in the transportation report and because they are based on the transportation report, the air quality and noise sections are also based on this information.

The Proposed Project's potentially considerable contributions to significant cumulative impacts are fully addressed in Section 3.1 through 3.10 of this EIR. These sections identify feasible mitigation measures that will reduce the Proposed Project's potential contributions to cumulative impacts to less-than-significant levels and identifies cumulatively considerable impacts to the following:

- An eligible State Scenic Highway (AE-4),
- PM_{10} emissions (AQ-9),
- On-site noise levels (NE-4),
- Intersection LOS (TR-5),
- Road segment LOS (TR-6), and
- Intersection LOS (with 2nd Avenue extension) (TR-7).

The reader is referred to Sections 3.1 through 3.10 for a thorough analysis and discussion of the cumulative impacts.

5.0 ALTERNATIVES

5.0 PROJECT ALTERNATIVES

Introduction

As stated in Section 15126.6 (c) of the CEQA Guidelines, the intent of the alternative evaluation in an EIR is to ensure that "the range of potential alternatives to the Proposed Project shall include those that could feasibly accomplish most of the basic objectives of the Proposed Project and could avoid or substantially lessen one or more of the significant effects." At the project objectives are an integral part of developing an alternatives analysis, the reader is referred to Chapter 2 of this DEIR for the University Villages Specific Plan development objectives. At the end of this chapter are Tables 5-1 and 5-2. Table 5-1 expresses a summary matrix of the alternatives as compared to the Proposed Project. Table 5-2 expresses the project's objectives and the alternatives attainment of those objectives.

The project-specific significant impacts that would result from Proposed Project implementation are stated in Chapter 3.

Alternatives Previously Considered and Eliminated From Further Analysis

Fort Ord Reuse Plan EIR Alternatives

The *Fort Ord Reuse Plan EIR* (Reuse Plan EIR) (EDAW/EMC 1996) includes a discussion of four alternatives. All are pertinent to reuse of the 28,000 acre former military base. These alternatives are:

- Alternative 6R (Revised Anticipated Reuse; from the U.S. Army's FEIS). This alternative relates to the Army's preferred alternative for the Presidio of Monterey (POM) annex and reserve center and the disposal of lands excess to Army needs. In this alternative, 84 percent of the former Fort Ord is conveyed to public agencies, with three percent held by the Army as "No Proposed Use" and could be sold by the Army to private entities. The Proposed Project is within the 84 percent of the former Fort Ord and not the three percent area. In this alternative, approximately 14 percent of the undeveloped land would be develop with a total 27,000 jobs and 10,210 dwelling units. The buildout population would be approximately 22,800.

- Alternative 7 (the FORA 12-12-94 *Fort Ord Reuse Plan*; from the U.S. Army's FEIR). This alternative refers to the first FORA Reuse Plan which had substantially higher employment and population figures. This alternative proposed 13,800 dwelling units and 58,500 jobs. The total population was estimated to be 41,500 plus 20,000 CSUMB students by ultimate buildout.

- Alternative 8 (Modification of Alternative 7 to include newly excessed lands; from the U.S. Army's DSEIS). This alternative is a slight modification of Alternative 7 and includes two golf courses and 1,200 additional residential units proposed in conjunction with one of the golf courses. This alternative would result in 15,000 dwelling units (plus

CSUMB student accommodations) and 48,100 jobs. The buildout population would be approximately 45,100 plus 20,000 CSUMB students.

- No Project Alternatives. This alternative was proposed in the Reuse Plan EIR for the purpose of discussing a scenario where the former Fort Ord was unable to adopt a reuse plan. As a reuse plan was adopted by FORA, this particular alternative scenario is moot and will not be further discussed in this EIR.

Each of these alternatives evaluates the alternatives to developing the 28,000 acre former military base. The project site is approximately 420 acres of this larger area; therefore, these alternatives are not relevant to the relatively small geographic area and specifics of this Proposed Project. As a result a separate set of alternatives is presented and evaluated in this EIR that more closely aligns with the Proposed Project and its objectives.

Off-Site Alternative

The Proposed Project is considered an "infill" and "reuse" project because of the current urban conditions that exist on the project site and is a public benefit conveyance from the U.S. Army whereby alternative sites for reuse are not available. In light of this condition, an off-site alternative is not considered a reasonable alternative because an off-site alternative that could meet the same or similar Proposed Project objectives would not occur in the context of the benefit conveyance. The 1991 "baseline" context is discussed in Chapter 1 of this EIR and is briefly discussed in each of the environmental discussion sections 3.1 through 3.10.

Alternatives Analyzed

The City of Marina may adopt an alternative in lieu of the Proposed Project. This section provides a description of the reasonable alternatives to the Proposed Project.

In summary, the following three alternatives are analyzed in this EIR:

Alternative 1: No Project Alternative - No Development. In this scenario, "No Project" means that no development would occur on the 420 acre project site.

Alternative 2: Reduced Housing Alternative. In this scenario, the project site would be developed according to the existing City of Marina General Plan only and would not include the 400 additional units as allowed by General Plan Section 2.35.5. Therefore, 837 residential units would be constructed as well as 750,000 square feet (sf) of retail and 760,000 sf of office/research. All other components of the Proposed Project would remain the same.

Alternative 3: Reduced Commercial Alternative. In this scenario the 500 hotel rooms and 200,000 sf of retail space would not be developed. This alternative would leave approximately 550,000 sf of retail, 760,000 sf of office/research, and all the residential units allowed by the General Plan for the University Villages project site (i.e., 1,237 units).

