

# MARIN GENERAL HOSPITAL REPLACEMENT BUILDING PROJECT

Draft Environmental Impact Report  
State Clearinghouse #2011092057

Prepared for  
Marin Healthcare District

August 2012



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# LIST OF ACRONYMS AND ABBREVIATIONS

$\mu\text{g}/\text{m}^3$                       micrograms per cubic meter  
°F                                degrees Fahrenheit

## **A**

AB                                Assembly Bill  
ABAG                            Association of Bay Area Governments  
acre-foot of water            325,829 gallons of water  
Alquist Act                    Alfred E. Alquist Hospital Facilities Seismic Safety Act (Senate Bill 1953)  
amsl                            above mean sea level  
ASCE                            American Society of Civil Engineers  
AST(s)                        aboveground storage tank(s)  
ASTM                            American Society for Testing Materials  
AWSC                            All-Way Stop-Controlled intersection

## **B**

BAAQMD                      Bay Area Air Quality Management District  
BART                            Bay Area Rapid Transit  
BCDC                            San Francisco Bay Conservation and Development Commission  
BGM                            Bay Area Greenhouse Gas Model  
bgs                              below ground surface  
BMP                              Best Management Practice

## **C**

CAAQS                        California Ambient Air Quality Standards  
CAC                            Citizens Advisory Committee  
CalEMA                        California Emergency Management Agency  
Cal EPA                        California Environmental Protection Agency  
CalRecycle                    California Department of Resources Recycling and Recovery  
Caltrans                        California Department of Transportation

CAP	Clean Air Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAT	Climate Action Team
CBC	California Building Code
CCR	California Code of Regulations
CDA	Community Development Agency
CDC	Centers for Disease Control and Prevention
CDE	California Department of Education
CDFG	California Department of Fish and Game
CALFIRE	California Department of Forestry and Fire Protection
CDMG	California Department of Mines and Geology
CDP	census designated place
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability System
CESA	California Endangered Species Act
CFCs	Chlorofluorocarbons
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CH <sub>4</sub>	methane
CHMIRS	California Hazardous Material Incident Reporting System
CHP	California Highway Patrol
CLSM	controlled low-strength material
CMA	Congestion Management Agency
CMP	[County of Marin] Congestion Management Program
CMSA	Central Marin Sanitation Agency
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	carbon dioxide equivalents
Corps	U.S. Army Corps of Engineers
Cortese List	California Hazardous Waste and Substances List
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources

CUPA	Certified Unified Program Agency
CWA	Clean Water Act
CY	cubic yards

## D

dB	decibel
dBA	A-weighted decibel
dbh	diameter at breast height
DDT	dichloro-diphenyl-trichloroethane
DNL	day/night average sound level
DOT	U.S. Department of Transportation
DPFs	diesel particulate filters
DPM	diesel particulate matter
DPS	Distinct Population Segment
DPW	Department of Public Works
DSOD	Division of Safety of Dams
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources

## E

EDR	Environmental Data Resources
EHS	County of Marin Environmental Health Service
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ESA	Environmental Science Associates

## F

FFed/OSHA	U.S. Department of Labor Occupational Safety and Health Administration
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIGR	Federated Indians of Graton Rancheria
FIRM	Flood Insurance Rate Map
FINDS	Facilities Index Systems Database
FTE	full-time equivalent (employee)

## G

GGHC	Green Guide for Health Care
GGT	Golden Gate Transit
GHG	greenhouse gas
gpd	gallon(s) per day
gpm	gallon(s) per minute
GWP	global warming potential

## H

HHALS	Historic American Landscape Survey
HCD	California Housing and Community Development
HCM	<i>Highway Capacity Manual, Special Report 209 (TRB, 2000)</i>
HCFCs	hydrofluorocarbons
HEPA filter	high efficiency particulate air filter
HIST UST	Hazardous Substance Storage Container Database of the State Water Resources Control Board
HOV	high-occupancy vehicle

## I

I-580	Interstate 580
IAQ	indoor air quality
IBC	International Building Code
ICU	Intensive Care Unit
IPCC	International Panel on Climate Change
IT	Information Technology
ITE	Institute of Transportation Engineers

## J

JPA	Marin County Hazardous and Solid Waste Management Joint Powers Authority
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## K

KFPD	Kentfield Fire Protection District
kW-h	kilowatt hour(s)

**L**

L <sub>01</sub>	the A-weighted noise levels that are exceeded 1-percent of the time during the measurement period
L <sub>10</sub>	the A-weighted noise levels that are exceeded 10-percent of the time during the measurement period
L <sub>50</sub>	the A-weighted noise levels that are exceeded 50-percent of the time during the measurement period
L <sub>90</sub>	the A-weighted noise levels that are exceeded 90-percent of the time during the measurement period
LAFCO	Local Agency Formation Commissions
LCFS	Low Carbon Fuel Standards
L <sub>dn</sub>	day/night average sound level, also expressed as DNL
LEED®	Leadership in Energy and Environmental Design
L <sub>eq</sub>	Equivalent Noise Level; the average A-weighted noise level during the measurement period
L <sub>max</sub>	the maximum A-weighted noise level during the measurement period
L <sub>min</sub>	the minimum A-weighted noise level during the measurement period
LID	Low Impact Design
LOS	Level of Service
LOS A	Level of Service A, free flow or insignificant delays
LOS B	Level of Service B, stable operation or minimal delays
LOS C	Level of Service C, stable operation or acceptable delays
LOS D	Level of Service D, approaching unstable or tolerable delays
LOS E	Level of Service E, unstable operation or significant delays
LOS F	Level of Service F, forced flow or excessive delays
LT	Long-Term (noise measurement)
LUST	Leaking Underground Storage Tank

**M**

MCC	Marin County Code
MCCDA	Marin County Community Development Agency
MCFD	Marin County Fire Department
MCOSD	Marin County Open Space District
MCPOS	Marin County Parks and Open Space
MCSTOPPP	Marin County Stormwater Pollution Prevention Program
MDO	mid-day only
MEI	Maximum Exposed Individual
mgd	million gallon(s) per day

MGH	Marin General Hospital
MM	Richter Magnitude
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric tons
MMTCO <sub>2</sub> e	million metric tons carbon dioxide equivalent
MMWD	Marin Municipal Water District
MOB	Medical Office Building
mpg	miles per gallon
MPO	Metropolitan Planning Organization
MRI	magnetic resonance imaging
MSDS(s)	Materials Safety Data Sheet(s)
MSS	Marin Sanitary Service
MT	Marin County Transit District
MTC	Metropolitan Transportation Commission
MUTCD	<i>California Manual on Uniform Traffic Control Devices</i> (Caltrans, 2010)
Mw	Moment Magnitude

## N

N <sub>2</sub> O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NB	northbound
NICU	Neonatal Intensive Care Unit
NMFS	National Marine Fisheries Service
NO <sub>2</sub>	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO <sub>x</sub>	nitrogen oxide(s)
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NPC	Nonstructural Performance Category
NPL	National Priorities List
NRCS	Natural Resource Conservation Service

## O

O <sub>3</sub>	ozone
OB/GYN	Obstetrics/Gynecology

OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OIRA	Office of Information and Regulatory Affairs
OPR	Office of Planning and Research
OSCAR	Open Space, Conservation and Recreation Element
OSHA	Occupational Safety and Health Administration
OSHPD	Office of Statewide Health Planning and Development

## P

PCB(s)	polychlorinated biphenyl(s)
pc/h/ln	passenger cars per hour per travel lane
PF	Public Facility (Marin Countywide Plan Land Use designation)
PF	Public Facilities District (Marin County Zoning designation)
PGA	peak ground acceleration
PG&E	Pacific Gas and Electric Company
PM	particulate matter
PM2.5	fine particulate matter
PM10	respirable particulate matter
ppm	part(s) per million
PRC	Public Resources Code
PSHA	probabilistic seismic hazard assessment
psi	pounds per square inch

## R

RCRA	Resource Conservation and Recovery Act
RCRIS-SQG	Resource Conservation and Recovery Act Small Quantity Generator
RHB	Radiologic Health Branch of the California Department of Health Services
RHNA	Regional Housing Need Allocation
ROG	reactive organic gases
ROW	right-of-way
RVSD	Ross Valley Sanitation District
RWQCB	Regional Water Quality Control Board

## S

SAB	California State Allocation Board
SARA	Superfund Amendments and Reauthorization Act



SB	Senate Bill
SB	southbound
SDC	Seismic Design Category
Seismic Safety Act	Hospital Facilities Seismic Safety Act (Senate Bills [SBs] 1953 and SB 1661, SB 499, and Assembly Bill [AB] 523)
SF <sub>6</sub>	sulfur hexafluoride
SFD Blvd.	Sir Francis Drake Boulevard
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SIP	State Implementation Plan
SLIC	Spills, Leaks, Investigations, and Cleanup
SO <sub>2</sub>	sulphur dioxide
SOD	sudden oak death syndrome
SPC	Structural Performance Category
SPCC Plan	Spill Prevention Control and Countermeasure Plan
SSSC	Side-Street Stop-Controlled intersection
ST	Short-Term (noise measurement)
SU	significant and unavoidable
SVP	Society of Vertebrate Paleontology
SWMP	Storm Water Management Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board

## T

TAC	Toxic Air Contaminant
TAM	Transportation Authority of Marin
TCLF	The Cultural Landscape Foundation
TCM	transportation control measure
TCPA	Twin Cities Police Authority
TDM	transportation demand management
TRB	Transportation Research Board
TWLTL	two-way-left-turn-lane
UUCMP	University of California Museum of Paleontology
UNFCCC	United Nations Framework Convention on Climate Change
U.S. 101	U.S. Highway 101
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

USPS	U.S. Postal Service
UST	underground storage tank
<b>V</b>	
V/C	volume-to-capacity ratios
VMT	vehicle miles traveled
VOC	Volatile Organic Compound
<b>W</b>	
WRAP	Waste Reduction Awards Program

# CHAPTER 1

---

## Introduction

### 1.1 Overview

The Marin Healthcare District (“District”) has prepared this Environmental Impact Report (EIR) for the Marin General Hospital Replacement Building Project (“proposed project” or “project”), located in unincorporated Marin County, between the communities of Kentfield and Greenbrae. The primary purpose of the proposed project is to ensure that Marin General Hospital will comply with the Hospital Facilities Seismic Safety Act (Seismic Safety Act) (Senate Bills [SBs] 1953, SB 1661, SB 499). (See detailed background below in Section 1.2, *State-Mandated Compliance with Senate Bill 1953*.) The ultimate goal in building the new hospital is to enhance the safety, comfort, service, and well-being of all future patients, doctors, nurses, and employees.

The project site is approximately 19.7 acres fronting Bon Air Road, south of Sir Francis Drake Boulevard. (See Figure 3-1, Site Location Map, in Chapter 3, Project Description.) About 75 percent of the project site is owned by the Marin Healthcare District. A land swap or lease agreement between the County of Marin (“County”) and the Marin Healthcare District is required to accommodate components of the proposed project on a 25 percent portion of the site currently co-owned by the County and the District.

Overall, the proposed project consists of the phased development of a 300,000 square-foot Hospital Replacement Building, a 100,000 square-foot Ambulatory Services Building, a 412-space Hillside Parking Structure, and a 507-space Bon Air Road Parking Structure.

### 1.2 State-Mandated Compliance with Senate Bill 1953

The primary purpose of the proposed project is to ensure that Marin General Hospital will comply with the Hospital Facilities Seismic Safety Act (Seismic Safety Act) (Senate Bills [SBs] 1953 and SB 1661, SB 499, SB 90, and Assembly Bill [AB] 523). The Seismic Safety Act requires that California acute care hospitals be designed and constructed to withstand a major earthquake, and remain operational immediately after the earthquake, providing uninterrupted operation of medical services currently provided and maintaining continuity of care. General acute care hospitals are defined as health facilities having a duly constituted governing body with overall administration and professional responsibility and an organized medical staff that provides 24-hour inpatient care, including the following basic services: medical, nursing, surgical, anesthesia, laboratory, radiology, pharmacy, and dietary services. Marin General Hospital is classified as an acute care facility.

Seismic-safety legislation SB 1953 (Chapter 740, Statutes of 1994), the Alfred E. Alquist Hospital Facilities Seismic Safety Act (Alquist Act), requires the seismic upgrade or replacement of all general and acute care hospitals at risk of collapsing during a major earthquake. The Marin Healthcare District has determined that it is infeasible to bring the existing Marin General Hospital facilities at 250 Bon Air Road into compliance with the mandated SB 1953 regulations through retrofitting the hospital; the hospital is too outdated to practice modern hospital patient care. The proposed project meets the mandate of the regulations in a way that is consistent with Marin Healthcare District's abilities and the viability of the hospital's current facilities. The Office of Statewide Health Planning and Development (OSHPD) is responsible for carrying out the provisions of SB 1953 regulations under SB 1661 and SB 499. AB 523 granted an extension to January 1, 2015, allowing the Marin Healthcare District to achieve its goal to meet the provisions of SB 1953 by January 1, 2015; subsequently, SB 90 was enacted in June 2012 and granted an additional extension to January 1, 2020.

### **1.3 Marin Healthcare District Background**

The Marin Healthcare District (formerly the Marin Hospital District) is a local healthcare district organized in December 9, 1946, under the provisions of the Local Healthcare District Law (Health and Safety Code, Division 32; the District Law). The Marin Healthcare District built Marin General Hospital, which opened in 1952. The Marin General Hospital is a community-based, not-for-profit hospital serving Marin County and neighboring communities.

From 1952 to 1985, 33 years, the Marin Healthcare District operated Marin General Hospital. In 1981 the Marin Healthcare District acted to meet its need for newer and larger facilities and issued bonds, hired a team of architects and planners, and built Marin General Hospital's West Wing, adding 79 beds to the hospital. Construction of the West Wing was completed in 1986.

In 1985, the Marin Hospital District Board entered into a 30-year lease of the hospital to a new nonprofit, Marin General Hospital Corporation. The Corporation continues to hold the original lease that runs through 2015. Soon after forming, Marin General Hospital Corporation affiliated with California Healthcare Systems. In 1995, California Healthcare Systems merged with Sutter Health, which operated Marin General Hospital until June 29, 2010.

In 2006, the Marin Healthcare District, the Marin General Hospital Corporation, and Sutter Health, entered into a Settlement and Transfer agreement that removed Sutter Health and returned control of the Corporation to the Marin Healthcare District. Marin General Hospital returned to Marin Healthcare District control beginning on June 30, 2010.

### **1.4 Environmental Review and Approvals**

The Marin Healthcare District is the Lead Agency primarily responsible for preparing this Draft EIR (pursuant to State and local guidelines for implementing the California Environmental Quality Act [CEQA]), and has determined that the project is subject to CEQA (Public Resources

Code Section 21000, et seq. and Section 15000, et seq.) and the State CEQA *Guidelines* (California Code of Regulations) promulgated thereunder (together “CEQA”).

### 1.4.1 Use of this EIR

Pursuant to CEQA, this EIR is a public information document prepared for use by governmental agencies and the public to identify and evaluate potential environmental consequences of the proposed project, to evaluate and recommend mitigation measures that would substantially lessen or eliminate significant environmental adverse impacts, and to examine a range of feasible alternatives to the project. The information contained in this Draft EIR is subject to review and consideration by the Marin Healthcare District and any other responsible agency and the public prior to the decision to approve, reject or modify the project.

### 1.4.2 EIR Scoping

On September 21, 2011, the Marin Healthcare District issued a Notice of Preparation (NOP) for 30 calendar days to announce its intent to prepare and distribute a Draft EIR for the project. The NOP review period ended on October 20, 2011. The NOP was published and distributed to governmental agencies, organizations, and persons interested in the project. The Marin Healthcare District sent the NOP to agencies with statutory responsibilities in connection with the project and requested their input on the scope and content of the environmental information that should be addressed in the EIR. The NOP was also published in the *Marin Independent Journal* and on the Marin Healthcare District’s website. The Marin Healthcare District held a Public Scoping Meeting on October 6, 2011, to accept comments regarding the scope of the EIR in response to the NOP. The NOP and written comments received in response to the NOP (including those received after the 30-day comment period) are included as Appendix A to this Draft EIR.

The Marin Healthcare District has prepared this EIR to analyze the potential environmental effects of the project under CEQA and addresses all environmental topics identified in the CEQA *Guidelines*. The Marin Healthcare District, as Lead Agency, elected not to prepare an Initial Study Checklist to reduce the scope of the EIR, as permitted by CEQA *Guidelines* § 15060(d).

### 1.4.3 Public Review

This Draft EIR is available for public review and comment for the period identified on the Notice of Availability accompanying this document (45 calendar days). During the public review and comment period, written comments (including comments submitted via electronic mail) on the Draft EIR may be submitted to the Marin Healthcare District at the address indicated on the notice. Verbal comments may be stated at the public hearing on the Draft EIR, which will be held as indicated in the Notice of Availability.

Following the public review and comment period for the Draft EIR, the Marin Healthcare District will prepare responses that address all substantive written and verbal comments on the Draft EIR’s environmental analyses that are received within the specified review period. The Draft EIR

with tracked changes and its appendices, together with the Responses to Comments document actually constitute the Final EIR (commonly referred to collectively as “EIR”) for the project.

Prior to approval of the project and a Mitigation Monitoring and Reporting Program for all mitigation measures identified in the Final EIR, the Marin Healthcare District must review and certify the Final EIR.

Separate from the CEQA public review process described above, the Marin Healthcare District has kept the public informed of the proposed project through communications such as newsletters and by holding regularly scheduled, open board meetings and presentations at various public meetings in Marin County.

### 1.4.4 Project Review and Approval

The Marin Healthcare District must ultimately certify that it has reviewed and considered the information in the EIR, and that the EIR has been completed in conformity with the requirements of CEQA. The District must make these determinations before any discretionary decision can be made regarding the proposed project. However, certification of the EIR does not guarantee approval of the project. This Draft EIR identifies significant effects that would result from the proposed project. Therefore, pursuant to CEQA *Guidelines* § 15091, no public agency shall approve or carry out a project for which an EIR has been certified that identifies one or more significant impacts of the project, unless the public agency makes one or more of the following findings:

1. Changes or alterations have been required to, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.
2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency, or can and should be adopted by such agency.
3. Specified economic, legal, social, technological, or other considerations, including provisions of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

As required by CEQA *Guidelines* § 15091, prior to taking action on the project, the Marin Healthcare District will prepare appropriate written findings for each significant effect identified in the EIR, accompanied by a brief explanation of the rationale for each finding.

## 1.5 Organization of the Draft EIR

Following this **Chapter 1, Introduction**, this Draft EIR is organized as follows:

**Chapter 2, Summary**, contains an executive summary of the project, the impacts and mitigation measures, and the alternatives identified in the Draft EIR. Table 2-1, Summary of Impacts, Mitigation Measures, and Residual Impacts is provided at the end of Chapter 2 as a reader-

friendly reference to each of the environmental impacts, proposed mitigation measures and residual environmental impacts after mitigation is implemented.

**Chapter 3, Project Description**, describes in detail the project site and surroundings, the background of the project; project objectives, and project characteristics (including phasing and construction activities). Chapter 3 also identifies other agencies that must consider or approve aspects of the project.

**Chapter 4, Environmental Setting, Impacts and Mitigation Measures**, discusses for each environmental topic (listed in Appendix G of the CEQA *Guidelines*) the environmental setting (existing physical conditions and regulatory framework), significance criteria, the potential environmental impacts of the project and cumulative conditions, and mitigation measures that, in most cases, would reduce or eliminate significant impacts. The preface of Chapter 4 outlines the scope of the analysis, the organization, the methods and nomenclature for determining significance used in this EIR, as well as presenting the baseline and cumulative analysis approach applied. All reference documents and persons contacted to prepare the EIR analyses, are listed at the end of each analysis section.

**Chapter 5, Alternatives**, evaluates a reasonable range of alternatives to the project, as identified by the District, and identifies an environmentally superior alternative.

**Chapter 6, Impact Overview and Growth Inducement**, summarizes the potentially significant and unavoidable impacts, and cumulative impacts, that could result with the project, as they are identified throughout Chapter 4. Chapter 6 also describes the project's potential for inducing growth, as well as the project's significant, irreversible effects and less-than-significant effects.

**Chapter 7, Report Preparers**, identifies the authors of this EIR, including CEQA and other consultants to the Marin Healthcare District, who contributed to, or whose technical reports were used for, the project description and EIR analysis.

**Appendices** to the Draft EIR are provided at the end of the document and include the NOP and scoping comments received, as well as technical background detail supporting various analyses presented throughout the document. The appendices to the Draft EIR are available for review by the public at the Marin Healthcare District offices at the address indicated on the notice provided at the front of this document, as well as with the Draft EIR copies available at the main branch of the Marin County Free Library (3501 Civic Center Drive, San Rafael, CA 94903) and the Larkspur Library (400 Magnolia Ave, Larkspur, CA 94939).

All reference documents and persons contacted to prepare this Draft EIR are listed at the end of each analysis section in Chapter 4. All documents incorporated by reference in this Draft EIR are available by request to the Marin Healthcare District offices at the address indicated on the notice provided at the front of this document.

# CHAPTER 2

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## Summary

As described in Chapter 1, this chapter is an executive summary of the project, the impacts and mitigation measures, and the alternatives identified in the Draft EIR. While this is an easy reference to key aspects of the Draft EIR, the document is intended to be reviewed in its entirety.

### 2.1 Project Overview

The Marin Healthcare District has prepared this Draft Environmental Impact Report (EIR) for the Marin General Hospital Replacement Building Project (“proposed project” or “project”), located in unincorporated Marin County, between the communities of Kentfield and Greenbrae. The Marin Healthcare District (formerly the Marin Hospital District) is a local healthcare district organized under the provisions of the Local Healthcare District Law (Health and Safety Code, Division 32; the District Law).

The primary purpose of the proposed project is to ensure that Marin General Hospital will comply with the Hospital Facilities Seismic Safety Act (Seismic Safety Act) (Senate Bills [SBs] 1953, SB 1661, and SB 499). Assembly Bill [AB] 523 granted an extension to January 1, 2015, allowing the Marin Healthcare District to achieve its goal to meet the provisions of SB 1953 by January 1, 2015. Subsequently, SB 90 was enacted in June 2012 and granted an additional extension to January 1, 2020. The Seismic Safety Act requires that California acute care hospitals be designed and constructed to withstand a major earthquake, and remain operational immediately after the quake, providing uninterrupted operation of medical services currently provided and maintaining continuity of care. This project will allow Marin Healthcare District to achieve its goal to meet the provisions of SB 1953 by January 1, 2020.

The project site is approximately 19.7 acres fronting Bon Air Road, south of Sir Francis Drake Boulevard. Approximately 14.8 acres (75 percent) of the 19.7-acre project site is owned by the Marin Healthcare District; 4.9 acres (25 percent) at the northernmost corner of the project site is co-owned by the District and the County of Marin (“County”), and a land swap or lease agreement for approximately 0.82 acres between the County and Marin Healthcare District is required to accommodate components of the proposed project.

Overall, the proposed project consists of the phased development of the Marin General Hospital to include a 412-space Hillside Parking Structure, a 507-space Bon Air Road Parking Structure, a 100,000 square-foot Ambulatory Services Building, and a 300,000 square-foot Hospital Replacement Building.



The project would also renovate existing wings of the existing hospital and involve new and relocated utilities to serve existing and proposed new buildings and the overall project site.

Approximately 15,500 square feet of existing ancillary buildings on the project site would be demolished, and the project would remove portions of existing historic landscapes attributed to Landscape Architect Lawrence Halprin.

There are two potential project elements that Marin Healthcare District may implement, pending its ability to secure funding for these components: one is construction of an elevated pedestrian bridge (instead of a proposed ground-level covered walkway) between the Bon Air Road Parking Structure and the Hospital Replacement Building and the Ambulatory Services Building; the second are new trellises with a photovoltaic (PV) system on the top levels of the two new parking structures.

The project proposes to install two new traffic signals at the two main access/exit driveways to the project site off Bon Air Road; the northern signal installed upon operation of the Hospital Replacement Building and the southern driveway signal at a latter phase when warranted. Additionally, two new cuts in the Bon Air Road median are to be provided to improve access to the Emergency Room facilities by emergency response vehicles and the public. The project does not involve a new heli-stop.

The major components of the project will be developed in six phases over a period of approximately eight years (generally, through 2020).

A total of 426 new employees would be added to the project site. The project would not result in a net increase in the existing number of licensed beds on the project site.

The Marin Countywide Plan Land Use designation for the project site is “PF – Public Facility.” The Marin County Zoning designation for the project site is “PF (Public Facilities District).”

The Marin Healthcare District is the Lead Agency primarily responsible for preparing this EIR and will make decisions on certification of this EIR, approval of the Mitigation Monitoring and Reporting Plan, and approval of the project.

The Marin Healthcare District’s project applications to Marin County seek County approvals for the (1) property swap or lease agreement between the County and Marin Healthcare District to construct the Hillside Parking Structure, (2) Design Review, (3) work to occur in the Bon Air Road right of way, and (4) building permits for the Hillside Parking Structure, the Bon Air Road Parking Structure, and the Ambulatory Services Building. The project is also subject to the Plan Review Process and building permit issuance from the Office of Statewide Health Planning and Development (OSHDP), which enforces building standards related to the construction of acute care health facilities and the issuance of all building and occupancy permits for these facilities. OSHDP approvals will occur prior to implementation of the project.

## 2.2 Environmental Impacts and Mitigation Measures

All impacts and mitigation measures identified in this Draft EIR are summarized in **Table 2-1, Summary of Impacts, Mitigation Measures, and Residual Impacts**, at the end of this chapter. Table 2-1 includes all impact statements, recommended mitigation measures, and the level of significance of the impact after recommended mitigation measures are implemented.

This Draft EIR identifies for the project the following significant impacts that are considered unavoidable because no feasible mitigation measures are available to reduce the impacts to less than significant:

- **Impact CUL-1:** The Project will have an impact on a historical resource as defined by PRC Section 5024.1.
- **Impact NOI-2:** Construction of the Project would substantially and temporarily increase noise levels in areas of sensitive receptors and exceed the ambient noise environment.
- **Impact TRA-1:** The Project would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Existing plus Project Conditions. (SU for intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd.)
- **Impact TRA-5:** The Near-Term Project would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Near-Term (Year 2018) plus Near-Term Project Conditions.
- **Impact TRA-7:** The Project, in conjunction with past, present and other reasonably foreseeable future development in the area, would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Cumulative plus Project conditions. (SU for intersection LOS and freeway segment LOS)

## 2.3 Alternatives

Chapter 5, Alternatives, of this Draft EIR analyzes the following CEQA alternatives to the project:

- **No Project 1.1:** Close Marin General Hospital, No Relocation Offsite
- **No Project 1.2:** Medical Office Backfill in All Non-Seismically Compliant Space
- **Alternative 2:** Seismic Retrofit of Existing Marin General Hospital / Historical Resource Avoidance
- **Alternative 3:** No Ambulatory Services Building or Hillside Parking Structure / No Land Swap
- **Alternative 4:** Reduced Ambulatory Services Building and Reduced Bon Air Road Parking Structure

Alternative 2 is identified as the CEQA-required environmentally superior alternative because it would avoid a significant and unavoidable impact identified for the project, whereas none of the other project alternatives would (excluding the No Project alternatives). Alternative 2 avoids the project's significant and unavoidable impact that would result from removing the Halprin Gardens, a historic resource. Alternative 2 would avoid demolition of the Halprin Gardens.

Chapter 5, Alternatives, also assesses a set of non-CEQA design alternatives that the Marin Healthcare District considered during site planning of the Bon Air Road Parking Structure.

## **2.4 Areas of Controversy and Scoping Comments**

In response to the Notice of Preparation (NOP) for this EIR, public comments on the desired scope of this EIR and the project were received at a Public Scoping Meeting held by the Marin Healthcare District on October 6, 2011, and through the end of the 30-day public scoping period (see Section 1.4.2, *EIR Scoping*, in Chapter 1, Introduction). All comments received are presented in Appendix A to this Draft EIR and topics raised are addressed throughout this document. None of the comments received in response to the NOP raise areas of particular controversy or issues relevant to the environmental effects of the project to be addressed in this CEQA document.

**TABLE 2-1  
SUMMARY OF IMPACTS, MITIGATION MEASURES, AND RESIDUAL EFFECTS**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Aesthetics</b>		
<p><b>Impact AES-1:</b> The Project would have a substantial adverse effect on one scenic vista as seen from the Corte Madera Creek pathway. (Potentially Significant)</p>	<p><b>Mitigation Measure AES-1:</b> The applicant shall add taller tree cover west of the Hospital Replacement Building to “break” up the building’s west facing facade, as seen from the Corte Madera Creek pathway looking east. In addition to the proposed relocated palm trees and deciduous trees proposed along the west portion of the project site, three to four tall evergreen conifers, such as redwoods or other tree of similar height and shape (e.g., columnar with a tall trunk without dense low branch cover) shall be added to the proposed landscape plan and installed prior to completion of the Hospital Replacement Building. These additional trees shall be adequately spaced in the area between the building and the west edge of the project site to prevent full blockage of views toward Corte Madera Creek, Creekside Marsh, Hal Brown Park and/or views Mt. Tamalpais from hospital rooms. Prior to Design Review approval of the Hospital Replacement Building, the applicant shall present the final landscape plan to the County for conformance review with this measure.</p>	Less than Significant
<p><b>Impact AES-2:</b> The Project would not substantially damage scenic resources or natural viewsheds, but could result in substantial changes to the natural terrain visible from public viewpoints. (Potentially Significant)</p>	<p><b>Mitigation Measure AES-2:</b> The most visible area of retaining walls along the south access road shall be altered by “stepping” the retaining walls on the hillside for the area that is within 250 feet of Bon Air Road. This shall only apply when retaining walls exceed five feet in height. The “steps” of the retaining walls shall be at least two feet in depth to allow planting areas, and the retaining wall heights shall be no greater than five feet. Evergreen plantings shall be added in the stepped portions of the walls to create a partially vegetated and more naturalized slope, more consistent with the existing vegetated area visible south of the proposed retaining wall, compared to 90-degree-vertical retaining walls with no vegetation. Prior to Design Review approval of the Hospital Replacement Building, the applicant shall present the final south access road retaining walls and planting plans to the County for conformance review with this measure.</p>	Less than Significant
<p><b>Impact AES-3:</b> The Project would not substantially degrade the existing visual character of the project site or its surroundings, would not change the visual quality of the region, or eliminate significant visual resources. (Less than Significant)</p>	None required	
<p><b>Impact AES-4:</b> The Project would not create a significant increase in light and glare that would adversely affect nighttime views in the area. (Less than Significant)</p>	None required	
<p><b>Impact AES-5:</b> The Project would not significantly reduce sunlight or introduce shadows in areas used extensively by the public. (Less than Significant)</p>	None required	

**TABLE 2-1 (Continued)  
SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Aesthetics (cont.)</b>		
<b>Impact AES-6:</b> The Project would not conflict with the County goals and policies related to visual quality, or other applicable aesthetic or visual policies or standards. (Less than Significant)	None required	
<b>Impact AES-7:</b> The Project, combined with past, present and other reasonably foreseeable future development in the area, would not cause cumulative aesthetics impact. (Less than Significant)	None required	
<b>Air Quality</b>		
<b>Impact AIR-1:</b> The Project could conflict with or obstruct implementation of the applicable air quality plan. (Less than Significant)	None required	
<b>Impact AIR-2:</b> Construction of the Project would result in short-term construction equipment exhaust emissions that could contribute to existing or projected air quality standard violations. (Potentially Significant)	<p><b>Mitigation Measure AIR-2:</b> The measures listed below to control diesel exhaust emissions associated with demolition, grading and new construction shall be implemented. These measures shall apply to all phases even though the only potential exceedance of a threshold is in 2015 (or through Phase III):</p> <ol style="list-style-type: none"> <li>1. Prior to the commencement of construction activities, the developer or contractor will provide a plan for approval by the District or BAAQMD demonstrating that the heavy-duty (&gt;50 horsepower) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction. The NOx reduction will be based on a comparison to URBEMIS2007 emissions estimates for this project (see Appendix C to this Draft EIR). This plan will address all equipment that will be on site for more than two working days.</li> <li>2. Diesel particulate filters (or features that provide equivalent level of PM2.5 emissions reductions) shall be installed on all diesel-powered equipment with engines larger than 50 horsepower that will be working on the site for more than two working days. These features are anticipated to provide at least a 45-percent reduction in PM<sub>2.5</sub> exhaust emissions.</li> <li>3. During building construction, establish on-site electric power to reduce the use of diesel-powered generators.</li> <li>4. Arrange for service to provide on-site meals for construction workers to avoid travel to off-site locations.</li> <li>5. Stage construction equipment at least 200 feet from existing or new habitable residences.</li> </ol>	Less than Significant

**TABLE 2-1 (Continued)  
SUMMARY OF IMPACTS, MITIGATION MEASURES, AND RESIDUAL EFFECTS**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Air Quality (cont.)</b>		
<b>Impact AIR-2 (cont.)</b>	<p>6. Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes in accordance with the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations. Clear signage will be provided for truck operators and construction workers at all access points.</p> <p>7. All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation.</p> <p>8. Require an on-site disturbance coordinator to ensure that the construction period mitigation measures are enforced. This coordinator will respond to complaints regarding construction activities and construction caused nuisances. The phone number of this disturbance coordinator will be clearly posted at the construction site and provided to nearby residences. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. A log documenting any complaints and the timely remedy or outcome of such complaints will be kept.</p>	
<b>Impact AIR-3:</b> Construction of the Project would result in short-term generation of fugitive dust that could contribute to existing or projected air quality standard violations. (Potentially Significant)	<p><b>Mitigation Measure AIR-3:</b> The contractor shall implement the following BAAQMD recommended basic fugitive dust mitigation measures:</p> <ol style="list-style-type: none"> <li>1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.</li> <li>2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.</li> <li>3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.</li> <li>4. All vehicle speeds on unpaved roads shall be limited to 15 mph.</li> <li>5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.</li> </ol>	Less than Significant
<b>Impact AIR-4:</b> The Project would result in long-term operational emissions of criteria pollutants that could contribute to existing or projected air quality standard violations. (Less than Significant)	None required	

**TABLE 2-1 (Continued)  
SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Air Quality (cont.)</b>		
<b>Impact AIR-5:</b> The Project would contribute to community health risk impacts. (Potentially Significant)	<b>Mitigation Measure AIR-5:</b> Implement Mitigation Measure AIR-2.	Less than Significant
<b>Impact AIR-6:</b> Sensitive receptors at Marin General Hospital would not be exposed to health risk impacts. (Less than Significant)	None required	
<b>Impact AIR-7:</b> The Project would not generate localized odors. (Less than Significant)	None required	
<b>Impact AIR-8:</b> The Project would contribute to cumulative air quality degradation and to regional air quality cumulative impacts. (Potentially Significant)	<b>Mitigation Measure AIR-8:</b> Implement Mitigation Measures AIR-2 and AIR-3.	Less than Significant
<b>Biological Resources</b>		
<b>Impact BIO-1:</b> Construction of the Project could adversely impact special-status bat species through removal of potential roosting habitat and through increases in noise levels during construction. (Potentially Significant)	<p><b>Mitigation Measure BIO-1:</b> (Applies to Phases I through IV) The project applicant shall ensure that construction activities are conducted in a manner that avoids disturbance or mortality of bats, through surveys to determine whether bats are present. If bats are present, limit construction activities as specified below. Specifically, the project applicant shall take the following measures to avoid direct mortality of roosting special-status bats and disturbance of maternity roosts or winter hibernacula during Phases I through IV of the project:</p> <ul style="list-style-type: none"> <li>a) Prior to demolition and/or construction of Phases I through IV, a qualified bat biologist, shall conduct surveys of all potential bat habitat within 250 feet of construction activities prior to initiation of such activities. Potentially suitable habitat shall be identified visually. An acoustic detector shall be used to determine any areas of bat activity. At least four nighttime emergence counts shall be undertaken on nights that are warm enough for bats to be active. The bat biologist shall determine the type of each active roost (i.e., maternity, winter hibernaculum, day or night).</li> <li>b) If based on the pre-construction surveys no evidence of bats (i.e., visual or acoustic detection, guano, staining, strong odors) is present, no further mitigation is required. If pre-construction surveys indicate that roosts are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required.</li> <li>c) Trees or buildings with evidence of bat activity shall be removed during the time that is least likely to affect bats, as determined by a qualified bat biologist. In general, roosts should not be removed if maternity bat roosts are present, typically April 15 – August 15. Roosts should not be removed if present bats are in torpor, typically when temperatures are less than</li> </ul>	Less than Significant

**TABLE 2-1 (Continued)  
SUMMARY OF IMPACTS, MITIGATION MEASURES, AND RESIDUAL EFFECTS**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Biological Resources (cont.)</b>		
<b>Impact BIO-1 (cont.)</b>	<p>40 degrees Fahrenheit. Non-maternity bat roosts shall be removed by a qualified bat biologist, by either making the roost unsuitable for bats by opening the roost area to allow airflow through the cavity, or excluding the bats using one-way doors, funnels, or flaps.</p> <p>d) A no-disturbance buffer shall be created around active bat roosts being used for maternity purposes at a distance to be determined by the qualified bat biologist in consultation with CDFG. Bat roosts initiated within 250 feet of the project area after construction has already begun are presumed to be unaffected, and no buffer is necessary. However, the project shall avoid a “take” of individuals, including harming, harassing, or killing.</p> <p>e) If known bat roosting habitat is to be destroyed during tree removal activities, artificial bat roosts shall be constructed at least two weeks prior to such disturbance, in an undisturbed area of the property, at least 250 feet from any ongoing or future activities. The design and location of the artificial bat roost(s) shall be determined by a qualified bat biologist.</p>	
<b>Impact BIO-2:</b> The Project would not have a substantial adverse effect on migratory and breeding birds through building collisions and increases in night lighting. (Less than Significant)	None required	
<b>Impact BIO-3:</b> The Project could affect breeding raptors and other special-status birds through vegetation removal associated with construction. (Potentially Significant)	<p><b>Mitigation Measure BIO-3a: (Applies to Phases I-IV)</b> No more than two weeks in advance of any tree or shrub pruning, removal, ground-disturbing activity, or other construction activity that will commence during the breeding season (February 1 through August 31), a qualified wildlife biologist shall conduct pre-construction surveys of all potential nesting habitat in the vicinity of the planned activity.</p> <p>Pre-construction surveys are not required for construction activities scheduled to occur during the non-breeding season (August 31 through January 31). Construction activities commencing during the non-breeding season and continuing into the breeding season do not require surveys (as it is assumed that any breeding birds taking up nests would be acclimated to project-related activities already under way).</p> <p>Nests initiated during construction activities would be presumed to be unaffected by the activity, and a buffer zone around such nests would not be necessary. However, a nest initiated during construction cannot be moved or altered and the nests shall be clearly identified and the immediate area fenced to prevent destruction.</p>	Less than Significant



**TABLE 2-1 (Continued)  
SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Biological Resources (cont.)</b>		
<p><b>Impact BIO-3 (cont.)</b></p>	<p>If pre-construction surveys indicate that no nests are present or that nests are inactive or potential habitat is unoccupied, no further mitigation is required. If active nests are found during pre-construction surveys, Mitigation Measure BIO-3b will be required.</p> <p><b>Mitigation Measure BIO-3b:</b> If active nests are found during pre-construction surveys, the results of the surveys shall be discussed with the CDFG and avoidance procedures shall be adopted, if necessary, on a case-by-case basis. In the event that an active nest is found, construction in the vicinity would not be initiated until avoidance measures are adopted. Avoidance measures shall include construction buffer areas (up to several hundred feet in the case of raptors), relocation of birds, or seasonal avoidance, as needed. If buffers are created, a no-disturbance zone shall be created around active nests for the remainder of the breeding season, or until a qualified biologist determines that all young have fledged. The size of the buffer zones and types of construction activities restricted shall take into account factors such as the following:</p> <ul style="list-style-type: none"> <li>a) Noise and human disturbance levels at the project site and the nesting site at the time of the survey and the noise and disturbance expected during the construction activity;</li> <li>b) Distance and amount of vegetation or other screening between the project site and the nest; and</li> <li>c) Sensitivity of individual nesting species and behaviors of the nesting birds.</li> </ul>	
<p><b>Impact BIO-4:</b> The Project could affect migratory and breeding birds indirectly through increases in ambient noise due to construction. (Potentially Significant)</p>	<p><b>Mitigation Measure BIO-4a: (Applies to Phase IV and other major noise generating construction and/or demolition phases occurring within 200 feet of Creekside Marsh)</b> Project construction activities that would exceed existing ambient noise levels at Creekside Marsh by over 10dBA will avoid and minimize adverse effects on California clapper rail reproductive success through one of the following measures:</p> <ul style="list-style-type: none"> <li>a) Project construction activities shall take place September-January, outside the clapper rail breeding season of February through August)); or</li> <li>b) Consistent with Mitigation Measure NOI-3 in Section 4.K, Noise, solid plywood fences shall be constructed along the western edge of the project site prior to initiation of construction to serve as noise attenuation barriers. The fencing shall be a minimum of 8 feet in height. The fences shall shield the marshes from major noise generating phases of demolition and construction and will serve to attenuate noise emanating from the project site up to 10 dBA.</li> </ul>	<p align="center">Less than Significant</p>

**TABLE 2-1 (Continued)**  
**SUMMARY OF IMPACTS, MITIGATION MEASURES, AND RESIDUAL EFFECTS**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
Biological Resources (cont.)		
Impact BIO-4 (cont.)	Mitigation Measure BIO-4b: Implement Mitigation Measure NOI-3.	
Impact BIO-5: The Project would not have a substantial adverse effect on Waters of the United States, Waters of the State, or critical habitat for endangered steelhead and coho salmon. (Less than Significant)	None required	
Impact BIO-6: The Project would involve the removal of native trees protected under the Marin County Native Tree Protection and Preservation Ordinance. Tree work on the project site has the potential to spread sudden oak death syndrome. (Potentially Significant)	<p><b>Mitigation Measure BIO-6a: (Applies to Phases I-IV)</b> Prior to construction initiation for each project phase, the project applicant shall prepare a map indicating the size and species of trees to be removed and retained. In addition, the project applicant shall do all of the following:</p> <ul style="list-style-type: none"> <li>a) Prior to the start of any clearing, stockpiling, excavation, grading, compaction, paving, change in ground elevation, or construction, preserved trees that occur adjacent to, or within, project construction shall be identified as preserved and clearly delineated by constructing short post and plank walls, or other protective fencing material, at the dripline of each tree.</li> <li>b) The delineation markers shall remain in place for the duration of the work.</li> <li>c) Where proposed development or other site work must encroach upon the dripline of a preserved tree, special construction techniques shall be required to allow the roots of remaining trees within the project site to breathe and obtain water (examples include, but are not limited to, use of hand equipment for tunnels and trenching, and/or allowance of only one pass through a tree's dripline). Tree wells or other techniques may be used.</li> <li>d) Excavation adjacent to any trees, when permitted, shall be in such a manner that shall cause only minimal root damage.</li> <li>e) The following shall not occur within the dripline of any retained tree: parking; storage of vehicles, equipment, machinery, stockpiles of excavated soils, or construction materials; or dumping of oils or chemicals.</li> </ul> <p><b>Mitigation Measure BIO-6b: (Applies to Phases I-IV):</b> All pruning activities of preserved trees shall be performed by a certified arborist.</p> <ul style="list-style-type: none"> <li>a) No more than 25 percent of a tree's canopy shall be removed during pruning activities of retained trees.</li> <li>b) If any protected preserved tree is damaged, then the project applicant shall replace the tree as required by the County.</li> <li>c) All removed trees that meet the criteria of a protected tree shall be replaced with the same species removed as required by the County.</li> </ul>	Less than Significant