Alternative 1: No Project Alternative – No Development

Aesthetics and Visual Resources. As with the Proposed Project, this alternative will result in the barrack buildings eventually being deconstructed and demolished but it is anticipated that in this alternative funding for this activity will be delayed as funding sources would be uncertain without the Proposed Project. Fencing around the project site would be required to maintain some level of security of the decaying structures to prevent arson and vandalism, and to protect public health. This fencing would be somewhat a negative impact especially as seen from Highway 1. The northern area of the Proposed Project site immediately north and south of Imjin Parkway can be seen from Highway 1, but as the remainder of the project site is set back from the highway and there is intervening "Non-Application Parcels" between Highway 1 and the project site, the view of this area from Highway 1 is not expected to be significant. Furthermore, there are intervening trees on the east boundary of the Highway 1 corridor that filter views from the highway to the "Non-Application Parcels", and the project site. With this alternative, it is theoretically possible that the "Non-Application Parcels" under ownership (or future ownership) of public agencies such as TAMC, ACOE, and MST could be developed with a variety of land uses which would further obscure the project site from the highway.

Therefore, compared to the Proposed Project, this alternative would result in more severe aesthetic and visual impacts because degraded barrack buildings when compared to a new hotel, retail and residential uses is considered by the City to have a greater visual quality.

Air Quality. This alternative would have significantly less air quality impacts because the homes and businesses and the vehicle trips they generate would not be constructed. Therefore, there are less severe operational impacts. However, air quality impacts associated with deconstruction and demolition would remain.

Therefore, compared to the Proposed Project, this alternative would result in less severe air quality impacts.

Biological Resources. This alternative would result in similar biological resources impacts when compared to the Proposed Project because the biological resources would be impacted associated with the deconstruction and demolition activities that includes removal of approximately 943 buildings. In this scenario, once buildings are removed, it is assumed the property remains vacant whereby the variety of native plants and wildlife would be slowly reintroduced to the vacant area.

Therefore, compared to the Proposed Project, this alternative would result in less severe biological resources impacts.

Cultural Resources. Development of this alternative would not change the potential for encountering unidentified cultural resources during deconstruction and demolition. The potentially significant impacts related to unidentified subsurface archeological or undiscovered human remains that could occur with the Proposed Project during deconstruction and demolition could also occur with this alternative. These impacts would be addressed by the same mitigation identified for the Proposed

Project. Identical to the Proposed Project, no historical resources exist on the site. As with the Proposed Project, no cumulatively considerable impact to unidentified cultural resources would occur.

Therefore, compared to the Proposed Project, this alternative would result in an identical cultural resources impact.

Hazardous Materials and Public Safety. As with the Proposed Project, transportation, routine use, storage and disposal of hazardous materials, and exposure to unexploded ordnance would be identical during deconstruction and demolition, but would be less severe as compared to the Proposed Project after deconstruction and demolition.

Hydrology and Water Quality. The absence of any reuse of the project site will likely result in the status quo in terms of the existing drainage system, whereby stormwater continues to flow off-site to the west side of Highway 1 and to existing percolation ponds in the Fort Ord Dunes State Park and via surface drainage and underground stormwater conveyance pipelines. There would be no change in impervious surface cover. In this alternative, unless these drainage facilities are regularly maintained by FORA, they would be expected to rot, decay, collapse, leak, etc. and potentially cause localized flooding and/or erosion.

Therefore, compared to the Proposed Project, this alternative would result in greater hydrology and water quality impacts as it pertains to localized flooding and potential erosion associated with such flooding events.

Land Use and Planning. This alternative systematically is inconsistent with the intent of the Reuse Plan and the City of Marina General Plan to redevelop the former military base Main Garrison area whereby economic benefit is derived. With this alternative scenario where the property is left vacant and where it is likely to contain substantial structural debris from remnant roads, and other surface and underground infrastructure, adjacent property owners to include CSUMB, MIRA, other "Non-Application Parcels" and the City of Seaside, would likely find this alternative scenario detrimental to their future land use plans, as it would likely be somewhat of a blighted area adjacent to their reuse areas.

Therefore, compared to the Proposed Project, this alternative would result in greater land use and planning impacts.

Noise. This alternative would result in noise impacts related to deconstruction and demolition only.

Therefore, compared to the Proposed Project, this alternative would result less severe noise impacts.

Public Utilities. This alternative would not be expected to use water except for watering down soils and buildings during deconstruction and demolition activities. There would be no wastewater flows to the wastewater treatment plant and except for the building detritus associated with deconstruction and demolition, no solid waste would be delivered to the local landfill.

Therefore, compared to the Proposed Project, this alternative would result in less severe water use, wastewater flows and except for short-term building detritus, no solid waste.

Transportation and Circulation. This alternative would result in short-term transportation impacts associated with the 6,500 truck loads (i.e. 12-13,000 round trips) carrying building materials from the deconstruction and demolition process. After this activity, there would be no impact.

Therefore, compared to the Proposed Project, this alternative would result less severe transportation and circulation impacts.

Demographics. This alternative provides no reuse of the property and no change in population, housing, and employment opportunities.

Therefore, compared to the Proposed Project, this alternative would result in no growth inducing impacts.

Comparison to Project Objectives. This alternative is not consistent with the Fort Ord Reuse Plan, the City of Marina General Plan and general expectations of the Monterey Peninsula community in regards to economic redevelopment of the former military base. Therefore, this alternative would not achieve any of the project objectives.

Alternative 2: Reduced Housing Alternative

Under Alternative 2 development as currently permitted by the General Plan, would occur with the exception that there would be 400 fewer residential units constructed. With 400 fewer units it is also assumed that the density of remaining units would be reduced. The maximum allowable commercial and office land uses as currently proposed are developed in this alternative.

Aesthetics and Visual Resources. With less square footage of development, there could be larger residential lots and more opportunity for landscaping and reduction of residential density. With this alternative, the significant and unavoidable impact related to an adverse effect related to light and glare would occur as there would still be a hotel up to 90 feet tall in Planning Area OP1A and T and light and glare associated with vehicle traffic and the commercial area at the intersection of Imjin Parkway at Highway 1 would remain. Impacts to the highway view corridor or would be expected to be the same. Impacts to the visual character of the site and surroundings would also be the same. Light and glare would be less than significant as with the Proposed Project after mitigation. The cumulatively considerable impacts resulting from increased light and glare would still occur with this alternative as the alternative would still have the visitor serving, commercial and office components.

Therefore, compared to the Proposed Project, this alternative would result in approximately the same aesthetic and visual resources impact.

Air Quality. This alternative reduces vehicle trips by approximately 4,000 daily trips (less than four percent of the Proposed Project's total daily trips at full buildout of approximately 114,586 daily trips). This results in a related reduction in vehicle emissions. However, the significant and unavoidable

operational impact related to emissions of criteria pollutants would still occur with this alternative. Other potentially significant and mitigatable impacts related to PM_{10} emissions from demolition, and PM_{10} emissions from grading would occur with this alternative and would be mitigated as with the Proposed Project. Less than significant impacts related to diesel emissions from construction trucks, release of asbestos during demolition, release of lead during demolition, and increase of CO emissions from operations would be similar with this alternative as with the Proposed Project. Cumulative PM_{10} emissions would also be reduced with this alternative but not by enough to reduce the significance of the impact, and this impact would remain cumulatively considerable as with the Proposed Project.

Therefore, compared to the Proposed Project, this alternative would result in approximately the same air quality impacts.

Biological Resources. Compared to the Proposed Project, the 400 units developed under this alternative would result in the same impacts to biological resources because the remaining residential units (837) would be placed on larger lots (i.e., lower density). Therefore, the urban footprint in this scenario would remain approximately the same as that associated with the Proposed Project. In addition, the redevelopment of the project site includes the removal of old infrastructure related to Fort Ord's previous military mission, it is anticipated that in this alternative the same trees could be removed to accommodate the new road network, drainage, potable water and wastewater infrastructure. Therefore, the impacts related to loss of special-status plant populations and special-status wildlife habitat, loss of black legless lizards or California horned lizards, loss of nesting raptors, loggerhead shrike or other migratory birds, loss of hibernation or maternity roosts for special-status bats, potential conflicts with the HMP, and effects on wildlife due to increased night lighting would be similar to those occurring with the Proposed Project. Light intrusion to the Fort Ord Dunes State Park would still occur. As with the Proposed Project, no cumulatively considerable impact would occur.

Therefore, compared to the Proposed Project, this alternative would result in approximately the same biological resources impact.

Cultural Resources. The potentially significant impacts related to unidentified subsurface archeological or undiscovered human remains that could occur with the Proposed Project could also occur with this alternative because the same amount of land would be disturbed. These impacts would be addressed by the same mitigation identified for the Proposed Project. Identical to the Proposed Project, no historic resources exist on-site. As with the Proposed Project, no cumulatively considerable impact to unidentified cultural resources would occur.

Therefore, compared to the Proposed Project, this alternative would result in approximately the same cultural resources impact.

Hazardous Materials and Public Safety. As with the Proposed Project, transportation, routine use, storage and disposal of hazardous materials, and exposure to unexploded ordnance would be identical during deconstruction and demolition and during long-term operational conditions. No project or cumulative impacts are expected to occur.

Therefore, compared to the Proposed Project, this alternative would result in identical hazardous materials and public safety impacts.

Hydrology and Water Quality. The reduction of 400 residential units would be expected to reduce the total impervious surface and thus create fewer sources of contaminants that could enter the groundwater. Development of this alternative, as is the case with the Proposed Project, would end the discharge of existing stormwater flows to ponds on the west side of Highway 1 and these flows would be captured on-site within the proposed stormwater system that includes underground percolation chambers, thus reducing potential contaminants released to off-site soils and the Pacific Ocean. Potentially significant impacts related to flooding at the CSUMB campus would be similar with this alternative as with the Proposed Project, but would be addressed with the same mitigation as that recommended for the Proposed Project. As with the Proposed Project, no cumulatively considerable impact would occur.

Therefore, compared to the Proposed Project, this alternative would result in approximately the same hydrology and water quality impacts.

Land Use and Planning. No potentially significant land use impacts were identified for the Proposed Project and this alternative would not change those conclusions because a reduction of 400 units would not create inappropriate adjacent land uses. However, with 400 fewer residential units there is expected to be fewer opportunities for affordable housing. In addition, it is important to note that Public Resources Code Section 21159.26 states the following:

> With respect to a Proposed Project that includes a housing development, a public agency may not reduce the number of housing units as a mitigation measure or Proposed Project alternative for a particular significant effect on the environment if it determines that there is another feasible specific mitigation measure or Proposed Project alternative that would provide a comparable level of mitigation. This section does not affect any other requirement regarding the residential density of a Proposed Project.

In light of this Public Resources Code section, the Lead Agency may conclude that this alternative may not be feasible and other alternatives discussed herein would be feasible.