**TABLE 2-1 (Continued)  
SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
Biological Resources (cont.)		
Impact BIO-6 (cont.)	<p><b>Mitigation Measure BIO-6c: (Applies to Phases I-IV):</b> The project applicant shall develop and implement a five-year monitoring program for any required replacement plantings. Applicable performance standards may include, but are not limited to: 75 percent survival rate of replacement plantings; absence of invasive plant species; and self-sustaining trees at the end of five years.</p> <p><b>Mitigation Measure BIO-6d: (Applies to Phases I-IV):</b> All tree removal and pruning activities shall include measures to avoid the spread of SOD. Such measures may include, but are not limited to the following:</p> <p><i>Before working:</i></p> <ul style="list-style-type: none"> <li>a) As a precaution against spreading the pathogen, clean and disinfect pruning tools after use on confirmed or suspected infested trees or in known infested areas. Sanitize tools before pruning healthy trees or working in pathogen-free areas. Clean chippers and other vehicles of mud, dirt, leaves, organic material, and woody debris before leaving a site known to have SOD and before entering a site with susceptible hosts.</li> <li>b) Inform crews about the arboricultural implications of SOD and sanitation practices when they are working in infested areas.</li> <li>c) Provide crews with sanitation kits. (Sanitation kits should contain the following: Chlorine bleach (10/90 mixture bleach to water) or Clorox Clean-up® or Lysol®, scrub brush, metal scraper, boot brush, and plastic gloves).</li> <li>d) Sanitize shoes, pruning gear, and other equipment before working in an area with susceptible species.</li> </ul> <p><i>While working:</i></p> <ul style="list-style-type: none"> <li>a) When possible, work on SOD-infected and susceptible species during the dry season (June-October). When working in wet conditions, keep equipment on paved, graveled, or dry surfaces and avoid mud.</li> <li>b) Work in disease-free areas before proceeding to infested areas.</li> <li>c) If possible, do not collect soil or plant material (wood, brush, leaves, and litter) from host trees in the quarantine area. Within the quarantine area, host material (e.g., wood, bark, brush, chips, leaves, or firewood) from tree removals or pruning of symptomatic or non-symptomatic host plants should remain onsite to minimize pathogen spread.</li> </ul>	

**TABLE 2-1 (Continued)**  
**SUMMARY OF IMPACTS, MITIGATION MEASURES, AND RESIDUAL EFFECTS**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Biological Resources (cont.)</b>		
<b>Impact BIO-6 (cont.)</b>	<p><i>After working:</i></p> <p>a) Use all reasonable methods to sanitize personal gear and crew equipment before leaving a SOD infested site. Scrape, brush, and/or hose off accumulated soil and mud from clothing, gloves, boots, and shoes. Remove mud and plant debris by blowing out or power washing chipper trucks, chippers, bucket trucks, fertilization and soil aeration equipment, cranes, and other vehicles.</p> <p>b) Restrict the movement of soil and leaf litter under and around infected trees as spores may be found there.</p> <p>c) Tools used in tree removal/pruning may become contaminated and should be disinfected with Lysol® spray, a 70 percent or greater solution of alcohol, or a Clorox® bleach solution (1 part Clorox® bleach to 9 parts water or Clorox Cleanup ®).</p> <p>Implementation of Mitigation Measures BIO-6a through BIO-6d would reduce impacts to trees protected under the Marin County Tree Preservation Ordinance.</p>	
<b>Impact BIO-7:</b> The Project, combined with other past, present, and reasonably foreseeable development in the vicinity of the Project site would not result in cumulative impacts on special-status species, wetlands and other waters of the U.S. and State, and protected trees. (Less than Significant)	None required	
<b>Cultural and Paleontological Resources</b>		
<b>Impact CUL-1:</b> The Project will have an impact on a historical resource as defined by PRC Section 5024.1. (Significant)	<p><b>Mitigation Measure CUL-1:</b> The project applicant shall conduct the following:</p> <ul style="list-style-type: none"> <li>• Pre-demolition photo-documentation, a report, and as-built drawings of the gardens in accordance with the Historic American Landscape Survey (HALS) standards. This documentation would include a HALS report in either the short form format or a longer outline format and a measured drawing of the existing conditions. A copy of all of the HALS documentation shall be provided to the Lawrence Halprin archives at the University of Pennsylvania and the Anne T. Kent California Room in the Marin County Free Library. No additional historic registries local to Marin County could be identified.</li> <li>• Installation of a public plaque or element that commemorates the work of Lawrence Halprin on this site.</li> </ul>	Significant and Unavoidable

**TABLE 2-1 (Continued)  
SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Cultural and Paleontological Resources (cont.)</b>		
<p><b>Impact CUL-1 (cont.)</b></p>	<ul style="list-style-type: none"> <li>• Design of a new garden that commemorates Lawrence Halprin’s design contributions:                             <ul style="list-style-type: none"> <li>- Within a new garden, recognize Halprin’s use of hardscape materials, landscape grading and planting to evoke local, natural elements and delineate space. The garden would not relocate or mimic Halprin’s gardens, but could possibly reuse some materials and/or incorporate similar materials in its construction, particularly plant materials.</li> <li>- Locate the new garden in view of the Corte Madera Marsh to maintain the connection of the hospital landscape to the broader natural setting. “”</li> </ul> </li> <li>• Incorporate a more private garden within the hospital landscape for the purpose of respite or reflection within a natural setting. The intent would be to recall and respect rather than mimic Halprin’s work. The garden could also incorporate elements that reference Halprin and his influence.</li> <li>• Marin General Hospital will seek donations to commemorate Lawrence Halprin’s influence on the design of the Marin General Hospital Landscape; donations could fund an intern to work with the Halprin archivist at the University of Pennsylvania or similar relevant efforts for a one-year time duration.</li> <li>• Document other Bay Area designs of Halprin’s from this early period in his career. This documentation would include a list of his projects, plans when available, project locations, a written description identifying the project types and whether they were public or private commissions and photos, when possible, showing the overall character of the designs. The research could serve as an important resource for the local community and could be combined with HALS documentation, with copies sent to the University of Pennsylvania, the Marin County Free Library, or other institutions.</li> </ul> <p>Demolition or destruction of a historical resource, cannot be mitigated below a level of significance, however this mitigation would add to the body of knowledge about Lawrence Halprin’s work and would provide further documentation of this particular design.</p>	

**TABLE 2-1 (Continued)**  
**SUMMARY OF IMPACTS, MITIGATION MEASURES, AND RESIDUAL EFFECTS**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Cultural and Paleontological Resources (cont.)</b>		
<p><b>Impact CUL-2:</b> The Project would have an impact on archaeological resources as defined by PRC Section 21083.2(g). (Potentially Significant)</p>	<p><b>Mitigation Measure CUL-2:</b> A Secretary of the Interior-qualified archaeologist and a Native American monitor shall be present during ground-disturbing activities in the vicinity of Buildings 1, 2, and 3, and the Halprin Gardens. During the course of the monitoring, the archaeologist may adjust the frequency of the monitoring—from continuous to intermittent— based on observed conditions (i.e. artificial fill) and professional judgment regarding the potential to impact resources. Prior to ground disturbing activities, an archaeological monitoring plan shall be developed that includes:</p> <ul style="list-style-type: none"> <li>• Training program for all construction personnel involved in site disturbance activities;</li> <li>• Qualifications of person responsible for conducting monitoring activities, including Native American monitors;</li> <li>• The required format and content of monitoring reports, assessment, designation and mapping of sensitive cultural resource areas on final project maps;</li> <li>• Person(s) responsible for overseeing and directing the monitors;</li> <li>• Schedule for submittal of monitoring reports and person(s) responsible for review and approval of monitoring reports;</li> <li>• Physical monitoring boundaries;</li> <li>• Protocol for notifications in case of encountering of cultural resources, as well as methods of dealing with the encountered resources (e.g., collection, identification, curation);</li> <li>• Methods to ensure security of cultural resources sites;</li> <li>• Protocol for notifying local authorities (i.e., Sheriff, Police) should site looting and other illegal activities occur during construction.</li> </ul> <p>If cultural resources are encountered during construction, all activity in the vicinity of the find shall cease until it can be evaluated by a qualified archaeologist and a Native American representative. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or</p>	<p align="center">Less than Significant</p>

**TABLE 2-1 (Continued)  
SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Cultural and Paleontological Resources (cont.)</b>		
<p><b>Impact CUL-2 (cont.)</b></p>	<p>ceramic refuse. If the archaeologist and Native American representative determine that the resources may be significant, they will notify the County. An appropriate treatment plan for the resources shall be developed and shall be submitted to the County for review and approval. The archaeologist shall consult with Native American representatives in determining appropriate treatment for prehistoric or Native American cultural resources.</p> <p>In considering any suggested mitigation proposed by the archaeologist and Native American representative, the County will determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed in other parts of the site while mitigation for cultural resources is being carried out.</p>	
<p><b>Impact CUL-3:</b> The Project could have an impact on a paleontological resource. (Potentially Significant)</p>	<p><b>Mitigation Measure CUL-3:</b> If fossil or fossil bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (in accordance with Society of Vertebrate Paleontology standards). The paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA <i>Guidelines</i> Section 15064.5. The paleontologist shall notify Marin County to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the County determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project, based on the qualities that make the resource important. The excavation plan will include identification of an institution willing and able to accept fossil specimens; and emergency discovery procedures, including survey and record keeping of fossil-finds, bulk sediment sample collection and processing, specimen identification, disposition, and museum curation of any specimens and data recovered. The excavation plan shall be submitted to the County for review and approval prior to implementation.</p>	<p align="center">Less than Significant</p>
<p><b>Impact CUL-4:</b> The Project could have an impact on human remains. (Potentially Significant)</p>	<p><b>Mitigation Measure CUL-4:</b> If potential human remains are encountered, the contractor will halt work in the vicinity of the find and contact the Marin County coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission. As provided in PRC §5097.98, the Native American Heritage Commission will identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent will make recommendations for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98.</p>	<p align="center">Less than Significant</p>

**TABLE 2-1 (Continued)**  
**SUMMARY OF IMPACTS, MITIGATION MEASURES, AND RESIDUAL EFFECTS**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Cultural and Paleontological Resources (cont.)</b>		
<b>Impact CUL-5:</b> The Project, combined with other past, present and reasonably foreseeable development would not have a cumulative impact on cultural resources. (Less than Significant)	None required	
<b>Geology, Soils, and Seismicity</b>		
<b>Impact GEO-1:</b> The Project would not expose people or structures to potential substantial adverse effects involving strong seismic ground-shaking and associated secondary effects due to landslides and/or weak or liquefiable soils. (Less than Significant)	None required	
<b>Impact GEO-2:</b> The Project would not expose people or structures to potential substantial adverse effects involving soils that have shrink-swell characteristics or other properties (e.g., corrosivity, settlement, or collapse) that could damage foundations, underground utilities, and other sub-grade structures. (Less than Significant)	None required	
<b>Impact GEO-3:</b> The Project would not have a substantial adverse effect due to it being located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, resulting in a landslide, earthflow or other earth movement, or be subject to soil erosion or loss of topsoil. (Less than Significant)	None required	
<b>Impact GEO-4:</b> The Project, combined with other existing, planned, proposed, or reasonably foreseeable development in the region, would not result in cumulative geologic and soil hazards. (Less than Significant)	None required	
<b>Greenhouse Gases and Climate Change</b>		
<b>Impact GHG-1:</b> Construction of the Project would result in increased GHG emissions, but would incorporate best management practices. (Less than Significant)	None required	
<b>Impact GHG-2:</b> Operations of the Project would result in increased GHG emissions. (Potentially Significant)	<p><b>Mitigation Measure GHG-2:</b> The Project shall include the following features to reduce energy consumption that could reduce the GHG emissions associated with the proposed project.</p> <ul style="list-style-type: none"> <li>• <i>Additional Transportation Demand Management Strategies.</i> The project applicant shall implement the following Transportation Demand Management (TDM) program strategies, in addition to maintaining the existing Marin General Hospital valet parking and shuttle transit service TDM strategies:</li> </ul>	Less than Significant



**TABLE 2-1 (Continued)  
SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Greenhouse Gases and Climate Change (cont.)</b>		
<p><b>Impact GHG-2 (cont.)</b></p>	<p>a) Develop and implement a Marin General Hospital employee commute program with specific actions and goals to provide on-site information to employees about commute alternatives to and from Marin General Hospital; designate an employee transportation coordinator (ETC) to facilitate the program;</p> <p>b) Provide carpool and vanpool matching for Marin General Hospital employees, working together with <i>511 Rideshare</i>, TAM, or other agency or organization with this objective;</p> <p>c) Incorporate employee showers and additional secured bicycle parking facilities to encourage bicycle use by Marin General Hospital employees;</p> <p>d) Participate in the Emergency Ride Home (ERH) program for Marin County employers when it is made available by the County;</p> <p>Within one calendar year after patient occupancy of the Hospital Replacement Building, the project applicant shall submit to the County appropriate documentation that demonstrates compliance with each of the aforementioned strategies. Each of the strategies shall also be extended to include employees of the Ambulatory Services Building, when that building is operational.</p> <ul style="list-style-type: none"> <li>• <i>Reduce Waste Generation.</i> MGH shall include waste management and recycling programs to minimize solid waste generation. Such programs are assumed to minimize waste production. The applicant shall implement waste management and recycling programs to minimize solid waste generation. At a minimum, the applicant shall provide employee information, instructional signage at waste areas; and designated recycling bins to promote avoiding products with excessive packaging, recycling, buying refills instead of new items, separating food and landscaping waste (if composting such waste is elected for the program), and using rechargeable batteries, wherever feasible and consistent with hospital operations and regulations. For modeling purposes, GHG emissions associated with energy associated with landfilling of waste were assumed to be reduced by 10 percent, consistent with and expected reduction in waste generation.</li> </ul>	
<p><b>Impact GHG-3:</b> The Project would not conflict with an applicable plan, policy, or regulation adopted to reduce GHGs. (Less than Significant).</p>	<p>None required</p>	
<p><b>Impact GHG-4:</b> The incremental GHG impact of the Project would be cumulatively considerable (Potentially Significant)</p>	<p><b>Mitigation Measure GHG-4:</b> Implement Mitigation Measure GHG-2.</p>	<p>Less than Significant</p>

**TABLE 2-1 (Continued)  
SUMMARY OF IMPACTS, MITIGATION MEASURES, AND RESIDUAL EFFECTS**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Hazards and Hazardous Materials</b>		
<b>Impact HAZ-1:</b> The Project would not cause a significant hazard due to the transport, use and storage of hazardous chemicals, radioactive materials, and biohazardous materials. (Less than Significant)	None required	
<b>Impact HAZ-2:</b> The Project's demolition or renovation of existing structures that contain hazardous building materials would not cause a significant hazard by exposing workers, the public, or the environment to them or by generating hazardous waste. (Less than Significant)	None required	
<b>Impact HAZ-3:</b> The Project would not cause a significant hazard by emitting hazardous materials or handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. (Less than Significant)	None required	
<b>Impact HAZ-4:</b> The Project would occur on a site listed in Government Code Section 65962.5 and could disturb soil and groundwater impacted by historic hazardous material use, but would not cause a significant hazard by exposing construction workers, the public, or the environment to adverse conditions related to hazardous materials handling. (Less than Significant)	None required	
<b>Impact HAZ-5:</b> The Project would not cause a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Less than Significant)	None required	
<b>Impact HAZ-6:</b> The Project, combined with past, present and other reasonably foreseeable development in the area, would not cause cumulative impacts with respect to hazardous materials. (Less than Significant)	None required	
<b>Hydrology and Water Quality</b>		
<b>Impact HYD-1:</b> The project would not involve activities that would violate water quality standards or waste discharge requirements; result in substantial erosion or siltation; create or constitute substantial polluted runoff; or otherwise substantially degrade water quality. (Less than Significant)	None required	
<b>Impact HYD-2:</b> The Project would not result in impacts due to the depletion of groundwater supplies or substantially interference with groundwater recharge. (Less than Significant)	None required	

**TABLE 2-1 (Continued)  
SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Hydrology and Water Quality (cont.)</b>		
<b>Impact HYD-3:</b> The Project would not alter existing drainage patterns, which could result in increased pollutant loading in stormwater runoff, leading to violation of water quality standards of receiving waters or increase the volume of stormwater runoff, leading to flooding in downstream areas. (Less than Significant)	None required	
<b>Impact HYD-4:</b> The Project would not result in significant impacts by placing structures within a 100-year flood hazard zone. (Less than Significant)	None required	
<b>Impact HYD-5:</b> The Project would not expose people or structures to a significant risk of loss, injury or death resulting from flooding caused by failure of a levee or dam. (Less than Significant)	None required	
<b>Impact HYD-6:</b> The Project site would not expose people or structures to a significant risk of loss, injury or death resulting from flooding caused by seiche, tsunami or mudflow. (Less than Significant)	None required	
<b>Impact HYD-7:</b> The project, in conjunction with past, present and other reasonably foreseeable development in the area, would not cause cumulative impacts with respect to hydrology and water quality. (Less than Significant)	None required	
<b>Land Use, Plans, and Policies</b>		
<b>Impact LU-1:</b> The Project would not conflict with uses at the periphery of the project area, divide an existing community, convert open space, or result in incompatible land uses. (Less than Significant)	None required	
<b>Impact LU-2:</b> The Project would not conflict with any applicable land use plan, goal, policy, or regulation, including zoning, adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)	None required	
<b>Impact LU-3:</b> The Project, combined with past, present, and reasonably foreseeable projects in the area, would not result in a cumulative land use impact regarding land use, plans and policies. (Less than Significant)	None required	

**TABLE 2-1 (Continued)**  
**SUMMARY OF IMPACTS, MITIGATION MEASURES, AND RESIDUAL EFFECTS**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Noise and Vibration</b>		
<p><b>Impact NOI-1:</b> The Project would not develop land uses that would be incompatible with the noise environment at and nearby the project site. (Less than Significant)</p>	None required	
<p><b>Impact NOI-2:</b> Construction of the Project would substantially and temporarily increase noise levels in areas of sensitive receptors and exceed the ambient noise environment. (Significant)</p>	<p><b>Mitigation Measure NOI-2:</b></p> <ul style="list-style-type: none"> <li>a) Pursuant to Sections 6.70.030(5) and 6.70.040 of the Marin County Municipal Code, restrict noise-generating activities at the construction site or in areas adjacent to the construction site to the hours of 7:00 a.m. to 6:00 p.m., Monday through Friday and 9:00 a.m. to 5:00 p.m. on Saturday. Construction will be prohibited on Sundays and holidays. Loud noise-generating construction-related equipment (e.g., backhoes, generators, jackhammers) can be maintained, operated, or serviced at a construction site for permits administered by the community development agency from 8:00 a.m. to 5:00 p.m. Monday through Friday only.</li> <li>b) If during construction it is determined that construction noise disrupts on-going hospital operations for workers of patients within patient rooms or existing medical offices, the project shall erect temporary noise control blanket barriers along existing hospital building facades facing the construction area. The specific location and height of barriers would depend on the extent of the problem indoors. Noise control blanket barriers can be rented and quickly erected to reduce the intrusiveness of construction noise indoors. If construction noise is not problematic and does not disrupt hospital or medical office operations, the temporary noise barriers would not be necessary.</li> <li>c) Where it is feasible to block the line-of-sight to construction activities, construct solid plywood fences (minimum eight feet in height either around the construction zone or at the common property line) to shield adjacent residences or other noise-sensitive land uses prior to major noise generating phases of demolition and construction;</li> <li>d) Shield adjacent sensitive uses from stationary equipment with individual noise barriers or partial acoustical enclosures;</li> <li>e) Develop a plan to relocate patient rooms and sensitive medical offices away from areas undergoing construction;</li> <li>f) Use manually adjustable or self-adjusting back-up alarms to increase or decrease the volume of the alarm based on background noise levels. Installation and use of the back-up alarms will be consistent with OSHA (Occupational Safety and Health Administration) regulations;</li> <li>g) Utilize 'quiet' models of air compressors and other stationary noise sources where technology exists;</li> </ul>	Significant and Unavoidable

**TABLE 2-1 (Continued)**  
**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Noise and Vibration (cont.)</b>		
<b>Impact NOI-2 (cont.)</b>	<ul style="list-style-type: none"> <li>h) Equip all internal combustion engine-driven equipment with intake and exhaust mufflers, which are in good condition and appropriate for the equipment;</li> <li>j) Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from residences or noise-sensitive land uses;</li> <li>k) Locate staging areas and construction material areas as far away as possible from residences or noise-sensitive land uses;</li> <li>l) Route all construction traffic to and from the project site via designated truck routes where possible. Prohibit construction related heavy truck traffic in residential areas where feasible;</li> <li>m) Control noise from construction workers' radios to a point that they are not audible at existing residences bordering the project site;</li> <li>n) Conduct sensitivity training to inform construction personnel about the requirements of the construction noise control plan and about methods to reduce noise;</li> <li>o) Prohibit all unnecessary idling of internal combustion engines;</li> <li>p) Notify all adjacent business, residences, and noise-sensitive land uses of the construction schedule in writing;</li> <li>q) Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler) and would require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.</li> </ul>	
<b>Impact NOI-3:</b> Construction of the Project could expose persons to groundborne vibration. (Potentially Significant)	<b>Mitigation Measure NOI-3:</b> Implement Mitigation Measure NOI-2.	Less than Significant
<b>Impact NOI-4:</b> The Project could generate operational noise levels that exceed standards established in the Marin Countywide Plan. (Potentially Significant)	<b>Mitigation Measure NOI-4a:</b> During final design of the project, conduct an acoustical analysis to ensure that noise resulting from the rooftop mechanical equipment on the Hospital Replacement Building complies with applicable General Plan policies. The acoustical analysis would calculate noise levels resulting from the selected equipment at the nearest sensitive receiving land uses, assess noise levels relative to applicable standards, and provide feasible and reasonable recommendations to control noise levels in accordance with the applicable limits. Particular attention will be	Less than Significant

**TABLE 2-1 (Continued)  
SUMMARY OF IMPACTS, MITIGATION MEASURES, AND RESIDUAL EFFECTS**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Noise and Vibration (cont.)</b>		
<b>Impact NOI-4 (cont.)</b>	<p>given to the chiller room enclosure and cooling towers. Additional noise control measures might include, but are not limited to, selection of quieter equipment, baffles, packaged sound attenuators, and noise barriers. The report will be completed and submitted to the building department prior to the issuance of building permits, and will be used to determine the added noise measures required.</p> <p><b>Mitigation Measure NOI-4b:</b> During final design of the project, conduct an acoustical analysis to ensure that noise resulting from the operation of the emergency generators is reduced to 85 dBA or less (or a lower limit if necessary to minimize interference with hospital operations) in the ambulance bay. The report will be completed and submitted to the building department prior to the issuance of building permits related to installation of the generators in the West Wing, and will provide feasible and reasonable recommendations as needed to control noise levels in accordance with the applicable limits. Additional noise control measures might include, but are not limited to, high-performance (hospital or critical grade) mufflers, additional banks of silencers, or acoustical louvers. The additional noise control would also reduce noise levels in the surrounding community during testing or emergency operations.</p>	
<b>Impact NOI-5:</b> The Project would not result in increased traffic volumes that would substantially increase noise levels at sensitive receivers in the project vicinity. (Less than Significant)	None required	
<b>Impact NOI-6:</b> The Project, combined with past, present, and reasonably foreseeable projects, would not substantially increase traffic noise levels along area roadways or result in cumulatively significant temporary or operational noise or vibration effects. (Less than Significant)	None required	
<b>Population, Housing, and Employment</b>		
<b>Impact POP-1:</b> The Project would not induce substantial population growth or concentration of population in the area, either directly or indirectly. (Less than Significant)	None required	
<b>Impact POP-2:</b> The Project could conflict with housing and population projections and policies as set forth in the Countywide Plan. (Less than Significant)	None required	
<b>Impact POP-3:</b> The Project, in conjunction with past, present and reasonably foreseeable projects, would not contribute to a cumulatively considerable effect related to population, housing and/or employment. (Less than Significant)	None required	

**TABLE 2-1 (Continued)**  
**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Public Services and Recreation</b>		
<b>Impact PSR-1:</b> The Project would not cause a substantial adverse physical impact due to increased demand for fire protection services and emergency medical assistance. (Less than Significant)	None required	
<b>Impact PSR-2:</b> The Project would not cause a substantial adverse physical impact due to increased demand for police protection services. (Less than Significant)	None required	
<b>Impact PSR-3:</b> The Project would not cause a substantial adverse physical impact due to the need for additional school capacity or facilities. (Less than Significant)	None required	
<b>Impact PSR-4:</b> The Project would not result in increased use of parks at levels that would require the designation of additional parkland to remain in conformance with locally adopted park standards. (Less than Significant)	None required	
<b>Impact PSR-5:</b> The Project would not result in increased use of recreational facilities that would result in substantial and/or accelerated physical deterioration of facilities. (Less than Significant)	None required	
<b>Impact PSR-6:</b> The Project, combined with past, present, and other reasonably foreseeable development in the area, would not contribute to cumulative impacts with respect to public services and recreation. (Less than Significant)	None required	
<b>Transportation and Circulation</b>		
<b>Impact TRA-1:</b> The Project would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Existing plus Project Conditions. (Significant for intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd. Less than Significant for freeway segment LOS)	None feasible for intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd. None required for freeway segment LOS	Significant and Unavoidable for intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd
<b>Impact TRA-2:</b> The Project would substantially increase traffic safety hazards for vehicles, bicyclists, and pedestrians on public roadways due to roadway design features, incompatible uses, or Project-related vehicles trips. (Potentially Significant regarding hazards for vehicles. Less than Significant for bicyclists, pedestrians, and transit service.)	<b>Mitigation Measure TRA-2a:</b> To improve vehicle sight distance from the planned parking garage right-turn only westbound driveway onto Bon Air Road, no vehicle parking shall be allowed on the east side of Bon Air Road between the garage's outbound only driveway and the planned inbound only ambulance driveway located to the south (which would entail removal of two parking spaces, in addition to the two or three parking spaces removed to accommodate the new driveways). In addition, planned trees and shrubbery shall be removed in the landscaped areas both south and between the two driveways to allow for improved vehicle sight distance.  These measures will result in reducing potential vehicle sight distance problems to a less-than-significant level.	Less than Significant

**TABLE 2-1 (Continued)**  
**SUMMARY OF IMPACTS, MITIGATION MEASURES, AND RESIDUAL EFFECTS**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Transportation and Circulation (cont.)</b>		
<b>Impact TRA-2 (cont.)</b>	<p><b>Mitigation Measure TRA-2b:</b> To improve traffic flow and reduce potential queuing impacts at the main full-access southern driveway, it is recommended that a double yellow lane striping shall be installed from the driveway's raised median around the internal curb northbound into the drive aisle to prevent queued vehicles from potentially blocking inbound traffic to the site.</p> <p>None required for bicyclists, pedestrians, and transit service</p>	Less than Significant
<b>Impact TRA-3:</b> The Project could result in inadequate emergency access. (Potentially Significant)	<b>Mitigation Measure TRA-3:</b> Implement Mitigation Measure TRA-2a (improve vehicle sight distance from the planned parking garage right-turn only westbound driveway onto Bon Air Road).	Less than Significant
<b>Impact TRA-4:</b> The Project would not be inconsistent with adopted polices, plans, and programs supporting alternative transportation. (Less than Significant)	None required	
<b>Impact TRA-5:</b> The Near-Term Project would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Near-Term (Year 2018) plus Near-Term Project Conditions. (Significant for intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd. Less than Significant for freeway segment LOS)	<p>None feasible for intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd</p> <p>None required for freeway segment LOS</p>	Significant and Unavoidable for intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd
<b>Impact TRA-6:</b> The Project would generate temporary increases in traffic volume and temporary effects on transportation conditions during construction activities. (Less than Significant)	None required	
<b>Impact TRA-7:</b> The Project, in conjunction with past, present and other reasonably foreseeable future development in the area, would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Cumulative plus Project conditions. (Significant for intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd, and freeway segment LOS)	<p><b>Mitigation Measure TRA-7:</b> If the proposed Highway 101 Greenbrae/Twin Cities Corridor Improvement project circulation improvement for Sir Francis Drake Boulevard (eastbound through lane at Eliseo Drive) is deemed feasible, contribute a "fair share" contribution towards that improvement, based on the project's percent contribution to the total cumulative year 2035 plus project volume at the intersection.</p> <p>None feasible for intersection LOS at Sir Francis Drake Boulevard intersections at Wolfe Grade and La Cuesta Drive, and for queuing on Bon Air Road/Sir Francis Drake Blvd</p> <p>None feasible for freeway segment LOS</p>	<p>Significant and Unavoidable for intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd</p> <p>Significant and Unavoidable freeway segment LOS</p>



**TABLE 2-1 (Continued)**  
**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Environmental Impact	Mitigation Measures	Level of Significance after application of Mitigation
<b>Utilities and Service Systems</b>		
<b>Impact UTIL-1:</b> The Project would not require new or substantially expanded water facilities or new entitlements. (Less than Significant)	None required	
<b>Impact UTIL-2:</b> The Project would not require expanded wastewater treatment services. (Less than Significant)	None required	
<b>Impact UTIL-3:</b> The Project would not be served by a landfill with insufficient permitted capacity or conflict with solid waste regulations. (Less than Significant)	None required	
<b>Impact UTIL-4:</b> The Project would not be served by energy suppliers with inadequate capacity and would not conflict with energy conservation standards. (Less than Significant)	None required	
<b>Impact UTIL-5:</b> Construction of the Project would not use or encourage large or inefficient use of energy, exceed the energy supplier's existing capacity, or conflict with energy conservation standards. (Less than Significant)	None required	
<b>Impact UTIL-6:</b> The Project, in combination with other past, present, and reasonably foreseeable development, would not result in cumulative impacts on utilities and service systems. (Less than Significant)	None required	

# CHAPTER 3

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## Project Description

This chapter describes the Marin General Hospital Replacement Building Project (“proposed project” or “project”) proposed by the Marin Healthcare District. Topics discussed in this chapter include project objectives, geographic setting and location of the project site, project characteristics relevant to the environmental analysis, State of California regulatory context for the project, and permits and approvals required for the project.

### 3.1 Project Location and Surroundings

#### 3.1.1 Project Location

The project site is located at 250 Bon Air Road, in unincorporated Marin County, California.<sup>1</sup> The project site is approximately 10 miles north of San Francisco and 1.25 miles west of Highway 101. (See **Figure 3-1, Project Location Map.**) The project site is approximately 19.7 acres bounded generally by Bon Air Road to the west and north, Bayview Road to the south, medical offices and apartment buildings to the northeast, and the Spyglass Apartments uphill to the east and southeast. Sir Francis Drake Boulevard is located approximately 1,000 feet to the north of the site. (See **Figure 3-2, Aerial of Project Site and Surroundings.**)

#### 3.1.2 Existing Site Designations

The Marin Countywide Plan Land Use designation for the project site is “PF – Public Facility.” The Marin County Zoning designation for the project site is “PF (Public Facilities District).”

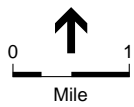
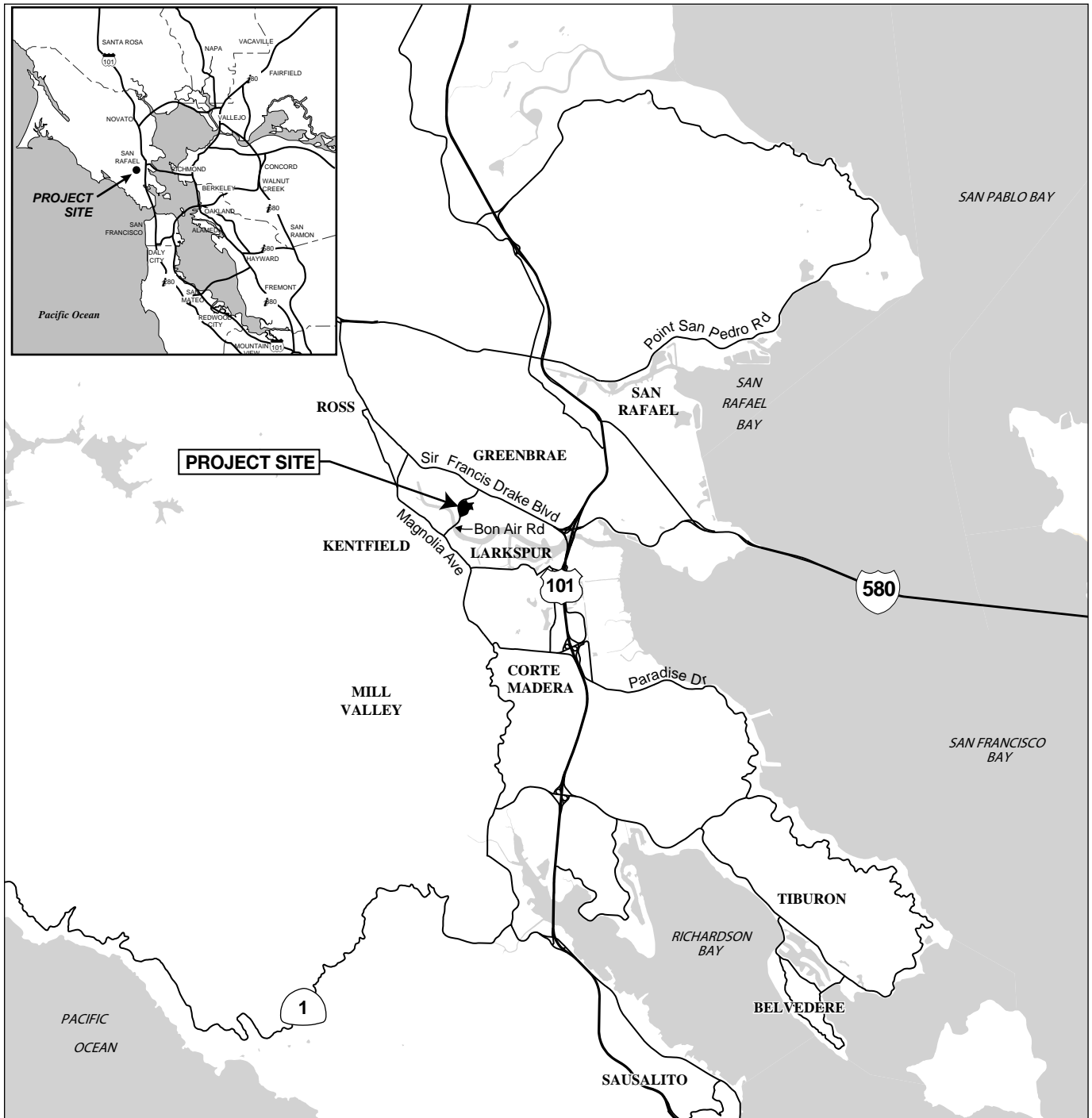
#### 3.1.3 Existing Ownership

The Marin Healthcare District (formerly the Marin Hospital District) is a local healthcare district organized December 9, 1946, under the provisions of the Local Healthcare District Law (Health and Safety Code, Division 32; the District Law).

The Marin Healthcare District and the County of Marin (“County”) entered into a joint venture to construct the Marin Community Mental Health Building that currently exists in the northeast area of the project site. The Marin Healthcare District contributed a 4.9-acre parcel of land, and the County contributed grants and money toward the construction of the Mental Health Building.

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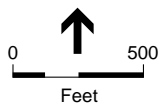
<sup>1</sup> The entire Marin General Hospital campus is considered the project site.



SOURCE: ESA

Marin General Hospital . 210606

**Figure 3-1**  
Project Location Map



SOURCE: ESA

Marin General Hospital . 210606

**Figure 3-2**  
Aerial of Project Site and Surroundings

The land contributed by the District equated to 49 percent of the total value of the Mental Health Building project.

In 2008, as a condition of a loan by the County to the District, a legal description was created that defined the boundaries of the parcel associated with the Mental Health Building. The legal description assigned an undivided 51 percent interest to the County and an undivided 49 percent interest to the District. An easement for parking was granted to provide 37 gated access parking spaces and three open access parking spaces consistent with existing conditions in 2008.

Overall, approximately 14.8 acres (75 percent) of the 19.7-acre project site is owned by the Marin Healthcare District; 4.9 acres (25 percent) at the northernmost corner of the project site is co-owned by the District and the County of Marin (“County”). In order to develop a hillside parking structure on the project site, the Marin Healthcare District would need to lease 0.82 acres of land from the County, or swap that same acreage for the District’s lands. In addition, the Marin Healthcare District would provide an easement for access and parking to the County property. (See **Figure 3-3, Existing Marin County Property and Access Parking Easements.**)

The County Assessor’s Parcel Numbers for the parcels that make up the project site are 022-010-34 and 022-060-20.

### 3.1.4 Surrounding Uses

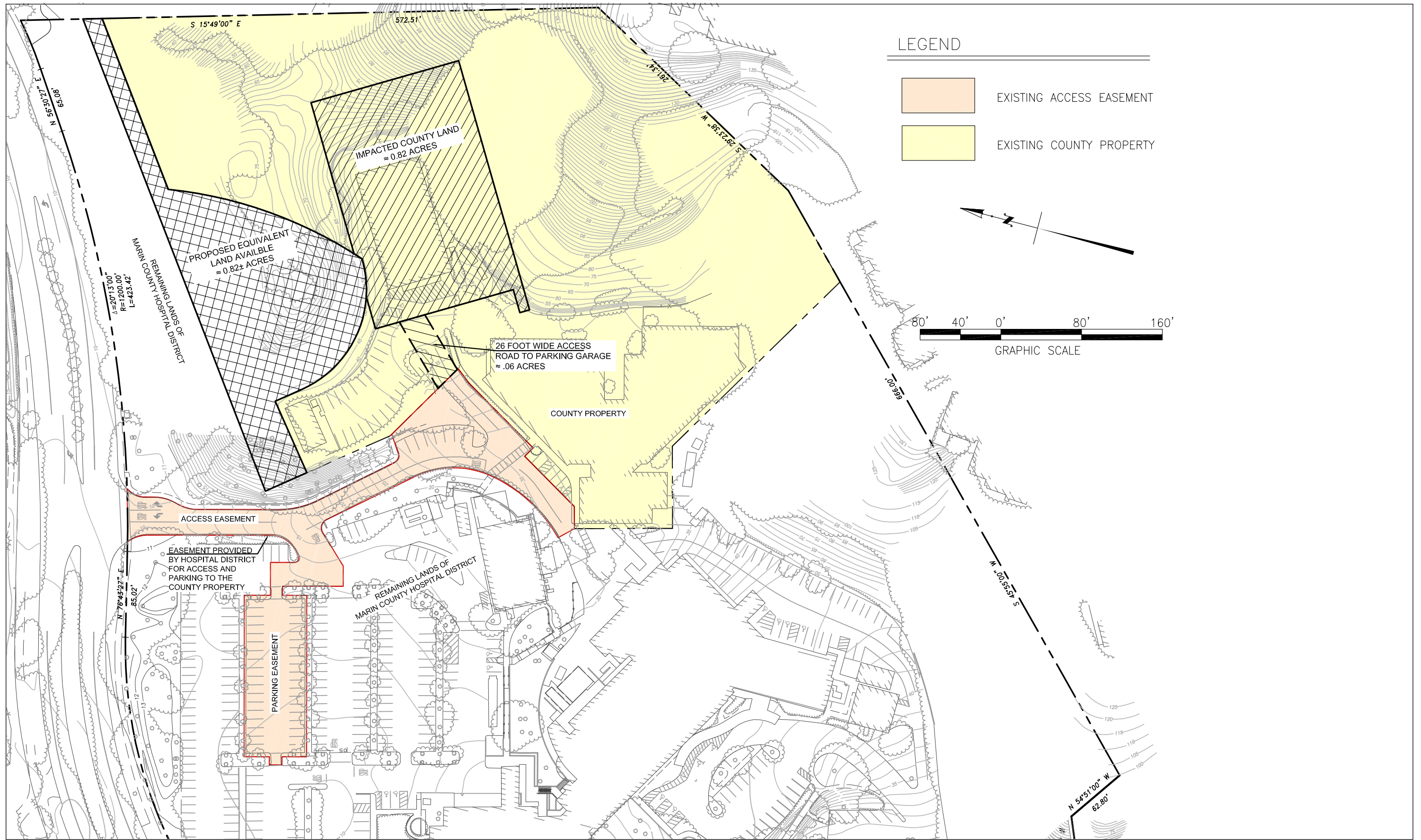
The project site is surrounded by a mix of residential, medical-related and public facility development, as well as public and private open space areas. Surrounding areas include natural and developed ridges, valleys, and hillside topography. The surrounding pattern of developed and undeveloped areas is shown above in Figure 3-2, Aerial of Project Site and Surroundings.

**West:** The project site is edged on the west by Bon Air Road. The Hal Brown Park at Creekside (Hal Brown Park) (formerly “Creekside Park”) is located west of the site, directly across Bon Air Road.<sup>2</sup> Hal Brown Park includes a small playground and ball field, as well as open space and estuarial wetlands (also referred to generally as “marsh”), associated with Corte Madera Creek, which is located primarily to the south and west of the project site.

**North / Northeast:** St. Sebastian’s Catholic Church, the Marin Catholic High School athletic fields and the Bay Club and their associated parking lots are located across Bon Air Road, toward the north. Each of these facilities is accessed off Bon Air Road, except the high school, which is accessed from Sir Francis Drake Boulevard. Medical offices buildings, nursing facilities, and four and three-story apartment buildings are located northeast of the project site.

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<sup>2</sup> Creekside Park Recreational Area reopened on February 14, 2011, following extensive renovations and was renamed “Hal Brown Park.” <http://maringov.org/Depts/PK/Divisions/Parks/Hal%20Brown.aspx>



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**East / Southeast:** Several townhome and apartment complexes are located on a ridge above and to the southeast of the project site, above and beyond the existing Marin Community Mental Health Building. The ground floors of these multi-family residential units are located at an elevation of approximately 130 feet above mean sea level (amsl), compared to the project site at an elevation of approximately 10 to 45 feet amsl.

**South:** A small private road, Bayview Road, is located south of the southern boundary of the site. There is a mix of single-family and multi-family residences and commercial uses on Bayview Road. The residences on Bayview Road are the closest to the project site and are separated from the project site by a small hill and grove of eucalyptus trees. The nearest residence is located approximately 200 feet south of the proposed Hospital Replacement Building. Additionally, medical office buildings are located on Bon Air Road and South Eliseo Drive, south of the project site.

**Surrounding Natural Characteristics:** The topography of the area includes the ridges, valleys, and rolling hills associated with the side hills of Mt. Tamalpais. The project site is within the Corte Madera Creek watershed, a 28-square-mile watershed that extends to the east peak of Mt. Tamalpais and includes the Ross Valley.

## 3.2 Existing Marin General Hospital Facilities

### 3.2.1 Existing Buildings and Uses

Existing buildings, facilities, and surface parking areas occupy approximately 11.7 acres (or approximately 60 percent) of the 19.7 acres of the project site. The remaining undeveloped areas of the site are characterized by an area of oak woodland on the low hill on the eastern edge of the property and a eucalyptus grove on the southern edge of the property.