Therefore, as no impacts were identified with the Proposed Project, this alternative would result in similar land use and planning impacts.

Noise. This alternative would result in less development than the Proposed Project resulting in approximately 4,000 fewer daily vehicle trips. Regardless, the small number of vehicle trips not on the roads would still result in Proposed Project specific and cumulative traffic noise impacts similar to the Proposed Project. Construction noise would be less as 400 fewer homes would be constructed. Significant and unavoidable pile driving sounds could nonetheless occur. Groundborne vibration impacts would be the same, as this construction equipment is related to the large hotel and commercial structures. On-site cumulative noise levels would be approximately the same, but would be mitigated.

Similar to the Proposed Project, off-site noise impacts are less than significant but less severe because there are 400 fewer units under Alternative 2.

Therefore, compared to the Proposed Project, this alternative would have slightly lower construction and operational related noise impacts, but mitigations prescribed to the Proposed Project would remain applicable to this alternative.

Public Utilities. No potentially significant impacts were identified for public water and sewer utilities conveyance infrastructure. With this alternative, no changes in provision of public utility infrastructure would occur and thus no potentially significant impacts would occur with this alternative. However, adequate water supply does exist as the Regional Urban Water Augmentation Project provides a reliable future water supply.

The 400 dwelling units removed in this alternative scenario assumes that of the variety of housing types proposed to be included in the Proposed Project (Small Lot Alley, Carriage, Duets, Live-work Townhomes, Small lot standard, standard lots) 100 each of the standards lots, small standard lots, live-work townhomes, and duets would be removed. Each of these type of housing units has the following water demand factor (based on Table 2-1 of the Water Supply Assessment and Written Verification of Supply, Marina Coast Water District/Byron Buck and Associates 2005; and based on interior and exterior water use); Duets = 0.17 acre feet per year (AFY); Live-work Townhomes = 0.13 AFY; Small lot standard = 0.24 AFY; standard lot = 0.30 AFY. With the removal of these 400 units the total water demand of the Proposed Project would be reduced from 732 AFY to 648 AFY. Of the Proposed Project's total water demand of 732 AFY, approximately 194.47 AFY is attributable to the 1,237 dwelling units.

Dwelling Type	**Water Demand (AFY)**
Duets	100 units x 0.17 = 17
Live-work Townhomes	100 units x 0.13 = 13
Small lot standard	100 units x 0.24 = 24
Standard lot	100 units x 0.30 = 30
	Total 84 AFY

With this reduction in the number of units will be a reduction in water consumed and wastewater flows to the regional wastewater treatment plant which would be up to 90 percent of the 84 AFY (i.e., 75.6 AFY). With 400 fewer residential units, there would also be a slight reduction in the solid waste flow to the local landfill.

Therefore, compared to the Proposed Project, this alternative would reduce water use, wastewater flows, and solid waste flows and would have a slightly less severe impact.

Transportation and Circulation. In this scenario there would be a reduction of approximately 4,000 daily vehicle trips associated with not constructing 400 residential units. Therefore, there are fewer transportation related impacts associated with this alternative. As the 4,000 daily trips represent less than four percent of the Proposed Project's total at buildout daily trips, this alternative is considered to

have approximately the same transportation impacts as those of the Proposed Project. There also remains significant and unavoidable project and cumulative level impacts as is the case with the Proposed Project because mitigations would require participation of agencies outside the control of the City of Marina. This alternative would also result in less development fees paid to FORA for its CIP Program.

Therefore, compared to the Proposed Project, this alternative would result in slightly less traffic impacts but the conclusions and prescribed mitigations associated with the Proposed Project would be expected to remain the same.

Demographics. Demographics is discussed in this document in the context of population, housing and employment and is contained in the Growth Inducement discussion in Chapter 4. By not constructing 400 residential units there would be a reduction in population by 1,116 residents, as compared to the 3,451 residents associated with the Proposed Project. As no retail space is removed, there would be no reduction of jobs created, however, there will be the short term loss associated with the 400 units. With removal of 400 units, the project would have to reorganize its approach to providing "affordable" housing.

Comparison to Project Objectives. Implementation of the Reduced Housing Alternative would not achieve the housing goals of the Proposed Project, but would achieve the commercial and office related goals.

Alternative 3: Reduced Commercial Alternative

In this scenario the 500 hotel rooms and 200,000 square feet of retail space would not be constructed, resulting in a total of 550,000 sf of retail uses. The retail square footage area would be reduced at the intersection of Imjin and Highway 1 whereby more space remains available for reducing residential density. Potential hotel sites in Planning Area OP1A and T are removed and these sites would be used for residential use.

Aesthetics and Visual Resources. With less square footage of development, there could be larger residential lots, lower residential density, and more opportunity for landscaping. The absence of a hotel and 200,000 square feet would reduce the visual impact as can be seen from an eligible State scenic highway. The impact from light and glare would be less with this alternative as development of a 90-foot tall hotel at the OP1A site would not occur and 200,000 fewer square feet of commercial area would also reduce light and glare and fewer vehicle trips (20,500 fewer vehicle trips as discussed below under transportation) that would circulate in the area and increase illumination during the night. The cumulative impacts associated with light and glare would be similar, but less severe under this alternative but would remain significant and unavoidable as is the case with the Proposed Project.

Therefore, compared to the Proposed Project, this alternative would result in less severe aesthetics and visual resource impacts.

Air Quality. This alternative reduces vehicle trips by approximately 20,500 average daily trips, or about 18 percent of the Proposed Project's total average daily trips of approximately 114,586. This results in a commensurate reduction in vehicle emissions; however, as compared to the Proposed Project, the significant and unavoidable impact related to emissions of criteria air pollutants would still occur with this alternative. Other potentially significant and mitigatable impacts related to PM_{10} emissions from demolition, and PM_{10} emissions from grading would occur with this alternative and would be mitigated as with the Proposed Project. Less-than-significant impacts related to diesel emissions from construction trucks, release of asbestos during demolition, and increase of CO emissions from operations would be less with this alternative. Cumulative PM_{10} emissions would also be reduced with this alternative but not by enough to reduce the significance of the impact, and this impact would remain cumulatively considerable. The PM_{10} emissions resulting from this option still exceeds the threshold of 82 lbs. per day.

Therefore, compared to the Proposed Project, this alternative would result in fewer emissions, but not enough to lower the impact threshold. This alternative would have a less severe impact.

Biological Resources. In this alternative, the residential density would be reduced by spreading out the units on larger lots. The 500 room hotel and 200,000 sf of retail would be eliminated in this alternative. Therefore, this alternative would not necessarily result in a smaller development footprint and would not necessarily result in fewer biological resources being affected, including trees being removed on Planning Areas OP1A and T.

Because the urban footprint would still be about the same in this alternative, the potential significant impacts associated with the loss of special-status plant populations and special-status wildlife habitat, loss of black legless lizards or California horned lizards, loss of nesting raptors, loggerhead shrike or other migratory birds, loss of hibernation or maternity roosts for special-status bats, potential conflicts with the HMP, and affects on wildlife due to increased night lighting would be similar to those occurring with the Proposed Project. In addition, the cumulatively significant impact on biological resources related to loss of biodiversity would still occur. As with the Proposed Project, no cumulatively considerable impact would occur.

Therefore, compared to the Proposed Project, this alternative would result in identical biological resource impacts.

Cultural Resources. The potentially significant impacts related to unidentified subsurface archeological or undiscovered human remains that could occur with the Proposed Project could also occur with this alternative because the same amount of land would be disturbed, these impacts would be addressed by the same mitigation identified for the Proposed Project. Identical to the Proposed Project, no historic resources exist on site. As with the Proposed Project, no cumulatively considerable impact to unidentified cultural resources would occur.

Hazardous Materials and Public Safety. As with the Proposed Project, transportation, routine use, storage and disposal of hazardous materials, and exposure to unexploded ordnance would be identical

during deconstruction and demolition and during long-term operational conditions. No project or cumulative impacts are expected to occur.

Therefore, compared to the Proposed Project, this alternative would result in the same hazardous materials and public safety impacts.

Hydrology and Water Quality. The elimination of 500 hotel rooms and 200,000 square feet of commercial area would be expected to reduce total impervious surface and thus create fewer sources of contaminants that could enter the groundwater via the on-site drainage system; however, this difference is considered negligible as the land would still be disturbed by lower density residential development, which has with it its own impervious surfacing. Development of this alternative would benefit from the discharge of stormwater flows as these currently drain from the site and with this alternative these flows would be captured within the stormwater system, reducing contaminants released to adjoining soils and the Pacific Ocean. Potentially significant impacts related to flooding at the CSUMB campus would be similar with this alternative as with the Proposed Project, and would be addressed with the same mitigation as used for the Proposed Project. As with the Proposed Project, no cumulatively considerable impact would occur.

Therefore, compared to the Proposed Project, this alternative would result in similar impacts hydrology and water quality impacts.

Land Use and Planning. No potentially significant land use impacts were identified for the Proposed Project and this alternative would not change those conclusions because a reduction of retail space and hotel rooms would not create inappropriate adjacent land uses.

Noise. This alternative would result in less development compared to the Proposed Project and less associated daily trips. Approximately 20,500, or 18 percent, of the total Proposed Project buildout daily trips generated. This alternative would, therefore, generate less noise because of the lower daily traffic volumes and because of the pile-driver sounds and construction noise would be substantially less with no hotel and 200,000 fewer square feet of commercial area.

Therefore, compared to the Proposed Project, this alternative would result in less noise impacts.

Public Utilities. No potentially significant impacts were identified for public water and sewer utilities conveyance infrastructure. With this alternative, no changes in provision of public utility infrastructure would occur and thus no potentially significant impacts would occur with this alternative. Adequate water supply exists as the Regional Urban Water Augmentation Project provides a reliable future water supply.

The removal of 500 hotel rooms would result in an approximately 114 AFY reduction in water use (based on two hotels with one at 150 rooms and another at 350 rooms and accounting for interior, exterior, in-hotel retail, and restaurant uses). With this reduction in the number of units would be a reduction in water consumed and wastewater flows to the regional wastewater treatment plant which

would be up to 90 percent of the hotel 114 AFY water demand (i.e., 88.5 AFY; the turf and ornamental water demand is not accounted for in the wastewater flow).

The removal of 200,000 square feet of retail use would further reduce water demand. Without this retail there would be approximately a 56 AFY water use reduction assuming a 20 acre site (for use in determining exterior water demand), 10,000 sf of restaurant area (sit-down) and 8,000 sf of fast food (take-out). Therefore, this alternative would result in a total water demand reduction of approximately 170 AFY. With this reduction in the retail area will be a reduction in water demand and wastewater flows to the regional wastewater treatment plant which would be up to 90 percent of the 56 AFY. (i.e., 50.4 AFY; the turf and ornamental water demand is not accounted for in the wastewater flow).