As shown in **Figure 3-4, Existing Site Buildings and Layout**, current facilities within the campus include the existing hospital, the Marin Community Clinic, the Marin Community Mental Health Building, and other small ancillary offices and support services.

### Campus Population

The existing hospital houses all of the medical services on the campus, except those provided in the Mental Health Building, and therefore has the highest population and concentration of visitors, patients, and staff compared to other facilities on the project site. The hospital currently has a total of 1,126 full-time equivalent (FTE) employees; approximately 190 acute care visitors and patients visit the hospital daily. An additional approximately 700 ambulatory and 100 mental health visitors and patients visit daily. These numbers do not reflect the employees and visitors to the Health and Human Services function operated by Marin County. However the parking and traffic counts that are factored into the analysis in this Draft EIR were based on actual visitors to the site, including the Health and Human Services population counts.



## Existing Hospital and Mental Health Building

The existing hospital building is 292,786 square feet in total floor area. The hospital has three wings: Central, East and West Wings, and also includes the Marin Community Mental Health Building. There are a total of 235 licensed beds on the campus, including 17 beds in the Mental Health Building. The existing wings range from four to five stories in height. The original Central Wing of the hospital was completed in 1952 and was expanded to add the East Wing in 1961. Existing services in the Central and East Wings include Medical/Surgery, Postpartum, the Neonatal Intensive Care Unit (NICU), and Pediatrics. The East Wing also includes administration offices, physicians' offices, and the Oncology Department. There are a total of 139 licensed beds in the Central and East Wings. The West Wing, completed in 1986, includes the Emergency Services Department, Intensive Care Unit (ICU) and surgical operations. There are currently 79 licensed beds in the West Wing.

The Marin Community Mental Health Building was constructed in 1967, north of the existing Central Wing. It includes a 17-bed psychiatric unit. The facility would not be altered as part of the proposed project and would continue to operate the services currently offered after all phases of the proposed project are complete. However, existing site accessibility issues to the Mental Health Building would be resolved by the proposed project, as discussed in Section 3.6.1, *Site Access and Circulation*.

## Marin Community Clinic

The Marin Community Clinic and associated offices are located in one-story temporary trailers located north of the Mental Health Building. As mentioned in Section 3.1.3, *Existing Ownership*, for the proposed project, the Marin Community Clinic would move offsite to new space as the existing space no longer meets the clinic's needs.

## Ancillary Facilities

Relatively small existing ancillary facilities on the project site include an information technology building, a purchasing department office located in a temporary trailer, a risk management office located in a temporary trailer, and a bulk oxygen facility. Except for the bulk oxygen facility, each of these facilities would be demolished as part of the proposed project.

## Heli-stop

Helicopters are currently allowed to land at Hal Brown Park, directly across the street from the project site. The majority of the helicopter flights are critical patients being transferred out to other healthcare facilities with a rare occasion (two times in five years) of a patient being flown in to Marin General. The County of Marin controls the helicopter traffic into and out of Marin General using their communication center and procedures for traffic control. This practice would continue with the proposed project and ensure life-threatening events are treated in an expeditious manner. The proposed project does not include a heli-stop.



**LEGEND**

- BUILDING TO BE DEMOLISHED
- BIKE PATH
- ACCESSIBLE PATH OF TRAVEL
- PROPERTY LINE
- LOT #
- PARKING SUPPLY

**SITE BUILDINGS**

- ① EXISTING WEST WING
- ②A EXISTING CENTRAL WING
- ②B EXISTING EAST WING
- ③ EXISTING MENTAL HEALTH
- ④ EXISTING BULK OXYGEN
- ⑤ EXISTING INFORMATION TECH OFFICES

**DEMOLITION KEYNOTES**

- BUILDING TO BE DEMOLISHED
- ① DEMOLISH PARTIAL WEST WING
- ② DEMOLISH WEST WING ENTRANCE CANOPY
- ③ DEMOLISH MOBILE MAGNETIC RESONANCE IMAGING UNIT
- ④ DEMOLISH RISK MANAGEMENT Q.A. OFFICES
- ⑤ DEMOLISH RISK MANAGEMENT Q.A. OFFICES
- ⑥ DEMOLISH PARTIAL INFORMATION TECH OFFICES
- ⑦ DEMOLISH PURCHASING DEPARTMENT
- ⑧ DEMOLISH MARIN COMMUNITY HEALTH CLINIC OFFICES
- ⑨ DEMOLISH MARIN COMMUNITY HEALTH CLINIC

- Bus Stop

0 200  
Feet

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### 3.2.2 Existing Access and Circulation

There are two existing vehicular entrances/exits to the project site and one exit-only driveway (see Figure 3-4, Existing Site Buildings and Layout). One entrance is located in the northern quadrant of the project site and provides primary access the Mental Health Building. It is also primarily used by emergency vehicles, service vehicles, and hospital employees. The main hospital entrance is located in the southwest quadrant of the hospital area and mostly used by visitors, patients, employees, and transit vehicles. An exit-only driveway, just north of the main entrance, is located west of the West Wing. All driveways provide direct vehicle access to northeast bound Bon Air Road, and each driveway location is an un-signalized intersection. Painted crosswalks are located at both of the driveway entrances.

Two bus shelters are located within and around the project site and are served by Golden Gate Transit and Marin Transit. One bus shelter is located adjacent to the West Wing, and another is located on Bon Air Road at the north vehicular entrance to the project site.

Marin General Hospital operates a morning peak-hour shuttle service from 7:00 to 9:00 a.m. to transport visitors and employees from the St. Sebastian Church parking lot and campus area north of the project site to the hospital, and from the hospital to and from additional medical facilities located within five miles of the hospital (20 miles for senior patients).

Existing pedestrian facilities in and around the project site include several connecting, paved, and stepped sidewalks that connect to the hospital and other on-site facilities. The main public building entrance to the hospital is located at the West Wing, and an additional public building entrance is located between the Central and East Wings.

There is a dedicated bicycle path paralleling Bon Air Road through Hal Brown Park, west of the project site. Bicycle racks and bicycle stalls are provided within the project site for visitors and employees.

### 3.2.3 Existing Parking

There are a total of 768 surface parking spaces utilized by the existing hospital. Of this total, 605 parking spaces are located throughout 18 surface parking lots on the project site; 73 are on-street parking spaces along Bon Air Road fronting the project site; and 90 are off-street spaces in the neighboring St. Sebastian Church to the north, across Bon Air Road. The project has considered the 73 on-street parking spaces in determining the demand associated with the project site, and factored in the fact that they are available for use by the general public and patrons and residents of other nearby uses, as well as users of the hospital. However, the parking supply count used to calculate the project's parking needs only considered the 605 on-site parking spaces. Most of the existing on-site parking spaces are from Marin County's approvals of the 1985 Marin General Hospital Master Plan and a subsequent 1995 plan amendment, which together required that at least 750 permanent on-site spaces (with a practical capacity of 675 spaces) be provided onsite.

The County of Marin has an easement for parking on a plat of land in the surface parking lot on the campus that includes 37 parking spaces for the employees of the Health and Human Services facility, along with three additional reserved spaces in the Marin Community Clinic parking lot, for a total of 40 spaces (see Figure 3-3, Existing Marin County Property and Access Parking Easements). These spaces are included in the on-site total of 605 parking spaces.

Valet parking is offered onsite to employees and visitors between the hours of 6:30 a.m. and 4:00 p.m. During a typical weekday, three valet attendants are available to park and retrieve vehicles from the three parking lots within the project site that are used for valet operations. Parking at the hospital is currently free of charge.

### **3.2.4 Existing Landscaping and Vegetation**

Landscaping on the project site primarily exists along the Bon Air Road frontage along the West Wing, and in the southern portion of the project site. The landscape palette is a combination of native and non-native species and includes several large oak, eucalyptus, pine and redwood trees with an understory of various shrubs. Varied landscaping also exists within the existing surface parking lots. Landscaping in the median and along the east side of Bon Air Road is characterized by fully mature trees, including pine, redwood, oak and other species.

The undeveloped hillsides along the eastern and southeastern borders of the project site contain remnant oak woodland habitat with mostly native tree species and an herbaceous understory. The oak woodland canopy opens to a grassland area at the top of the eastern hillside. A small hill on the southern boundary is dominated by the stand of large eucalyptus trees and grassland areas below.

### **3.2.5 Lawrence Halprin Terrace Gardens**

An area in the south portion of the project site is characterized by special terrace gardens, one of the first designed by the late landscape architect Lawrence Halprin. The gardens were created as part of the original Marin General Hospital site layout in the early 1950s. The “Ambulatory Terrace” view garden is located within an existing oak grove, between the existing Central and West Wings. The “Bar-B-Que Terrace” is located in the southernmost part of the project site and includes a built -in Bar-B-Que within a manicured lawn and a circle of various palm species and other ornamental varieties. Portions of the garden areas have been disturbed and removed due to parking lot expansions over the years. (The Lawrence Halprin Terrace Gardens are described in detail in Section 4.D, *Cultural and Paleontological Resources*, in Chapter 4 of this Draft EIR.)

### **3.2.6 Existing Site Constraints, Utilities and Services**

#### **Slopes, Drainage and Flooding**

The western portion of the project site is relatively flat and rises steeply toward the east. The topography changes from an elevation of 10 feet above mean sea level (amsl) along Bon Air Road at the west, to an elevation of 45 feet amsl (a 35 foot increase) at the back of the existing East Wing. The easternmost portion of the site rises more steeply from an elevation of 50 feet

amsl to an elevation of 130 feet amsl (an 80-foot increase). As a result, the site generally drains from east to west, as well as north to south. An existing storm drain system conveys and collects stormwater runoff through the hospital grounds and discharges to an existing public drainage system in Bon Air Road, which eventually drains directly to Corte Madera Creek.

No portion of the project site is located within the 100-year flood area. (A detailed flood hazards map is Figure 4.H-1, Area Flood Zones, in Section 4.H, *Hydrology and Water Quality*, in Chapter 4 of this Draft EIR.)

## Soils Stability

Soft Bay Mud deposits associated with the nearby Corte Madera Creek are found beneath artificial fills in the western portion of the project area, with none in the eastern and southeastern portions of the site, where the bedrock is either exposed or close to the ground surface. Recent shallow slope failures have occurred within the steep cut slopes in the northeast areas of the site where the Marin Community Clinic is located (see detail in Section 4.G, *Geology, Soils, and Seismicity*, in Chapter 4 of this Draft EIR).

The National Wetlands Inventory does not map any wetland areas on the project site but does identify Corte Madera Creek and the associated marshlands to the west of Bon Air Road as estuarine intertidal habitats (as discussed further in Section 4.C, *Biological Resources*, in Chapter 4 of this Draft EIR). Although areas to the southwest of the project site are considered highly susceptible to liquefaction, soils encountered in borings taken onsite were considered too clayey to liquefy.

## Utilities

Existing publicly-owned utilities run diagonally through the site and include sanitary sewer, water and gas. Other publicly-owned utilities include telecommunication manholes owned by AT&T and several PG&E meter boxes. Marin General Hospital-owned utilities on the project site include sanitary sewer, gas, electric, telecommunication, non-potable water, site lighting conduit, and oxygen service lines and appurtenances. Each of these utilities would be modified to serve all new and existing facilities on the project site during and after construction. (The proposed modifications to each are described below in Section 3.7.7, *Utilities Work During Construction*, and Table 3-4, Required Utility Infrastructure, in this chapter; and are addressed further and illustrated in Section 4.N, *Utilities and Service Systems*, in Chapter 4 of this Draft EIR.)

## Fire Service

Marin General Hospital is in the jurisdiction of Marin County Fire Department, however Marin County Fire contracts this service to the Kentfield Fire District. The Kentfield Fire District fire house is located at the intersection of Sir Francis Drake Boulevard and College Avenue approximately 2.0 miles west of the project site. Fire service related needs during construction and operation of the project are discussed below in Section 3.5, *Proposed Project Characteristics*, and Section 3.7.4, *Grading, Excavation and Runoff During Construction*.

## 3.3 State-Mandated Compliance with Senate Bill 1953

### 3.3.1 Applicability of SB1953 and Building Codes

Seismic-safety legislation Senate Bill (SB) 1953 and the Alfred E. Alquist Hospital Facilities Seismic Safety Act (The Alquist Act), described in detail in Chapter 1, Introduction, of this Draft EIR, mandates the replacement or seismic retrofit of existing California acute care hospital facilities that do not meet current earthquake-resistant standards for hospitals within specified timeframes continuing to 2030. Marin General Hospital is classified as an acute care facility.

The Alquist Act also requires that building plans for the retrofit or replacement of acute care hospital facilities be submitted to, and approved by, Office of Statewide Health Planning and Development (OSHPD). OSHPD enforces building standards related to construction of health facilities. Specifically, hospitals with non-ambulatory patients, such as Marin General Hospital, are considered “Institutional Group I Occupancy” structures (as defined in the California Building Code) and are subject to stringent requirements for life safety (fire, health, seismic). Non-OSHPD structures (i.e., structures that do not house OSHPD-regulated hospital functions) are not subject to the same building requirements, but are subject to the 2011 California Building Code and currently applicable building codes, State and federal accessibility requirements and local regulations.

The proposed Ambulatory Services Building, retaining walls, and parking structures are non-OSHPD structures, as are portions of the existing hospital that would no longer be used for the provision of acute care services (as described in detail below in Section 3.5.2, *Major Project Components*).

### 3.3.2 Building Ratings and Needs

OSHPD has established a Structural Performance Category (SPC) and Non-Structural Performance Category (NPC) rating system for buildings to assess a building’s compliance with SB 1953 regulations. The following describes the ratings and needs of the existing hospital wings, which are discussed in greater detail in Section 4.G, *Geology, Soils, and Seismicity*, in Chapter 4 of this Draft EIR.

#### West Wing

The West Wing of the existing hospital was built in 1986 and is an SPC-3 rated building that does not require structural upgrades to comply with the Seismic Safety Act.<sup>3</sup> Installation of new central plant services may occur in the basement of the proposed Hospital Replacement Building or new equipment could be installed in the existing West Wing central plant. This new equipment would replace aging equipment in the West Wing that would require replacement in the next five years, and would be sized large enough to serve the Hospital Replacement Building.

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<sup>3</sup> SPC-3-rated buildings are compliant with the SB 1953 regulations. They can be used to January 1, 2030 and beyond.

Putting the new central plant in the existing West Wing space would require upgrading the West Wing to an NPC-4 rating.<sup>4</sup> That upgrade would require seismic bracing of all architectural, mechanical, electrical, and plumbing systems, their components and equipment, and all medical equipment to meet the requirements of Part 2, Title 24. The work to accomplish this would be internal of the building envelope; thus it is not expected to alter environmental effects of the project identified in this EIR or be material to public consideration of its approval since it would primarily involve interior alterations.

## Central/East Wings

The Central/East Wings are rated SPC-1, and all acute care departments and services in the Central and East Wings of the existing hospital would move to the proposed Hospital Replacement Building.<sup>5</sup> Non-acute care departments and services in the Central and East Wings would either remain in place and/or relocate within those wings, with some being expanded. A breakdown of the departments and services that would be relocated to the proposed Hospital Replacement Building and Ambulatory Services Building, and those departments and services that would remain in the existing hospital is detailed below in Section 3.5.2, *Major Project Components (Renovation of Existing Hospital Wings)*.

## 3.4 Objectives of Proposed Project

The objectives of the proposed project are:

1. To provide an OSHPD SB 1953 seismically compliant acute care hospital facility for the citizens of Marin County for the foreseeable future.
2. To develop the new Hospital Replacement Building, Ambulatory Services Building, Parking Structures, and internal circulation system, including on-site pedestrian circulation to meet the contemporary energy and design objectives and to adhere to the project's goal for sustainable design that achieves a rating equivalent to the United States Green Building Council Leadership in Energy and Environmental Design's (LEED®) Silver and the LEED® for Healthcare Rating System modeled after the Green Guide for Health Care (GGHC).
3. To promote health, safety and well-being for all future patients, doctors, nurses and employees on the Marin General Hospital campus.
4. To ensure that the Marin General Hospital meets the standards and requirements of the Hospital Facilities Seismic Safety Act (SB 1953). The hospital is proceeding under additional regulations SB 1661, and SB 499, SB 90, and AB 523, pursuing compliance at the earliest practicable date and within mandated State deadlines.

<sup>4</sup> NPC-4-rated buildings have all architectural, mechanical, electrical systems, components and equipment, and hospital equipment properly anchored. If there is not significant structural damage and problems with water and sewer systems, basic emergency medical care should be able to continue after an event.

<sup>5</sup> SPC-1 rated buildings have a high risk of collapse in an earthquake. These buildings must be retrofitted, replaced, or removed from acute care classification by January 1, 2015.



5. To allow for uninterrupted operation of medical services currently provided at Marin General Hospital and maintain continuity of care during and after a major earthquake.
6. To improve a medical campus at 250 Bon Air Road that is accessible to all patients, doctors, nurses, employees, and visitors at buildout of the project.
7. To phase construction of the project so as to allow uninterrupted hospital operations.
8. To provide integrated delivery of high quality health care services from the existing Marin General Hospital campus and to provide private patient rooms where possible.<sup>6</sup>
9. To manage development of the proposed project in a responsible manner sensitive to the surrounding area.
10. To minimize existing on-site parking shortfalls for patients, visitors and staff at Marin General Hospital and reduce parking-related problems in the surrounding neighborhood by providing substantial additional on-site parking located near the hospital entrance and future outpatient Ambulatory Services Building; and to locate, design and phase new parking structures onsite to minimize parking shortfalls during and after construction while avoiding any adverse effects to the aesthetic setting of the project site and surroundings.

## 3.5 Proposed Project Characteristics

This section describes the components of the proposed project, which, combined with all parts of this chapter, constitute the CEQA “Project” analyzed in this EIR.<sup>7</sup> A brief overview of the project is provided immediately below (Section 3.5.1), followed by more detailed descriptions of each major component of the project (Section 3.5.2), and project activities by phase (Section 3.5.3). Proposed site development and construction activities associated with the project are described further in this chapter (Sections 3.6 and 3.7, respectively).

### 3.5.1 Project Overview

The proposed project consists of the phased development of Marin General Hospital to include a 412-space Hillside Parking Structure, a 507-space Bon Air Road Parking Structure, a 100,000 square-foot Ambulatory Services Building, and a 300,000 square-foot Hospital Replacement Building. In addition, the project would renovate existing wings of the existing hospital and develop a Nursing Unit Infill Project within the new Hospital Replacement Building. These major components of the project would be developed, in the sequence mentioned above, in six phases over a period of approximately eight years (generally, through 2020).

A total of 426 new employees would be associated with the proposed Ambulatory Services Building and Nursing Unit Infill Project would be added to the site. The project would not result in a net increase in the existing number of licensed beds on the project site.

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<sup>6</sup> Use of private rooms (i.e., hospital rooms with a single patient) is a well-established and growing national trend in new hospital construction to address patient health and safety and operational efficiency.

<sup>7</sup> CEQA *Guidelines* Section 15378 defines “Project” as “the whole of the action” that has the potential for resulting in physical changes in the environment.

The project would involve site work to relocate existing utilities and to develop new utilities to serve existing and proposed buildings. The project would also involve retaining walls up to approximately 25 feet tall to support the Hillside Parking Structure, and overall site improvements, such as improved site access, new landscaping and outdoor seating areas, and related site amenities, such as enhanced signage and lighting.

The project proposes a ground-level covered walkway from the Bon Air Road Parking Structure to the Hospital Replacement Building and the Ambulatory Services Building. As an alternative option, the project considers an elevated pedestrian bridge following a different route than the ground-level covered walkway between these buildings, if the District is able to secure adequate funding for this optional element. Similarly, the project may incorporate new trellises with a photovoltaic (PV) system on the top levels of the two new parking structures, pending funding availability.

Buildout of the proposed project is illustrated in **Figure 3-5, Proposed Site Plan** and **Figure 3-6, Proposed Site View (Illustrative) - Looking Southeast** (the latter showing the potential elevated pedestrian walkway option), and simulated in **Figure 3-7, Proposed Site View (Simulation) - Looking Southeast**.

### 3.5.2 Major Project Components

This discussion describes the major building development and demolition components of the proposed project, generally in the sequence that they will be developed (as described in detail in Section 3.5.3, *Project Activities by Phase*).

#### **New Parking Structures**

Marin General Hospital currently has substantial parking shortages for its patient/visitor population as well as staff. Currently its patient/visitors and staff compete for close convenient parking to the main hospital entrance given limited parking availability onsite. The project would construct two new parking structures during the initial phases of the project. See conceptual illustrations of the proposed parking structures in **Figure 3-8, Internal Site Views of Proposed Parking Structures and Ambulatory Services Building**.

##### ***Hillside Parking Structure***

The Hillside Parking Structure would be constructed on the hillside at the northeast portion of the project site, adjacent to the existing Community Mental Health Building, and in the footprint of the existing Marin Community Clinic structure that would be demolished. The parking structure would provide 412 parking spaces and would primarily service staff parking. (See **Figure 3-9, Hillside Parking Structure – Levels and Section**.)

This structure would be five stories (six parking levels), tucked within the contours of the hillside. The top of slab elevation of the Hillside Parking Structure would sit at approximately 35 feet amsl. The entire front (south) elevation of the structure would be visible and 57 feet above

ground. The rear of the structure would be cut into the hillside slope, leaving two to three stories visible above grade on the side and rear elevations. As previously mentioned, retaining walls ranging from approximately three to 25 feet tall would be required for terracing in the northern most area of the site, adjacent to the Hillside Parking Structure.

The structure would also include an elevator. The parking structure would be accessed from Bon Air Road, via the existing north access road which would be widened to accommodate appropriate vehicular queuing to allow functional access to and from the structure.

As previously mentioned, pending Marin Healthcare District's ability to secure adequate funding, the parking structure may incorporate a trellis and PV system in the center aisles of the top parking level.

### ***Bon Air Road Parking Structure***

The Bon Air Road Parking Structure would be constructed along Bon Air Road, generally where the existing surface parking lot currently exists at the northern area of the project site. This parking structure would provide 507 parking spaces and would primarily provide patient/visitor parking for the proposed Hospital Replacement Building and Ambulatory Services Building. (See **Figure 3-10, Bon Air Road Parking Structure – Levels and Section.**)

The Bon Air Road Parking Structure would be four stories (five parking levels) and 46 feet above ground level. The top of slab elevation of the Bon Air Road Parking Structure would sit at approximately 12 feet amsl. This structure would also include an elevator. The parking structure would be accessed from two main vehicular access points located on the main internal campus roadway. The parking structure will also have a right-turn exit-only driveway to northbound Bon Air Road to provide an additional vehicular exit from the parking structure that does not direct exiting vehicles back onto the project site. Like the Hillside Parking Structure discussed above, the Bon Air Road Parking Structure may incorporate the trellis and PV system in the center aisles of the top parking level, an optional project component that depends on the Marin Healthcare District's ability to secure adequate funding for it.

## **Building Demolition**

The proposed project would involve demolition of several existing facilities on the project site. As shown in Figure 3-4, Existing Site Buildings and Layout, these facilities include the Marin Community Clinic and Offices and several relatively smaller ancillary buildings totaling approximately 15,500 square feet. These buildings currently house the Risk Management Quality Assurance Offices, the Information Technology Offices, a mobile magnetic resonance imaging (MRI) Unit, and the Purchasing Department. Additionally, a small portion of the existing West Wing and entrance canopy of the existing hospital would be removed to accommodate the Hospital Replacement Building. The hospital departments currently being housed in these spaces would be relocated to the Central / East Wings that would remain. As previously mentioned, the existing Marin Community Clinic, located where the new Hillside Parking Structure is proposed, would move offsite to new space and the existing structure would be removed.



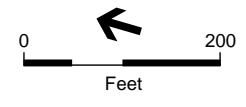
**LEGEND**

- BIKE PATH
- ACCESSIBLE PATH OF TRAVEL
- PROPERTY LINE
- ACCESS AND PARKING EASEMENT
- PROPOSED EASEMENT
- IMPACTED COUNTY LAND
- PROPOSED EQUIVALENT LAND AVAILABLE

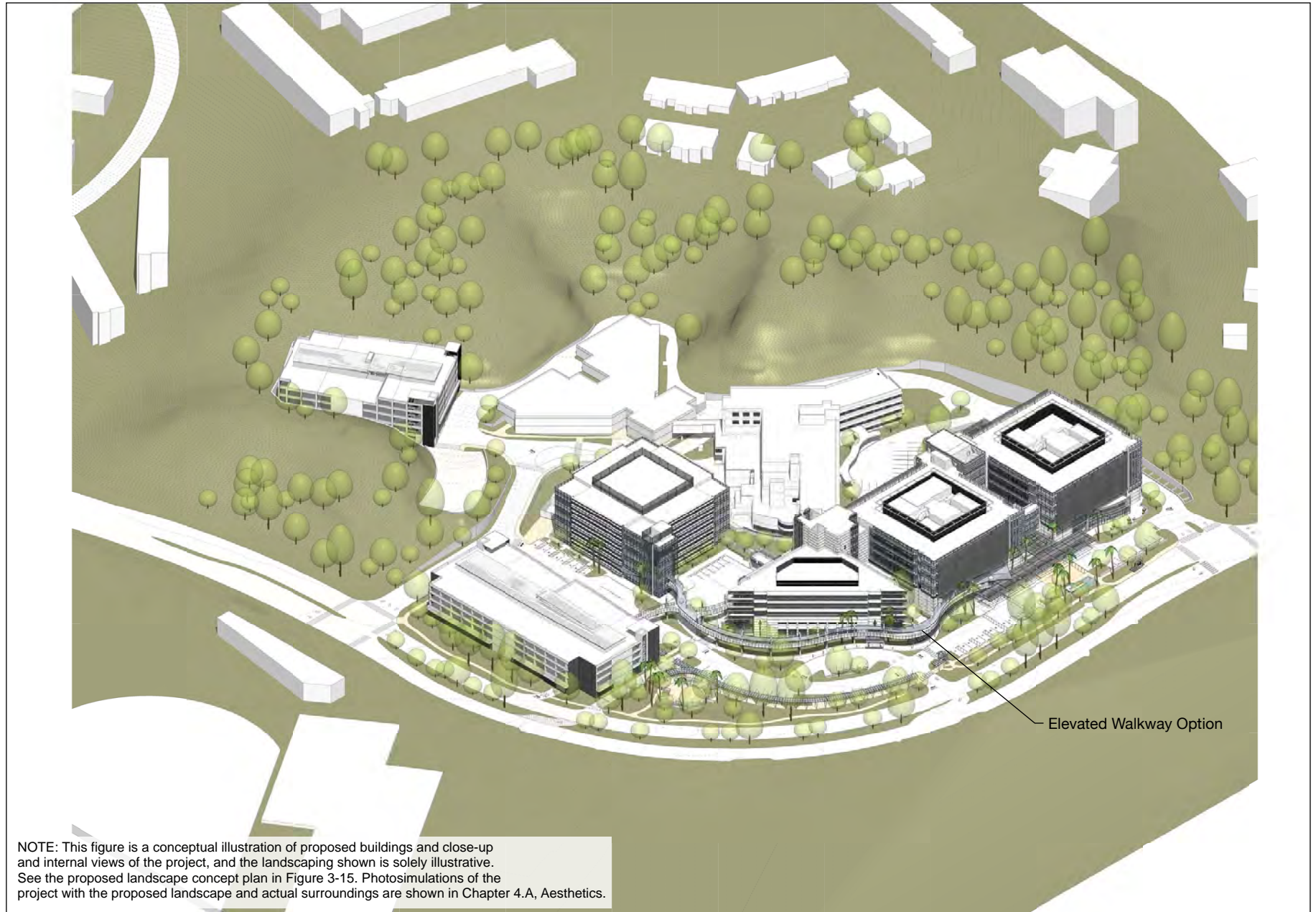
**SITE BUILDINGS**

- 1 EXISTING WEST WING
- 2A EXISTING CENTRAL WING
- 2B EXISTING EAST WING
- 3 EXISTING MENTAL HEALTH
- 4 EXISTING BULK OXYGEN
- 5 EXISTING INFORMATION TECH OFFICES
- 6 HOSPITAL REPLACEMENT 300,000 SF (5 LEVELS + BASEMENT)
- 7 AMBULATORY SERVICES BUILDING 100,000 SF (5 LEVELS)
- 8A PARKING STRUCTURE 507 SPACES (5 LEVELS)
- 8B HILL SITE PARKING STRUCTURE 412 SPACES (6 LEVELS)
- 9 UNDERGROUND GENERATORS
- 10 SUNKEN GARDEN

● Bus Stop - (N) New



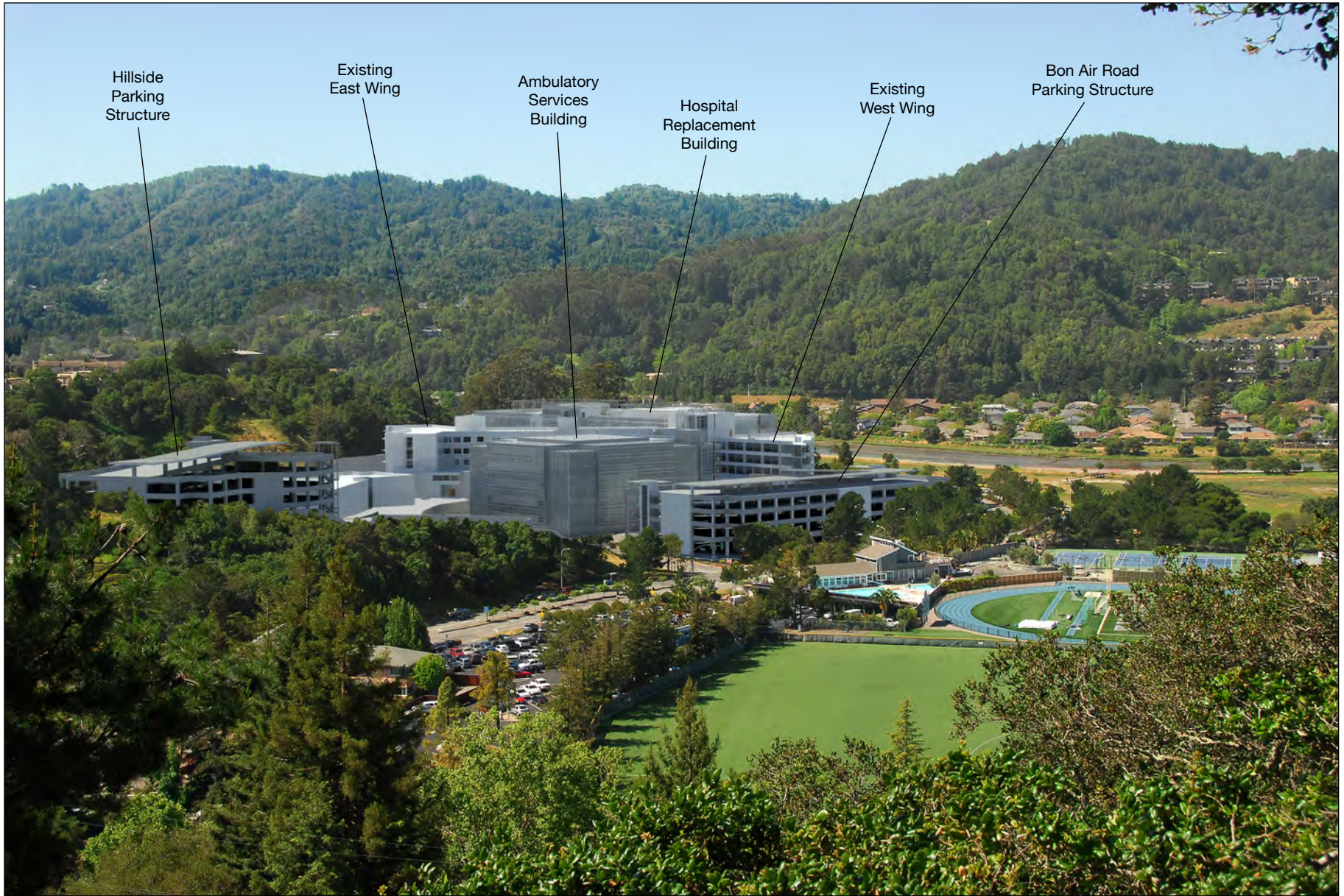
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SOURCE: Lee Burkhart, Liu, Inc.

Marin General Hospital . 210606

**Figure 3-6**  
Proposed Site View (Illustrative) -  
Looking Southeast View of the Project Site



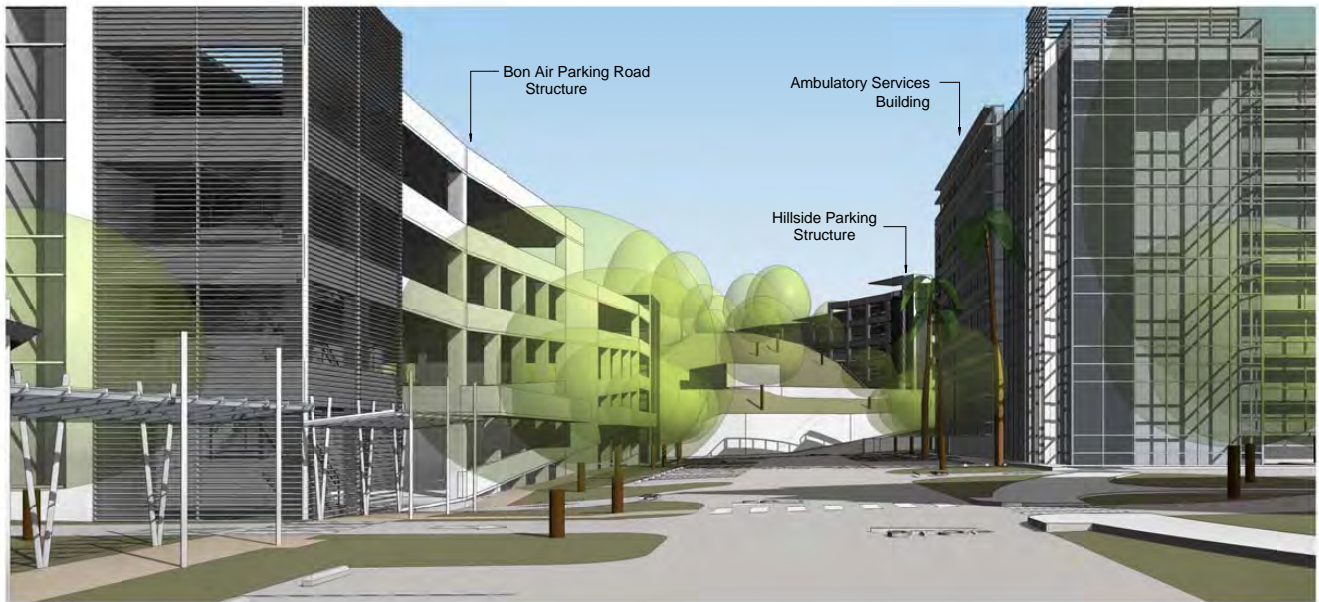
SOURCE: Lee Burkhardt, Liu, Inc.

Marin General Hospital . 210606

**Figure 3-7**  
Proposed Site View (Simulation) - Looking Southeast



① View from North Entrance from Bon Air Road



② View from Interior Street from Bon Air Road



NOTE: This figure is a conceptual illustration of proposed buildings and close-up and internal views of the project, and the landscaping shown is solely illustrative. See the proposed landscape concept plan in Figure 3-15. Photosimulations of the project with the proposed landscape and actual surroundings are shown in Chapter 4.A, Aesthetics.

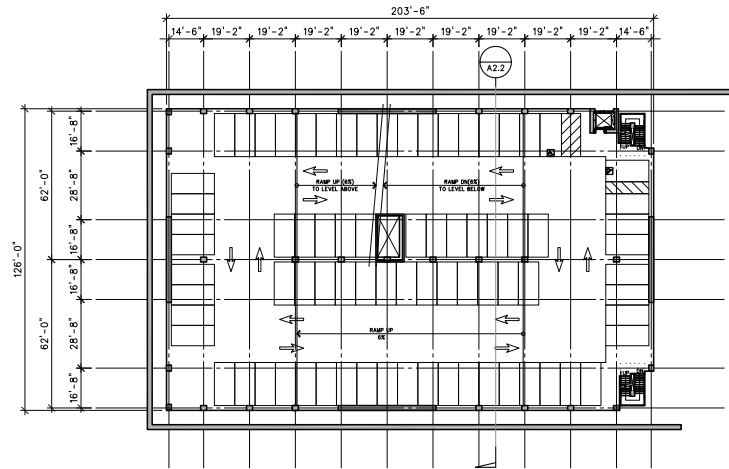
SOURCE: Lee Burkhardt, Liu, Inc.

Marin General Hospital . 210606

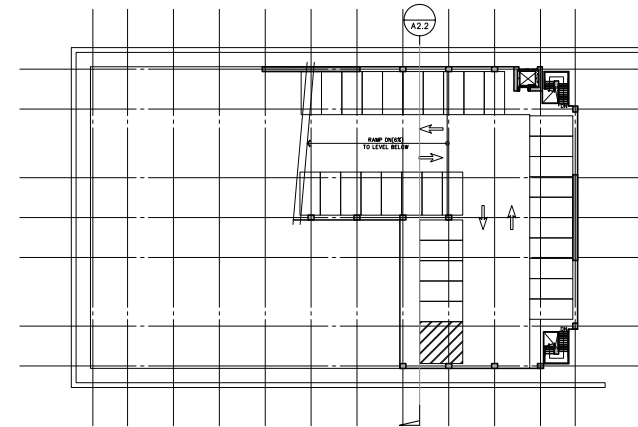
**Figure 3-8**  
Internal Site Views of Proposed Parking Structures  
and Ambulatory Services Building



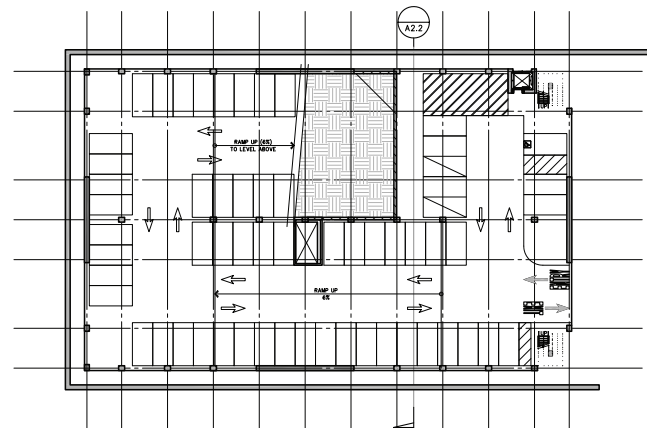
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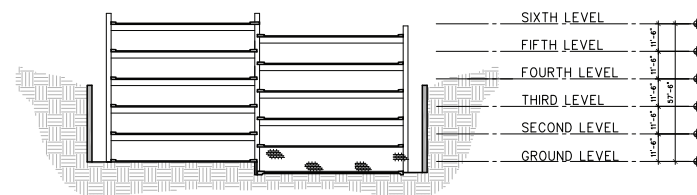
**SECOND LEVEL PARKING PLAN (3RD, 4TH & 5TH SIM.)**



**SIXTH LEVEL PARKING PLAN**



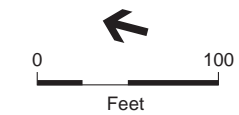
**GROUND LEVEL PARKING PLAN**

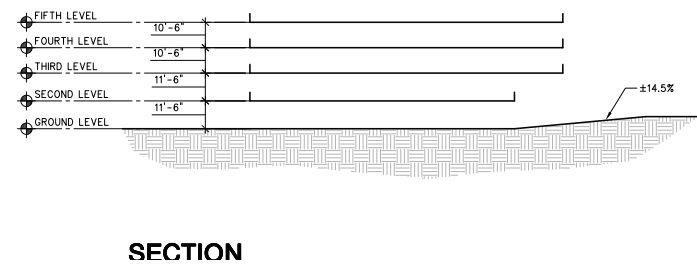
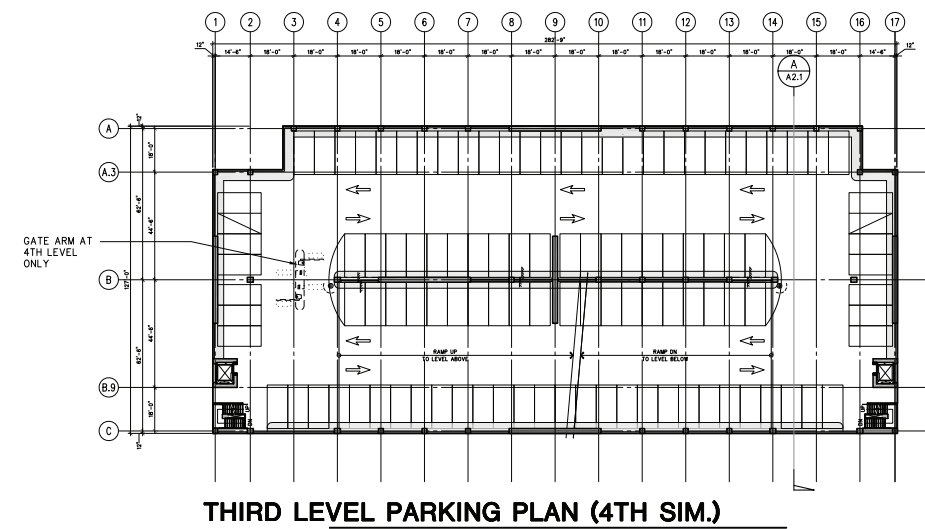
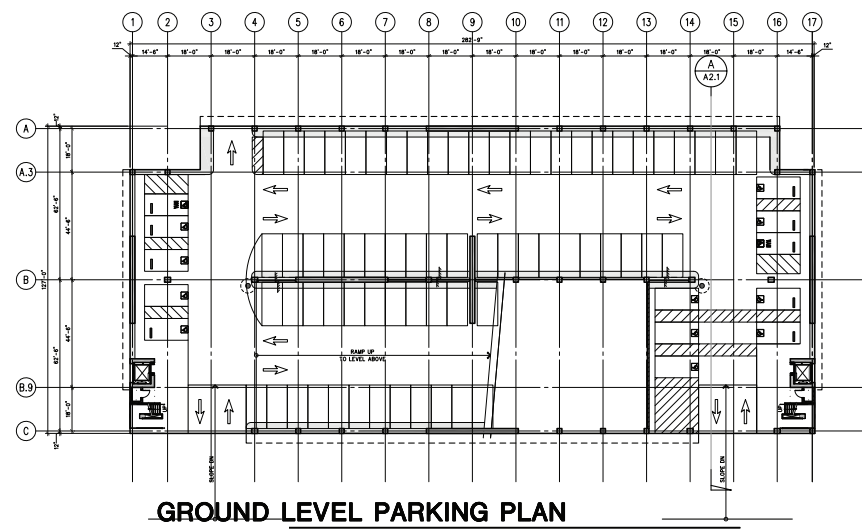
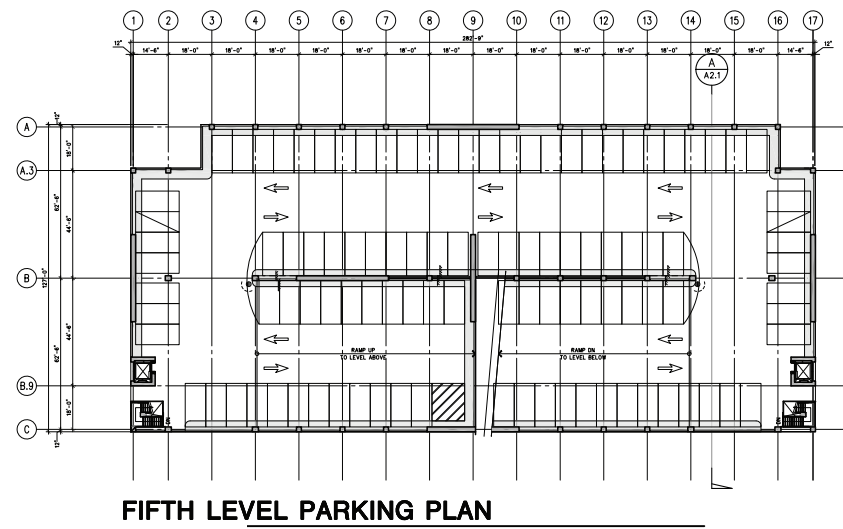
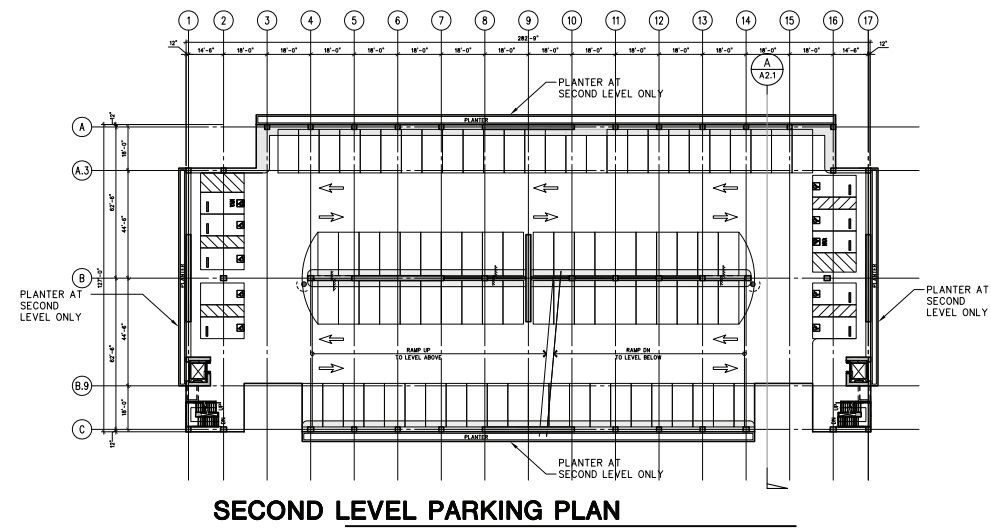


**SECTION**

A-10 OPTION (6% RAMP) 6/14/11

SUMMATION CHART					
LEVEL	UNINSTALL (8'-6"x18'-0")	ACCESSIBLE (9'-0"x18'-0")	TOTAL	SQ. FOOTAGE	SQ. FT./STALL
SIXTH	40	0	40	11,800	358
FIFTH	78	2	80	25,400	330
FOURTH	78	2	80	25,400	330
THIRD	78	2	80	25,400	330
SECOND	78	2	80	25,400	330
GROUND	51	1	52	23,300	388
<b>TOTAL</b>	<b>403</b>	<b>9</b>	<b>412</b>	<b>136,700</b>	<b>341</b>





A-10 OPT 01/13/12

SUMMATION CHART					
LEVEL	UNISTALL (8'-6"x18'-0")	ACCESSIBLE (9'-0"x18'-0")	TOTAL	SQ. FOOTAGE	SQ. FT./STALL
FIFTH	111	0	111	35,000	333
FOURTH	109	0	109	36,000	330
THIRD	109	0	109	36,000	330
SECOND	88	10	98	37,000	378
GROUND	67	13	80	31,000	388
<b>TOTAL</b>	<b>484</b>	<b>23</b>	<b>507</b>	<b>175,000</b>	<b>349</b>



## Ambulatory Services Building

A five-story, 100,000 square-foot Ambulatory Services Building is proposed directly west of the existing West Wing of the existing hospital building (see Figure 3-5, Proposed Site Plan, Figure 3-6, Proposed Site View (Illustrative) – Looking Southeast, and Figure 3-7, Proposed Site View (Simulation) – Looking Southeast). The Ambulatory Services Building would house ambulatory services that are not required to be in OSHPD-compliant space (as discussed above in Section 3.3, *State-Mandated Compliance with Senate Bill 1953*), but that need to be in proximity to the Hospital Replacement Building (as the two buildings may have shared functions) and the new parking structures, to facilitate convenient patient/visitor access. The design and location of the Ambulatory Services Building within the project site are would ensure that the facility functions as an integral component of the Hospital Replacement Building and other existing medical facilities on the campus, including the Community Mental Health Building located northeast of the Ambulatory Services Building. As the doctors who reside in the Ambulatory Services Building would move from office to hospital facilities frequently for pre-surgery and post-surgery inpatient care and emergency surgeries, having the Ambulatory Services Building location next to the Hospital Replacement Building would increase inpatient safety and care. Outpatient care would increase satisfaction by reducing wait times for doctors called away to address emergencies during office hours.