Therefore, compared to the Proposed Project, this alternative would use less water, wastewater, and solid waste flows and would have a substantially lower impact, thus the overall impact to utilities would be less severe.

Transportation and Circulation. In this scenario there would be a reduction of approximately 16,000 average daily vehicle trips associated with 200,000 square feet less of retail land uses and an additional reduction of approximately 4,500 average daily vehicle trips associated with the 500 fewer hotel rooms. Level of Service (LOS) impacts associated with this alternative on area intersections and road segments are expected to be improved with this alternative.

With the reduction of 20,500 average daily trips associated with retail uses and the hotel rooms, and as the daily trips associated with these land uses are considered visitor-serving and regional retail, these daily trips would be expected to primarily travel Imjin Parkway, Second Avenue and Highway 1 (as opposed to the internal roads associated with the Proposed Project). Therefore, the greatest benefit in terms of reduced impacts would be on these roads and especially the 2nd Avenue/Imjin Parkway intersection which would have a substantial reduction in vehicle traffic and perhaps to an extent this reduction could preclude some of the mitigations pertinent to this intersection prescribed for the Proposed Project.

Therefore, compared to the Proposed Project, this alternative would still have significant and unavoidable impacts because many mitigations prescribed require cooperation of agencies outside the control the of the City of Marina, thereby implementing mitigations cannot be assured.

Demographics. As conveyed in the *Fort Ord Reuse Plan, Context and Framework, Vol. 1, Table 3.3-1* (EDAW/EMC 1996), there is one job created per hotel room and 2.2 jobs created per 1,000 square feet of retail. Therefore, the Proposed Project would create a total of 2,150 jobs associated with retail and hotel uses (the proposed office / research would generate another 2,128 at 2.8 jobs per 1,000 square feet). In this alternative, with removal of 500 hotel rooms and 200,000 square feet of retail space there would be 940 fewer jobs. As with the Proposed Project, all 1,237 residential units are constructed and affordable housing opportunities remain.

Comparison to Project Objectives. Implementation of the Reduced Commercial Alternative would achieve the housing goals of the Proposed Project, but would fall short of the economic reuse of the project site.

Environmentally Superior Alternative

An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. CEQA Guidelines Section 15126.6(e)(2) requires that an environmentally superior alternative be designated and states that "if the environmentally superior alternative is the 'no Proposed Project' alternative (in this case the "No Development" alternative), the EIR shall also identify an environmentally superior alternative among the other alternatives."

Based on the alternatives analysis herein, it appears that the "Alternative 3: Reduced Commercial Component Alternative" would result in less severe impacts. Associated with this alternative are reduced visual impacts to the Highway 1 corridor due to the absence of the hotel and 200,000 square feet of commercial (cumulative impacts relating to light and glare and an eligible State Scenic Highway are approximately the same), reduced construction and project-related vehicle emissions, reduced light and glare, reductions in water use, sewer flow, lower vehicle emissions, and 20,500 fewer vehicle trips per day. Other effects would be similar to those identified for the Proposed Project.

The following Table 5-1 summarizes the comparative impacts of the project alternatives.

Table 5-1
Alternatives Impact Comparison to Proposed Project

Issue Area	1: No Project/No Development	2: Reduced Housing	3: Reduced Commercial
Aesthetics and Visual Resources	(+)	(=)	(-)
Air Quality	(-)	(=)	(-)
Biological Resources	(-)	(=)	(=)
Cultural Resources	(=)	(=)	(=)
Hazardous Materials and Public Safety	(=)	(=)	(=)
Hydrology and Water Quality	(+)	(=)	(=)
Land Use and Planning	(+)	(=)	(=)
Noise	(-)	(=)	(-)
Public Utilities	(-)	(-)	(-)
Transportation and Circulation	(-)	(-)	(-)
Demographics	(-)	(-)	(-)

Notes:
(-) impact is less severe compared to the Proposed Project
(=) impact is identical to the Proposed Project
(+) impact is more severe compared to the Proposed Project

Project Objectives and Alternatives

The following Table 5-2 summarizes the Proposed Project objectives and their relationship to the alternatives.

Table 5-2
Attainment of Objectives

Objectives	Proposed Project	1: No Project/No Development	2: Reduced Housing Alternative (Excludes 400 residential units)	3: Reduced Commercial (Excludes 500 hotel rooms and 200,000 sf of retail)
Implementation of Fort Ord Reuse Authority Act In 1994, the California Legislature adopted the Fort Ord Reuse Authority Act, Government Code section 67650, *et seq.,* in order to facilitate the transfer and reuse of Fort Ord. The City has actively participated in a cooperative effort to achieve the legislative purpose of the Fort Ord Reuse Authority Act, and desires to further implement that legislative purpose at the project level in the University Villages by achieving the following objectives:				
Goal I.A – Formulate and implement project-level land use planning and land disposition in a manner which will achieve the reuse of the real property comprising the University Villages portion of the former Fort Ord with all practical speed.	✓		✓	
Goal I.B – Overcome the disruption that was caused to the civilian economy by the closure of the former Fort Ord by providing for a wide variety business development opportunities, including retail, commercial, tourist service, hotel uses, office, and other commercial facilities in order to enhance the local and regional economy.	✓		✓	
Goal I.C – Enhance the quality of life for people in the City of Marina and the Monterey Bay area by providing housing, employment, shopping, and recreational opportunities within the University Villages portion of the former Fort Ord.	✓		✓	
Goal I.D – Protect the unique environmental features and resources located within the University Village area, including the scenic qualities associated with this coastal area and inland hills, and the vast recreational opportunities in the vicinity.	✓		✓	
Implementation of the Fort Ord Reuse Plan The City desires to implement the Reuse Plan and its Community Design Vision for the University Villages portion of former Fort Ord. The City took an important step toward this implementation in 2000 by adopting its updated General Plan, which FORA certified as being consistent with the Reuse Plan. The City now desires to carry out the Reuse Plan at the project-level by creating a livable community that integrates housing, recreation, retail and job opportunities in the overall community plan. Among the City's most important objectives in this regard are the following:				

Table 5-2
Attainment of Objectives

Objectives	Proposed Project	1: No Project/No Development	2: Reduced Housing Alternative (Excludes 400 residential units)	3: Reduced Commercial (Excludes 500 hotel rooms and 200,000 sf of retail)
Goal II.A. – The City wishes to accomplish the Design Objectives 3.8.3 of the Reuse Plan in the University Villages area by approving a specific plan which accomplishes all of the following:				
1. Provides for convenient and publicly accessible circulation in a manner that creates a village center with a mix of uses and lively streetscape by incorporating the Village Promenade with shopping, dining, visitor services, employment centers, housing stock, and recreational opportunities all within easy access.	✓			
2. Integrates viable residential neighborhoods into the commercial development with open space amenities and convenient personal services and retail uses within a half-mile or less distance from residential areas.	✓		✓	
3. Takes advantage of the State Highway 1 visibility and accessibility to establish a high quality commercial and multiple use village center to serve as an anchor for the University Villages area.	✓		✓	✓
4. Protects the visual qualities of the State Highway 1 through the use of enhanced setbacks design guidelines and native landscaping.	✓		✓	✓
5. Takes advantage of the transit accessibility represented in the transit corridor by incorporating a well-designed pedestrian circulation system throughout the University Villages area that links residents and employees to future transit facilities.	✓		✓	✓

Table 5-2
Attainment of Objectives

Objectives	Proposed Project	1: No Project/No Development	2: Reduced Housing Alternative (Excludes 400 residential units)	3: Reduced Commercial (Excludes 500 hotel rooms and 200,000 sf of retail)
6. Enhances the regional identity of this area with a mix of public and quasi public uses to create a regional cultural attraction, by providing linkage via the 8th Street Bridge between the Fort Ord Dunes State Park and by commemorating the former base through adaptive reuse of 3-4 structures, signage, open corridor retention, historical exhibits, rotating displays and design features that pay tribute to the base's history.	✓		✓	
Goal II.B. Adopts a Specific Plan for the University Villages area which comports with general goals and programs contained in the all elements of the Reuse Plan.	✓		✓	
Goal II.C. To generate development that will maximize revenues to FORA's CIP program and thereby help to finance base-wide improvements encompassed therein.	✓		✓	
Achieving the Goals of the City of Marina Redevelopment Agency Redevelopment Plan The City of Marina desires to achieve the purposes of the Redevelopment Plan for Project Area 3 through its land use approvals and disposition and development agreement for the University Villages Area. More specifically, its goals in this regard are as follows:				
Goal III.A. To expeditiously eliminate the blighted conditions which exist in the University Villages area, including in particular acceleration of the FORA Building Removal Program with the assistance of the project developer and removal of toxic contaminants.	✓	✓		
Goal III.B. To eliminate or ameliorate existing substandard conditions, including substandard vehicular and pedestrian circulation, parking, inadequate infrastructure, inadequate public improvements and facilities which have contributed to the blight conditions within Project Area 3 and integrate former Fort Ord lands with city lands by creation and construction of new road connections, bikeways and walkways.	✓			

Table 5-2
Attainment of Objectives

Objectives	Proposed Project	1: No Project/No Development	2: Reduced Housing Alternative (Excludes 400 residential units)	3: Reduced Commercial (Excludes 500 hotel rooms and 200,000 sf of retail)
Goal III.C. To facilitate the development of a wide range of housing opportunities for differing lifestyles and affordability levels for a minimum of 1,200 households in order to provide the critical mass necessary to create sustainable neighborhoods and to attract the retail and employment options for a sustainable local economy, and to provide housing opportunities to employees of future businesses.	✓			
Goal III.D. To generate funding for the development of the housing of low to moderate income groups, with emphasis on meeting the housing needs of the very low to low income residents of Marina, including the use of set aside funds.	✓			
Goal III.E. To facilitate commercial development which will maximize future tax increment revenues from the University Villages area for the City of Marina Redevelopment Agency and FORA.	✓			
Goal III.F. To promote economic development opportunities in Project Area 3 which will in turn provide a basis of ongoing revenues to the City to support operation and capital projects, including the generation of sales taxes, transient occupancy taxes, business license and other fees and other taxes.	✓			
Goal III. G. In harmony with FORA, the University of California MBEST Center, and Cal State University at Monterey Bay (CSUMB), create and develop local job opportunities to preserve and improve the City's existing employment base, so as to attract new businesses, stimulate economic revitalization and provide business assistance to the Project Area.	✓			
Implement the City of Marina General Plan Another University Villages Specific Plan objective is to meet the goals, Section 1.18, of the City of Marina General Plan, including in particular the following:				
Goal IV.A. To achieve a balance of jobs and housing that provides the greatest possible opportunity both to live and work in Marina.	✓			