### ***Proposed Ambulatory Services Building Uses***

The Ambulatory Services Building would include acute care services and physicians directly responsible for inpatient and outpatient continuity of care. The hospital does not intend to lease space in the Ambulatory Services Building to non-hospital affiliated medical practices with infrequent hospital admissions.

“Ambulatory care” (which would be handled in the Ambulatory Services Building) is a defined health care encounter(s) of less than 24 hours in duration that requires direct professional health care support within a specific facility. The Ambulatory Services Building would be fully occupied with outpatient hospital services, these services would be offered as accessory clinics and laboratories to the Hospital Replacement Building, as follows:

- **Pre-Admit / Testing:** This service would allow patients suffering complications during an outpatient procedure to transfer directly to the Hospital Replacement Building inpatient care without having to check out of the outpatient building.
- **Urgent Care / Primary Care:** Urgent care patients have less severe medical needs than those at the Emergency Department however a small percentage of patients at Urgent Care would be transferred to the Hospital Replacement Building inpatient care as required. These patients would utilize the Pre-Admit / Testing services for a less complicated transfer. This would be a new service to the hospital.
- **Neurosurgery:** Neurosurgery outpatient services located in the Ambulatory Services Building would support both outpatient and inpatient services. Some percentage of neurosurgery out-patients would be transferred directly to the Hospital Replacement Building due to complications during surgery or due to the requirement for additional

testing. These patients would utilize the Pre-Admit / Testing services offered at the Ambulatory Services Building. In addition, the doctors move from outpatient services offices to the hospital frequently for pre surgery and post surgery inpatient care and emergency surgeries; thus the Ambulatory Services Building location next to the Hospital Replacement Building would increase both inpatient safety and care. It would also increase outpatient care and satisfaction by reducing wait times for doctors called away to address emergencies during office hours. These outpatient services would be new to the hospital campus.

- **Orthosurgery:** Orthosurgery outpatient services located in the Ambulatory Services Building would support both outpatient and inpatient services. Some percentage of orthosurgery out-patients would be transferred directly to the Hospital Replacement Building due to complications during surgery or due to the requirement for additional testing. These patients would utilize the Pre-Admit / Testing services offered at the Ambulatory Services Building. In addition, the doctors move from outpatient services offices to the hospital frequently for pre surgery and post surgery inpatient care and emergency surgeries; thus the Ambulatory Services Building location next to the Hospital Replacement Building would increase inpatient safety and care. It would also increase outpatient care and satisfaction by reducing wait times for doctors called away to address emergencies during office hours. These outpatient services would be new to the hospital campus.
- **Obstetrics/Gynecology:** Obstetrics/Gynecology (OB/GYN) outpatient services located in the Ambulatory Services Building would support both outpatient and inpatient services. A large percentage of OB/GYN out-patients would become Hospital Replacement Building patients to deliver babies or due to the requirement for additional testing. These patients would utilize the Pre-Admit / Testing services offered at the Ambulatory Services Building. In addition, the doctors move from outpatient services offices to the hospital frequently for pre-surgery and post-surgery inpatient care and emergency surgeries; thus the Ambulatory Services Building location next to the Hospital Replacement Building would increase inpatient safety and care. It would also increase outpatient care and satisfaction by reducing wait times for doctors called away to address emergencies during office hours. These outpatient services would be new to the hospital campus.
- **Gastro Intestinal:** Gastro Intestinal outpatient services located in the Ambulatory Services Building would support both outpatient and inpatient services. Some percentage of gastro intestinal surgery out-patients would be transferred directly to the Hospital Replacement Building due to complications during surgery or due to the requirement for additional testing. These patients would utilize the Pre-Admit / Testing services offered at the Ambulatory Services Building. In addition, the doctors move from the outpatient services office to the hospital frequently for pre surgery and post surgery inpatient care and emergency surgeries; thus the Ambulatory Services Building location next to the Hospital Replacement Building would increase inpatient safety and care. It would also increase outpatient care and satisfaction by reducing wait times for doctors called away to address emergencies during office hours. These outpatient services would be new to the hospital campus.
- **Oncology:** Oncology outpatient services located in the Ambulatory Services Building would support both outpatient and inpatient services. Some percentage of oncology out-patients would be transferred directly to the Hospital Replacement Building due to complications during surgery or due to the requirement for additional testing. These patients would utilize the Pre-Admit / Testing services offered at the Ambulatory Services Building. In addition, the doctors move from outpatient services offices to the hospital

frequently for pre surgery and post surgery inpatient care and emergency surgeries so the Ambulatory Services Building location next to the Hospital Replacement Building would increase inpatient safety and care. It would also increase outpatient care and satisfaction by reducing wait times for doctors called away to address emergencies during office hours. These outpatient services would be new to the hospital campus.

- Cardiology:** Cardiology outpatient services located in the Ambulatory Services Building would support both outpatient and inpatient services. Some percentage of cardiology surgery out-patients would be transferred directly to the Hospital Replacement Building due to complications during surgery or due to the requirement for additional testing. These patients would utilize the Pre-Admit / Testing services offered at the Ambulatory Services Building. In addition, the doctors move from outpatient services to the hospital frequently for pre surgery and post surgery inpatient care and emergency surgeries; thus the Ambulatory Services Building location next to the Hospital Replacement Building would increase inpatient safety and care. It would also increase outpatient care and satisfaction by reducing wait times for doctors called away to address emergencies during office hours. These outpatient services would be new to the hospital campus.
- Urology:** Urology outpatient services located in the Ambulatory Services Building would support both outpatient and inpatient services. Some percentage of urology out-patients would be transferred directly to the Hospital Replacement Building due to complications during surgery or due to the requirement for additional testing. These patients would utilize the Pre-Admit / Testing services offered at the Ambulatory Services Building. In addition, the doctors move from outpatient services offices to hospital frequently for pre surgery and post surgery inpatient care and emergency surgeries so the Ambulatory Services Building location next to the Hospital Replacement Building would increase inpatient safety and care. It would also increase outpatient care and satisfaction by reducing wait times for doctors called away to address emergencies during office hours. These outpatient services would be new to the hospital campus.
- Outpatient Pharmacy:** This service is provided for the convenience of outpatients, especially for those requiring heavily medicated treatments. This would be a new outpatient service to the hospital.

## Hospital Replacement Building

The proposed Hospital Replacement Building would be constructed in the southwestern quadrant of the project site, facing Bon Air Road. The new building would be southeast of the West Wing (the main lobby of the existing hospital) (see Figures 3-5, Proposed Site Plan, Figure 3-6, Proposed Site View (Illustrative) – Looking Southeast, and Figure 3-7, Proposed Site View(Simulation)– Looking Southeast.) The proposed Hospital Replacement Building is approximately 300,000 square feet in size, consisting of a basement, ground level, and four additional floors above ground level. The new hospital would continue to operate with 235 licensed beds resulting in a net increase of zero hospital beds for the project.

### ***Proposed Program for Seismic Compliance and Modernization***

The Hospital Replacement Building would incorporate a full range of inpatient and outpatient treatment and diagnostic services, including all ancillary and support activities required for those

services. To meet the structural compliance regulations of the Seismic Safety Act (as discussed above in Section 3.3, *State-Mandated Compliance with Senate Bill 1953*), the project would relocate required acute care services from the Central and East Wings of the existing hospital into the new Hospital Replacement Building.

The program for the Hospital Replacement Building consists primarily of Acute Care Nursing Units (patient beds) and Diagnostic and Treatment departments, which require relocation from the aging, non-structurally compliant existing hospital wings. These services typically serve both inpatients and outpatients, and the range of services is typical of most hospitals.

With the changes in technology and care models, rooms that were sized appropriately in the 1960s and 1970s are half the size of what is required by today's standards. Much of the increased square footage programmed for the replacement of non-compliant acute care services in the Hospital Replacement Building reflects the increased floor area required to provide patient rooms consistent with current design standards.

The proposed building is designed to have hospital department functional adjacency and horizontal connections to the West Wing of the existing hospital to maximize operational efficiency. Currently, the connection between the Central (non-OSHPD compliant) and West Wing (OSHPD-compliant) requires varying degrees of ramping necessary to connect the floors. With a replacement building, the floors would align allowing staff to transport patients between the two buildings with increased ease and efficiency compared to existing conditions, although there is one exception on the fourth floor, which requires minimal ramping. The Hospital Replacement Building would also include a new loading dock with five truck spaces at the first floor level.<sup>8</sup>

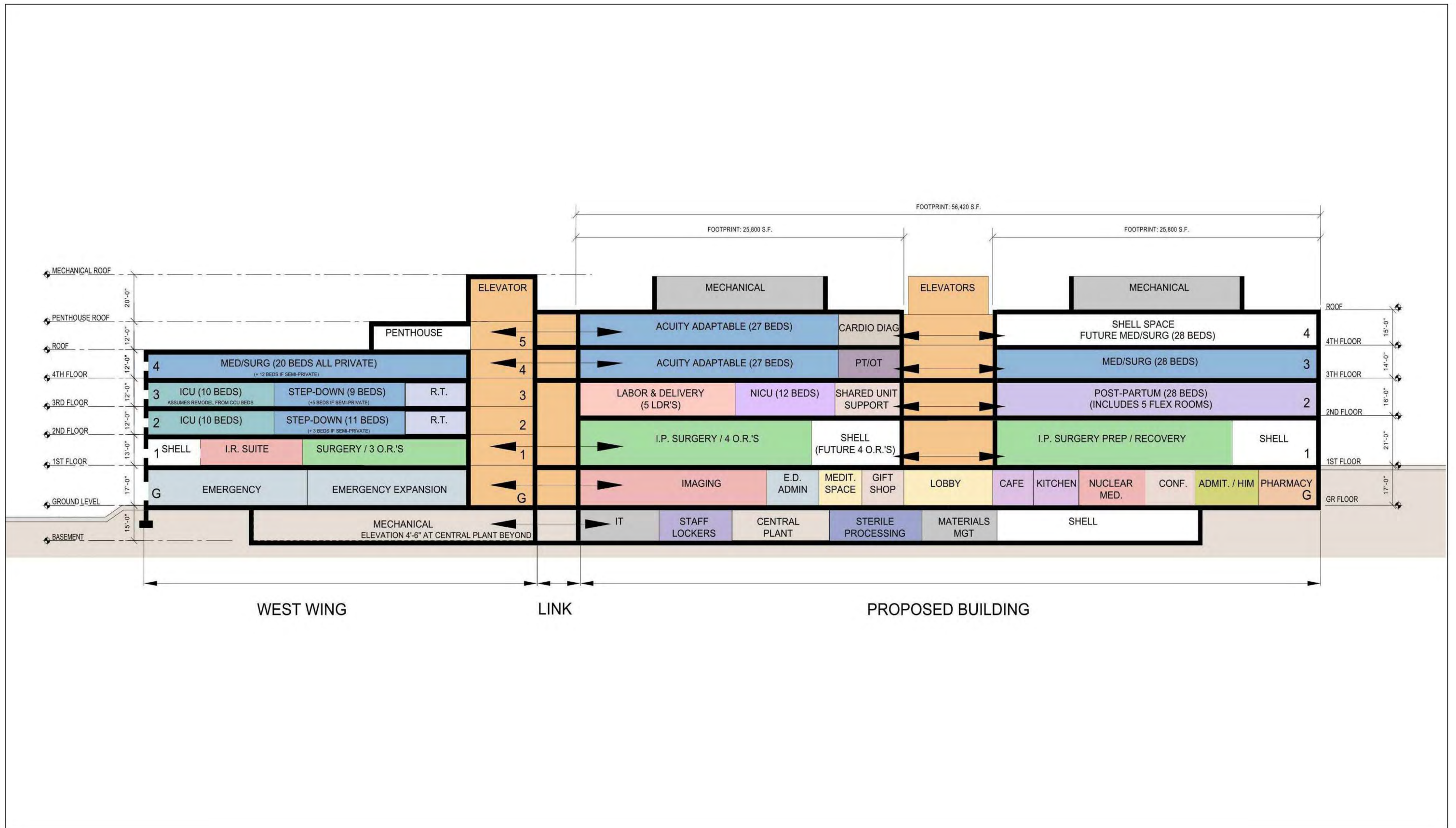
As illustrated in **Figure 3-11, Hospital Replacement Building Uses by Floor**, the services in the Hospital Replacement Building would be as follows:

- **Basement:** Central Plant, Information Systems, Materials Management, Sterile Processing
- **Ground Floor:** Main Building Entrance and Lobby and Services, Administrative spaces/Admitting, Gift Shop, Imaging Department, and Dietary and Pharmacy, and Spiritual Center
- **First Floor:** Surgery Department, Loading Dock service spaces, and Lab.
- **Second Floor:** Women's Center: Labor and Delivery (5 beds) and Neonatal Intensive Care Unit Pavilion (12 Beds); Postpartum and Gynecology Pavilion (28 beds)
- **Third and Fourth Floors:** Medical/Surgical patient units (56 beds) and the Acuity Adaptable unit (54 beds)

Elevations of the Hospital Replacement Building are shown in **Figure 3-12a, Hospital Replacement Building – Southeast/Northeast Elevations**, and **Figure 3-12b, Hospital Replacement Building – Southwest/Northwest Elevations**.

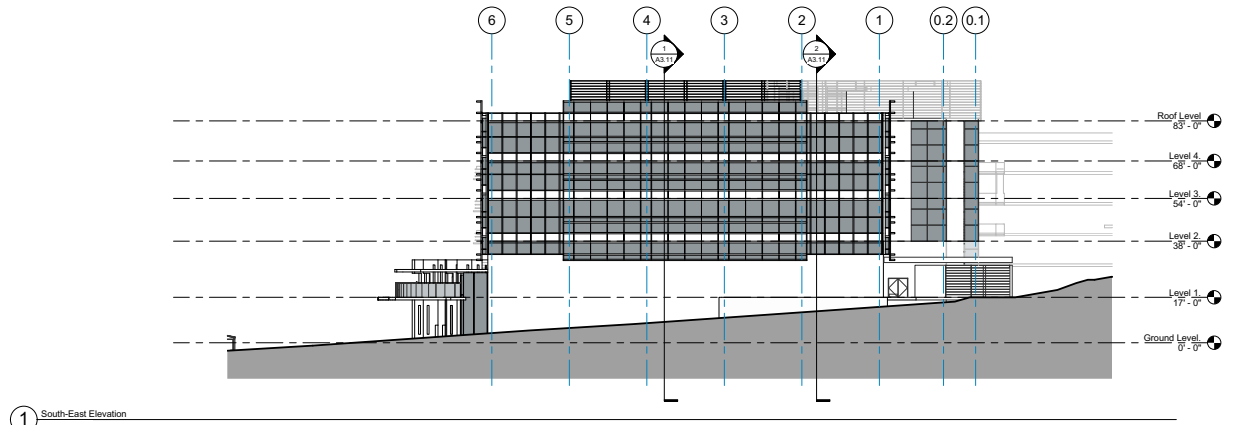
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<sup>8</sup> No loading dock currently exists on the project site; service trucks park along the existing service road at the southern end of the project site and truck lifts are used to load and unload.

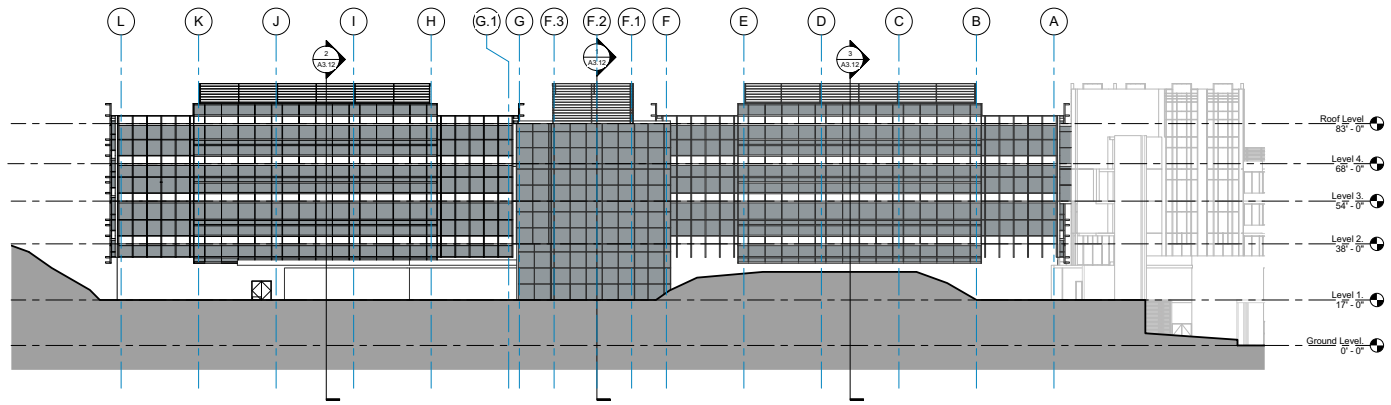




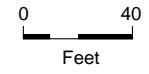
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1 South-East Elevation



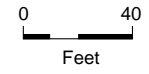
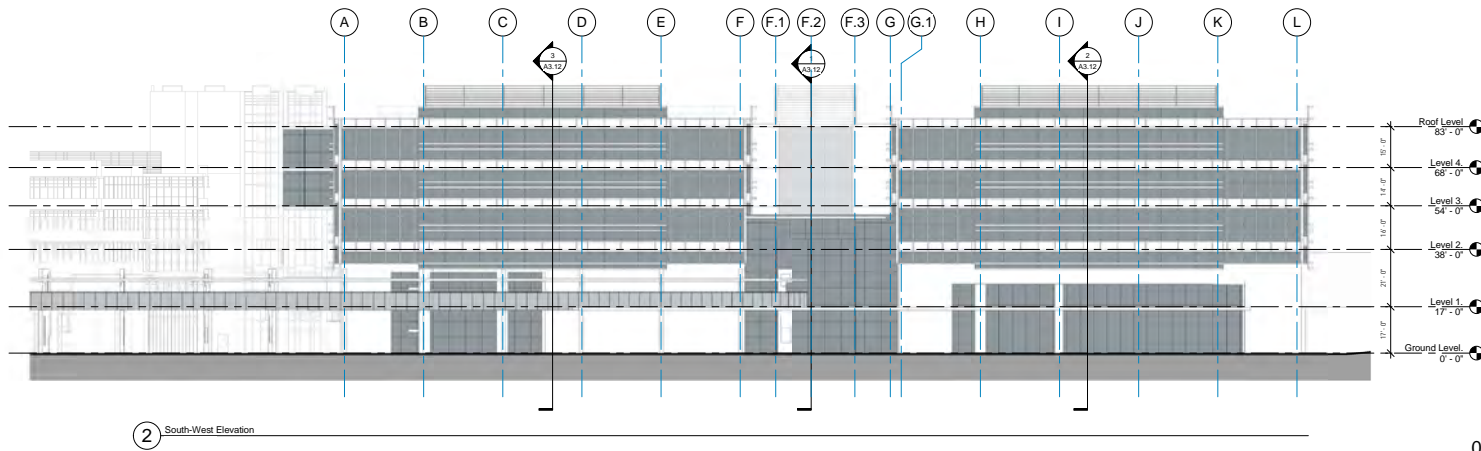
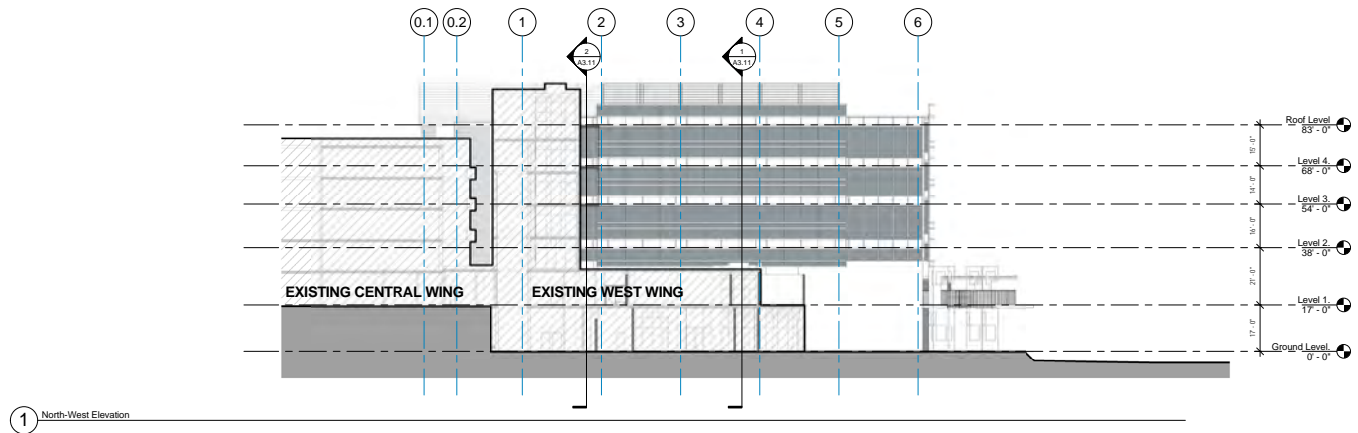
2 North-East Elevation



SOURCE: Lee Burkhart, Liu, Inc.

Marin General Hospital . 210606

**Figure 3-12a**  
Hospital Replacement Building – Southeast/Northeast Elevations



SOURCE: Lee Burkhardt, Liu, Inc.

Marin General Hospital . 210606

**Figure 3-12b**  
Hospital Replacement Building – Southwest/Northwest Elevations

## Covered Pedestrian Walkway / Elevated Pedestrian Bridge Option

The proposed project would include pedestrian walkways to facilitate pedestrian movement between all major building elements of the site. (See Section 3.6.1, *Site Access and Circulation [Pedestrian and Bicycle Access]*, for discussion of general pedestrian access to the site and project buildings.) The project specifically proposes a covered, ground-level pedestrian walkway between the Bon Air Road Parking Structure and the Hospital Replacement Building (which is depicted in Figure 3-14, Landscape Concept Plan). This covered walkway across the internal roadway from the Hospital Replacement Building would provide a safe, lighted path providing additional separation of pedestrians from vehicular traffic and inclement weather.

The Marin Healthcare District is also considering an option that would instead develop an elevated pedestrian bridge, following a different route than the ground-level covered walkway, that would link the Hospital Replacement Building as well as the Ambulatory Services Building to the Bon Air Road Parking Structure (as shown in Figure 3-6, Proposed Site View (Illustrative) - Looking Southeast, and Figure 3-14, Landscape Concept Plan). This option depends on the District's ability to secure adequate funding for it.<sup>9</sup> The elevated pedestrian bridge would originate from the southeastern corner of the Bon Air Road Parking Structure at the third floor (above grade) and would span the on-site circulation and parking areas between the parking structure, the Hospital Replacement Building, and the Ambulatory Services Building.

While, the potential elevated pedestrian bridge could increase safety by vertically separating pedestrians from ground-level vehicular traffic, it would not be required for pedestrian access safety; proposed ground-level sidewalks and crosswalks would accommodate safe pedestrian movement between all buildings on the project site. The clearance under the elevated bridge would be a minimum 16 feet, 8 inches (finished floor of the West Wing of the existing hospital to bottom of the bridge). Where the bridge crosses internal roadways, the clearance would range from 16 feet, 8 inches to 18 feet, 1 inch.

## Renovation of Existing Hospital Wings

Approximately 74,986 square feet of the Central and East Wings of the existing hospital would be renovated for non-acute care outpatient services (i.e., uses that would not be required to move to the new Hospital Replacement Building). The remaining 45,462 square feet of Central and East Wing space would not be renovated and the departments that currently occupy this space would continue to operate under existing conditions. These uses do not require space complying with the new seismic requirements. Further, the expansion of the services provided in the Central and East Wings would be to support the hospital; it is not intended to be client/patient treatment space.

The renovated 74,986 square feet would be occupied by the following user types:

- 9,116 square feet to replace the Internet Technology (IT) building and onsite trailers to be demolished.

<sup>9</sup> The analysis in this Draft EIR evaluates the elevated pedestrian bridge option (as well as the ground-level walkway), in case the District implements the bridge in the future, pending funding.

- 19,570 square feet by departments that are relocating from the West Wing or are now in the East or Central Wings and moving to other areas. The West Wing space being vacated would be used for expansion of the Emergency Department. The East/Central Wing space being vacated would be used for expansion of adjacent departments.
- 25,880 square feet by departments currently in the East and Central Wings that are keeping their present space and expanding.
- 20,420 square feet by departments relocating from off-campus space at Drakes Landing currently leased by the Marin Healthcare District.

Many departments are in overcrowded or otherwise poorly functioning arrangements. Their space would be enlarged to improve work conditions and facilities (e.g., adding conference rooms, waiting rooms, facility engineering shop space and work areas). The enlarged departments are not expected to increase the number of employees; at most the renovation may lead to adding a few new employees in total, which is too speculative to estimate at this time and, moreover, would not affect the impact analysis of the overall project.<sup>10</sup>

The project would also involve renovation of the West Wing Emergency Department.

### 3.5.3 Project Activities by Phase

The major components of the project described above would be developed in the following sequence, over a period of approximately eight years (generally, 2012 through 2020), as detailed in **Table 3-1, Project Development Summary by Phase and Buildout**. This section focuses on the sequence of activities and changes that would occur throughout the project. Greater detail about changes to parking, grading, and infrastructure during construction activities are discussed further below in Section 3.7, *Construction Activities*.

- **Phase I – Hillside Parking Structure (2012-2013):** The work in Phase I would be under the jurisdiction of the County of Marin for Design Review, Public Right-of-Way Encroachment Permits, and Building Permits. The approximately 412 parking spaces in the Hillside Parking Structure would be primarily dedicated to staff, except during the Phase II construction of the Bon Air Road Parking Structure when it would be used by visitors/patients and staff who currently park in the surface parking lot where the Bon Air Road Parking Structure would be located. The parking lot that currently serves the Marin Community Clinic would be utilized by the general contractor for construction parking and lay down area during this phase.

As detailed in Section 3.7, *Construction Activities*, improvements to the north access road and service road to and from the Hillside Parking Structure would include retaining wall construction, the extension of utilities, and temporary relocation of an existing bus stop. A traffic signal at the intersection of Bon Air Road and the north access road would also be

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<sup>10</sup> This is primarily because project-related vehicle trips (and resulting effects on traffic, air quality, total greenhouse gas emissions, and roadway noise) are based on the number of hospital beds and building floor area, rather than number of employees. If additional employees were to result from the enlarged departments in the Central and East Wings, the number of new employees would be too few to significantly affect any population-based effects (population growth; public services; per capita greenhouse gas emissions; and utilities and service systems).

**TABLE 3-1  
PROJECT DEVELOPMENT SUMMARY BY PHASE AND TOTAL BUILDOUT**

	Proposed Hospital Replacement Building	Existing Hospital (West and Central/ East Wings)	Existing Hospital Mental Health Building	Existing Mental Health Building (County Offices)	Proposed Ambulatory Services Building	Existing Ancillary Buildings / Areas Affected by the Project <sup>a</sup>	Change from Existing Conditions <sup>b</sup>	Total / Running Total on the Project Site
<b>Existing Conditions</b>								
Site Acres <sup>c</sup>								19.7
Building Area (square feet) <sup>a</sup>		255,000	16,500	18,500		15,500		305,500
Hospital Beds		218	17					235
Total On-Site Parking Spaces						605		605
Total employees (FTE) <sup>c</sup>						1,126		1,126
<b>Phase I Hillside Parking Structure (2012 – 2013)</b>								
Demolished Building Area (square feet)							0	
New Building Area (square feet)							0	305,500
Hospital Beds							0	235
<b>Total On-site Parking</b>							<b>398</b>	<b>1,003</b>
Phase I Net Change in On-site Parking						398	<b>398</b>	398
<i>Removed On-Site Parking Spaces</i>						(14)	(14)	(14)
<i>New On-Site Parking Spaces</i>						412	412	412
Total employees (FTE) <sup>c</sup>						0	0	1,126
<b>Phase II Site Preparation and Bon Air Road Parking Structure (2013 – 2014)</b>								
Demolished Building Area (square feet)							0	0
New Building Area (square feet)							0	305,500
Hospital Beds							0	235
<b>Total On-site Parking</b>							<b>328</b>	<b>1,331</b>
Phase II Net Change in On-site Parking						328	<b>328</b>	726
<i>Removed On-Site Parking Spaces</i>						(179)	(179)	(193)
<i>New On-Site Parking Spaces</i>						507	507	919
Total employees (FTE) <sup>c</sup>						0	0	1,126
<b>Phase III Ambulatory Services Building (2013 – 2015)</b>								
Demolished Building Area (square feet)							0	0
New Building Area (square feet)					100,000		<b>100,000</b>	405,500
Hospital Beds							0	235
<b>Total On-site Parking</b>							<b>(58)</b>	<b>1,273</b>
Phase III Net Change in On-site Parking						(58)	<b>(58)</b>	668
<i>Removed On-Site Parking Spaces</i>						(58)	(58)	(251)
<i>New On-Site Parking Spaces</i>							0	919
Total employees (FTE) <sup>c</sup>					286		<b>286</b>	1,412
<b>Phase IV Hospital Replacement Building and Potential Elevated Pedestrian Bridge (2015 – 2019)</b>								
Demolished Building Area (square feet) <sup>d</sup>						(15,500)	<b>(15,500)</b>	15,500
New Building Area (square feet)	300,000						<b>300,000</b>	690,000
Hospital Beds	122	(122)					0	235
<b>Total On-site Parking</b>							<b>(194)</b>	<b>1,079</b>
Phase IV Net Change in On-site Parking						(194)	<b>(194)</b>	474
<i>Removed On-Site Parking Spaces</i>						(194)	(194)	(445)
<i>New On-Site Parking Spaces</i>							0	919
Total employees (FTE) <sup>c</sup>							0	1,412

**TABLE 3-1 (Continued)**  
**PROJECT DEVELOPMENT SUMMARY BY PHASE AND TOTAL BUILDOUT**

	Proposed Hospital Replacement Building	Existing Hospital (West and Central/ East Wings)	Existing Hospital Mental Health Building	Existing Mental Health Building (County Offices)	Proposed Ambulatory Services Building	Existing Ancillary Buildings / Areas Affected by the Project <sup>a</sup>	Change from Existing Conditions <sup>b</sup>	Total / Running Total on the Project Site
<b>Phase V Central and East Wing Renovations (2019 – 2020) / Phase VI Nursing Unit Infill Project (2023 – 2025)</b>								
Demolished Building Area (square feet)							0	15,500
New Building Area (square feet)							0	690,000
Hospital Beds	28 <sup>e</sup>	(28)					0 <sup>e</sup>	235
<b>Total On-site Parking</b>							<b>0</b>	<b>1,079</b>
Phase V-VI Net Change in On-site Parking							0	474
<i>Removed On-Site Parking Spaces</i>							0	(445)
<i>New On-Site Parking Spaces</i>							0	919
Total employees (FTE) <sup>c</sup>	140 <sup>e</sup>						<b>140</b>	1,552

<sup>a</sup> Includes floor area and employees only for existing buildings affected by the proposed project: approximately 290,000 square feet in the existing hospital, and approximately 15,500 square feet of office and support service uses in temporary buildings. A small bulk oxygen facility would not be altered by the proposed project and thus are not included in this table. All floor area data are approximate.

<sup>b</sup> "Change" column represents the overall physical change in the Marin General Hospital campus evaluated in this EIR.

<sup>c</sup> FTE is full time equivalent employees.

<sup>d</sup> Demolition of all ancillary buildings, including an approximately 1,500 square-foot portion of the existing Internet Technology (IT) offices located north of the proposed Ambulatory Services Building.

<sup>e</sup> New 28-Unit Nursing Unit Infill Project at the Hospital Replacement Building.

installed and would be operational near the end of this phase. During this phase of construction a total of 38 spaces would be removed from service, and the current parking demand of 36 spaces associated with the Marin Community Clinic would be met offsite. As a result, the net loss of parking spaces during Phase I construction is two spaces. After construction, the footprint of the Hillside Parking Structure would take two parking spaces out of service. Improvements to the service road to and from this structure would remove another 12 parking spaces from service. When Phase I is complete, there would be a total of 1,003 spaces available onsite.

- Phase II – Site Preparation and Bon Air Road Parking Structure (2013-2014):** The work in Phase II would be under the jurisdiction of the County of Marin for Design Review, Public Right-of-Way Encroachment Permits, and Building Permits. It involves relocation and replacement of on- and off-site utilities and construction of the Bon Air Road Parking Structure that would provide 507 new parking spaces when complete. Parking in the structure would be dedicated to both hospital visitors/patients and Ambulatory Services Building visitors/patients.

As detailed below in Section 3.6.1, *Site Access and Circulation*, a median cut to provide left turn access for emergency vehicles from Bon Air Road to the new ambulance access road would be completed during this phase. Work in the public right of way would include the relocation of several public utilities as well as the median cut and new driveway.

As detailed below in Section 3.7, *Construction Activities*, construction of the Bon Air Road Parking Structure would require removal of 200 existing on-site surface parking spaces.

However, construction of the structure would not start until after completion of the Phase I Hillside Parking Structure that would have provided 398 net new spaces to the project site, which would accommodate the loss of the 200 on-site parking spaces during construction of the Phase II Bon Air Road Parking Structure. When Phase II is complete, there would be a total of 1,331 spaces available on site.

- Phase III – Ambulatory Services Building (2013-2015):** This phase of work would be under the jurisdiction of the County of Marin for Design Review and Building Permits. The approximately 100,000 square-foot Ambulatory Services Building would provide a full range of outpatient hospital services which support the hospital. Approximately 65 existing on-site surface parking spaces would be removed from service during construction of the Ambulatory Services Building, however, this would be offset by the net total of 668 new spaces added to the project site during Phases I and II. A total of 286 new employees associated with the Ambulatory Services Building would result during this phase.
- Phase IV – Hospital Replacement Building and Potential Elevated Pedestrian Bridge (2015-2019):** The work in Phase IV would be under the jurisdiction of OSHPD for the Building Permit, and the County of Marin for Design Review and Public Right-of-Way Encroachment Permits. Activities early in this phase would prepare a small portion of the existing West Wing and entrance canopy (see Figure 3-4, Existing Site Buildings and Layout, demolition structures “1” and “2”) to accommodate construction of the Hospital Replacement Building. This phase would also involve relocation of healthy palms and specific components of the Lawrence Halprin Gardens within the project site, where feasible (see Section 3.6.4, *Usable Outdoor Spaces / New Healing Garden [Lawrence Halprin Garden Elements]*, below). If the elevated pedestrian bridge is developed, it would also be developed in this phase, linking the Hospital Replacement Building to the Ambulatory Services Building constructed in Phase III and the Bon Air Road Parking Structure constructed in Phase II. This phase would also involve the location of new bus stops along Bon Air Road, at the north and south access roads. At the end of Phase IV the Hospital Replacement Building would become operational and the existing departments would relocate into the new building.

As detail below in Section 3.6.1, *Site Access and Circulation*, another median cut would be created in this phase to provide left turn access for the public to the Emergency Room drop off. Additionally, this phase of work includes installation of an interim left-turn refuge lane for outbound traffic at the south driveway and Bon Air Road. This configuration would remain in place until a new traffic signal is warranted at this driveway at buildout. As detailed below in Section 3.7, *Construction Activities*, approximately 295 existing on-site surface parking spaces would be removed from service during construction of the Hospital Replacement Building. At the completion of Phase IV however, 101 spaces would be placed back into service, and the net total of new spaces added to the project site would be 474 spaces.

- Phase V – Renovate Existing Hospital Wings (2019-2020):** The work in Phase V would be under the jurisdiction of OSHPD for Building Permits. It involves renovation of the West Wing Emergency Department and Surgery suite and the Central/East Wings of the existing hospital for non-acute outpatient care uses. No changes to the site access, infrastructure, or on-site parking would occur during Phase V, except if a signal is warranted to replace the interim left-turn refuge lane (Phase IV).



- **Phase VI – Nursing Unit Infill Project at the Hospital Replacement Building (2023-2025):** The work in Phase VI would be under the jurisdiction of OSHPD for Building Permits. It involves construction of a 28-bed nursing unit in the south pavilion of the new Hospital Replacement Building constructed in Phase IV. No changes to on-site parking would occur during Phase VI, except if the signal to replace the interim left-turn refuge lane (Phase IV) was not warranted by the end of Phase V, in which case it would be installed in Phase VI. A total of 140 new employees associated with the new nursing unit would result during this phase, for a total of 426 new employees at buildout (when combined with the 286 new employees in the Phase III Ambulatory Services Building).

## 3.5.4 Project Design Characteristics

### Building Design Materials and Wayfinding

Detailed exterior building materials have not been specified for each building of the project. However, representative finishes (as depicted in a series of photosimulations in Section 4.A, *Aesthetics*, in Chapter 4 of this Draft EIR) includes a combination of primarily glass, metal panel, and some precast concrete elements. Overall, the materials would be selected to resist decay and complement the exterior of the existing West Wing. The existing West Wing would receive some minor exterior upgrades to ensure a consistent look with the new structures. Screened mechanical areas would be located on the roof level of the Hospital Replacement Building and the Ambulatory Services Building. The new loading dock proposed at the first floor level of the Hospital Replacement Building would be covered with a “green” roof with natural landscaping, essentially screening the new loading dock from view from patients, hospital rooms, and project site neighbors. Similarly, both parking structures would be open air structures, constructed of concrete with natural landscaping situated to shield the circulation of vehicles within from off-site areas and patient views.

“Wayfinding” is also integral to the design approach of the project. New site and building access points have been designed to clearly define new building entry points for vehicles and pedestrians. The design considers distances and signage for appropriate queuing space to improve connections between services and buildings throughout the site, and between service and patient waiting areas within the hospital.

### Natural Light and Views (Hospital Replacement Building)

To maximize the availability of natural light and views within the Hospital Replacement Building, primary circulation (i.e., public corridors, elevators and stairs) would be located to allow more public spaces and patient rooms facing toward the west and Mt. Tamalpais. As depicted in Figure 3-6, Proposed Site View – Looking Southeast, (and in several photo simulations in Section 4.A, *Aesthetics*), the Hospital Replacement Building would have a courtyard created between two pavilions to allow natural light into patient rooms, consistent with the California Building Code, and into the lobby and first floor of the hospital.