Table 5-2
Attainment of Objectives

Objectives	Proposed Project	1: No Project/No Development	2: Reduced Housing Alternative (Excludes 400 residential units)	3: Reduced Commercial (Excludes 500 hotel rooms and 200,000 sf of retail)
Goal IV.B. To avoid sprawl in the region by making efficient use of lands designated for community development purposes.	✓			
Goal IV.C. To create residential neighborhoods which are physically and visually distinguishable from the other communities of the Monterey Bay region, with a sense of place and identity in which residents can take pride.	✓		✓	
Goal IV.I. To provide a diversified and sound economic base including but not limited to development of specialty retail, convention exhibit facilities and regional retail opportunities.	✓		✓	
Goal IV.K. To provide an arts and cultural district which brings together commercial, arts, civic, cultural and educational activities and access to the beach.	✓		✓	
Implementation of the Terms of the U.S. Army – FORA Memorandum of Understanding (MOU) – and the Economic Development Conveyance				
Goal V.A. the City wishes to adopt a specific plan for the University Villages area and to enter into agreements which provide for the ultimate disposition of the subject property in a manner which fully complies with the City's obligations under both the FORA/Army MOU and the terms of the economic benefit conveyance.	✓		✓	

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7.0 REPORT PREPARATION

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8.0 ACRONYMS AND ABBREVIATIONS

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AB 939 = California Integrated Waste Management Act of 1989

AFY = Acre Feet per Year

AMBAG = Association of Monterey Bay Governments

ANSI = American National Standards Institute

AQMP = Air Quality Management Plan

BAT = Best Available Technologies

BMPs = Best Management Practices

BRP = Fort Ord Base Reuse Plan

CAAQS = California Ambient Air Quality Standards

Caltrans = California Department of Transportation

CARB = California Air Resources Board

CCR = California Code of Regulations

CCRWQCB = Central Coast Regional Water Quality Control Board

CDFG = California Department of Fish and Game

CESA = California Endangered Species Act

CEQA = California Environmental Quality Act

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

CERFA = Comprehensive Environmental Response Facilitation Act

CFR = Code of Federal Regulations

CHP = California Highway Patrol

CHRIS = California Historical Resources Information System

CMP = County of Monterey's Congestion Management Program

CNEL = community noise exposure level

CNPS = California Native Plant Society

CO = carbon monoxide

Corps = U.S. Army Corps of Engineers

CSC = California Species of Special Concern

CSUMB = California State University, Monterey Bay

CTS = California tiger salamander

CUPA = Certified Unified Program Agency

CWA – Clean Water Act

dB = decibel

dBA = A-weighted decibel scale

DOD = Department of Defense

DOT = Department of Transportation

DTSC = Department of Toxic Substance Control

ECP = Environmental Condition of Property

EPA = U.S. Environmental Protection Agency

FAR – Floor Area Ratio

FESA = Federal Endangered Species Act

FHWA = Federal Highway Administration

FHWA RD-77-108 = Federal Highway Administration Noise Prediction Model

FIRMS = Flood Insurance Rate Maps

FOBRP = Fort Ord Base Reuse Plan

FOR A = Fort Ord Reuse Authority

FOST = Finding of Suitability to Transfer

GAMAQI = Guide to Assessing and Mitigating Air Quality Impacts

GIS = Geographical Information System

gpcpd = gallons per capita per day

HCP = Habitat Conservation Plan

HCM = 2000 Highway Capacity Manual

HMP = Habitat Management Plan

IA = Implementing Agreement

IDF = Intensity-Duration-Frequency

ITE = Institute of Transportation Engineers

L_{eq} = equivalent energy noise level

L_{dn} = day night average level

L_{min} = minimum instantaneous noise level experienced during a given period of time

L_{max} = maximum instantaneous noise level experienced during a given period of time

LOS = Level of Service

MBTA = Migratory Bird Treaty Act

MBUAPCD = Monterey Bay Unified Air Pollution Control District

MCEST = Monterey Bay Education, Science and Technology Center

MCL = maximum contaminant limit

MCP = Marina Community Partners

MCWRA = Monterey County Water Resources Agency

MCWD = Marina Coast Water District

MPWMD = Monterey Peninsula Water Management District

MRSWMP = Monterey Regional Storm Water Management Program

MRWPCA = Monterey Regional Water Pollution Control Agency

MST = Monterey-Salinas Transit

NCCAB = North Central Coast Air Basin

NESHAP = National Emission Standards for Hazardous Air Pollutants

NFIP = National Flood Insurance Program

NHPA = National Historic Preservation Act

NO_2 = nitrogen dioxide

NOI = Notice of Intent

NPDES = National Pollutant Discharge Elimination System

NPL = National Priority List

NWIC = Northwest Information Center

OE = ordnance and explosives

OES = Office of Emergency Services

OPR = Office of Planning and Research

OSHA = Occupational Safety and Health Administration

OU = operable unit

PM_{10} = Particulate matter less than ten microns in diameter

RCRA = Resource Conservation and Recovery Act

RI = Remedial Investigation

ROG = reactive organic gases

RTOR = right turns on red

RWQCB = Regional Water Quality Board

SANDAG = San Diego Association of Governments

SF = square feet

SIP = State Implementation Plan

SJVUAPCD = San Joaquin Valley Unified Air Pollution Control District

SO_2 = sulfur dioxide

SOPA = Society of Professional Archaeologists

SWPPP = Storm Water Pollution Prevention Plan

SWRCB = State Water Resources Control Board

TAC = toxic air contaminants

TAPS = Transportation and Parking Services

URBEMIS = CARB's Urban Emissions Model

USFWS = U.S. Fish and Wildlife Service

UXO = unexploded ordnance

VdB = vibration decibels

VOC = volatile organic compound

WDR = Waste Discharge Requirements