## Functionality and Efficiency (Hospital Replacement Building)

The basic building floor plate of the Hospital Replacement Building uses modules of clinical spaces (pod-like designs) that facilitate sharing of spaces, thus increasing efficiency, reducing the program area for clinical spaces, lowering potential future alteration costs, and allowing for design flexibility. For example, the planning module for nursing units (all of which require direct natural light) can be designed to provide 28 beds per floor or a 12 bed ICU / 14 bed Step-down unit.<sup>11</sup> The hospital can select the bed configuration required based on the projected level of care needs.

### 3.5.5 Sustainability Elements

As stated in Section 3.4, *Objectives of the Proposed Project*, the project maintains a goal of achieving a rating equivalent to LEED® Silver. The LEED® for Healthcare Rating System is modeled after Green Guide for Health Care (GGHC), a self certifying checklist and best practice guideline that set high standards for the design, construction and operation of healthcare facilities.

The list below includes design and operational characteristics that the Marin Healthcare District has committed the project to and that align with LEED® Silver certification and the LEED® for Healthcare Rating System modeled after GGHC. Additional characteristics may be incorporated into the project as more detailed design and construction specifications of the buildings are identified, and through the implementation of mitigation measures identified in this EIR. Because the project sponsor has committed to the characteristics listed below, they are factored into the environmental analyses in this Draft EIR, where appropriate:

- **Stormwater Design:** Intent is to limit disruption and pollution of natural water flows by managing stormwater runoff. The requirement is to implement a stormwater management plan that reduces impervious cover, promotes infiltration and captures and treats the stormwater runoff from 90 percent of the average annual rainfall using acceptable best management practices (BMPs).
- **Water Efficient Landscaping:** Intent is to limit or eliminate the use of potable water or other natural surface or subsurface water resources available on or near the project site for landscape irrigation. The requirement is to reduce potable water consumption for irrigation by 50 percent from a calculated midsummer baseline case. Also, water use during construction would be restricted to critical activities, such as dust control.
- **Building Systems Set to Operate at Optimal Efficiency:** Intent is to achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use. The requirement is to demonstrate a percentage improvement in the proposed building performance rating compared with the baseline building performance rating.
- **Construction Waste Management Plan:** Intent is to divert construction and demolition debris from disposal in landfills and incineration facilities and to redirect recyclable recovered resources back to the manufacturing process and reusable materials to appropriate sites. The requirement is to recycle and/or salvage nonhazardous construction

<sup>11</sup> A “Step-down Unit” addresses cases in medium crisis, whereas “ICU” handles cases in high crisis status.

and demolition debris. At a minimum the plan will identify the materials to be diverted from disposal and whether the materials will be sorted onsite or comingled. The project would comply with County of Marin Ordinance No. 3389 regarding Construction and Demolition Waste Recovery.

- **Construction Air Quality Management Plan:** Intent is to reduce indoor air quality (IAQ) problems resulting from construction or renovation and promote the comfort and well-being of construction workers and building occupants. The requirement is to develop and implement an IAQ management plan for the construction and preoccupancy phases of the building.
- **Low Emitting Materials, Adhesives, Sealants, Paints, Flooring:** Intent is to reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants. The requirement for all adhesives and sealants used on the interior of the building (i.e., inside of the weatherproofing system and applied on-site) must comply with the adopted standards for Volatile Organic Compound (VOC) limits for the different architectural finish applications.
- **Emergency Lighting Used only During Evening Hours:** The project seeks an Innovation in Design credit for this idea where it would achieve significant, measurable environmental performance using a strategy not addressed in the LEED® 2009 for New Construction and Major Renovations Rating System. Also, the project would use energy efficient lighting for temporary and security lighting during construction.

## 3.6 Site Development

### 3.6.1 Site Access and Circulation

#### General Vehicular Access

There are currently two main access/exit points into the project site, with a third serving as an exit only (see Figure 3-4, Existing Site Buildings and Layout). The project proposes the following improvements and additions to the site access/exit points for vehicular access by the general public (as shown in Figure 3-5, Proposed Site Plan):

- a signalized northern entrance/exit for access to both proposed parking garages – operational at the end of Phase I;
- an interim left-turn (southbound) refuge lane from the southern exit – installed in Phase IV<sup>12</sup>;
- a median cut to provide left turn access (currently exit only) from Bon Air Road by the public to the Emergency Room drop off in front of the West Wing to reduce vehicle congestion onsite and the mixing of general traffic with emergency traffic – installed in Phase IV; and
- a signalized southern entrance/exit (and special service vehicle entrance/exit) – operational at the end of Phase V or VI.

<sup>12</sup> Allows motorists turning left out of the south driveway onto Bon Air Road to do so in a two-part turn. The first, crossing the northbound traffic lanes to an approximately 25-foot long “refuge lane” in the center of Bon Air Road before making the second part of the turn by merging into the southbound traffic lanes when traffic flow allows.

All signal timings would be coordinated with Marin County and the City of Larkspur. Also, the design installation and maintenance of each of these improvements would be coordinated with Marin County. Each of these improvements is discussed in greater detail in Section 4.M, *Transportation and Circulation*, in Chapter 4 of this Draft EIR.

## Emergency Response Access

An ambulance access road – a dedicated emergency response vehicles access driveway - would be created off Bon Air Road just south of the Bon Air Road Parking Structure (see Figure 3-5, Proposed Site Plan). To accommodate this new road, the project proposes the following improvement:

- a median cut to provide left turn access from Bon Air Road to the ambulance access road to create Emergency Room drop off, in front of the West Wing – installed in Phase IV.

This turn lane would be appropriately marked for emergency response vehicles only and would allow direct access to the new ambulance access road and into the ambulance drop off area.

## Delivery Access

Delivery and service vehicles for the Hospital Replacement Building would enter and exit the site via the signalized southern entrance/exit to access the new loading dock at the rear of the building, via a service road branched off the southern access road. Delivery and service vehicles for the Ambulatory Services Building would continue to enter and exit the site via the signalized northern entrance/exit to use the north access road to the existing loading area near the Central Wing. Primarily food service delivery and other smaller truck would use the Central Wing loading area, therefore the elevated pedestrian bridge would not pose height clearance issues if it is incorporated into the project.

## Transit Access

The project proposes three new dedicated bus stops on Bon Air Road (including relocation of an existing bus stop onsite, where the Hospital Replacement Building will be constructed), for a total of four bus stops at the project site (see Figure 3-5, Proposed Site Plan). The sequencing of the proposed bus stops is described above in Section 3.5.3, *Project Activities by Phase*, and shown in Figures 4.N-3 through 4.N-6 in Chapter 4 of this Draft EIR. An existing bus stop at the north access road will be adjusted in Phase I to accommodate widening and utility work in that area, and the proposed new stops would be implemented primarily in Phases IV and/or V of the project, with completion of the Hospital Replacement Building and proposed new crosswalks and signals at the north and south access driveways. Marin Healthcare District will continue coordination with Marin Transit and the Golden Gate Transit District to consider the appropriate and feasible locations for new and relocated facilities and potential adjustments to bus routes, as well as with the Marin County about right-of-way and safety considerations and requirements. There would also be ADA accessible sidewalks from the proposed bus stops to the front door of the Hospital Replacement Building.

## Pedestrian and Bicycle Access

The proposed project would include pedestrian walkways within the project site that provide safe and efficient connections between all public buildings and parking areas within the campus, including existing buildings not proposed for change with the project, such as the Community Mental Health Building (see Figure 3-5, Proposed Site Plan). Pedestrian access improvements would also include crosswalks at internal streets, and ADA accessible ramps. The project will comply with all applicable State and federal accessibility requirements. As described above in Section 3.5.2, *Major Project Components (Covered Pedestrian Walkway / Elevated Pedestrian Bridge Option)*, the project also proposes a covered, ground-level pedestrian walkway to connect the Bon Air Road Parking Structure and the Hospital Replacement Building (See Figure 3-14, Landscape Concept Plan). As also discussed in Section 3.5.2, the project may incorporate an optional elevated pedestrian bridge to connect the Bon Air Road Parking Structure, the Hospital Replacement Building, and the Ambulatory Services Building.

The new main hospital entrance would be located in the proposed Hospital Replacement Building, between its two pavilions and facing Bon Air Road. The entrance would have a large lobby facing the area where patients and visitors can be dropped off or picked up. A second entrance, for the Emergency Department walk-in only, is proposed west of the existing West Wing. This entrance would include a new vehicular patient drop off and canopy. This entrance would be at grade, allowing direct drop off for emergency cases.

The proposed Ambulatory Services Building would have an entrance lobby across the street from the Bon Air Road Parking Structure. A vehicular drop off area and canopy would also be provided at grade.

New pedestrian crossings associated with the two new traffic signals proposed along Bon Air Road from the project site to adjacent parks, trails and tidal marshlands are proposed to improve pedestrian safety and encourage the connection between the hospital and adjacent parks and recreation areas. (Also see Section 3.7.3, *Vehicle and Pedestrian Access During Construction*, below.)

There is a dedicated bicycle path paralleling Bon Air Road through Hal Brown Park, just across from the project site. Bicyclists would continue to access the project site via this path to the proposed southern entrance off Bon Air Road (see Figure 3-5, Proposed Site Plan). Facilities for bicycle parking would also be located throughout the project site.

### 3.6.2 Parking Supply at Buildout

The proposed project would result in 1,079 parking spaces throughout the project site: 160 on-site surface spaces in 12 lots, 412 spaces in the Hillside Parking Structure, and 507 spaces in the Bon Air Road Parking Structure, as shown in **Figure 3-13, Parking Supply Site Plan**, and summarized in **Table 3-2, Parking Summary**. A total of 445 existing on-site surface parking spaces would be removed and replaced in other new or reconfigured parking lots onsite or in the parking structures.

**TABLE 3-2  
PARKING SUMMARY**

<b>Area / Type</b>	<b>Total Spaces (Near-Term 2018)</b>	<b>Total Spaces (2035)</b>
Surface Parking:	160	160
Hillside Parking Structure:	412	412
Bon Air Road Parking Structure:	507	507
<b>Total On-Site Parking Provided</b>	<b>1,079</b>	<b>1,079</b>
<b>Total Parking Demand</b>	<b>1,098</b>	<b>1,172</b>
<b>Surplus / (Short-fall)</b>	<b>(19)</b>	<b>(93)</b>
Projected Long-term Shared Parking Agreement <sup>a</sup>	90	90
<b>Surplus / (Shortfall)</b>	<b>71</b>	<b>(3)</b>

<sup>a</sup> No change is proposed to existing off-site parking at St. Sebastian Church, which the Marin Healthcare District would seek to keep available for hospital parking, but that is not included in the total parking used to meet the required parking demand of the project.

The total 1,079 parking spaces provided by the project would be 19 spaces less than the 1098 space demand of the project in Year 2018 (after the Ambulatory Services Building is operation, but before completion of the Hospital Replacement Building). The parking demand in Year 2035 would increase to 1,172 parking spaces due to additional employees in the Hospital Replacement Building, increasing the on-site parking shortfall to 93 spaces.

The Marin Healthcare District would seek to continue its present arrangement and enter into a long-term shared parking agreement with St. Sebastian Church located just northwest of the campus. A long-term agreement would secure an additional 90 parking spaces for employee use. With these additional spaces, the project would exceed parking demand by 71 spaces in Year 2018, and would have a three-space shortfall compared to parking demand in Year 2035. The church parking lot would continue to be served by hospital shuttle services if the 90 spaces are secured long term. As described in the following section, the project would also provide landscaping that would ensure safe driver sightlines within the site, as well as strategically-located pedestrian crossings as previously discussed under *Pedestrian Access*. (Also see Section 3.7.2, *Parking During Construction*.)

### 3.6.3 Landscape Concept

The proposed landscape design concept for the project is depicted in **Figure 3-14, Landscape Concept Plan**. The landscape design is intended to reinforce the character of the surrounding natural environment while complementing the new buildings and programs. The existing hillside or knoll located on the southeast corner of the project site would be maintained and supplemented with native oak trees and grasses to reinforce an oak woodland vegetation mix, while providing a visual and acoustic buffer to adjacent uses. Likewise, **Figure 3-15, Landscape Concept Sections**, highlights the landscaping concept across key portions of the site. Section A shows that, to the extent feasible, existing pine, oak and redwood trees located to the north would be saved and infilled with additional evergreen trees and shrubs to screen the proposed parking structures

from Bon Air Road. Specifically, each the Hillside Parking Structure and the Bon Air Road Parking Structure would incorporate a dense vegetation zone on their perimeter, where feasible. Section B shows the proposed landscape concept through the surface parking lot fronting Bon Air Road, in front of the Hospital Replacement Building.

To the extent feasible, 16 mature palms that must be removed due to the construction of the Hospital Replacement Building would be saved and relocated elsewhere on the project site.

Special paving elements and the select reuse of existing mature palms, where feasible, would also be incorporated to highlight entrance features. If relocation of these mature palms is not feasible, similar species of palm would be incorporated onsite at each building's main entry point. Overall, a total of approximately 230 trees would be removed. Approximately 264 trees would be planted in new landscaping, approximately 159 trees would be retained in place for development of the project, and approximately 35 trees would be relocated within the project site. As the Hospital Replacement Building would displace much of the existing vegetation, proposed replacement plant species are predominantly native to mitigate the proposed tree removal and promote local vegetation and habitat. (See Section 4.C, *Biological Resources*, for detailed discussion of tree removal and plantings to occur with the project, including Figure 4.C-2, Tree Inventory and Plan.)

As mentioned in previous sections, the Marin Healthcare District is exploring the viability of locating PV panels on top of trellises that would be developed on the top level of each parking structure. This project component would only be developed if the District is able to secure adequate funding for it. The trellises would be situated along the central aisles of the top parking levels and would partially screen the top parking decks visible from higher elevations. If constructed, the trellises would be approximately 34 feet wide by 160 feet long for the Hillside Parking Structure, and approximately 34 feet wide and 190 feet long for the Bon Air Road Parking Structure. The trellises would be constructed of light gauge steel framing and would feature a non-reflective coating on top. The PV panels would be sized to provide most of the power necessary for the parking structures. Panels would be oriented to maximize efficiency while mitigating the potential for glare to adjacent hillside properties.

A Vegetation Management Plan would be prepared as part of the overall landscape development of the project site. The plan would describe the management, restoration and maintenance of plantings, including defensible space zones with requirements for each zone, planting standards and plant selections, and any special site conditions or requirements.

### **3.6.4 Usable Outdoor Spaces / New Healing Garden (Lawrence Halprin Elements)**

The project proposes several new outdoor terraces and gardens around the Hospital Replacement Building for use by visitors, patients and employees. These are shown in Figure 3-14, Landscape Concept Plan, generally where ornamental / accent plantings are proposed. A new "sunken garden" that would provide a new healing garden for patients, staff and visitors is proposed near the West Wing of the existing hospital and across the street from Hal Brown Park. The garden site is



**LEGEND**

- ▲ LOT # PARKING SUPPLY
- ◆ BIKE PARKING
- ACCESSIBLE PATH OF TRAVEL
- PROPERTY LINE

**NEW PARKING SUPPLY**

Lot Number / Location	Parking Supply
Lot 1	10
Lot 2	13
Lot 3	21
Lot 4	7
Lot 5	13
Lot 6	8
Lot 7	-
Lot 8	-
Lot 9	27
Lot 10	-
Lot 11	-
Lot 12	37
Lot 13	3
Lot 14	21
<b>Total Surface On-Site Parking</b>	<b>160</b>

Parking Structure 8A	507
Parking Structure 8B	412

<b>TOTAL NEW SUPPLY</b>	<b>1,079</b>
<b>REQUIRED PARKING</b>	<b>1,098</b>
▲	-19

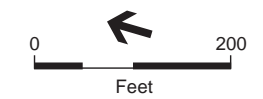
**NEW BIKE PARKING SUPPLY**

Lot Number / Location	Bike Parking Supply
Lot 2 (Hospital side)	18
Lot 2 (Bon Air side)	18
Lot 4	27

<b>TOTAL NEW SUPPLY</b>	<b>63</b>
-------------------------	-----------

**SITE BUILDINGS**

- ① EXISTING WEST WING
- ②A EXISTING CENTRAL WING
- ②B EXISTING EAST WING
- ③ EXISTING MENTAL HEALTH
- ④ EXISTING BULK OXYGEN
- ⑤ EXISTING INFORMATION TECH OFFICES
- ⑥ HOSPITAL REPLACEMENT 300,000 SF (5 LEVELS + BASEMENT)
- ⑦ AMBULATORY SERVICES BUILDING 100,000 SF (5 LEVELS)
- ⑧A PARKING STRUCTURE 501 SPACES (5 LEVELS)
- ⑧B HILL SITE PARKING STRUCTURE 401 SPACES (6 LEVELS)
- ⑨ UNDERGROUND GENERATORS
- ⑩ SUNKEN GARDEN







MARIN GENERAL PLANT LIST

- TREES**
- EXISTING
  - OAK WOODLAND (99)
    - AMELGUS MARIANUS
      - QUERCUS HERRICKII
      - QUERCUS LUBATA
  - EVERGREEN CONIFER (74)
    - PRUNUS RADATA
      - PIROSTROBIA MENZIESII
      - SEQUOIA SEMPERVERENS 'SANTA OLIV'
  - DECIDUOUS SHADE (38)
    - ACERUCALUS CALIFORNICA
      - URBICHOENON FLUPPIFFIA
      - PERSEA GIBBERNA
      - PLATANUS ACERIFOLIA
  - ORNAMENTAL ACCENT (18)
    - ACEA FRAXINOSA
      - LAGERSTRÖMIA INDICA
      - MANGROVIA & SYCAMORE
  - ★ PALM (35)
    - PHOENIX CAROLINENSIS
      - MORNINGGLORY PLATANUS
- (264) TOTAL TREES PROPOSED

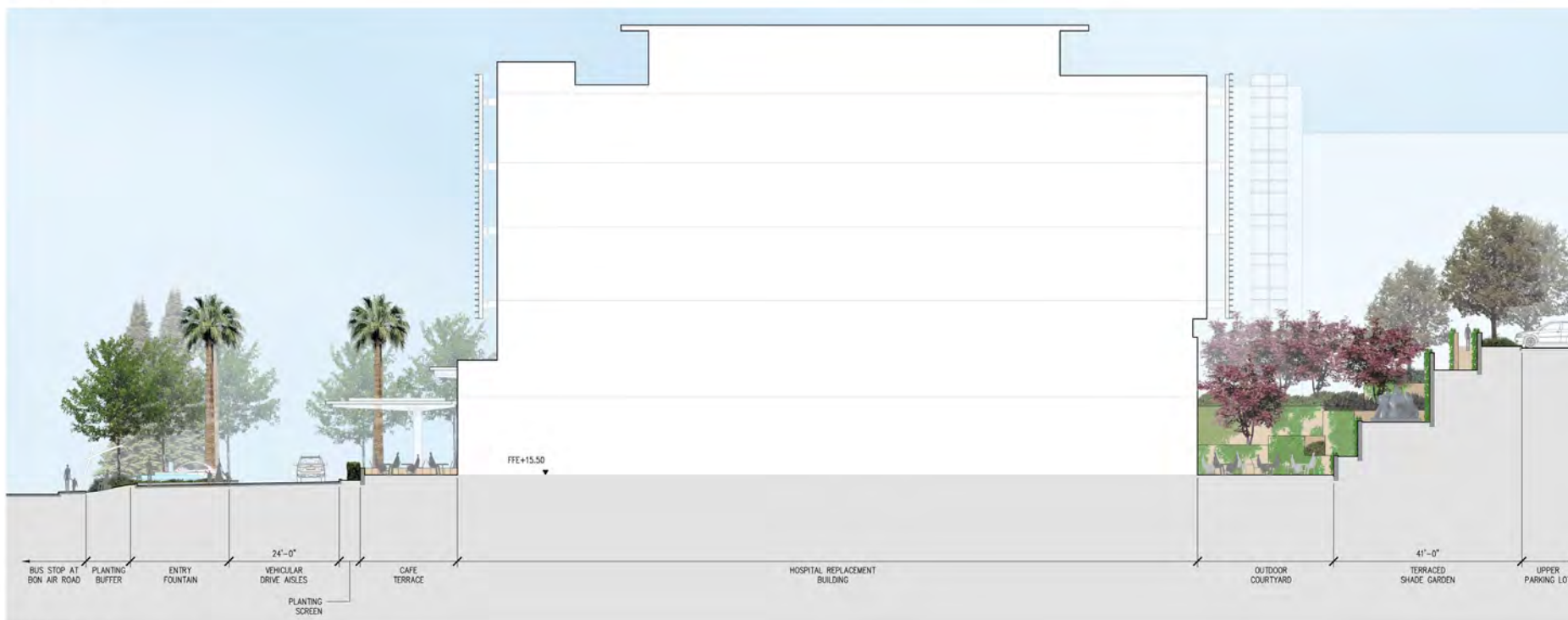
BUILDING INVENTORY

- ① EXISTING WEST WING
- ②A EXISTING CENTRAL WING
- ②B EXISTING EAST WING
- ③ EXISTING MENTAL HEALTH
- ④ EXISTING BULK OXYGEN
- ⑤ EXISTING INFORMATION TECH OFFICES
- ⑥ HOSPITAL REPLACEMENT BUILDING
- ⑦ AMBULATORY SERVICES BUILDING
- ⑧A PARKING STRUCTURE
- ⑧B HILL SITE PARKING STRUCTURE
- ⑨ UNDERGROUND GENERATORS

LANDSCAPE INVENTORY

- Ⓐ ENTRY FOUNTAIN
- Ⓑ COVERED DROP-OFF
- Ⓒ BUS STOP
- Ⓓ CAFE TERRACE
- Ⓔ OUTDOOR COURTYARD
- Ⓕ COVERED WALK
- Ⓖ SUNKEN GARDEN
- Ⓗ UPPER TERRACE
- Ⓘ SHADE GARDEN
- Ⓝ BIOSWALE PLANTING
- Ⓚ GREEN ROOF
- Ⓛ STORMWATER GARDEN
- Ⓜ SCREENING TREES





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also proposed to commemorate the design influence of Landscape Architect Lawrence Halprin on the project site, and to address the loss of existing historic landscapes (namely the Ambulatory Terrace and the Bar-B-Q Terrace) as a result of the project. (The Halprin Gardens are introduced in Section 3.2.5, *Lawrence Halprin Terrace Gardens*, and described in detail in Section 4.D, *Cultural and Paleontological Resources*, in Chapter 4 of this Draft EIR.

Further, a detailed description and assessment of the historical and other remaining site landscapes by Lawrence Halprin are presented in Appendix F to this Draft EIR.) The design of the new healing garden would include commemorative elements, materials, grading, and plantings – much reused from the existing Halprin Gardens where feasible.

### 3.6.5 Lighting Concept

The project proposes a comprehensive lighting program that provides a variety of lighting types. As depicted in **Figure 3-16, Site Lighting Plan**, new and enhanced lighting would include pedestrian area lighting poles in parking lots, as well as lighted bollards and step lighting along other pedestrian paths of travel, including the potential elevated pedestrian bridge, if it is implemented. Mounted lighting on buildings and landscape walls would be cast downwards, as would lighting in architectural canopies and the potential parking structure trellises. The project will remove one existing street light at the south access road entrance, on the west side of Bon Air Road. New street lights would be introduced with the traffic signal standards at the controlled intersections at the north and south access roads.

### 3.6.6 Storm Drainage and Erosion Control

The proposed storm drainage scheme for the project site includes directing all stormwater runoff from new or modified impervious areas of the site to landscape-based stormwater filtration areas. As shown conceptually in **Figure 3-17, Stormwater Control Plan**, the proposed stormwater management treatment features include infiltration swales, surface bioswales, infiltration planters, and porous pavement. The peak stormwater discharge runoff rate after development of the project would be approximately 9.3 percent less than existing conditions; the total volume of stormwater discharge runoff would not change substantially, with an approximately 0.2 percent reduction from existing conditions.

Site improvements also would incorporate temporary and permanent erosion and sediment control measures consistent with regional and local standards and regulations. The overall drainage patterns would be redirected by curbs, gutters, inlets, and/or catch basins to accommodate new buildings, modified parking areas, walkways, and planting areas. All stormwater drained from the garage would be treated in an oil/grease separator prior to being discharged into the storm drain.

### 3.6.7 Heli-stop Exclusion

The proposed project does not include a heli-stop. The construction and operation of any future heli-stop would require separate environmental review and approval by multiple agencies.

## 3.7 Construction Activities

### 3.7.1 Construction Schedule and Activities

#### Schedule

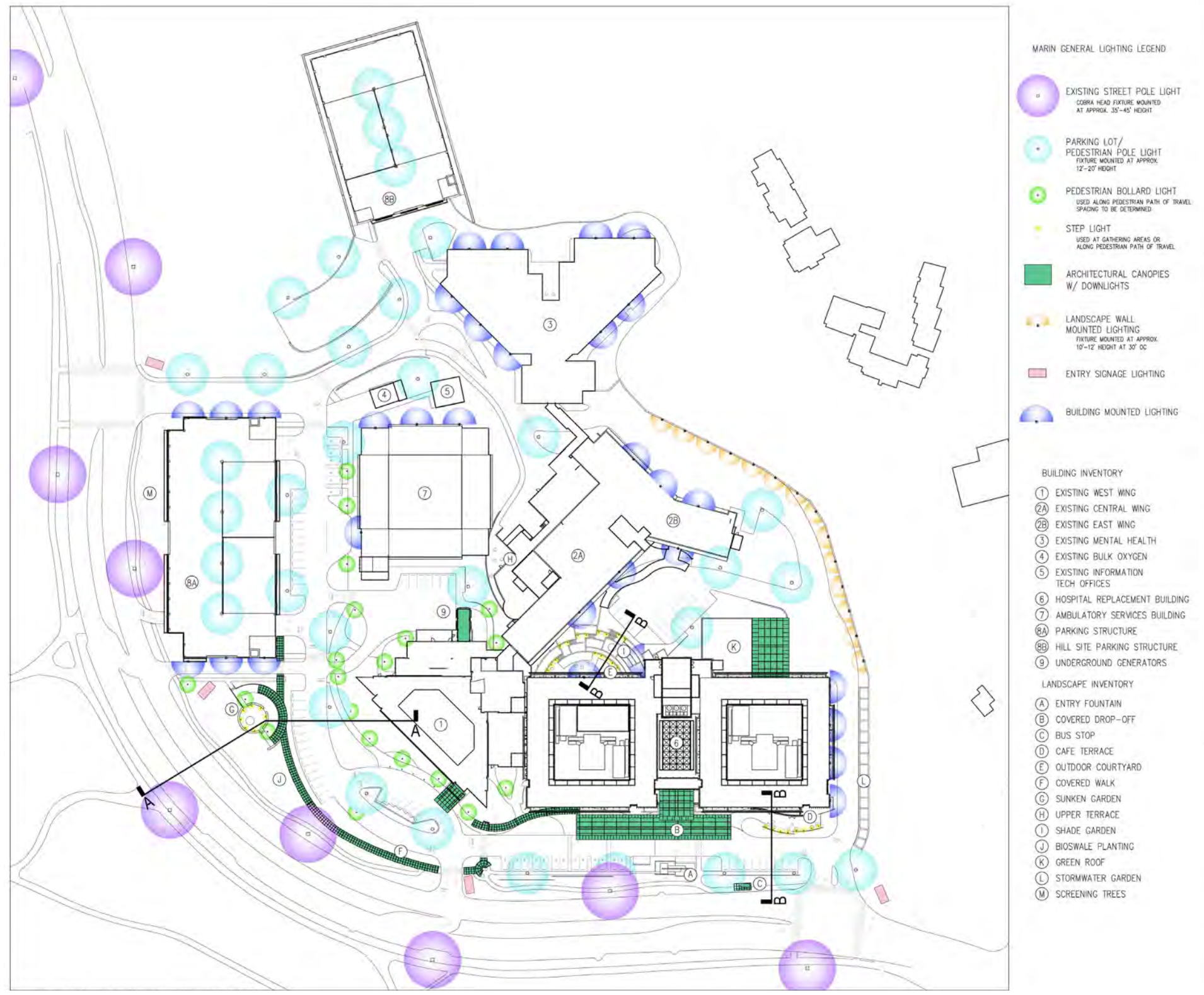
A summary of the proposed construction schedule for each major component of the proposed project is presented in **Table 3-3, Construction Activities Schedule**. Overall, initial construction activities for the first phase would start in 2012, and all major construction associated with the project would be completed by 2020.

As shown in Table 3-3, each construction phase includes specific construction activities that are relevant to assessing the duration and intensity of certain construction effects. Major components of site preparation (Site Make Ready) would involve removal of an existing 10,000 gallon fuel underground storage tank (UST) that would be replaced with a 20,000 gallon UST; demolition of existing structures, some of which are older and have asbestos containing materials and lead based paint in isolated locations; grading of the development areas; and (as summarized

below in Section 3.7.7, *Utility Work During Construction*, and illustrated and described in greater detail in Section 4.N, *Utilities and Service Systems*, in Chapter 4 of this Draft EIR), installation and/or relocation of utility lines. Regarding demolition and grading activities in particular, all hazardous material quantities would be determined at the time of removal and in accordance with federal, State and Marin County requirements. Major components of building construction would involve excavation and drilling piers to support building foundations, constructing the building frame (Superstructure”), pouring concrete/asphalt, and completing the interior of each building (Finish Work) with architectural coatings.

#### Construction Management Plan / Right of Way Activity

Marin Healthcare District will prepare for the Marin County Design Review process a detailed construction management plan that describes site logistics for each phase of construction. The District has prepared preliminary information that describes and illustrates phased utility work that would affect existing right of ways, primarily Bon Air Road and the existing north access road, during construction (one element required in the detailed construction management plan), as shown in Figures 4.N-3 through 4.N-6 in Chapter 4 of this Draft EIR. Work proposed in the right of way includes but is not limited to the following: widening the north access road; creating new driveway exits and entrances off Bon Air Road; providing median cuts and turn pockets on Bon Air Road; installing two new traffic signals and pedestrian crosswalks; removing and installing new or replacement landscaping; improving or replacing sidewalks; installing new and replacement signage; removing public off-site parking spaces on Bon Air Road; relocation and installation of utility and lighting infrastructure; relocating and constructing new bus shelters; and repairing, as necessary, roadways resulting from construction truck activity associated with project.



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**TABLE 3-3  
CONSTRUCTION ACTIVITIES SCHEDULE**

<b>Phase</b>	<b>Start Activity (Quarter [Q]-Year)</b>	<b>Duration (projected number of months [mo])<sup>a</sup></b>
<b>Phase I Hillside Parking Structure (2012 – 2013)</b>		
a) Site Make Ready	Q1 – 2013	1 mo
b) Demolition	Q2 – 2013	1 mo
c) Excavation/Foundations	Q2 – 2013	4 mo
d) Superstructure	Q3 – 2013	5 mo
e) Finish Work	Q1 – 2014	1 mo
<b>Phase II Site Preparation and Bon Air Road Parking Structure (2013-2015)</b>		
a) Site Make Ready	Q1 – 2014	2 mo
b) Utility Relocation	Q2 – 2014	4 mo
c) Demolition	Q2 – 2014	1 mo
d) Excavation/Foundations	Q3 – 2014	4 mo
e) Superstructure	Q4 – 2014	5 mo
f) Finish Work	Q1 – 2015	1 mo
<b>Phase III Ambulatory Services Building (2013 – 2015)<sup>b</sup></b>		
a) Site Make Ready	Q2 – 2014	2 mo
b) Utility Relocation	Q2 – 2014	4 mo
c) Demolition	Q3 – 2014	1 mo
d) Excavation	Q3 – 2014	2 mo
e) Substructure	Q4 – 2014	2 mo
f) Superstructure	Q4 - 2014	4 mo
g) Exterior Skin	Q1 – 2015	4 mo
h) Interior Construction	Q3- 2015	8 mo
<b>Phase IV Hospital Replacement Building and Possible Elevated Pedestrian Bridge (2015 – 2018)</b>		
a) Site Make Ready	Q1 – 2015	4 mo
b) Utility Relocation	Q2 -2015	2 mo
c) Demolition	Q3 – 2015	2 mo
d) Excavation	Q3 – 2015	3 mo
e) Substructure	Q4 - 2015	5 mo
f) Superstructure	Q2 – 2016	7 mo
g) Exterior Skin	Q1 – 2017	10 mo
h) Interior Construction	Q2 – 2017	18 mo
i) Owner Fit Up	Q3 – 2018	6 mo
<b>Phase V Central and East Wing Renovations (2019 – 2020) / Phase VI Nursing Unit Infill Project (2023 – 2025)</b>		
a) Interior Construction		
b) Finish Work		

<sup>a</sup> Demolition activities include all preparation and post-demolition activities in addition to actual structural demolition activity.

<sup>b</sup> The Ambulatory Services Building is only in the conceptual design stage and therefore the associated construction schedule and activities are preliminary, yet based on conservative estimates for EIR purposes.

SOURCE: Lee Burkhart, Lui, Inc.



The following **Figure 3-17a** through **Figure 3-17e** delineate, by phase, the proposed boundaries of construction activity and the alignments for ADA accessible pathways during construction. They also specify the construction activities to occur. This information will also be further refined for the detailed construction management plan required by the County.

## 3.7.2 Parking During Construction

### Hospital User Parking

The phasing of the two new parking structures in Phase I and Phase II would ensure adequate on-site parking for hospital users during all construction activities (as described in Section 3.5.3, *Project Activities by Phase*, and Table 3-1, Project Development Summary by Phase and Buildout). To summarize, compared to existing conditions, there would be a net increase of on-site parking at the end each phase:

- 398 net new spaces by the end of Phase I (Hillside Parking Structure)
- 726 net new spaces by the end of Phase II (Bon Air Road Parking Structure)
- 668 net new spaces at the end of Phase III (Ambulatory Services Building)
- 474 net new spaces at the end of Phase IV (Hospital Replacement Building)<sup>13</sup>

### Construction Worker Parking

During all phases of construction, the contractor would utilize a parking lot on the hillside for construction parking. This lot is currently used by the Marin Community Clinic, which would relocate off the hospital campus prior to the start of Phase I construction. These spaces then would accommodate construction parking needs for Phase I, and additional construction period parking would be secured for Phases II, III and IV through the lease of an off-site parking lot and shuttle service for workers to the specific phase of construction underway. The Marin Healthcare District would continue its existing parking lease for 90 spaces with the St. Sebastian's Church located north of the project site, across Bon Air Road, for the duration of the construction.

## 3.7.3 Vehicle and Pedestrian Access During Construction

The project intends to maintain vehicular access onto the project site through the two existing main driveways (at the north and south access roads) and through all phases of construction, with a new driveway added in Phase II (new ambulance access road to/from Bon Air Road) and in Phase IV (inbound driveway from southbound Bon Air Road to the Emergency Room drop off, for public use). Fire lane access would also be maintained during construction in accordance with the latest fire and building codes and would particularly be a requirement of the construction of the Hillside Parking Structure.

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<sup>13</sup> Phases V and VI would not affect on-site parking.

**Phase I – 12 months**

1. Demolish Temporary Modular Buildings
2. Construct Hillside Parking Structure
3. Widen North Access Road
4. Install Signal and Crosswalk at North Entrance
5. Install Utilities in Right of Way (see Figure 4.N-3)
6. Relocate Bus Stop at North Entrance approx. 100 feet north.



**LEGEND**

- BUILDING TO BE DEMOLISHED
- BIKE PATH
- ACCESSIBLE PATH OF TRAVEL
- PROPERTY LINE
- LOT # PARKING SUPPLY

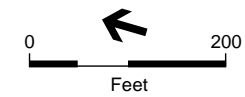
**SITE BUILDINGS**

- ① EXISTING WEST WING
- ②A EXISTING CENTRAL WING
- ②B EXISTING EAST WING
- ③ EXISTING MENTAL HEALTH
- ④ EXISTING BULK OXYGEN
- ⑤ EXISTING INFORMATION TECH OFFICES

**DEMOLITION KEYNOTES**

- BUILDING TO BE DEMOLISHED
- ① DEMOLISH PARTIAL WEST WING
- ② DEMOLISH WEST WING ENTRANCE CANOPY
- ③ DEMOLISH MOBILE MAGNETIC RESONANCE IMAGING UNIT
- ④ DEMOLISH RISK MANAGEMENT Q.A. OFFICES
- ⑤ DEMOLISH RISK MANAGEMENT Q.A. OFFICES
- ⑥ DEMOLISH PARTIAL INFORMATION TECH OFFICES
- ⑦ DEMOLISH PURCHASING DEPARTMENT
- ⑧ DEMOLISH MARIN COMMUNITY HEALTH CLINIC OFFICES
- ⑨ DEMOLISH MARIN COMMUNITY HEALTH CLINIC

- Construction Fence
- Bus Stop



**Phase II – 17 months**

1. Construct Bon Air Road Parking Structure
2. Create New Ambulance Access Road
3. Create New Left Turn Across Bon Air Road Median
4. Install Utilities in Right of Way (see Figure 4.N-4)



**LEGEND**

- BUILDING TO BE DEMOLISHED
- BIKE PATH
- ACCESSIBLE PATH OF TRAVEL
- PROPERTY LINE
- LOT # PARKING SUPPLY

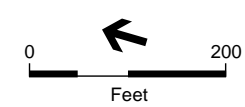
**SITE BUILDINGS**

- ① EXISTING WEST WING
- ②A EXISTING CENTRAL WING
- ②B EXISTING EAST WING
- ③ EXISTING MENTAL HEALTH
- ④ EXISTING BULK OXYGEN
- ⑤ EXISTING INFORMATION TECH OFFICES
- ⑧B HILL SITE PARKING STRUCTURE 412 SPACES (6 LEVELS)

**DEMOLITION KEYNOTES**

- BUILDING TO BE DEMOLISHED
- ① DEMOLISH PARTIAL WEST WING
- ② DEMOLISH WEST WING ENTRANCE CANOPY
- ③ DEMOLISH MOBILE MAGNETIC RESONANCE IMAGING UNIT
- ④ DEMOLISH RISK MANAGEMENT Q.A. OFFICES
- ⑤ DEMOLISH RISK MANAGEMENT Q.A. OFFICES
- ⑥ DEMOLISH PARTIAL INFORMATION TECH OFFICES
- ⑦ DEMOLISH PURCHASING DEPARTMENT
- ⑧ DEMOLISH MARIN COMMUNITY HEALTH CLINIC OFFICES
- ⑨ DEMOLISH MARIN COMMUNITY HEALTH CLINIC

- Construction Fence
- Bus Stop



**Phase III – 27 months**

1. Demolish Information Technology Offices
2. Construct Ambulatory Services Building



**LEGEND**

- BUILDING TO BE DEMOLISHED
- BIKE PATH
- ACCESSIBLE PATH OF TRAVEL
- PROPERTY LINE
- LOT #**
- PARKING SUPPLY

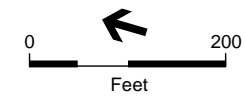
**SITE BUILDINGS**

- ① EXISTING WEST WING
- ②A EXISTING CENTRAL WING
- ②B EXISTING EAST WING
- ③ EXISTING MENTAL HEALTH
- ④ EXISTING BULK OXYGEN
- ⑤ EXISTING INFORMATION TECH OFFICES
- ⑧A PARKING STRUCTURE 507 SPACES (5 LEVELS)
- ⑧B HILL SITE PARKING STRUCTURE 412 SPACES (6 LEVELS)

**DEMOLITION KEYNOTES**

- BUILDING TO BE DEMOLISHED
- ① DEMOLISH PARTIAL WEST WING
- ② DEMOLISH WEST WING ENTRANCE CANOPY
- ③ DEMOLISH MOBILE MAGNETIC RESONANCE IMAGING UNIT
- ④ DEMOLISH RISK MANAGEMENT Q.A. OFFICES
- ⑤ DEMOLISH RISK MANAGEMENT Q.A. OFFICES
- ⑥ DEMOLISH PARTIAL INFORMATION TECH OFFICES
- ⑦ DEMOLISH PURCHASING DEPARTMENT
- ⑧ DEMOLISH MARIN COMMUNITY HEALTH CLINIC OFFICES
- ⑨ DEMOLISH MARIN COMMUNITY HEALTH CLINIC

- Construction Fence
- Bus Stop



**Phase IVa – 6 months**

1. Create New Emergency Department Patient Drop-off
2. Create New Emergency Department Lobby Entrance
3. Create New Sunken Garden
4. Create New Left Turn Across Bon Air Road Median



**LEGEND**

- BUILDING TO BE DEMOLISHED
- BIKE PATH
- ACCESSIBLE PATH OF TRAVEL
- PROPERTY LINE
- LOT # PARKING SUPPLY

**SITE BUILDINGS**

- ① EXISTING WEST WING
- ②A EXISTING CENTRAL WING
- ②B EXISTING EAST WING
- ③ EXISTING MENTAL HEALTH
- ④ EXISTING BULK OXYGEN
- ⑤ EXISTING INFORMATION TECH OFFICES
- ⑦ AMBULATORY SERVICES BUILDING 100,000 SF (5 LEVELS)
- ⑧A PARKING STRUCTURE 507 SPACES (5 LEVELS)
- ⑧B HILL SITE PARKING STRUCTURE 412 SPACES (6 LEVELS)
- ⑨ UNDERGROUND GENERATORS

**DEMOLITION KEYNOTES**

- ① DEMOLISH PARTIAL WEST WING
- ② DEMOLISH WEST WING ENTRANCE CANOPY
- ③ DEMOLISH MOBILE MAGNETIC RESONANCE IMAGING UNIT
- ④ DEMOLISH RISK MANAGEMENT Q.A. OFFICES
- ⑤ DEMOLISH RISK MANAGEMENT Q.A. OFFICES
- ⑥ DEMOLISH PARTIAL INFORMATION TECH OFFICES
- ⑦ DEMOLISH PURCHASING DEPARTMENT
- ⑧ DEMOLISH MARIN COMMUNITY HEALTH CLINIC OFFICES
- ⑨ DEMOLISH MARIN COMMUNITY HEALTH CLINIC

- Construction Fence
- Bus Stop

0 200  
Feet

**Phase IVb – 21 months**

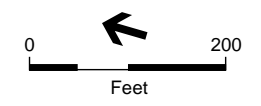
1. Demolish West Wing Lobby
2. Construct Hospital Replacement Building Foundation and Building Shell
3. Create New Service Road and Perimeter Site Walkways
4. Install Utilities in Right of Way (see Figure 4.N-5)
5. Install new Bus Stop at North Entrance.
6. Remove existing Bus Stop from site of Hospital Replacement Building Construction



LEGEND	
	BIKE PATH
	ACCESSIBLE PATH OF TRAVEL
	PROPERTY LINE
	ACCESS AND PARKING EASEMENT
	PROPOSED EASEMENT
	IMPACTED COUNTY LAND
	PROPOSED EQUIVALENT LAND AVAILABLE

SITE BUILDINGS	
①	EXISTING WEST WING
②A	EXISTING CENTRAL WING
②B	EXISTING EAST WING
③	EXISTING MENTAL HEALTH
④	EXISTING BULK OXYGEN
⑤	EXISTING INFORMATION TECH OFFICES
⑥	HOSPITAL REPLACEMENT 300,000 SF (5 LEVELS + BASEMENT)
⑦	AMBULATORY SERVICES BUILDING 100,000 SF (5 LEVELS)
⑧A	PARKING STRUCTURE 507 SPACES (5 LEVELS)
⑧B	HILL SITE PARKING STRUCTURE 412 SPACES (6 LEVELS)
⑨	UNDERGROUND GENERATORS
⑩	SUNKEN GARDEN

- Construction Fence
- Bus Stop - (N) New - (X) Removed





As previously depicted in Figures 3-17a through 3-17f, safe and ADA accessible pedestrian access would also be maintained throughout construction, consistent with current conditions or, if needed, through the construction of temporary sidewalks. As described in greater detail in Section 4.N, *Utilities and Service Systems*, pedestrian traffic would be redirected during construction only in Phase II, along the Bon Air Road sidewalk (in front of the hospital), during utility work in preparation for the Bon Air Road Parking Structure; pedestrians would be directed to cross Bon Air Road at a new crosswalk proposed in Phase I or at South Eliseo Drive to the south. All sidewalk or other right of way improvements will occur only within the frontage of the project site.

### 3.7.4 Grading, Excavation and Runoff During Construction

The site grading for the project primarily involves working within and designing around existing site features and elevations that are not part of the expansion, as each work area is constrained on nearly all sides. The most significant grading would occur where the new buildings, parking structures and expanded surface parking lots are planned. The proposed buildings, parking areas, and drive aisles would be graded to connect with the existing site elevations as much as possible, however, re-grading portions of driveway aisles, walkways, and constructing retaining walls would be required where significant changes in grade occur.

Retaining walls would be developed in the following areas:

- along the south access road, near the south site entrance (up to 10 feet high);
- south of the Hospital Replacement Building, between the new loading dock and visitor parking area (two to four feet);
- along the west side of the internal access road north of the Ambulatory Services Building (one to four-feet); and
- the northernmost area of the site, terracing near the Hillside Parking Structure (three to 25 feet tall).

It is expected that the project would require a total of 133,000 cubic yards (CY) of excavation during the various construction phases (as discussed in Section 4.M, *Transportation and Circulation*). The total includes 15,000 CY during the Hillside Parking Structure construction, 17,000 CY during the Bon Air Road Parking Structure construction, and 101,000 CY during the hospital construction. The soil would be sent to the appropriate disposal site based on the test results of the soil. As previously mentioned, all hazardous material quantities associated with excavated soils would be determined at the time of removal and in accordance with federal, State and Marin County requirements.

All construction activities for the project would be conducted pursuant to a compliant SWPPP, which California State and Regional Water Quality Boards require be implemented for each project site, and which the County of Marin Department of Public Works would review and



approve (as discussed above in Section 3.6.6, *Storm Drainage and Erosion Control*, and discussed in detail in Section 4.H, *Hydrology and Water Quality*, in Chapter 4 of this Draft EIR).

### 3.7.5 Demolition Debris

The project estimates roughly 18,400 cubic yards of debris from demolition to be generated and removed from the site. The project's goal is to recycle 20 percent or more of the construction waste, consistent with LEED® standards. The asphalt and concrete would be sent to a site to be crushed and reused. As mentioned above, all hazardous material quantities from demolition and grading activities in particular, would be determined at the time of removal and in accordance with federal, State and Marin County requirements.

### 3.7.6 Construction Vehicles and Trips

Most of the heavy traffic during construction would be during excavation and off haul days during the placement of concrete. This traffic would most likely be comprised of 10-wheel dump trucks and concrete trucks, plus delivery trucks for equipment and supplies. During the excavation and off haul of the soil the 10-wheel dump truck traffic would be fairly continuous and regular. Truck trips would also occur during the off haul of demolition debris from the site, but in substantially smaller numbers and not during periods that would overlap with the truck trips associated with construction and excavation.

The truck trip generation during the most intense hospital construction is approximately 120 truck trips per day, the equivalent of about 20 passenger car trips (10 in/10 out) during both the a.m. and p.m. peak hours.<sup>14</sup> (See Section 4.M, *Transportation and Circulation*, for detailed discussion of construction period truck trips.)

All the phases would also require cranes of different sizes to come in and out of the construction site. The construction traffic will proceed from Highway 101 to Sir Francis Drake Boulevard to Bon Air Road and back out the same way. Construction would take place during the hours mandated by Marin County and according to Marin County guidelines for noise, lighting and dust control.

### 3.7.7 Utilities Work During Construction

As indicated in Section 3.2.6, *Existing Site Constraints, Utilities and Services*, utilities on the project site include existing publicly-owned utilities as well as Marin General Hospital-owned utilities. Most utilities would need to be modified to serve all development on the project site, as described below. (Public and private existing and proposed utility lines pertinent to the project site are illustrated in Figures 4.N-1 and 4.N-2 in Chapter 4 of this Draft EIR.)

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<sup>14</sup> Because construction trucks represent a potential higher traffic impact (due to their greater length and slower acceleration characteristics), a Passenger Car Equivalent factor of 1.5 is applied to the truck trips, consistent with standard traffic methods.

The following **Table 3-4, Required Utility Infrastructure**, summarizes the utility infrastructure required for each project building, and the discussion that follows summarizes the proposed modifications to major utilities (except the storm drain system, which is discussed above in Section 3.6.6, *Storm Drainage and Erosion Control*).

**TABLE 3-4  
REQUIRED UTILITY INFRASTRUCTURE**

	Hillside Parking Structure	Bon Air Road Parking Structure	Ambulatory Services Building	West Wing Make-Ready <sup>a</sup>	Hospital Replacement Building
Potable Water	●	●	●		●
Storm Drain	●	●	●	●	●
Electric Service and Meter	●	●	●		●
Sanitary Sewer	●	●	●	●	●
Gas Service and Meter			●		●
Telecommunication Lines	●	●	●		●
Oxygen Line			●		●
Irrigation	●	●	●		●
Treatment of Impervious Areas	●	●	●		●

<sup>a</sup> Work to modify the existing West Wing entrance to the existing hospital.

SOURCE: KPFF

To ensure continuous utility services to the project site during construction, and avoid the inadvertent damage to or conflict with existing infrastructure, the project applicant would prepare and submit a Preconstruction Plan and Advanced Construction and Emergency Plan to the County for review and approval prior to the start of construction activities (as discussed in greater detail in Section 4.N, *Utilities and Service Systems*, in Chapter 4 of this Draft EIR.)

### ***Potable Water Supply and Fire Flows***

The publicly-owned water system is owned by Marin Municipal Water District (MMWD) and the project would realign that system, only as needed to accommodate the project.

A portion of the existing eight-inch diameter high-pressure water main running adjacent to Bon Air Road and through the existing hospital parking lot would be relocated into the Bon Air Road public right of way to avoid conflict with the Bon Air Road parking structure. This relocated main would be upgraded from an eight-inch line to a proposed 12-inch line by the MMWD. The new connection to the Hospital Replacement Building domestic service would be a six-inch water lateral from the existing main that travels through the hospital parking lot.<sup>15</sup>

<sup>15</sup> If the realigned pipe is located on the hospital property then a minimum of a 20-foot wide easement would be required.

Total estimated average daily domestic water demand of the new buildings proposed by the project is approximately 96,000 gallons per day (gpd). Total estimated peak flows (used to size plumbing systems) is approximately 480 gallons per minute (gpm).<sup>16</sup> (See Section 4.N, *Utilities and Service Systems*, in this Draft EIR for greater detail regarding projected demand and planned service flows.)

Existing fire hydrants would be kept in operation during construction or until new hydrants have been tested and approved to be operational by the Marin County Building Department and Marin County Fire. The project would require approval of a phased fire protection plan, which the Marin Healthcare District would be required to maintain throughout the construction process by the Building Department and Fire District.

### ***Sanitary Sewer***

The publicly-owned sanitary sewer main is owned by Ross Valley Sanitation District (RVSD) and the project would require the realignment of the existing sanitary sewer pipe and modification to the existing pressure pipe.

The proposed project would relocate a portion of an existing 12-inch sanitary sewer force main into the Bon Air Road public right of way. A new line would extend from the Hillside Parking Structure, down the north access road, and extend into the public right of way on Bon Air Road. The line then would run 400 feet along the length of Bon Air Road (close to the center median) from the north access road to the new ambulance access road, before turning back onto the project site and reconnecting to the existing sanitary sewer line. The sanitary sewer line is the only utility that would newly encroach into the public right of way. Upon completion and approval of the realigned sanitary sewer facilities the existing line would be abandoned and removed per RVSD standards.

The Hospital Replacement Building and Ambulatory Services Building would generate up to approximately 73,000 gpd of wastewater flow. (See Section 4.N, *Utilities and Service Systems*, in this Draft EIR.)

### ***Gas and Electricity***

The publicly-owned gas main is owned by Pacific Gas and Electric (PG&E) and the project would require the realignment of the existing high pressure gas pipe.

Gas and electric would be located in a joint trench that runs 400 feet from the north access road entrance to the proposed emergency vehicle road entrance (on the west side of the Bon Air Road Parking Structure). At that point, gas would continue onto the project site for approximately 580 linear feet and reconnect to the existing gas service; electric would terminate at a proposed new transformer at the emergency vehicle road entrance. The relocation of existing lines within the rights-of-way and construction of new lines within the project site would be permitted through

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<sup>16</sup> These estimates do not reflect subtracting out the portion of the existing hospital being replaced, 5,000 gpd of non-potable water for landscape irrigation, or for sprinkler/fireflow service.

a public utility easement approved and granted to PG&E. (See Section 4.N, *Utilities and Service Systems*, in this Draft EIR).

### **Telecommunications Systems**

Other publicly-owned utilities include telecommunication manholes owned by AT&T. AT&T telecommunication lines would be located in the joint trench between the north access road and the ambulance access road (with gas and electricity, discussed above) and then continue onto the project site.

Modifications to the existing AT&T system would introduce new, more efficient communications and data infrastructure on systems already existing at the project site. These include underground fiber systems that would integrate with existing utilities connections. Approximately four new four-inch conduits for fiber/copper are proposed to extend from the Hospital Replacement Building to Bon Air Road, where they would connect with local providers. This would result in ample feeds onto the project site for current and unknown future needs. The Hospital Replacement Building would feature a roof-mounted dish device or wireless antennae for data connections, if necessary (as discussed further in Section 4.A, *Aesthetics*, in Chapter 4 of this Draft EIR).

## **3.8 Project Entitlements and Approvals**

### **3.8.1 Lead Agency**

#### **Marin Healthcare District**

Marin Healthcare District is the Lead Agency primarily responsible for preparing this EIR (CEQA *Guidelines* § 15051). This EIR is intended to provide CEQA clearance for all required discretionary actions for the proposed project. The Marin Healthcare District would make decisions on the following discretionary actions (and other considerations and approvals) that have been identified, without limitation, at the time this EIR was prepared:

- Certification of this EIR
- Approval of the Mitigation Monitoring and Reporting Plan (MMRP)
- Project Approval

### **3.8.2 Responsible and Trustee Agencies**

“Responsible Agencies” include “all local and state public agencies other than the lead agency that have discretionary approval power over the project (CEQA *Guidelines* § 15381). A “trustee agency” is a “state agency having jurisdiction by law over resources affected by the project that are held in trust for the people of the State of California” (CEQA *Guidelines* § 15386). It is not anticipated that any federal agencies would have permit authority over aspects of the project. These agencies may also consider this EIR in their review and decision-making processes. A list of these other agencies and their jurisdictional permits and approvals include, but are not limited to, the following:

## **County of Marin**

Marin County is a Responsible Agency pursuant to CEQA because it has the authority to grant other discretionary approvals required before the Marin Healthcare District can implement the proposed project. (CEQA *Guidelines* § 15381). The project site is located in unincorporated Marin County. The County would make decisions on the following discretionary actions (and other considerations and approvals) that have been identified at the time this EIR was prepared:

- Approval of Property Swap or Lease Agreement for construction of the Hillside Parking Structure (County Administrator);
- Design Review (pursuant to Development Code section 22.14.040, Special Purpose District Development Standards) (County Community Development Agency);
- Any work in the Bon Air Road Right of Way (County Public Works); and
- Building Permit for Parking Structures and Ambulatory Services Building (County Building Department); and
- Elimination of parking spaces on Bon Air Road.

Although the project does not propose or anticipate any temporary public road closures, the approval of such, if warranted, must be granted by the Marin County Board of Supervisors.

## **Office of Statewide Health Planning and Development (OSHPD)**

OSHPD enforces building standards related to the construction of acute care health facilities, and the issuance of all building and occupancy permits for these facilities, to ensure compliance with the regulations developed by OSHPD as mandated by the Alquist Act, as amended in 1994 by Senate Bill (SB) 1953. The project is subject to the Phased Plan Review Process and building permit issuance from OSHPD prior to implementation.

## **San Francisco Bay Regional Water Quality Control Board (RWQCB)**

The RWQCB administers the National Pollutant Discharge Elimination System (NPDES), authorized by the federal Clean Water Act, as well as State water laws to protect water quality. The project would require compliance with NPDES through preparation and approval of a Stormwater Pollution Prevention Plan (SWPPP), which encompasses Standard Urban Stormwater Mitigation Plan requirements and a Stormwater Mitigation Plan. The project would require Section 401 Water Quality Certification. The project would also require RWQCB acceptance of a Notice of Intent (NOI) to obtain coverage under the General Construction Activity Storm Water Permit (General Construction Permit), and Notice of Termination after construction is complete.

## **Bay Area Air Quality Management District (BAAQMD)**

The BAAQMD has jurisdiction over regional air quality issues, including the operation of stationary equipment, such as emergency generators, that emit air pollutants. The BAAQMD

could require a new or revised *Authority to Construct* and *Permission to Operate* (PTO) permits. The BAAQMD typically reissues PTOs annually.

### **California Department of Fish and Game (CDFG) and U.S. Fish and Wildlife Service (USFWS)**

The project may affect fish and wildlife under the jurisdiction of CDFG as a trustee agency and may require consultation or permits issued by CDFG or USFWS regarding potential impacts to federally and State-listed sensitive species.

### **Other Local Utility and Service System Providers**

The project would involve new and modified utility systems and potentially expanded services that would require review and/or approval by local agencies that include, but are not limited to, the following:

- Marin County Fire
- Kentfield Fire District
- Marin Municipal Water District (MMWD)
- Ross Valley Sanitation District (RVSD)
- Pacific Gas and Electric (PG&E)
- AT&T
- Golden Gate Transit
- Marin Transit

## CHAPTER 4

# Environmental Setting, Impacts and Mitigation Measures

This Draft EIR has been prepared in accordance with the California Environmental Quality Act (CEQA), as amended (Public Resources Code Section 21000, et seq.), and the CEQA Guidelines (California Code of Regulations Sections 15000 through 15378). This chapter contains the analysis of the project's potential environmental effects under CEQA.

The body of this Chapter 4 presents the CEQA analysis in lettered sections (“4.A” through “4.N”) for each environmental topic addressed (as indicated in the Table of Contents to this document).<sup>1</sup> The following introductory discussion to Chapter 4 provides an overview of the scope of the environmental analysis, organization of the topical sections, the methods and nomenclature for determining significance, as well as the baseline and cumulative analysis approaches used throughout.

## Organization of Topic Sections

Each environmental topic section generally includes two main subsections:

- *Existing Setting*, which generally describes baseline conditions and environmental and regulatory conditions against which the potential impacts are considered; and
- *Impacts and Mitigation Measures*, which lists the significance criteria and thresholds (described below), identifies and discusses the potential impact, and states the recommended mitigation measures that would reduce or eliminate any significant impacts identified.

## Format of Impacts and Mitigation Measures

This EIR identifies all potentially significant and significant impacts with an abbreviated designation that corresponds to the environmental topic addressed (e.g., “HAZ” for hazardous materials). The topic designator is followed by a number that indicates the sequence in which the potentially significant or significant impact statement occurs within the section. For example, “Impact BIO-3” is the third (i.e., “3”) potentially significant or significant biological resources

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<sup>1</sup> *Agricultural Resources* and *Mineral Resources* were determined not to be directly relevant to the project and therefore are briefly discussed in Chapter 6, *Impact Overview and Growth Inducement*, under Section 6.6, *Effects Found Not to Be Significant*.

impact identified in the EIR. All impact statements are numbered and presented in bold text, including those that are less than significant.

Mitigation measures are numbered to correspond with the impact that they address. Where multiple mitigation measures address a single impact, each mitigation measure is designated sequentially by letter. For example a “Mitigation Measure BIO-3b” would be the second (i.e., “b”) mitigation identified to address the third biological resources impact (i.e., “BIO-3”). All mitigation measures are presented in bold text.

The impact determination or classification (discussed below) of the project’s effect *prior to* the implementation of mitigation measures is stated in parentheses, immediately following the impact statement. The impact determination *after* the implementation of mitigation measures is stated at the conclusion of each analysis discussion.

## Significance Criteria and Thresholds

Under CEQA, a “significant” effect is considered a substantial, or potentially substantial, adverse change in the environment (Public Resources Code Section 21068). Each *Impacts and Mitigation Measures* discussion in this chapter is preceded by the significance criteria and thresholds that pertain to the topic addressed to assess whether an impact is significant. This EIR applies the significance criteria specified in Appendix G of the State CEQA *Guidelines*, as well as those specified in Appendix N of the Marin County Environmental Review Guidelines.

## Impact Classifications

The following impact classifications for levels of significance are used throughout the impact analysis in this EIR:

- **Less than Significant (LS)** – The impacts of the project, either before or after implementation of feasible mitigation measures, do not reach or exceed the defined threshold/criteria of significance. No mitigation measure is required for a LS impact.
- **Potentially Significant (PS)** – The impact of the project may reach or exceed the defined threshold/criteria of significance, however it is not evident that, even in the theoretical worst-case standard conditions, a significant impact would occur. Where feasible, mitigation measures are identified to reduce the potentially significant impact to a less-than-significant level.
- **Significant (S)** – The impact of the project is expected to reach or exceed the defined threshold/criteria of significance. Feasible mitigation measures may or may not be identified to reduce the significant impact to a less-than-significant level.
- **Significant and Unavoidable (SU)** – The impact of the project reaches or exceeds the defined threshold/criteria of significance. No feasible mitigation measure is available to reduce the significant impact to a less-than-significant level. In these cases, feasible mitigation measures are identified to reduce the significant impact to the maximum feasible



extent, and the significant impact is considered unavoidable. Impacts are also classified as significant and unavoidable if a feasible mitigation measure is identified that would reduce the impact to a less-than-significant level, but the approval and/or implementation of the mitigation measure is not within the project applicant's sole control, the analysis cannot presume implementation of the mitigation measure and the resulting less-than-significant impact. It is important to clarify that significant and unavoidable is an impact classification that only applies *after* consideration of possible mitigation measures.

- **No Impact (N)** – No noticeable adverse effect on the environment would occur.

## Environmental Baseline

Overall, pursuant to Section 15125(a) of the CEQA Guidelines, this EIR measures the physical impacts of the project against a “baseline” of physical environmental conditions that exist at and in the vicinity of the project site. Generally, the environmental baseline is the combined circumstances existing around the time the NOP of the EIR was published, which is generally November 2011. The baseline also includes the existing policy and regulatory context that pertains to the project or its location.

This EIR includes an analysis of the project compared to existing conditions (generally November 2011) for each topic, consistent with recent court cases such as *Sunnyvale West Neighborhood Association v. City of Sunnyvale City Council* (2010) and *CEQA Guidelines*, Section 15125. To the extent that aspects of the existing traffic conditions are factored into the air quality, greenhouse gases (GHG)/climate change and noise analyses, these impacts of these topics also reflect this baseline. A notable variation to the “November 2011 NOP” baseline for the CEQA analysis herein is that mid-day peak period intersection counts taken in 2010 were compared to counts taken in 2006, which were higher volumes; thus the 2006 volumes are used to provide a conservative analysis in this EIR. Also, although not a CEQA analysis topic, the existing parking data presented in this EIR is based on a comprehensive parking study conducted in May 2010.

In most cases the baseline condition relevant to the environmental topic being analyzed is described within the *Environmental Setting* (described i above). In Section 4.A, *Aesthetics*, however, the baseline condition described in the *Setting* is revisited (including use of photographs) in the *Impacts and Mitigation Measures* discussion to present the impact analysis in the most reader-friendly format and organization.

## Cumulative Analysis

### Approach to the Cumulative Analysis

CEQA defines cumulative as “two or more individual effects that, when considered together, are considerable, or which can compound or increase other environmental impacts.” The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present and reasonable foreseeable

probable future projects. Section 15130 of the CEQA *Guidelines* requires that an EIR evaluate potential environmental impacts when the project's contribution to a cumulative effect is "cumulatively considerable." "Cumulatively considerable" means that the incremental effect of an individual project are significant when viewed in connection with the effects of past, present and reasonably foreseeable future projects (discussed below).

## Cumulative Context

The context used for assessing cumulative impacts varies depending on the environmental topic being analyzed. This variation ensures that the cumulative effect of the particular environmental topic is appropriately assessed. For example, considerations for the cumulative air quality analysis are different from those used for the cumulative analysis of aesthetics. In assessing air quality impacts, all development within the air basin contributes to regional emissions of criteria pollutants, and these basin-wide projections of emissions are the best tool for determining the cumulative effect. On the other hand, to assess cumulative aesthetics impacts, only characteristics that are visible within the viewsheds that include the project would contribute to a cumulative effect. Accordingly, the cumulative context is described within the cumulative analysis discussion of each topic in this EIR.

Pursuant to CEQA *Guidelines*, the cumulative development in this EIR considers the project and other closely related past, present and reasonably foreseeable probable future projects. (In this EIR, the cumulative development is consistently stated as "past, present, and reasonably foreseeable" projects.) CEQA allows the EIR to base the cumulative analysis on projects identified through a project list or through a projections/plan data approach (CEQA Guidelines Section 15130(b)). This EIR applies both approaches, as described below; **Table 4-1** below is a list of cumulative projects, as well as plans and/or programs that include growth projections for present and foreseeable projects, considered in the analysis in this Draft EIR.

The cumulative analysis for population, employment, housing, water demand, wastewater generation, solid waste generation, and energy usage (i.e., topics influenced by physical construction activity, direct population and or user demand) were based on evaluating the project and the cumulative development in the context of the Marin Countywide Plan (and Draft Housing Element Update incorporated therein), Marin County PropDev 46, various master plans prepared by service providers, and input from Marin County staff.<sup>2</sup>

The cumulative analysis for traffic and the related air quality, GHG/climate change, and noise were based on existing counts (reflecting past and present projects) and growth reflected in the Transportation Authority of Marin (TAM) travel demand model projections, which reflects traffic from projects countywide and that were applied to develop 2018 and 2035 traffic growth projections for project study roadways (as described in Section 4.N, *Transportation and Circulation*, and in Appendix B to this Draft EIR). Specific named projects are primarily planned transportation improvements to regional roadways and are listed in Section 4.M, *Transportation*

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<sup>2</sup> "Marin County PropDev 46" is a semi-annual inventory of proposed development projects in Marin County as of January 1, 2010. Included are projects that include at least five residential units or 5,000 square feet of commercial, industrial, or institutional space.

and Circulation), and nearby past, present and reasonably foreseeable projects identified in Marin County PropDev 46, and by County staff. Past and present cumulative projects are primarily reflected in the existing or near-term conditions reported for certain environmental topics.

**TABLE 4-1  
CUMULATIVE PROJECTS AND PROJECTIONS DOCUMENTS**

- Marin County PropDev 46 - All nearby past, present and reasonably foreseeable projects identified in the project area<sup>a</sup>
  - Drake's Cove Residential, Larkspur (Under Construction)
  - Drakes Way Residential, Larkspur (Construction Completed)
  - Sanitary District Property, Larkspur, Mixed Use (Under Construction)
  - The Rose Garden, Residential, Larkspur, (Approved)
  - 790 Sir Francis Drake Commercial, San Anselmo (Under Construction)
  - Joseph Maquire Residential, San Anselmo (Under Construction)
  - Branson School Student Center, Commercial, Ross (Approved)
  - Toussin Senior Housing Residential, Unincorporated Kentfield (Approved)
  - Karuna Master Plan Residential, Unincorporated San Anselmo (Under Review)
- Bay Club Expansion, 235 Bon Air Road, Kentfield (Under Review)
- Transportation Authority of Marin (TAM) travel demand model projections, which reflects traffic from all approved, pending, and potential projects countywide<sup>b</sup>
- PASS Signal Timing Project for the Sir Francis Drake Boulevard corridor between U.S. 101 and College Avenue
- The City of Larkspur has indicated that the vehicle and pedestrian bridge on Bon Air Road between Magnolia Avenue and South Eliseo Drive will be demolished and re-constructed as part of an overall seismic upgrade project.
- U.S. 101 Gap Closure Project—complete HOV lanes for all segments of northbound and southbound U.S.—101 from N. San Pedro Road to Corte Madera;
- U.S. 101 Marin City Interchange—rebuild the Marin City Interchange bridge structure to comply with current Caltrans standards;
- Tiburon Interchange Improvements—Three lanes for both eastbound and westbound directions;
- U.S. 101/I-580 interchange improvements—widen southbound to eastbound and westbound to northbound connections from one to two lanes;
- I-580 to Shoreline Parkway/Anderson Drive connection—crossing under Bernardi Bump;
- Capacity improvements for Bel Marin Keys Boulevard and Atherton Avenue;
- U.S. 101 SB auxiliary lane—between Miller Creek and N. San Pedro Road;
- South Novato Road improvement—four lanes from Center Road to U.S. 101;
- McInnis Parkway extension—from current terminus to Miller Creek.
- Various circulation improvement studies for the U.S. 101 Greenbrae / Twin Cities Corridor, including multi-modal (TAM, 2010).

<sup>a</sup> Specifically includes nearby areas of Greenbrae, Larkspur, Kentfield Corte Madera, Ross, and San Anselmo Fairfax, San Quentin, Sleepy Hollow, and Greenbrae Boardwalk.

<sup>b</sup> Includes all approved (including those under construction), pending, and potential projects (the latter being those not formally applied for, but which have a reasonable probability of being constructed) in the overall study area

SOURCE: Marin County, 2010; Transportation Authority of Marin (TAM), 2009a; TAM, 2012

## 4.A Aesthetics

This section describes existing conditions visible in the vicinity of the project site and documents visibility of the project site from various key public viewing locations such as roadways and public open space areas. Applicable regulations and policies that pertain to scenic vistas, scenic resources, and the visual character of the area are briefly addressed. This section also discusses the visible changes that would occur at the project site from the proposed new construction and identifies potential impacts and appropriate mitigation measures when necessary. Visual simulations are presented to provide “before” and “after” views of the project from key public viewing locations.

### Setting

#### Regional Setting

The project site is set within the larger context of central Marin County, a suburban area dominated by low- to medium-density residential development, shopping centers, and smaller commercial districts that include retail and/or office development. Parks and open space areas exist throughout the area, with the largest being regional Mt. Tamalpais State Park about 3.8 miles southwest of the project site, and Hal Brown Park at Creekside, a local park of 26 acres immediately west of the project site. The terrain is variable with large expanses of level topography interspersed with many low-lying hillsides. Views from roadways that may be limited by hillsides in one area, open up to long-distance vistas when the terrain becomes more level. Mt. Tamalpais is the dominant visual feature from many locations in this portion of Marin County.

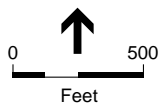
#### Local Setting

##### *Visual Character Overview*

Marin General Hospital is located within a level area that is surrounded by vegetated hillsides on three sides. Portions of the four- to five-story hospital “step up” the hill on the eastern portion of the project site, with some of the surface parking areas located on terraces of the site. Steeply vegetated hillsides on the northeast, east, and southeastern edges of the project site screen most of the existing on-site buildings from the view from the east, where residences (primarily apartments and condominiums) are located in the Spyglass Hill neighborhood of the Greenbrae community.

**Figure 4.A-1** provides a context map of the project site and surrounding uses described below, and **Figures 4.A-2 through 4.A-4** show existing photographs of the project site from key public viewpoints.

Bon Air Road, a two-lane heavily travelled arterial that joins Sir Francis Drake Boulevard with Magnolia Avenue, abuts the western boundary of the project site. This road includes a landscaped median in the vicinity of the hospital planted with pines, redwoods, and other mature trees. These trees effectively screen views of the existing hospital parking area and structures for southbound motorists on Bon Air Road. Trees on the project site also screen some of the on-site development from view.



SOURCE: ESA

Marin General Hospital . 210606

**Figure 4.A-1**  
Viewpoint Map



Viewpoint A: View of Project Site from Bon Air Road – Looking South



Viewpoint B: View of Project Site from Bon Air Bridge – Looking Northeast



Viewpoint C: View of Southern Area of Project Site from Corte Madera Creek South Pathway – Looking Northeast



Viewpoint D: View of Northern Area of Project Site from Corte Madera Creek South Pathway – Looking Northeast

4.A-3

SOURCE: Visual Impact Analysis, 2010-2010

Marin General Hospital . 210606

**Figure 4.A-2**  
Views of Existing Project Site



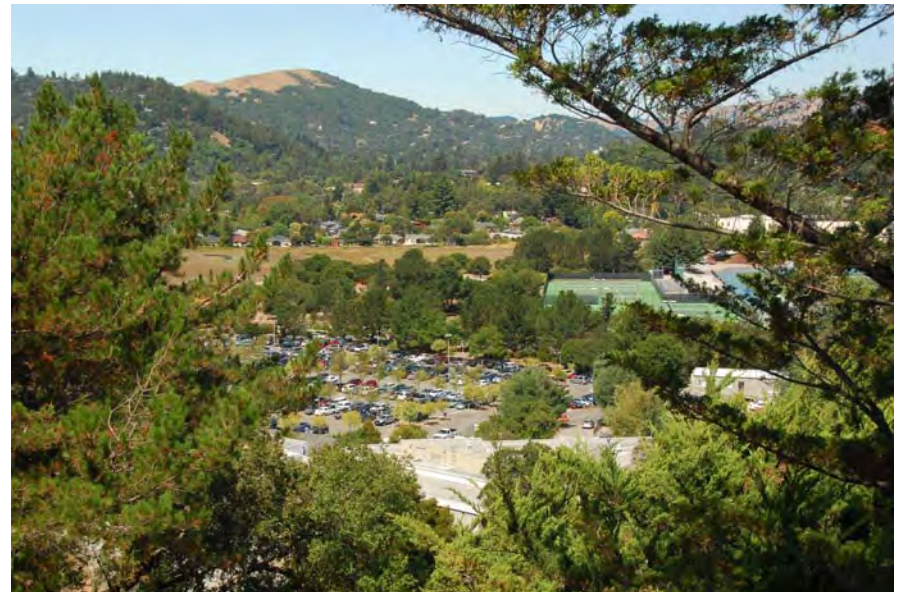
Viewpoint E: View of Project Site from West End of Corte Madera Creek South Pathway – Looking East



Viewpoint F: View of Project Site from Creekside Marsh – Looking Southeast



Viewpoint G: View of Project Site from Sir Francis Drake Boulevard – Looking South



Viewpoint H: View of Project Site from Spyglass Hill Area – Looking West

4.A-4

SOURCE: Visual Impact Analysis, 2010-2010

Marin General Hospital . 210606  
**Figure 4.A-3**  
 Views of Existing Project Site



Viewpoint I: View of project site from Vista Grande – Looking South



Immediately adjacent to and east of Bon Air Road is the Creekside Marsh and Corte Madera Creek, an open area accessed by two paved pathways located on both sides of the creek and used during daylight hours by bicyclists and pedestrians. No lighting occurs on the paths. The southern path extends from Magnolia Avenue in Larkspur across the Bon Air Bridge to the College of Marin soccer fields farther west of Corte Madera Creek. The northern path extends from the Bon Air Bridge to the main College of Marin campus in Kentfield and continues through the College's campus, terminating at the Post Office in the Town of Ross, northwest of the project site. This is a designated bicycle route in Marin County.

The wide natural segment of Corte Madera Creek, about 200 feet across on average, flows along the southwest edge of the Creekside Marsh and Bon Air Road, just west of the project site. The creek is used by kayakers and other non-motorized boat users. This open channel flows year-round with fluctuations in elevation due to tidal influence. Vegetation along the Creek is low lying, providing expansive views across the Creek toward Mt. Tamalpais and Mt. Baldy to the west, and toward Marin General Hospital and surrounding developed hillsides to the east. Foreground views along the Creek take in single-family homes adjacent to the pathways that edge the Creek, with fencing and trees partially screening the residences.

A major portion of the northern and eastern edge of Corte Madera Creek in the vicinity of Marin General Hospital includes the Creekside Marsh which is tidally influenced. Water passes between the Marsh and the Creek via pipes placed under the asphalt-paved, northern pathway that abuts the Creek. Trees line the edge of the marsh area adjacent to the pathway on the Creek's northern edge.

Hal Brown Park at Creekside is located at the northeastern corner of the Creekside Marsh, immediately south of the Marin Catholic High School campus. This park was renovated in early 2011 and includes the following elements: a playground and turf areas; picnic and bathroom facilities; a landscaped area planted with plants having healing and medicinal attributes; a redesigned amphitheater for outdoor classes and theatrical performances; and an overlook for Corte Madera Creek, Creekside Marsh, and Mt. Tamalpais. Parking for the park is available along Bon Air Road as part of the overall street parking.

Other nearby land uses within view corridors that include the project site include a cluster of medical office buildings to the south of the hospital site along South Eliseo Boulevard, residences above the site in the Spyglass Hill neighborhood, residences to the southwest of the site in the City of Larkspur, and residences west of the site and Creekside Marsh that are in the community of Kentfield. Additional medical offices are located north of the project site, and hillside single-family residences of the Greenbrae community are located north of Sir Francis Drake Boulevard.

The Bay Club is located west of the site, just north of Hal Brown Park at Creekside. This club includes tennis courts, clubhouse, parking, and swimming pools. St. Sebastian's Catholic Church is located just north of the Bay Club. Sir Francis Drake Boulevard, a four-lane arterial, is located about 860 feet north of the project site. This road provides access between I-580 to the east and Highway 1 in western Marin County.

### ***Views of and Across the Project Site from Surrounding Areas***

Views of the project site are primarily available from Bon Air Road (see Figure 4.A-2 [Viewpoints A and B]), and from the Corte Madera Creek pathways located west of the project site (see Figure 4.A-2 [Viewpoints C and D] and Figure 4.A-3 [Viewpoint E]). As seen in Figure 4.A-2 [Viewpoint A], the view of the project site and the existing hospital is largely screened by intervening trees. The on-site parking lot is in the foreground of this view.

From the Bon Air Road Bridge that crosses Corte Madera Creek, views to the north include the tallest points of the hospital in the mid-ground, with tree-covered higher hills forming the backdrop to this view (see Figure 4.A-2 [Viewpoint B]). From this location, the north parking lot at the hospital and existing palm trees can be seen, but the overall view is dominated by multiple mature eucalyptus trees south of the hospital and the foreground area of the Creekside Marsh and pathway. Corte Madera Creek is also visible in the foreground of this view. Mature trees along Bon Air Road screen the lower floors of the hospital from this bridge location.

When viewing the project site from the south pathway along Corte Madera Creek, views east include the central tower of the more recent wing of the hospital and the upper floors of the older part of the hospital (see Figure 4.A-2 [Viewpoints C and D] and Figure 4.A-3 [Viewpoint E]). The foreground of this view is dominated by Corte Madera Creek, while the hospital and the residential units above form the background. The midground is dominated by a number of mature trees on the hospital grounds. Farther west along this same south pathway, views across Corte Madera Creek in the foreground are uninterrupted, with the upper levels of the more recent wing of the hospital, and the combined horizontal and vertical elements of the architectural design forming the midground (see Figure 4.A-2 [Viewpoint D]). The hospital forms a strong visual contrast to the thickly vegetated hillsides on the left side of the image. These trees screen hillside residences of the Greenbrae community from view. Parked cars along Bon Air Road and the northern path along Corte Madera Creek can be seen in the midground of this view corridor.

Farther west along the south pathway and looking eastward, the hospital forms a strong architectural element in the background, with the higher elevation residential buildings of Spyglass Hill visible above the hospital buildings (see Figure 4.A-3 [Viewpoints E and F]). From this location, Corte Madera Creek takes on the most dominant element of the view and the hospital, nearby residences, sky views and the tree-covered hillsides form the backdrop. The hospital structure does not visually break the ridgeline due to the hospital's lower elevation. However, the ridgeline is visually interrupted above and to the right by uphill residences and the Tamalpais Retirement Community building.

A low-density residential area is located west of Marin General Hospital. From this area, the upper stories and backyards of some residences allow views across Creekside Marsh to the east. Figure 4.A-3 [Viewpoint F] shows the large expanse of level marshland that forms the foreground to the hospital buildings from this residential location. In this image and from this distance, views include the existing hospital buildings set within a tree-covered hillside area. The multi-family units to the east of the site are visible above the hospital at the left side of the photograph.

From Sir Francis Drake Boulevard, about 860 feet north of the project site, views to the south towards the existing hospital include the playing fields of the Marin Catholic High School in the foreground. Figure 4.A-3 [Viewpoint G] shows this view corridor, which would require a vehicle passenger to turn to look about 60 to 90 degrees to the south from the direction of travel. From this viewpoint, the hospital buildings are partially screened from view by intervening tree cover. The hillsides south of the hospital form the backdrop to the existing buildings and prevent the existing buildings from visually breaking the ridgeline views. The level playing fields form a dominant, uncluttered foreground image in this view corridor.

Two residential areas are located at higher elevations in the vicinity of the project site. One is the Spyglass Hill area located to the east of the hospital. The other is the Greenbrae residential area located north of the hospital in the vicinity of Vista Grande, a residential street in the hills north of Sir Francis Drake Boulevard. From Spyglass Hill, views west are through wooded vegetation that frames the view towards the parking lot at the northwest side of the hospital and the tree cover along Bon Air Road (see Figure 4.A-3 [Viewpoint H]). In this view corridor, tree cover forms the predominant image in the foreground, midground, and background of the image. Mt. Baldy, located above the communities of Ross and San Anselmo, forms the background to this image. In the midground, the tennis courts of the nearby Bay Club are also visible.

From Vista Grande, one looks south to a view corridor that takes in tree-covered hillsides in both the foreground and the background (see Figure 4.A-4[Viewpoint I]). The existing hospital forms a strong architectural contrast in the midground to the vegetated hillsides in the background due to its scale and height. The smaller residential buildings in the vicinity are generally screened from view or appear less visually prominent due to nearby trees.

### ***Scenic Vistas and Scenic Resources***

The most significant scenic vistas visible from public viewpoints in the vicinity include the area's scenic resources that include (1) expansive views across the low-lying open space provided along Creekside Marsh and Corte Madera Creek (see Figure 4.A-2 [Viewpoints B through D]); (2) views of distant hillsides and ridgelines to the north, south and east of the project site, as viewed primarily from Creekside Marsh, Corte Madera Creek, and Sir Francis Drake Boulevard west of the project site (see Figures 4.A-3 [Viewpoints E through G]; and (3) intermittent views of Creekside Marsh and Corte Madera Creek, from viewpoints west and above the project site (from roadways at Spyglass Hill and that are limited by dense vegetation) (see Figure 4.A-3 [Viewpoint I]).

### ***Light and Glare***

The existing hospital is lit during nighttime hours and both the exterior and interior lighting can be seen from nearby residential areas and from nearby roadways. The nearby park areas and pathways are not lit and thus have very little use during nighttime hours. From Sir Francis Drake Boulevard, the eastbound motorist can clearly see the lit features of the hospital as one approaches Bon Air Road. However, the lit hospital is not visible by the westbound motorist due to existing topography and existing intervening development between Sir Francis Drake Boulevard and the project site. The view towards the hospital from Sir Francis Drake Boulevard

can be seen in Figure 4.A-3 [Viewpoint G]. At night, the existing tree cover screens portions of this view, thus reducing the amount of light cast. Night lighting of the hospital is also visible from Bon Air Road, with some screening provided by existing tree cover. From residential areas at higher elevations, such as Spyglass Hill (see Figure 4.A-3 [Viewpoint H]) and Vista Grande (see Figure 4.A-4 [Viewpoint I]), the lit features of the hospital are a distinctive contrast to the large expanses of tree-covered hillsides where night lighting is not visible.

## Regulatory Setting

### Federal and State

No federal regulations related to aesthetics would pertain to the project. The California Scenic Highway Program, established in 1963, identifies and designates certain highways along which adjoining land uses and features require special conservation treatment. The responsibility for the management of a program is left to local cities and counties. Highways shown as “eligible” for listing are believed to have outstanding scenic values. Once a highway is shown in “Streets and Highways Code Section 263”, it may be nominated for official designation by the local governing body with jurisdiction over the lands adjacent to the proposed scenic highway. A visual assessment is required and a number of other steps must be followed. No highways in the vicinity of the project site are included in “Streets and Highways Code Section 263” or are designated a scenic highway (Caltrans, 2011).

### Local

#### *Marin Countywide Plan*

The Marin Countywide Plan is the County's long-range guide for use of land and protection of natural resources. The Plan sets forth policies and programs to be used by the public, planning staff, and decision makers when reviewing and analyzing proposed development. The Plan provides specific policy direction for land in unincorporated areas and general guidelines for the cities and towns of Marin. The aesthetic policies applicable to the proposed project relevant to CEQA are as follows:

#### **Built Environment Element**

*Policy DES-1.1: Address Design at the Community Level.* Use community plans to regulate building design and protect key resources. Encourage cities and towns to address design issues.

*Policy DES-3.1: Promote Infill.* Encourage the development of vacant and underutilized parcels consistent with neighborhood character.

*Policy DES-3.2: Promote Green Spaces.* Encourage the creation of high-quality community plazas, squares, greens, commons, community and neighborhood parks, and roof-top gardens.

*Policy DES-4.1: Preserve Visual Quality.* Protect scenic quality and views of the natural environment — including ridgelines and upland greenbelts, hillsides, water, and trees — from adverse impacts related to development.

*Policy DES-5.1: Achieve Streetscape Compatibility.* Ensure that roadways, parking areas, and pedestrian and bike movement are functionally and aesthetically appropriate to the areas they serve.

### **Kentfield/Greenbrae Community Plan**

The Kentfield/Greenbrae Community Plan addresses the unincorporated area which is bordered by the Town of Ross and the cities of San Rafael, Larkspur and Mill Valley (Kentfield/Greenbrae Community Planning Group<sup>1</sup> and Marin County Planning Dept., 1987).

The project site is part of “Subarea H” of the Community Plan. The following are policies of the Kentfield/Greenbrae Community Plan that are relevant to visual resources under CEQA:

*Policy E4.* Hospital, educational, and public facility land uses should be preserved. The land use recommendations contained herein are designed to guide conservation, development, and redevelopment of parcels within the community plan area.

#### **Conservation and Development Standards for Subarea H**

7. Modifications to Marin General Hospital should be permitted within the following guidelines:
  - b. Building mass should be minimized visually by controlling the size and location of new structures to conform with the terrain. Views from the surrounding single-family neighborhoods, Creekside Park, and the Corte Madera Creek bicycle path should be protected.
  - c. The garden on the southwest side of the hospital should be preserved if possible.

### **City of Larkspur General Plan**

The City of Larkspur has designation over lands surrounding Marin General Hospital on three sides, but not the project site itself. The City’s General Plan section entitled “Community Character” identifies the following policies related to visual resources (City of Larkspur, 1990):

*Policy b:* Preserve the desirable features of the built environment as well as the remaining natural environment – trees, marshes, creeks, hillsides – as components of Larkspur’s community character and identity.

*Policy d:* Visually integrate the various sections of the community.

### **Marin County Development Code and Zoning**

The County Development Code is one of the primary tools to carry out the goals, objectives, and policies of the Marin Countywide Plan and applicable community and specific plans, and is intended to maintain consistency with the Marin Countywide Plan policies. The County Development Code designates zoning districts applicable to all unincorporated lands under the jurisdiction of Marin County. The County Development Code Section 22.06.020 Special Purpose Zoning District and Section 22.14.020 Public Facilities (PF) Zoning/Combining District and

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<sup>1</sup> This group is now referred to as the Kentfield Planning Advisory Board (KPAB).

22.14.040 PF Development Standards are applicable to the project site. The PF zoning standards, which designates a height limitation (primary building maximum of 35 feet and accessory structure maximum of 15 feet), are also subject to Section 22.20.060 E. Institutional Buildings Height limit Exception, allowing structures to a maximum of 75 feet under certain provisions.

## Impacts and Mitigation Measures

### Significance Criteria

Based on Appendix G of the CEQA *Guidelines*, the project would have a significant impact on aesthetics if it would:

- a) Have a substantial adverse effect on a scenic vista;
- b) Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, hillsides, and historic buildings within a state scenic highway;
- c) Substantially degrade the existing visual character of the project site or quality of the site and its surroundings; or
- d) Create a new source of substantial light and glare which would adversely affect day or nighttime views in the area.

Based on Appendix N of the Marin County Environmental Impact Review Guidelines, the project may also have a significant impact on aesthetics if it would:

- conflict with the County goals and policies related to visual quality, or other applicable aesthetic or visual policies or standards;
- significantly alter the existing natural viewsheds, including changes in natural terrain or vegetation (consistent with CEQA Appendix G Criterion b);
- significantly change the existing visual quality of the region or eliminate significant visual resources (consistent with CEQA Appendix G Criterion c);
- significantly increase light and glare in the Project vicinity (consistent with CEQA Appendix G Criterion d); or
- significantly reduce sunlight or introduce shadows in areas used extensively by the public.

### Approach to Analysis

Aesthetics analysis relies on a subjective evaluation by the analyst. Therefore, tools are used here to illustrate how the project may likely appear after it is constructed within the context of the visual setting of the project site and surroundings. A series of photographic visual simulations support the impact analysis that follows.

To evaluate the change in views from public vantage points at project build-out, computer-generated visual simulations illustrating “before” and “after” visual conditions from nine representative public vantage points are included as part of this analysis. The locations of the visual

simulation vantage points were selected in consultation with visual resources professionals and members of the Kentfield Planning Advisory Board, and were chosen to represent viewpoints that are both accessible to the public and that best illustrate the most noticeable effects of the project on important views and scenic elements. The viewpoint locations are shown in Figure 4.A-1.

The visual simulations (**Figures 4.A-5 through 4.A-13**) were prepared based on digital models of the proposed buildings, site improvements and topography, as well as landscaping plans (as depicted in Chapter 3, Project Description, in Figure 3-5, Proposed Site Plan; Figure 3-9, Hillside Parking Structure – Levels and Section; Figure 3-10, Bon Air Road Parking Structure – Levels and Section; Figures 3-12a and 3-12b, Hospital Replacement Building Elevations; and Figure 3-14, Landscape Concept Plan. Each simulation is compared to existing conditions as seen from key public viewpoints (shown in Figure 4.A-1) and provide “before” and “after” views. The viewpoints were selected because these represent locations that the general public could access and that would be representative of views that could be experienced by a large number of people. Some viewpoints, such as those from Spyglass Hill and Vista Grande, were selected because they would be representative of multiple private home views from these higher elevations.

For the visual simulations, a three dimensional (3D) digital terrain model (DTM) was developed of the site, project terrain and proposed project. Digital models of the project and 3D topographic contours were inserted into the DTM database. The terrain surface was developed from project topographic surveys and from digital topography in the Marin County mapping database. The proposed project models were three dimensional (3D) digital models developed by project architects.

All digital models were reviewed for accuracy and consistency with project documents. While detailed exterior building materials have not been specified, the project finishes shown are representative of the anticipated combination of glass, metal, and concrete elements defined in the digital model developed by the project architects. Overall the visual simulations are based on a preliminary concept design and approximations for building exteriors as well; final selected and approved materials may change from what is depicted in the photomontages, and the simulations of the project are suitable for conveying for CEQA purposes the nature and scale of the effects on visual resources based on the bulk, siting, and elevation dimensions of proposed buildings and their setting within the project site. Final designs would be subject to County Design Review and, with recognition of other constraints (e.g., LEED certification and bird-strike avoidance measures), will assess whether the project is “aesthetically pleasing” as determined by the project’s ability to meet specific Design Review findings pursuant to the Marin County Code.

The DTM provided line-of-sight, visibility and scaling information for the visual simulations when oriented according to the viewpoint position coordinates. The DTM was used to generate scaled overlay plots for each viewpoint that was simulated. This ensures that size and position of the project as expressed in visual simulations are mathematically justified. Next, the project digital models were imported into rendering software and the rendered models represent the proposed new structures.



A. Existing



B. No Landscaping



C. With 10-Year Landscaping





A. Existing



B. No Landscaping



C. With 10-Year Landscaping

SOURCE: Visual Impact Analysis LLC, 2012

**Figure 4.A-6**  
Existing and Proposed Views of Project Site from Bon Air Bridge – Looking Northeast (Viewpoint B)



A. Existing



B. No Landscaping



C. With 10-Year Landscaping



A. Existing



B. No Landscaping



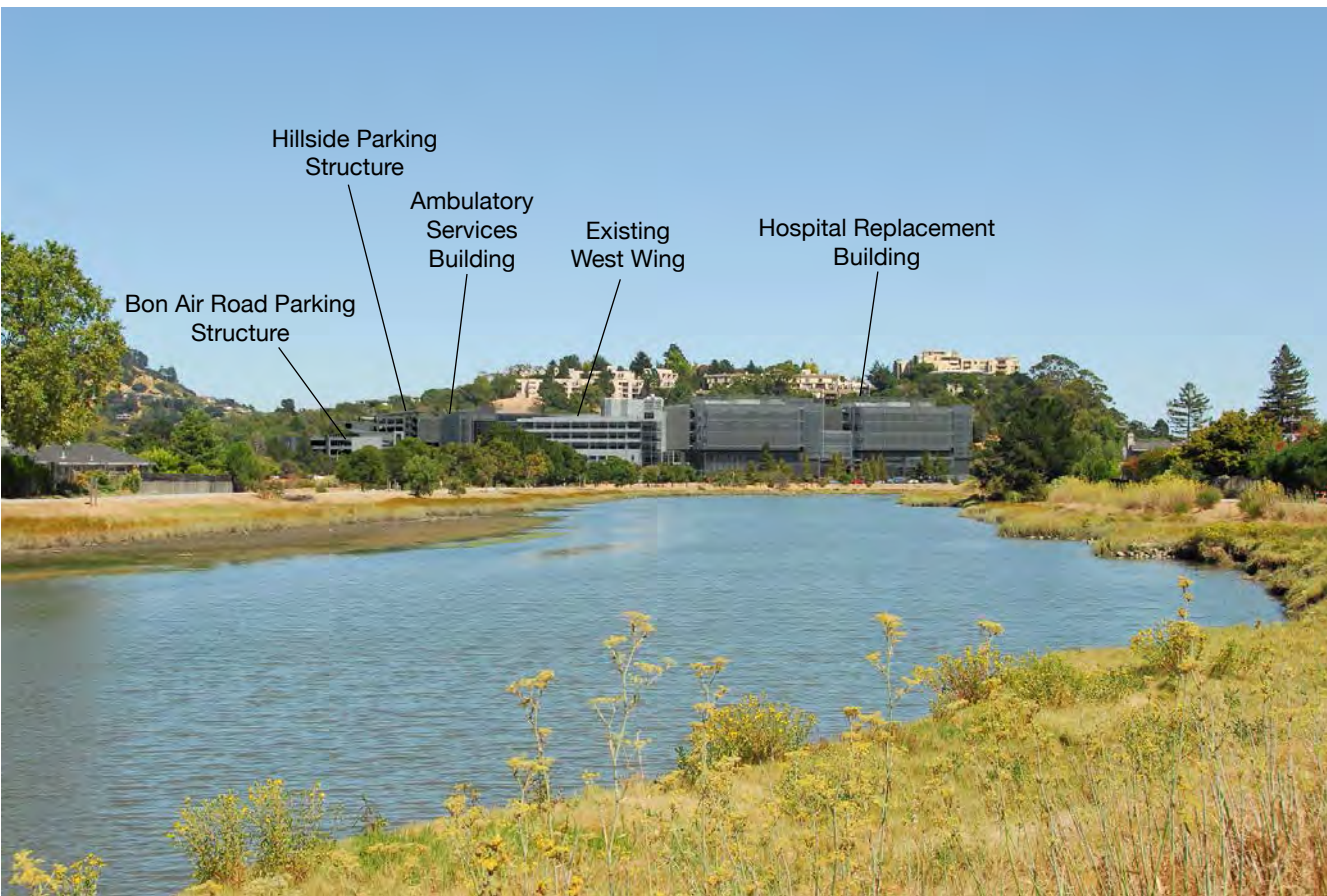
C. With 10-Year Landscaping

SOURCE: Visual Impact Analysis LLC, 2012

**Figure 4.A-8**  
Existing and Proposed Views of Northern Area of Project Site from  
Corte Madera Creek South Pathway – Looking Northeast  
(Viewpoint D)



A. Existing



B. No Landscaping



C. With 10-Year Landscaping



A. Existing



B. No Landscaping



C. With 10-Year Landscaping



A. Existing



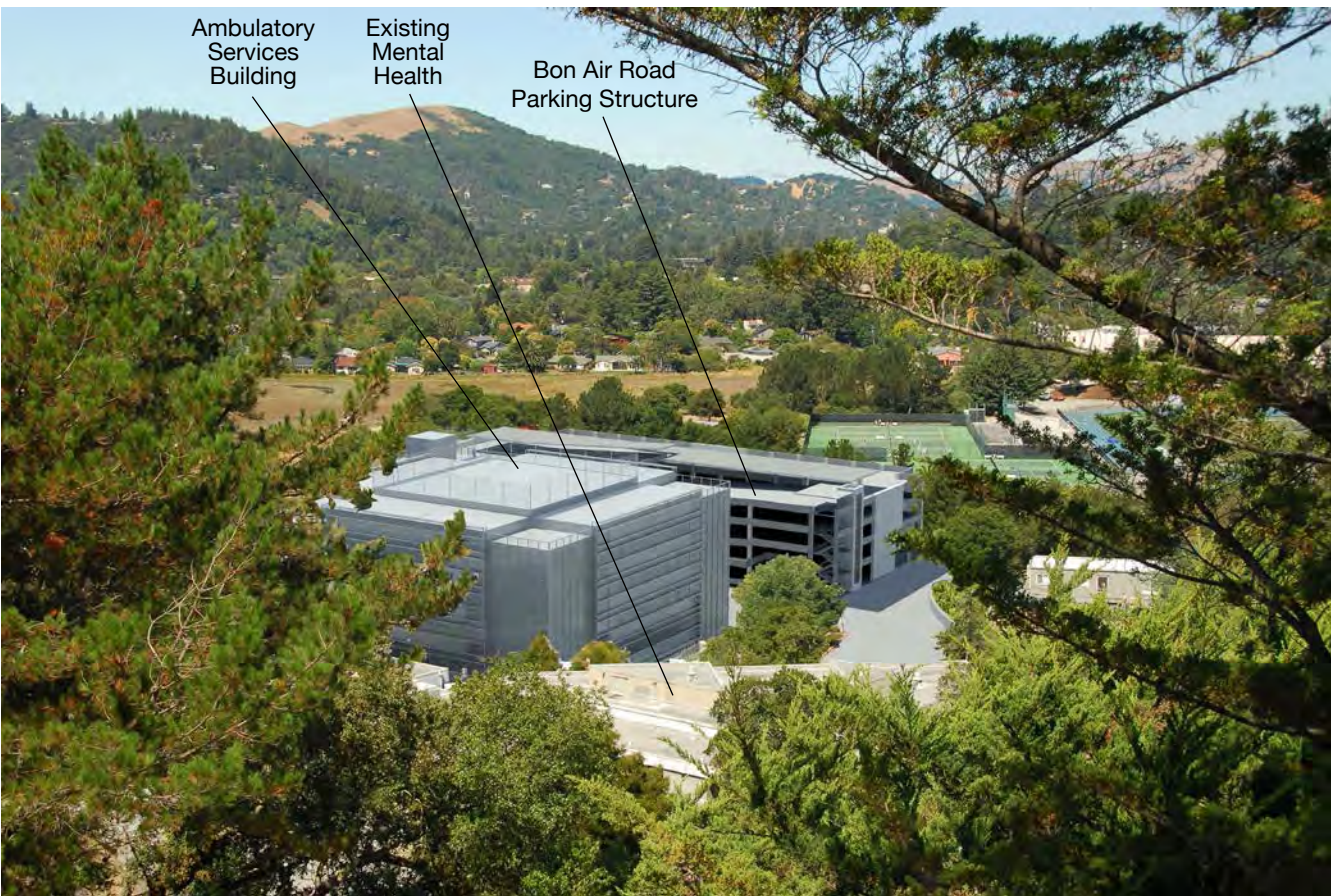
B. No Landscaping



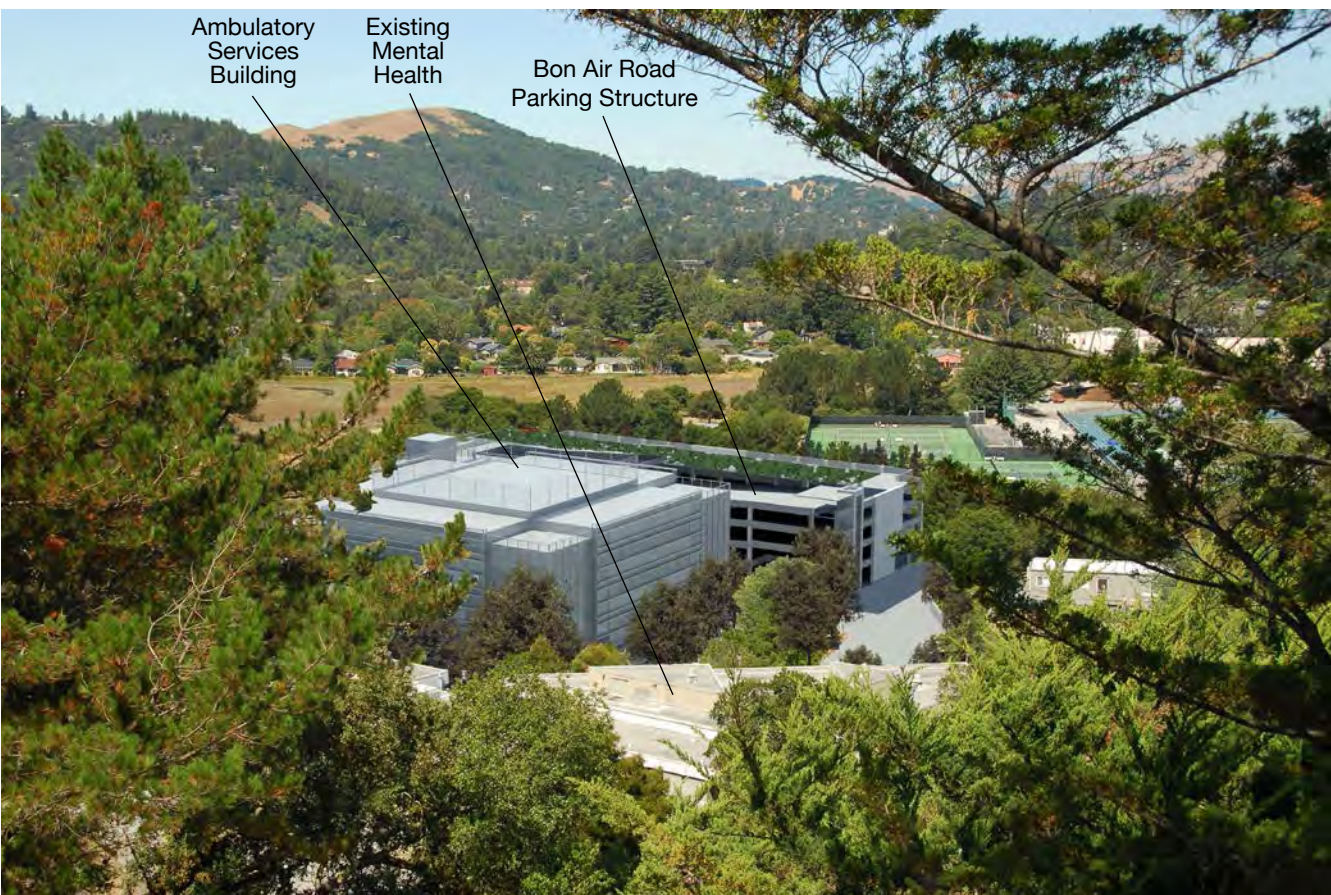
C. With 10-Year Landscaping



A. Existing



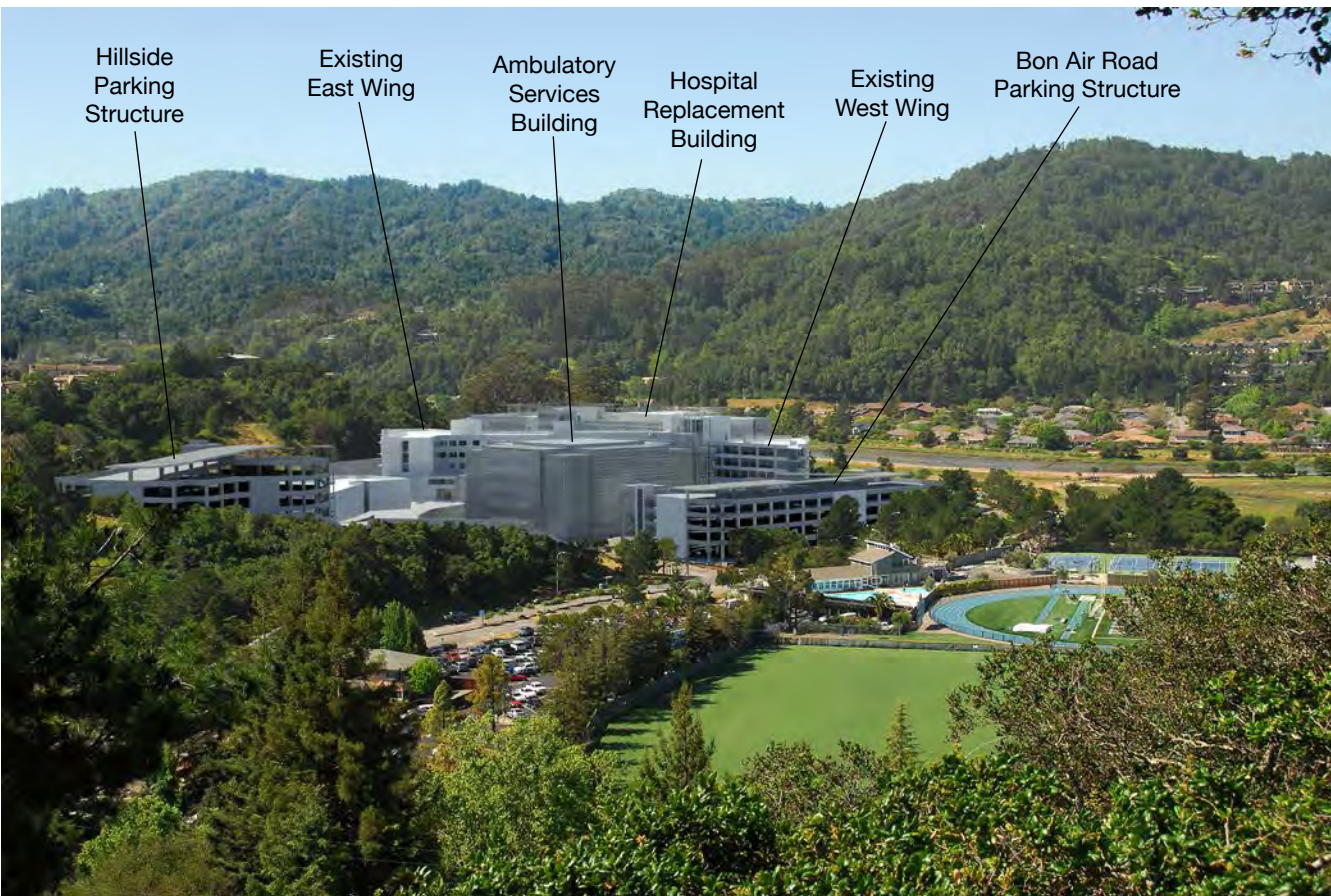
B. No Landscaping



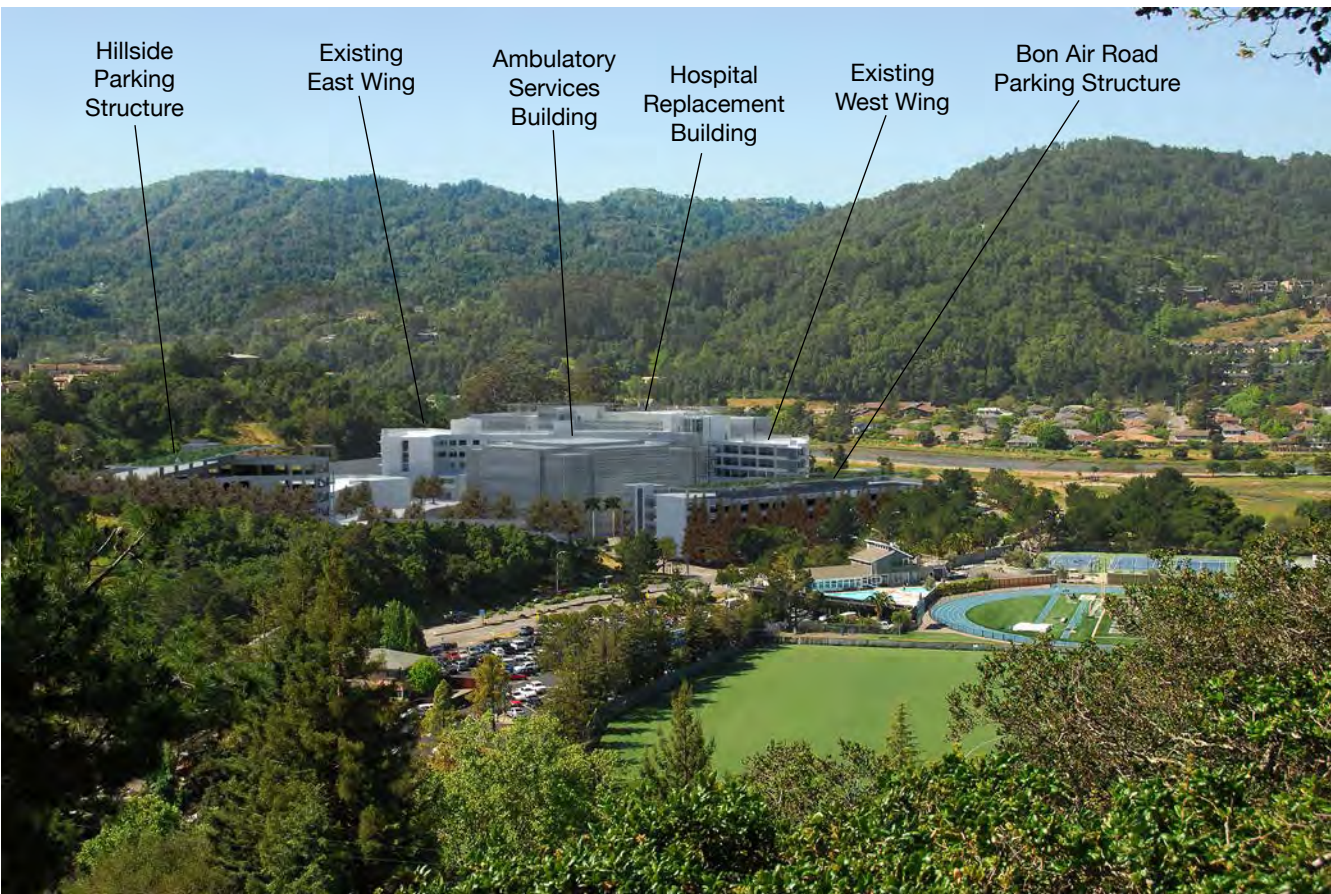
C. With 10-Year Landscaping



A. Existing



B. No Landscaping



C. With 10-Year Landscaping



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For each selected viewpoint, one “before” (existing conditions) photograph, and two “after” photomontages were produced. The “before” viewpoint is unaltered and unmanipulated, and provided for comparison purposes. The first “after” simulation shows the proposed project at “build out” and the second “after” simulation is the proposed project with proposed landscape elements digitized to depict a maturity and size at 10 to 12 years. Position and scale of landscape elements are based on the project landscape plans shown in Figure 3-14, Landscape Concept Plan, in Chapter 3, Project Description.

The approach to this relatively subjective analysis also relies on defining, based on the *Existing Setting* descriptions and local policies, the existing “scenic vista(s)”, “scenic resources” and “visual character” that could be “substantially” and adversely affected or degraded by the project. These are described in the impact analysis.

Lastly, this aesthetics analyses, where relevant, considers the two following potential project elements that would occur only if the Project Sponsor secures funding for them: a trellis with a photovoltaic (PV) system along the central aisles of the top parking levels, and an elevated pedestrian bridge, both as described in Chapter 3, *Project Description*.

## Impacts and Mitigation Measures

### *Scenic Vistas*

#### **Impact AES-1: The Project would have a substantial adverse effect on one scenic vista as seen from the Corte Madera Creek pathway. (Potentially Significant)**

Based on the detailed description of the project site surroundings in the *Local Setting* above, the most significant scenic vistas visible from public viewpoints in the vicinity include the area’s scenic resources that include (1) the expansive views across the low-lying open space provided along Creekside Marsh and Corte Madera Creek (see Figure 4.A-2 [Viewpoints B through D]); (2) views of distant hillsides and ridgelines to the north, south and east of the project site, as viewed primarily from Creekside Marsh and Corte Madera Creek (see Figure 4.A-3 [Viewpoints E and F]); and (3) intermittent views of Creekside Marsh and Corte Madera Creek, from viewpoints west and above the project site (from roadways at Spyglass Hill and that are limited by dense vegetation) (see Figure 4.A-3 [Viewpoint H]). These scenic vistas encompass each of the scenic resources identified specifically in the Marin Countywide Plan and the City of Larkspur General Plan: trees, marshes, water/creeks, hillsides, ridgelines and upland greenbelts and hillsides. The most heavily used public areas in the site vicinity are the pathways along Corte Madera Creek where pedestrians and bicyclists have expansive views in many directions.

The following discusses each of the visual simulations in terms of changes that would occur to any existing scenic vista or scenic resource visible from each viewpoint. Issues related to general visual quality and scenic resources are discussed separately below under other impacts. As seen in Figures 4.A-2 through 4.A-4, the views that include the most scenic vistas include the following<sup>2</sup>:

<sup>2</sup> Scenic vistas are considered those that include the least amount of the “built” environment and that take in natural features such as trees, marshes, water/creeks, hillsides, ridgelines and upland greenbelts and hillsides.

- Views from Bon Air Bridge, looking northeast, as seen in Figure 4.A-2 Viewpoint B, that takes in the Corte Madera Creek and open space in the foreground with mature trees in the midground, and existing hospital buildings in the background;
- Views from Corte Madera Creek south pathway toward the project site, existing onsite landscaping, and the tree covered hills to the north (intermixed with residences) as seen in Figures 4.A-2 Viewpoint C and 4.A-2 Viewpoint D;
- Views across Corte Madera Creek from the south pathway, with the creek in the foreground, as seen in Figure 4.A-3 Viewpoint E;
- View of Creekside Marsh taken from an area south of Marin Catholic high school, looking southeast toward the site (to be representative of backyards of homes in this area), as seen in Figure 4.A-3 Viewpoint F;
- View from Spyglass Hill area above and east of the project site, looking west toward Mt. Baldy with the Creekside Marsh in the midground of the view corridor, as seen in Figure 4.A-3 Viewpoint H; and
- View from Vista Grande to the north of the project site, as seen in Figure 4.A-4 Viewpoint I, which takes in the hospital in the midground of the view corridor as well as the slopes of Mt. Tamalpais and heavily forested hillsides in the background.

### Description of Simulations

**Viewpoint A.** As seen in Figure 4.A-5(A), the representative view from Bon Air Road or the adjacent sidewalk to the west includes images of existing hospital buildings that are partially screened from view by intervening landscaping. The image looking south from Bon Air Road / sidewalk includes a limited area of the existing onsite buildings but does not include a scenic vista. This image is dominated by the road and trees that are immediately adjacent to the road, thus “foreshortening” the view from this location.

This image is representative of views that pedestrians and drivers along Bon Air Road will experience with new buildings and landscaping developed closer to the roadway. As a result of the new development and landscaping close to Bon Air Road, views to passersby would be limited primarily to the close-in views of these elements with no effect to mid- or long-range scenic vistas viewed from relatively distance points and looking toward and/or across the project site, as depicted in most of the following simulations described.

Note that an existing tree located between the sidewalk and Bon Air Road has been removed for purposes of this simulation to allow the most direct view of the project site as possible from the selected viewpoint. Thus, the simulation is representative of the project site views observed “between” existing trees that line Bon Air Road.

**Viewpoint B.** As seen in Figure 4.A-6(B), the new Hospital Replacement Building would dominate the midground of this view corridor prior to the maturity of landscaping as seen in Figure 4.A-6(C). The proposed Bon Air Road Parking Structure would be only slightly visible to the left of and behind the Hospital Replacement Building. The proposed landscaping along Bon Air Road would soften the building image. This landscaping would include a mixture of

deciduous trees such as Chinese pistache and Tulipifera, which at maturity would prevent the project from having a substantial adverse effect on a scenic vista. However, during the winter months, when the trees are without leaves, the screening effect would be more limited. The large mass of existing trees on the right side of this image would remain, leaving the most important scenic elements still visible from this location. No ridgeline views would be significantly altered because these are already screened by existing hospital buildings (see 4.A-6[A]). A small portion of existing sky views would be blocked by the new Hospital Replacement Building but not significantly.

**Viewpoint C.** The most notable effect on a scenic vista is the proposed Hospital Replacement Building as seen in Figure 4.A-7(B). From the Corte Madera Creek pathway, one looks northeast across the Creek, toward the existing hospital campus. From this location, the view corridor takes in the existing hospital buildings on the left side of the image, but many portions of the buildings are screened from view by mature trees located along Bon Air Road and within the hospital campus. With the new Hospital Replacement Building and before proposed landscaping matures (see Figure 4.A-7[B]), the image is dominated by the west façade and the new driveway at the south end of the building. From this location, the west (front) facade of the building forms a strong visual element, broken up by the central building setbacks. The top of one existing mature eucalyptus would be visible at the rear (east) of the center portion of the building, but the existing dominance of tree cover would be removed from this area of the project site.

Existing trees would screen the lower floors of the proposed building (see 4.A-7[B]). Proposed landscaping includes the relocated palm trees and new deciduous trees that would screen the apparent bottom half of the building from this viewpoint to some extent. However, during the winter months, the trees (shown in pink/red flowering season in Figure 4.A-7[C]) would be out of leaf and the screening effect would be less.

**Viewpoint D.** The scenic vista seen looking in a more northerly direction from the Corte Madera Creek south pathway, as seen in Figure 4.A-8, shows the new Bon Air Road Parking Structure in scale with the existing hospital buildings seen from this location. From this location, the existing West Wing forms the strongest built element in the right side of this image. Tree-covered hill views and ridgelines would remain highly visible. From this distance, the proposed Bon Air Road Parking Structure would blend into the overall hospital campus, and with proposed landscaping, future trees would obscure the midground view and views of the lower floors of the West Wing.

**Viewpoint E.** As shown in Figure 4.A-9, the Corte Madera Creek forms a strong visual foreground and midground element in this view from the Corte Madera Creek south pathway. From this location, the sky views balance the water views, separated by the visible ridgeline just east of the project site. From this distance, the proposed Hospital Replacement Building would not interrupt any critical features in the vista, such as the water or the skyline and generally would blend into the built environment currently visible, especially with the ten-year-growth landscaping. New landscaping would partially screen both the existing buildings and the lower elevations of the new Hospital Replacement Building.

**Viewpoint F.** As shown in Figure 4.A-10, the marsh located north of Corte Madera Creek and adjacent to Hal Brown Park forms a dominant visual image. Similar to the images in Figure 4.A-9, the sky views from this location northwest of the hospital are also an important visual element. The existing hospital buildings and ridgeline apartment buildings form the relatively narrow visual divider between the marsh image and the sky area. The new Hospital Replacement Building would not significantly break the sky views but would slightly break the view of existing tree cover to the south of the hospital grounds. The new Bon Air Road Parking Structure would be visible from this location but would not block important elements in this scenic vista.

**Viewpoint G.** Figure 4.A-11 shows the view across the playing field of Marin Catholic High School if a driver were to look 90 degrees (toward the south) while heading east on Sir Francis Drake Boulevard. Thus, this view corridor would be brief for passing motorists. The scenic vista elements of this photograph include the wooded hillsides that form the backdrop to the existing hospital buildings. From this location, the new buildings would be slightly higher than existing buildings but would not break the ridgeline. Very similar amounts of hillsides would remain visible with the project. Proposed landscaping would screen much of the Bon Air Road Parking Structure after ten years.

**Viewpoint H.** As shown from Spyglass Hill in Figure 4.A-12, the existing views take in Mt. Baldy in the background (west of San Anselmo), the Creekside Marsh and Bay Club tennis courts in the midground, and the existing hospital surface parking area in the foreground. This view is framed by existing pine trees. The new Ambulatory Services Building and the proposed Bon Air Road Parking Structure would form a strong visual element in this view corridor, as shown in Figure 4.A-12B. However, the new structures would not block views of Mt. Baldy or wooded hillsides in the distance, or views of the Creekside Marsh. This viewpoint also captures the steep and heavily landscaped topography on the east area of the project site, which allows the proposed Hillside Parking Structure to be largely screened from hilltop viewpoints by the natural terrain.

**Viewpoint I.** A “hilltop” view across the project site is shown in Figure 4.A-13, in the view from Vista Grande looking south across the site. From this location, the scenic vista takes in heavily-wooded hillsides and sky views in the background, Corte Madera Creek and existing hospital buildings in the midground, and the playing fields of Marin Catholic High School in the foreground. The project would construct several new built features visible in the view corridor shown in Figure 4.A-13B, but would not result in a substantial adverse effect on a scenic vista. Views of distant hillsides, sky areas, and tree cover surrounding the hospital site would remain. The new buildings would be clustered in the area of the existing large hospital buildings. Proposed trees would screen large portions of the proposed Bon Air Road Parking Structure from view (Figure 4.A-13C). Additional proposed tree cover north of the proposed Hillside Parking Structure would also help to screen this new building from view.

As previously mentioned, if funding is secured for the optional trellis/PV system on the central aisles on top of the parking structures, and the elevated parking structure, neither would be located at a height that would allow it to substantially and adversely affect an existing scenic view or vista. The potential trellis/PV structure would be an appurtenance of about 10 to 12 feet in height; the

potential elevated pedestrian walkway would be located about 17 to 18 feet above the ground level, well below the height of the proposed buildings (see Figure 3-6 in Chapter 3, Project Description).

### **Conclusion**

In conclusion, considering the affects of the proposed project on the scenic vistas discussed above, Figure 4.A-7(B) shows that the project would have a substantial change to the scenic vista viewed from the Corte Madera Creek pathway toward the project site. Acknowledging the subjective nature of the aesthetic analysis (as previously discussed in the *Approach to Analysis*), this determination is based on the degree of change resulting from constructing the Hospital Replacement Building in an area of the site where existing mature landscaping exists and screens much of the existing campus buildings. This change appears especially prominent given the proximity of the Corte Madera Creek pathway to the project site in this location.

As shown in Figure 4.A-7(C) and discussed above, the proposed landscaping along the west boundary of the project site (with ten years growth), combined with existing landscaping that would also continue to mature, would provide some screening of the lower half of the proposed Hospital Replacement Building from this viewpoint. However, in winter months, the screening would be less given the height and plant types proposed (as shown in Figure 3-14, Landscape Concept Plan, in Chapter 3, Project Description).

The following mitigation measure is recommended to reduce this impact to less than significant.

**Mitigation Measure AES-1:** The applicant shall add taller tree cover west of the Hospital Replacement Building to “break” up the building’s west facing facade, as seen from the Corte Madera Creek pathway looking east. In addition to the proposed relocated palm trees and deciduous trees proposed along the west portion of the project site, three to four tall evergreen conifers, such as redwoods or other tree of similar height and shape (e.g., columnar with a tall trunk without dense low branch cover) shall be added to the proposed landscape plan and installed prior to completion of the Hospital Replacement Building. These additional trees shall be adequately spaced in the area between the building and the west edge of the project site to prevent full blockage of views toward Corte Madera Creek, Creekside Marsh, Hal Brown Park and/or views Mt. Tamalpais from hospital rooms. Prior to Design Review approval of the Hospital Replacement Building, the applicant shall present the final landscape plan to the County for conformance review with this measure.

**Significance after Implementation of Mitigation Measure:** Less than Significant

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### ***Scenic Resources / Natural Viewsheds, Terrain and Vegetation***

**Impact AES-2: The Project would not substantially damage scenic resources or natural viewsheds, but could result in substantial changes to the natural terrain visible from public viewpoints. (Potentially Significant)**

The proposed project would not result in substantial damage to rock outcroppings, hillsides or historic buildings within a state scenic highway. No state scenic highway passes the project site,

and the site is not visible from such a designated highway. A total of 230 trees would be removed from the project site for project construction, and 35 existing trees would be relocated on site (as detailed in Figure 4.C-2, Tree Inventory and Plan, in Section 4.C, *Biological Resources*), including 16 mature palms, to the extent feasible in terms of maintaining the health of the palms. If relocation is not possible, similar species of palm would be incorporated onsite at each building's main entry point. The visual simulation in Figure 4.A-7(B) (and Figure 3-14, Landscape Concept Plan, in Chapter 3, Project Description) shows that about 12 palms would be planted along the west façade of the Hospital Replacement Building.

A total of 150 existing trees would be retained in-place and approximately 264 new trees introduced to the site. Figure 3-14, Landscape Concept Plan, shows that proposed trees would include a mixture of evergreen conifers, deciduous shade trees, and oaks, with heights at maturity varying from about 30 feet to 90 feet. Due to the site's location in a type of topographic "bowl", the trees to be removed would not result in significant visual impacts to ridgelines (where removal of tree cover can be prominent). During construction and in the early years of the project, the removal of trees would be noticeable, but the proposed new tree cover would mitigate for the loss of existing trees. No significant areas of natural tree cover such as large oak or redwood groves would be removed.

The project site is already developed, therefore no significant impacts to a natural viewshed would occur. Project impacts related to scenic vistas are addressed above under Impact AES-1. As described in Chapter 3, Project Description, some changes in topography would occur for the proposed project. The most significant areas of grading would occur in the location of the Hillside Parking Structure and along the south access road, however, in all parts of the site, grading would be done to match existing elevations as much as possible. Retaining walls along the south access road would be up to 10 feet in height, and multiple retaining walls for terracing the site near the Hillside Parking Structure would be three to 25 feet in height. Other retaining walls throughout the site would be less notable, ranging from one to four feet in height.

The proposed northern retaining walls in the area of the Hillside Parking Structure would be largely hidden from view by the proposed Hillside Parking Structure itself, nor cause substantially adverse changes in the natural topography visible from public viewing locations. However, the proposed 10-foot retaining wall along the south access road, where the current terrain slopes up "naturally" from the existing roadway, would be visible from public views from the west, as shown in Figure 4.A-7 (right side of images [A] and [B]). The retaining walls may be finished as shotcrete with boulder finish, subject to Design Review.<sup>3</sup> Given the substantial degree of visible change in the natural topography that would occur, the impact is considered significant.

The following mitigation measure is recommended to reduce this impact to less than significant.

**Mitigation Measure AES-2:** The most visible area of retaining walls along the south access road shall be altered by "stepping" the retaining walls on the hillside for the area that is within 250 feet of Bon Air Road. This shall only apply when retaining walls exceed

<sup>3</sup> Shotcrete is an all-inclusive term to describe the spraying of concrete or mortar through either a dry- or wet-mix process.

five feet in height. The “steps” of the retaining walls shall be at least two feet in depth to allow planting areas, and the retaining wall heights shall be no greater than five feet. Evergreen plantings shall be added in the stepped portions of the walls to create a partially vegetated and more naturalized slope, more consistent with the existing vegetated area visible south of the proposed retaining wall, compared to 90-degree-vertical retaining walls with no vegetation. Prior to Design Review approval of the Hospital Replacement Building, the applicant shall present the final south access road retaining walls and planting plans to the County for conformance review with this measure.

**Significance after Implementation of Mitigation Measure:** Less than Significant

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### ***Visual Character and Visual Quality of the Project Site and Surroundings***

**Impact AES-3: The Project would not substantially degrade the existing visual character of the project site or its surroundings, would not change the visual quality of the region, or eliminate significant visual resources. (Less than Significant)**

The project would add a relatively large area of new structures within the existing hospital campus. The new buildings would be compatible in height and bulk to existing buildings, as well as the range of existing colors and exterior materials. With the proposed landscaping along Bon Air Road, the lower portions of buildings would be largely screened from view. Impacts to scenic vistas are addressed under Impact AES-1. The overall site is largely “visually contained” by the existing topography that includes tall, steep hillsides on three sides of the site. This topography allows some of the new buildings such as the Hillside Parking Structure to be largely screened from view by the natural terrain.

The most visible new structures that would be seen from Bon Air Road and offsite locations would be the Bon Air Road Parking Structure and the Hospital Replacement Building. These structures would be located close to the road but would be partially screened by new trees. The proposed building heights would be in keeping with existing hospital structures close to Bon Air Road. While the new buildings would appear taller by the being developed closer to the roadway than existing buildings, their visibility to passersby would be limited due to the new trees (see Figure 3-14, Landscape Concept Plan, in Chapter 3, Project Description). Due to the large width of Bon Air Road, the existing landscaped median strip to be maintained, and the existing protected open space on the west side of the road, the new buildings would not create a “canyon” like visual effect for motorists and pedestrians using the road.

Due to the clustering of new buildings adjacent to existing buildings, no regional visual quality impacts would occur. No significant visual resources such as natural tree groves, view corridors, or large landscaped public open spaces would be eliminated. The Lawrence Halprin healing garden would be removed from its current location. However, a new “sunken garden” would be constructed north of the existing West Wing of the hospital. The trees within the Halprin Garden that would be removed would include palms, redwoods, deciduous ornamentals, and oaks. As previously discussed, approximately 12 palms are proposed to be relocated to the western edge of



the site, and new trees would be planted throughout the project site to replace the removed trees (see Figure 3-14, Landscape Concept Plan, in Chapter 3, Project Description; and see Figure 4.C-2, Tree Inventory and Plan, in Section 4.C, *Biological Resources*).

While detailed exterior building materials have not been specified, the new structures are proposed to be finished primarily with glass, metal, and concrete elements, as described above in *Approach to Analysis*. Further, each new building would be varied in appearance, yet complementary to all other existing and proposed buildings on the campus. As also discussed in the *Approach to Analysis*, the potential elevated pedestrian bridge and the trellises with a PV system may be incorporated along the central aisles of the top parking levels, both pending the applicant's ability to secure funding sources for these components. If funding is secured for these elements, they would be subject to Design Review and any building permit review and issuance to ensure appropriate design and location. Further, the trellis/PV system would be a parking structure appurtenance that would not adversely affect the visual character of the project site or its surroundings, nor would the location or size/orientation of the potential elevated pedestrian bridge (as shown in Figure 3-6 in Chapter 3, Project Description) create a substantial change in the character of the project site or its surroundings. The changes would not be material. (See Impact AES-4 for discussion of potential glare effects from PV systems.)

Similarly, the Hospital Replacement Building could have a roof-mounted dish device or wireless antennae for data connections, if necessary. These would be for fire/life safety systems, cell phone (to enhance coverage in the building), and ambulance radio. These types of antennae are no more than 10 feet tall with most typically in the four- to six-foot range. None of the new antennae would be taller than the existing antennae on the West Wing of the existing hospital. It is unknown at this time how many would relocate to the new building and how many would remain where they are currently located. As with the potential trellis/PV system discussed above, the changes resulting with these elements on the new Hospital Replacement Building would not be material and would be subject to Design Review and possibly other building permit review to ensure appropriate design and location

Overall, the nature of the project would not degrade the existing visual character of the project site or its surroundings, change the visual quality of the region, or eliminate significant visual resources. The impact is less than significant.

**Mitigation:** None required

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### ***Light and Glare***

**Impact AES-4: The Project would not create a significant increase in light and glare that would adversely affect nighttime views in the area. (Less than Significant)**

As a 24-hour facility, lighting currently occurs at the hospital during the entire night, including existing surface parking lot lighting. The new buildings, especially the new parking structures,

could increase light generated from the project site during nighttime hours. The Bon Air Road Parking Structure would be located where one of the lighted surface parking lots currently exists. The Hillside Parking Structure would be located where the existing Marin Community Clinic exists, which is not a substantial source of nighttime lighting.

Those most potentially affected by the increase in light from the new parking structures would be the uphill residents to the north of the site and the residents on Spyglass Hill. From these locations, the open areas along the facades of the project structures, would be visible.

While lighting fixtures inside the parking structures would be ceiling mounted and would not cast direct glare, the overall lit environment would be seen. The project would limit visibility of rooftop lighting on the parking structures by restricting access to the parking level during nighttime hours, which the project is also implementing to reduce energy usage. Rooftop parking lighting would however be provided for safety and to meet code requirements; it would be pole-mounted lighting that is shielded and cast downwards. After the proposed landscaping matures, the garage side openings would be partially screened from view which would reduce overall lighting visibility (see Figures 4.A-12 and 4.A-13).

Lighting associated with the Ambulatory Services Building would also be visible to uphill residents to the north and east, but would be similar to lighting currently visible from the existing campus. The lighting of the Hospital Replacement Building would be most visible to the distant residents located west and south of the new building, but as previously discussed, the lower portions of this building would be substantially screened after the landscaping matures.

Overall, substantial glare from exterior building materials and windows of new buildings on the campus is not expected to occur. Building materials would not include reflective glazing or other materials that could create significant glare. The potential PV system that may be incorporated on the top level of the parking structures, pending funding, would have panels with standard low-glare glass with anti-reflective coatings – much like standard commercial building windows. The potential panels would be sited and angled to minimize potential glare to nearby residences. As shown in Figure 3-16, Site Lighting Plan, in Chapter 3, Project Description, other lighting proposed for the project includes lighting of small surface parking areas and pedestrian paths of varying heights. Some lighting would be exterior, building mounted lighting. Pole lights (12 to 14 feet in height) are proposed along the north access road, interior outdoor areas, and the west side of the Hospital Replacement Building and West Wing. All new exterior lighting would be shielded and cast downwards to minimize glare and excess light pollution. In conclusion, the project would not create a significant increase in light and glare which could adversely affect nighttime views in the area or cause potential “spillage” of lighting that may affect nearby residents. The impact is less than significant.

**Mitigation:** None required

### ***Sunlight and Shadows***

#### **Impact AES-5: The Project would not significantly reduce sunlight or introduce shadows in areas used extensively by the public. (Less than Significant)**

The project would add new structures on the project site that would create shadows, especially during the winter months when the sun is lowest in the sky and shadows are cast to the north, northeast, and northwest. However, no shadows would be cast for extended durations of time in areas used extensively by the public.

The existing shadow-sensitive public areas in proximity to the project site are Hal Brown Park at Creekside, the paths along Corte Madera Creek, and the tennis courts to the northwest – all across Bon Air Road. An assessment of the duration that the proposed project buildings could cast shadow westward toward these resources was conducted by calculating the length of new shadows based on maximum building heights (as shown in building and site plans in Chapter 3, Project Description), ground elevation, and sun angles (both compass bearing and altitude) at a given time on a given day of the year: December 21st, the winter solstice, the day of the longest shadows. Shadow cast by existing buildings was not considered.

The assessment indicates that shadow cast by the proposed Hospital Replacement Building and the Bon Air Road Parking Structure could cast shadow during early morning winter hours onto the Hal Brown Park at Creekside and the easternmost portion of the tennis courts, but in both cases, shadows would shift eastward from these resources by mid morning, casting shadow to the north and easterly portions of the project site. There are no shadow-sensitive public areas to the north and east of the project site that could be affected by new buildings; the residents to the east are located on the ridge approximately 85 feet above the highest part of the proposed development onsite. The proposed project buildings would all cast shadow on internal areas of the project site and toward eastern hillside. Although CEQA considers the potential environmental effects of the proposed project in the existing conditions (not proposed project elements), the new proposed healing garden (sunken garden) that the public may use would be located north of the existing West Wing and purposely sited to have minimal shadows cast by existing or proposed buildings (see Figure 3-14, Landscape Concept Plan, in Chapter 3, Project Description).

In summary, the proposed project would not significantly reduce sunlight or introduce shadows in areas used extensively by the public. Thus, potential impacts related to sunlight and shadows would be less than significant.

**Mitigation:** None required

## **County Goals and Policies**

### **Impact AES-6: The Project would not conflict with the County goals and policies related to visual quality, or other applicable aesthetic or visual policies or standards. (Less than Significant)**

The project would not conflict with policies of the Marin Countywide Plan related to the following issues: promoting infill; promoting green spaces; and achieving streetscape compatibility. The project would be an infill project with all new development clustered in the vicinity of existing hospital buildings. The project would include extensive new tree cover along Bon Air Road and within the hospital grounds. In terms of the County's policy about preserving visual quality, the project does not impact ridgelines or upland greenbelts or water. The hillside development of the proposed Hillside Parking Structure would generally be screened by both surrounding topography and proposed trees. Views of the natural environment are addressed above under Impact AES-1 and mitigation measures are recommended to protect the scenic vista as seen from the south path along Corte Madera Creek.

The project would not conflict with the visual-quality related policy of the Kentfield/Greenbrae Community Plan related to landscaping of parking areas. While most of the new parking would be located within two new proposed structures, there would be extensive tree planting at the perimeter of the structures. Regarding the Kentfield/Greenbrae Community Plan policy regarding preserving the garden on the southwest side of the hospital if possible (i.e., the Halprin Garden), while the project is displacing this garden, it is introducing several new courtyards, gardens, and terraces throughout the site, including a new healing garden (sunken garden) in the northern area of the site, adjacent to the West Wing (see Figure 3-14, Landscape Concept Plan, in Chapter 3, Project Description). (See Section 4.D, *Cultural and Paleontological Resources*, and Section 4.I, *Land Use, Plans and Policies*, for discussion of removal of the Halprin Garden in terms of historical resources.) In addition, the policy to locate buildings to conform to the terrain would be applicable to the proposed Hillside Parking Structure that is proposed to be built into the hill at the north end of the site. Regarding policies about building massing being minimized visually and views from surrounding areas being protected, the proposed project buildings are all within the same scale and massing to be compatible with the existing campus development, and proposed landscaping plan would help to minimize the massing of the most prominent new buildings along Bon Air Road.

The project would not conflict with policies of the Larkspur General Plan that address preserving the desirable features of the built environment and the natural environment, and visually integrating various sections of the community. No major features of the natural environment, such as marshes, creeks, or hillsides, would be adversely impacted. While a significant number of trees would be removed, new tree cover would be greater than the number of trees removed. However, as is typical, in the early years of the project, these trees would be relatively small in size and would take some years to mature fully. The Hillside Parking Structure would be built into a hillside at the north end of the site but the surrounding terrain and proposed tree cover would largely screen this garage from offsite locations. The project would be visually integrated with the existing hospital site that is currently developed with large hospital facilities. The new

buildings would be similar in height and bulk to existing buildings and would be constructed in close proximity to existing buildings.

In summary, the project would not have potential conflicts with adopted policies. The impact is less than significant.

**Mitigation:** None required

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## Cumulative Impacts

**Impact AES-7: The Project, combined with past, present and other reasonably foreseeable future development in the area, would not cause cumulative aesthetics impact. (Less than Significant)**

### *Geographic Setting*

The geographic setting for the consideration of cumulative aesthetic impacts is the vicinity within one-quarter mile of the project site as this area is generally within the important viewsheds that take in the hospital site. Past development at the project site and the vicinity has greatly altered the visual quality of the area, placing new buildings and roadways in an area that was once dominated by grass-covered hills and woodlands, with adjacent waterways and marshlands. Other projects in the immediate vicinity of the project that would most likely contribute to cumulative visual impacts would include the reconstruction of the Bon Air Bridge. Marin County PropDev 46 specifies recently past, present and reasonably foreseeable projects located throughout the county, as described in the Introduction to Chapter 4, Environmental Setting, Impacts and Mitigation Measures. The nearest reasonably foreseeable project relevant to the aesthetics analysis (i.e., within the viewshed of the hospital campus) is an approved 13-unit affordable senior housing project located about two miles northwest in Kentfield.

### *Impacts*

Like past projects, current and future projects, including the proposed project, are subject to Design Review to ensure high-quality and compatible design with each project's setting, and as required, cumulative projects would also be subject to CEQA to address potential adverse visual impacts. The visual impacts of the Bon Air Bridge reconstruction (just south of project site) are likely to be very minor as the bridge design is expected to be very similar to what currently exists. In addition, the bridge is generally outside of the view corridor of the project site. Similarly, the approved 13-unit affordable senior housing project located about two miles northwest in Kentfield would not have a substantial aesthetic effect and is also outside of the view corridor of the project site. The Bay Club seeks to modify its use permit with the County to increase maximum users and improve its tennis court facilities; no expansion is proposed, therefore the would not combine with any nearby project to create a significant effect. Adherence to mitigation measures recommended in this EIR, as well as those that may be identified for other cumulative development, in addition to Design Review recommendations for all cumulative projects, would

ensure that the visual effects of the project and other nearby projects would be less than significant.

Therefore, a cumulative visual impact related to scenic vistas, overall visual quality, scenic resources, and light and glare would not occur. The impact would be less than significant.

**Mitigation:** None required

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## References – Aesthetics

- California Department of Transportation, 2011. *Scenic Highway Guidelines*. Website: [http://www.dot.ca.gov/hq/LandArch/scenic/guidelines/scenic\\_hwy\\_guidelines.pdf](http://www.dot.ca.gov/hq/LandArch/scenic/guidelines/scenic_hwy_guidelines.pdf); accessed September 6.
- City of Larkspur. 1990. *Larkspur General Plan: 1990-2010* (Prepared by Naphtali H. Knox & Associates, Inc. and DKS Associates).
- Kentfield/Greenbrae Community Planning Group and Marin County Planning Department, 1987. *Kentfield/Greenbrae Community Plan (Final)*, May.
- Marin County Community Development Agency (MCCDA), 1994. *Environmental Impact Review Guidelines (EIR Guidelines): Policies and Procedures for Implementation of the California Environmental Quality Act (CEQA)*, Appendix N, Criteria for Significance and List of Ministerial Projects, adopted May 17.
- Marin County Community Development Agency (MCCDA), 2007. *Marin Countywide Plan*, available online at <http://www.co.marin.ca.us/depts/cd/main/fm/TOC.cfm>, adopted November 6.

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## 4.B Air Quality

This section describes existing air quality conditions in the vicinity of the project site and presents applicable regulations that pertain to air quality. This section also discusses the air quality impacts that could result from construction and operation of the proposed project and identifies appropriate mitigation measures when necessary.

### Setting

#### Existing Air Quality Conditions

The ambient air quality in a given region depends on the quantities of pollutants emitted within the area, transport of pollutants to and from surrounding areas, local and regional meteorological conditions, as well as the surrounding topography of the air basin. Air quality is described by the concentration of various pollutants in the atmosphere or the emissions of a pollutant or contaminant. Units of concentration are generally expressed in parts per million (ppm) or micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). Emissions are typically expressed as grams per mile, pounds per day, or tons per year.

Marin County is part of the nine county San Francisco Bay Air Basin. Air quality in the region is affected by natural factors such as proximity to the Bay and ocean, topography, and meteorology, as well as proximity to sources of air pollution. The Bay Area is characterized by its Mediterranean type climate with warm dry summers and cool wet winters.

The air pollution potential in Marin County is quite low due to the proximity to the San Francisco Bay and Pacific Ocean. The almost constant influence of marine air and lack of nearby or upwind air pollution sources results in low air pollution levels. Air pollutant levels can build up locally in Marin County under stable atmosphere conditions, since vertical and horizontal dispersion of air pollutants can be limited. However, the lack of upwind sources reduces the air pollution potential during these conditions.

Marin General Hospital is a source of air pollutant emissions from traffic, including truck traffic, and stationary sources. Stationary sources are combustion equipment, which include boilers used to generate steam for space and water heating, as well as emergency generators that are routinely tested to ensure reliability in the event of a power outage.

The Bay Area Air Quality Management District (BAAQMD) has regulatory authority over stationary sources at the hospital. As a result, the hospital has permits to operate its boilers and generators. The hospital's permits lists 10 boilers for space and water heating and two diesel powered standby emergency generators. The permits exempt the four smallest commercial boilers and apply fuel use conditions for the remaining boilers. Testing of the existing emergency generators is limited to 20 hours per year for each engine, per BAAQMD permits.



## National and State Ambient Air Quality Standards

As required by the Federal Clean Air Act, National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter, including respirable particulate matter (PM<sub>10</sub>) and fine particulate matter (PM<sub>2.5</sub>), sulfur dioxide (SO<sub>2</sub>), and lead. Pursuant to the California Clean Air Act, the State of California has established the California Ambient Air Quality Standards (CAAQS). Both State and federal standards are summarized in **Table 4.B-1**. The “primary” standards have been established to protect the public health. The “secondary” standards are intended to protect the nation’s welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare. While the NAAQS have lower standards for NO<sub>2</sub> and SO<sub>2</sub> than does the State, they can be exceeded a certain number of times per year where the CAAQS are not to be exceeded. As a result, CAAQS are generally the same or more stringent than NAAQS, with exceptions noted in Table 4.B-1. The more stringent of the two standards are used to identify exceedances of the highest air pollutant concentrations measured in the area.

Efforts to reduce air pollution began in the Bay Area in 1955 with the formation of the Bay Area Air Pollution Control District, now known as the BAAQMD. State and national ambient air quality standards cover a wide variety of pollutants; however, only a few of these pollutants are problems in the Bay Area either due to the strength of the emission or the climate of the region. The BAAQMD has for many years operated a multi-pollutant monitoring site in San Rafael, allowing analysis of trends in air quality. Problem air pollutants in Marin County and the Bay Area include ozone, and particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), and toxic air contaminants (TACs).

## Criteria Air Pollutants and Effects

Air quality studies generally focus on five pollutants that are most commonly measured and regulated: CO, O<sub>3</sub>, NO<sub>2</sub>, SO<sub>2</sub>, and suspended particulate matter, i.e., PM<sub>10</sub> and PM<sub>2.5</sub>. These pollutants are listed in **Table 4.B-2** along with the health effects associated with each pollutant. In Marin County, ozone and particulate matter are the pollutants of greatest concern, as measured air pollutant levels exceed these concentrations at times.

### Ozone

Ground level ozone, often referred to as smog, is not emitted directly, but is formed in the atmosphere through complex chemical reactions. Fortunately, ozone is not a pollutant that adversely affects Marin County; however, emissions from motor vehicle use in Marin County contribute to high ozone levels in other parts of the Bay Area. Motor vehicles are the largest source of ozone precursor emissions (i.e., nitrogen oxides (NO<sub>x</sub>) and reactive organic gases (ROG)) in the Bay Area. The Bay Area is currently classified as a federal and State nonattainment area for ozone.

**TABLE 4.B-1  
AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Time	California Standards <sup>a,b</sup>	National Standards <sup>a</sup>	
			Primary <sup>b,c</sup>	Secondary <sup>b,d</sup>
Ozone (O <sub>3</sub> )	1-hour	0.09 ppm (180 µg/m <sup>3</sup> )	— <sup>e</sup>	Same as primary
	8-hour	0.070 ppm (137 µg/m <sup>3</sup> )	0.075 ppm (147 µg/m <sup>3</sup> )	—
Carbon Monoxide (CO)	1-hour	20.0 ppm (23 mg/m <sup>3</sup> )	35.0 ppm (40 mg/m <sup>3</sup> )	—
	8-hour	9.0 ppm (10 mg/m <sup>3</sup> )	9.0 ppm (10 mg/m <sup>3</sup> )	—
Nitrogen Dioxide (NO <sub>2</sub> )	Annual	0.030 ppm (57 µg/m <sup>3</sup> )	0.053 ppm (100 µg/m <sup>3</sup> )	Same as primary
	1-hour	0.18 ppm (339 µg/m <sup>3</sup> )	0.100 ppm <sup>f</sup> (189 µg/m <sup>3</sup> )	—
Sulfur Dioxide (SO <sub>2</sub> )	Annual	—	— <sup>g</sup>	—
	24-hour	0.04 ppm (105 µg/m <sup>3</sup> )	— <sup>g</sup>	—
	3-hour	—	—	0.5 ppm (1300 µg/m <sup>3</sup> )
	1-hour	0.25 ppm (655 µg/m <sup>3</sup> )	0.075 ppm <sup>g</sup> (196 µg/m <sup>3</sup> )	—
PM <sub>10</sub>	Annual	20.0 µg/m <sup>3</sup>	—	Same as primary
	24-hour	50.0 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	Same as primary
PM <sub>2.5</sub>	Annual	12.0 µg/m <sup>3</sup>	15.0 µg/m <sup>3</sup>	
	24-hour	No Separate State Standard	35.0 µg/m <sup>3</sup>	
Lead	Calendar quarter	—	1.5 µg/m <sup>3</sup>	Same as primary
	30-day average	1.5 µg/m <sup>3</sup>	—	—

NOTES: ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter; mg/m<sup>3</sup> = milligrams per cubic meter. The most strict ambient air quality standard is used to determine exceedances (see Table 4.B-3).

- <sup>a</sup> Standards, other than for ozone and those based on annual averages, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.
- <sup>b</sup> Concentrations are expressed first in units in which they were promulgated. Equivalent units shown in parenthesis.
- <sup>c</sup> Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than 3 years after that state's implementation plan is approved by the EPA.
- <sup>d</sup> Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- <sup>e</sup> The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005. A new 8-hour standard was established in May 2008.
- <sup>f</sup> The form of the 1-hour NO<sub>2</sub> standard is the 3-year average of the 98<sup>th</sup> percentile of the daily maximum 1-hour average concentration.
- <sup>g</sup> On June 2, 2010 the U.S. EPA established a new 1-hour SO<sub>2</sub> standard, effective August 23, 2010, which is based on the 3-year average of the annual 99<sup>th</sup> percentile of the 1-hour daily maximum. The EPA also revoked both the existing 24-hour and annual average SO<sub>2</sub> standards.

SOURCE: CARB, 2010a

### **Particulate Matter**

Particulate matter is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, and dust. Particles ten microns or less in diameter are defined as “respirable particulate matter” or “PM<sub>10</sub>.” Fine particles are 2.5 microns or less in diameter (PM<sub>2.5</sub>). These particulates can contribute significantly to regional haze and reduction of visibility. Inhalable particulates

**TABLE 4.B-2  
 CRITERIA POLLUTANTS**

<b>Pollutant</b>	<b>Characteristics</b>	<b>Health Effects</b>	<b>Major Sources</b>
Carbon Monoxide (CO)	Non-reactive, colorless and odorless gas that dissipates relatively quickly; ambient CO concentrations generally located near vehicular traffic.  Highest CO concentrations measured in the Bay Area are typically recorded during the winter.	Interferes with the transfer of oxygen to the brain; causes dizziness and fatigue; can impair central nervous system functions.	Automobile exhaust, residential wood burning in fireplaces and woodstoves.
Ozone (O <sub>3</sub> )	Colorless toxic gas and the chief component of urban smog.  Present in relatively high concentrations within portions of the Bay Area; highest concentrations occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies.	Irritates eyes; impairs respiratory function; interferes with the transfer of oxygen, depriving sensitive tissues in the heart and brain of oxygen.	Although not directly emitted from a particular source, it forms in the atmosphere through a chemical reaction between reactive organic gas (ROG) and nitrogen oxides (NO <sub>x</sub> ) under sunlight; ROG and NO <sub>x</sub> are primarily emitted from automobiles, and industrial sources.
Nitrogen Dioxide (NO <sub>2</sub> )	Reddish-brown gas that irritates the lungs; NO and NO <sub>2</sub> are collectively referred to as NO <sub>x</sub> and are major contributors to O <sub>3</sub> formation; NO <sub>2</sub> also contributes to the formation of PM10.  Levels of NO <sub>2</sub> in the Bay Area are relatively low.	Irritates lungs; can cause breathing difficulties at high concentrations.	Like O <sub>3</sub> , NO <sub>2</sub> is not directly emitted, but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen; NO is primarily emitted from automobile and diesel truck exhaust, industrial processes, and fossil-fueled power plants.
Sulfur Oxides (SO <sub>x</sub> )	Primarily SO <sub>2</sub> , sulfur oxides are colorless gases with a pungent, irritating odor. Due to the lack of sources, levels of SO <sub>2</sub> in the Bay Area are relatively low.	Increases risk of acute and chronic respiratory disease; can cause diminished ventilator function in children.	Product of high-sulfur fuel combustion from coal and oil used in power stations, industries, and for domestic heating; industrial chemical manufacturing; diesel vehicle exhaust.
Suspended Particulate Matter (PM <sub>2.5</sub> / PM <sub>10</sub> )	Very small liquid and solid particles suspended in the air, which can include smoke, soot, dust, salts, acids, and metals; can produce haze and reduce regional visibility. PM <sub>10</sub> : Particulate matter less than 10 microns in diameter, about one-seventh the thickness of a human hair. PM <sub>2.5</sub> : Particulate matter 2.5 microns or less in diameter.	Damages respiratory tract; increases the number and severity of asthma attacks; causes or aggravates bronchitis and other lung diseases; reduces the body's ability to fight infections.	Directly and indirectly emitted. Motor vehicles; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; atmospheric chemical reactions.

come from smoke, dust, aerosols, and metallic oxides. Although particulates are found naturally in the air, most particulate matter found in the area is emitted either directly or indirectly by motor vehicles, industry, construction, agricultural activities, and wind erosion of disturbed areas. Most PM<sub>2.5</sub> is comprised of combustion products such as smoke or formed in the atmosphere from regional emissions of NO<sub>x</sub>. There are many sources of PM<sub>10</sub> emissions, including combustion, industrial processes, grading and construction, and motor vehicles. The greatest quantity of PM<sub>10</sub> emissions associated with motor vehicle uses is generated by re-suspended road dust. Reductions in motor vehicle miles traveled are necessary to reduce PM<sub>10</sub> emissions, rather than changes to motor vehicle technology. Wood burning in fireplaces and stoves is another significant source of particulate matter, primarily PM<sub>2.5</sub>.

Extensive research reviewed by the California Air Resources Board (CARB) indicates that exposure to outdoor PM10 and PM2.5 levels exceeding current ambient air quality standards is associated with increased risk of hospitalization for lung and heart-related respiratory illness, including emergency room visits for asthma (Peters, 2004; Gauderman, et al, 2004). Exposure to particulate matter is also associated with increased risk of premature deaths, especially in the elderly and people with pre-existing cardiopulmonary disease. In children, studies have shown associations between PM exposure and reduced lung function and increased respiratory symptoms and illnesses. Besides reducing visibility, the acidic portion of PM (e.g., nitrates and sulfates) can harm crops, forests, aquatic, and other ecosystems. In 2002, CARB adopted new ambient air quality standards for PM10 and PM2.5, resulting from an extensive review of the health-based scientific literature. The U.S. Environmental Protection Agency (USEPA) adopted stricter standards for PM2.5 in 2006. The Bay Area does not meet national and State PM2.5 standards or State standards for PM10.

### **Toxic Air Contaminants (TACs)**

TACs are a broad class of compounds known to cause a wide range of health effects. These include acute effects such as eye or throat irritation or headaches and chronic effects such as morbidity or mortality (usually because they cause cancer). TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter and benzene near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level. CARB has identified almost 200 TACs.

Diesel particulate matter (DPM) is the predominant TAC in urban air, and is estimated to represent over 80 percent of the Bay Area population weighted cancer risk. Diesel exhaust is a complex mixture of gases, vapors, and fine particles, which makes the evaluation of its health effects a complex scientific issue. Due to the complex nature of DPM, there are no accepted methods to measure ambient concentrations. CARB previously identified some of the chemicals in diesel exhaust (e.g., benzene, formaldehyde) as TACs; they are listed as carcinogens either under the State's Proposition 65 or under the federal Hazardous Air Pollutants program. California has adopted a comprehensive diesel risk-reduction program. USEPA has adopted low-sulfur diesel fuel standards that will reduce DPM substantially; these standards went into effect in late 2006. Other common TACs in urban environments include benzene present in gasoline vapors and vehicle exhaust, and 1,3 butadiene in vehicle exhaust.

In cooler weather, smoke from residential wood combustion can be a source of TACs. Localized high TAC concentrations can result when cold stagnant air traps smoke near the ground and, with no wind, the pollution can persist for many hours. This occurs in sheltered valleys during the winter. Wood smoke also contains a significant amount of PM10 and PM2.5. Wood smoke is an irritant and is implicated in worsening asthma and other chronic lung problems.

BAAQMD 2005 data indicate that the cancer health risk from TACs in Greenbrae is about 300 in 1 million, while the risk in the most urbanized areas of the Bay Area exceeds 1,000 in 1 million.

Population weighted cancer risk in the Bay Area is just under 500 in 1 million. According to BAAQMD studies, this risk is expected to decrease substantially in the future as new rules and regulations to reduce TAC emissions are implemented, especially those that will decrease emissions from trucks and construction equipment (Sonoma Technology, 2010).

## **Air Pollution Potential**

The significance of a pollutant concentration is determined by comparing the concentration to an appropriate ambient air quality standard. The standards represent the allowable pollutant concentrations designed to ensure that the public health and welfare are protected, while including a reasonable margin of safety to protect the more sensitive individuals in the population. The San Francisco Bay Area is considered to be one of the cleanest metropolitan areas in the country with respect to air quality.

The air pollution potential in Marin County is quite low due to the proximity to the San Francisco Bay and Pacific Ocean. The constant influence of marine air and lack of nearby or upwind air pollution sources results in low air pollution levels. Air pollutant levels can build up under stable atmosphere conditions, since vertical and horizontal dispersion of air pollutants is limited. Terrain shelters the project area from the almost persistent marine air flow off of the ocean and bay. As a result, neutral or stable conditions are typical at the project site during late night and early mornings.

BAAQMD monitors air pollutant levels continuously throughout the Bay Area. The San Rafael station is the closest to the project site and the only station in Marin County. This station is about two miles from the project site. Over the five-year period of 2005 to 2009, PM10 levels measured in San Rafael have exceeded CAAQS on zero to one sample day per year. Since PM10 is sampled once every six days, standards are exceeded on an estimated zero to six days annually. PM2.5 monitoring at San Rafael began in 2010. There were four days where levels were measured at or just above the NAAQS. No other exceedances of air quality standards have been measured at the San Rafael station. Summarized air pollutant data for this station is provided in **Table 4.B-3**. This table shows the highest air pollutant concentrations measured at the station over the five-year period of 2006 through 2009 (based on BAAQMD reported data) and 2010 (based on preliminary data reported by CARB). Data from BAAQMD for 2010 were not available at the time this report was completed.

## **Attainment Status for Ambient Air Quality Standards**

Measured levels of O<sub>3</sub> and particulate matter (i.e., PM10 and PM2.5) exceed ambient air quality standards in the Bay Area. However, in San Rafael, O<sub>3</sub> standards have not been exceeded in the 2005 to 2009 period, while the Bay Area as a whole exceeds an O<sub>3</sub> standard on 9 to 20 days per year. PM10 levels exceeded standards on zero to one measurement day in San Rafael during the five-year period and one to five days in the Bay Area. PM2.5 is not measured at the BAAQMD station in San Rafael or at any other locations in Marin County. PM2.5 levels exceed standards on 11 to 14 days throughout the Bay Area. PM10 and PM2.5 are only measured once every six days, in accordance with a national sampling schedule set by USEPA.

**TABLE 4.B-3  
HIGHEST MEASURED AIR POLLUTANT CONCENTRATIONS IN SAN RAFAEL**

Pollutant	Average Time	Measured Air Pollutant Levels				
		2006	2007	2008	2009	2010
Ozone (O <sub>3</sub> )	1-Hour	0.089 ppm	0.072 ppm	0.085 ppm	0.075 ppm	0.083 ppm
	8-Hour	0.058 ppm	0.057 ppm	0.069 ppm	0.059 ppm	0.069 ppm
Carbon Monoxide (CO)	1-Hour	2.6 ppm	2.8 ppm	1.8 ppm	2.2 ppm	--
	8-Hour	1.5 ppm	1.3 ppm	1.1 ppm	1.2 ppm	1.1 ppm
Nitrogen Dioxide (NO <sub>2</sub> )	1-Hour	0.054 ppm	0.057 ppm	0.056 ppm	0.052 ppm	0.057 ppm
	Annual	0.014 ppm	0.014 ppm	0.013 ppm	0.012 ppm	0.012 ppm
Respirable Particulate Matter (PM <sub>10</sub> )	24-Hour	<b>68 ug/m<sup>3</sup></b>	<b>65 ug/m<sup>3</sup></b>	41 ug/m <sup>3</sup>	38 ug/m <sup>3</sup>	51ug/m <sup>3</sup>
	Annual	18.1 ug/m <sup>3</sup>	17.5 ug/m <sup>3</sup>	18.6 ug/m <sup>3</sup>	16.2 ug/m <sup>3</sup>	16.7 ug/m <sup>3</sup>
Fine Particulate Matter (PM <sub>2.5</sub> )	24-Hour	--	--	--	--	<b>46.5 ug/m<sup>3</sup></b>
	Annual	--	--	--	--	--

NOTE: ppm = parts per million and ug/m<sup>3</sup> = micrograms per cubic meter. Values reported in **bold** exceed the most strict ambient air quality standard (see Table 4.B-1).

SOURCE: BAAQMD, 2011a. 2010 data are based on CARB reported data, since BAAQMD had not released 2010 data as of December 31, 2011.

Areas that do not violate ambient air quality standards are considered to have attained the standard. Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. The Bay Area as a whole does not meet either NAAQS or CAAQS for ground level O<sub>3</sub> and PM<sub>2.5</sub>, or CAAQS for PM<sub>10</sub>. For O<sub>3</sub>, the entire Bay Area is designated as non-attainment at both the federal and State levels.

Under the federal Clean Air Act, the USEPA has designated the region as marginally non-attainment for the eight-hour O<sub>3</sub> standard. USEPA has proposed revisions to the O<sub>3</sub> eight-hour NAAQS rule; however, the Office of Information and Regulatory Affairs (OIRA) recently returned the draft rule to USEPA for reconsideration (OIRA, 2011).

The Bay Area does attain the annual NAAQS for PM<sub>2.5</sub>. USEPA designated the Bay Area Air Basin as “nonattainment” for the 2006 24-hour PM<sub>2.5</sub> standard, as monitoring data indicate levels slightly above the standard. Most PM<sub>2.5</sub> nonattainment areas have until 2015 to attain the standards, with some extensions to 2020 if necessary.

The Bay Area has met the CO NAAQS for over a decade and is classified as attainment by the USEPA. The USEPA grades the region as attainment or unclassified for all other air pollutants, which include PM<sub>10</sub>, NO<sub>2</sub>, SO<sub>2</sub>, and lead. An unclassified designation means that there is not enough data to designate an area as “nonattainment,” but the area likely is in attainment of the standard. There have not been any recorded violations of these standards.

At the state level, the region is considered serious non-attainment for ground level O<sub>3</sub>, because monitoring stations in the region exceeds the one-hour and eight-hour CAAQS. The BAAQMD is required to adopt plans on a triennial basis that show progress towards meeting the State O<sub>3</sub> standard (see *Air Quality Plans*, discussed below). The region is also designated non-attainment for PM<sub>10</sub> and PM<sub>2.5</sub> by the State. Although the region is designated nonattainment for PM<sub>2.5</sub> under the CAAQS, monitoring data indicate that the standard is met. Note that the CAAQS only address annual concentrations of PM<sub>2.5</sub>. Most monitoring stations in the region exceed the annual and 24-hour PM<sub>10</sub> CAAQS. The area is considered attainment or unclassified for all other pollutants regulated under the CAAQS.

## **Sensitive Receptors**

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, schools, and parks. Sensitive receptors near Marin General Hospital include the hospital itself, nearby medical clinics that serve patients, Marin Catholic High School, Bacich Elementary School, and residences. Although Hal Brown Park is located near the project site, exposure durations for sensitive receptors using the park would be very short, compared with those of nearby residents, hospital patients, and school children.

## **Regulatory Setting**

The Federal Clean Air Act governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California Clean Air Act. At the federal level, USEPA administers the Federal Clean Air Act. The California Clean Air Act is administered by CARB at the state level and by the air districts at the regional and local levels. The BAAQMD regulates air quality in the project area at the regional level, which includes the nine-county Bay Area.

National and State ambient air quality standards have been established for criteria air pollutants, including: O<sub>3</sub>, N<sub>2</sub>O, S<sub>2</sub>O, particulate matter (i.e., PM<sub>10</sub> and PM<sub>2.5</sub>), and lead. The Bay Area as a whole does not meet the national standards for O<sub>3</sub> and PM<sub>2.5</sub>. Therefore, the Bay Area is designated as nonattainment for these air pollutants by the USEPA. At the State level, the region is considered a non-attainment area for ground-level O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. Because elevated levels of O<sub>3</sub> and particulate matter found in the Bay Area are considered to be the result of regional emissions, the entire Bay Area is considered nonattainment for the air pollutants.

## **Bay Area Air Quality Management District**

BAAQMD is primarily responsible for assuring that the national and State ambient air quality standards are attained and maintained in the Bay Area.

### ***Air Quality Plans***

BAAQMD, along with other regional agencies (e.g., Bay Area Governments and Metropolitan Transportation Commission) develop plans to reduce air pollutant emissions. USEPA requires plans to address attainment of the NAAQS for O<sub>3</sub> and PM<sub>2.5</sub>. State law requires a plan to show progress in reducing O<sub>3</sub> levels. The latest plan to directly address the NAAQS of O<sub>3</sub> was the 2001 Ozone Attainment Plan. This plan was a proposed revision to the Bay Area part of California's plan (State Implementation Plan, or SIP) to achieve the one-hour O<sub>3</sub> NAAQS and was prepared in response to USEPA's partial approval and partial disapproval of the Bay Area's *1999 Ozone Attainment Plan*.

BAAQMD must develop a plan as part of the State Implementation Plan (SIP) for the 2006 PM<sub>2.5</sub> NAAQS. The plan must be adopted by BAAQMD, approved by CARB and submitted to the EPA by December 14, 2012.

Air quality plans addressing the California Clean Air Act with respect to O<sub>3</sub> were developed in 1991 and updated about every three years to demonstrate progress toward meeting the more stringent one- and eight-hour O<sub>3</sub> CAAQS, which the Bay Area is designated nonattainment. In addition, emissions of O<sub>3</sub> precursors (i.e., NO<sub>x</sub> and ROG) contribute to higher O<sub>3</sub> levels in neighboring air basins. State law requires O<sub>3</sub> nonattainment areas to include all feasible measures to reduce O<sub>3</sub> precursors and reduce transport of O<sub>3</sub> and its precursors to neighboring air basins.

In September 2010, BAAQMD adopted the *Bay Area 2010 Clean Air Plan (CAP)*. This CAP updates the most recent ozone plan, the *2005 Ozone Strategy*. Unlike previous Bay Area CAPs, the 2010 CAP is a multi-pollutant air quality plan addressing four categories of air pollutants:

- Ground-level ozone and the key ozone precursor pollutants (ROG and NO<sub>x</sub>), as required by State law;
- Particulate matter, primarily PM<sub>2.5</sub>, as well as the precursors to secondary PM<sub>2.5</sub>;
- Toxic air contaminants; and
- Greenhouse gases.

While the CAP addresses State requirements, it also provides the basis for developing future control plans to meet federal requirements (NAAQS) for O<sub>3</sub> and PM<sub>2.5</sub>. The region is required to prepare (by December 2012) a federally enforceable plan to meet the NAAQS for PM<sub>2.5</sub>. While previous CAPs have relied upon a combination of stationary and transportation control measures, the 2010 CAP adds two new types of control measures: (1) Land Use and Local Impact Measures and (2) Energy and Climate Measures. These types of measures would indirectly reduce air pollutant and greenhouse gas emissions through reductions in vehicle use and energy usage. In addition, the plan includes Further Study Measures, which are evaluated as potential control measures.

The Bay Area 2010 CAP proposes expanded implementation of transportation control measures (TCMs) and includes public outreach programs designed to educate the public about air pollution in the Bay Area and promote individual behavior changes that improve air quality. New measures in the CAP are aimed at helping guide land use policies that would indirectly reduce air pollutant



emissions. Some of these measures or programs rely on local governments for implementation. The clean air planning efforts for O<sub>3</sub> also will reduce PM<sub>10</sub> and PM<sub>2.5</sub>, as a substantial amount of particulate matter comes from combustion emissions such as vehicle exhaust. Conversely, strategies to reduce O<sub>3</sub> precursor emissions will reduce secondary formation of PM<sub>2.5</sub> and PM<sub>10</sub>.

## **BAAQMD Regulations**

BAAQMD adopts and enforces rules to reduce particulate matter emissions and develops public outreach programs to educate the public to reduce PM<sub>10</sub> and PM<sub>2.5</sub> emissions (e.g., Spare the Air Program). California Senate Bill 656 (SB 656) requires further action by CARB and air districts to reduce public exposure to PM<sub>10</sub> and PM<sub>2.5</sub>. Efforts identified by BAAQMD in response to SB656 are primarily targeting reductions in wood smoke emissions and adoption of new rules to further reduce NO<sub>x</sub> and particulate matter from internal combustion engines and reduce particulate matter from commercial charbroiling activities. The Bay Area experiences the highest PM<sub>10</sub> and PM<sub>2.5</sub> concentrations in winter when wood smoke and ammonium nitrate contributions to particulate matter are highest. BAAQMD rules restrict operation of any indoor or outdoor fireplace, fire pit, wood or pellet stove, masonry heater, or fireplace insert on specific days during the winter when air quality conditions are forecasted to exceed the NAAQS for PM<sub>2.5</sub>. When meteorological conditions are conducive to high levels of O<sub>3</sub> or PM<sub>2.5</sub>, BAAQMD declares a Spare the Air day. Uncontrolled wood burning is prohibited in winter during Spare the Air days. The rule also limits excess visible emissions from wood burning devices and requires clean burning technology for wood burning devices sold (or resold) or installed in the Bay Area. NO<sub>x</sub> emissions contribute to ammonium nitrate formation that resides in the atmosphere as particulate matter, so a reduction in NO<sub>x</sub> emissions reduces wintertime PM<sub>2.5</sub> levels.

## **Impacts and Mitigation Measures**

### **Significance Criteria**

Based on Appendix G of the CEQA *Guidelines*, the project would have a significant impact on air quality if it would:

- a) Conflict with or obstruct implementation of the applicable air quality plan;
- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- c) Result in a cumulatively considerable net increase of any nonattainment pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- d) Expose sensitive receptors to substantial pollutant concentrations; or
- e) Create objectionable odors affecting a substantial number of people.

Based on Appendix N of the Marin County Environmental Impact Review Guidelines, the project may also have a significant impact on air quality if the project would:

- Cause or contribute substantially to existing or projected air quality violations (consistent with CEQA Appendix G Criteria b and c);
- Result in exposure of sensitive receptors (i.e., individuals with respiratory diseases, the young, the elderly) to substantial pollutant concentrations (consistent with CEQA Appendix G Criterion d); or
- Result in toxic air contaminants (TACs) that would cause a significant health risk above the Air Pollution Control District's level of significance, if any (e.g., cancer risk of more than one in one million).

## Approach to Analysis

The following impact analysis focuses on potential impacts of the project related to air quality. The analysis presented in this report uses the methodologies provided in the BAAQMD's *CEQA Air Quality Guidelines* updated in 2011 (herein referred to as the BAAQMD Guidelines) (BAAQMD, 2011b). Although the BAAQMD's adoption of the significance thresholds in the BAAQMD Guidelines has been rescinded by a recent legal decision that found that proper CEQA review of the thresholds did not occur, the Marin Healthcare District has determined that Appendix D of the BAAQMD Guidelines, in combination with BAAQMD's *Revised Draft Options and Justification Report* (BAAQMD, 2009), provide substantial evidence to support the 2011 thresholds and, therefore, has determined they are appropriate for use in this analysis. Emission estimates for the project presented in this section were prepared by Illingworth & Rodkin, Inc. (2012), and independently reviewed by Marin Healthcare District's consultant, Environmental Science Associates (ESA). For details of data, calculations, and assumptions used to determine project-related emissions and associated public health risks that would be associated with the proposed project, refer to Appendix C.

## Air Quality Plans

Potential conflict with, or obstruction to implementation of, the applicable air quality plan is evaluated by comparing the project effects on projections used in the latest Bay Area Clean Air Plan (i.e., 2010 CAP) and evaluating the plan features compared to control measures identified in the 2010 CAP. The project would not affect population or vehicle miles traveled forecasts used for 2010 CAP projections, as discussed in Impact AIR-1, below.

## Criteria Pollutants

Construction and operational mass emissions (area and mobile source) that would be associated with the proposed project were estimated using the URBEMIS2007 (version 9.2.4) model, which is designed to model emissions from development projects and is recommended for use by the BAAQMD. The model predicts daily and annual emissions associated with land use developments. For mobile source emissions, the model combines daily traffic activity with emission factors from the State's mobile source emission factor model (EMFAC2007).

Impacts related to the project contributing to an existing or projected air quality violation and whether the project would result in a cumulatively considerable net increase of any criteria pollutant or associated precursors are judged by comparing estimated direct and indirect project emissions to the BAAQMD significance thresholds, which for short-term construction emissions are 54 pounds per day for ROG, NO<sub>x</sub>, and PM<sub>2.5</sub>, and 82 pounds per day for PM<sub>10</sub>. For long-term operations, BAAQMD has two sets of significance thresholds, including daily thresholds that are the same as the construction thresholds, and annual thresholds that are 10 tons per year for ROG, NO<sub>x</sub>, and PM<sub>2.5</sub>, and 15 tons per year for PM<sub>10</sub>. Only the exhaust portion of PM<sub>2.5</sub> and PM<sub>10</sub> emissions are compared against the construction thresholds.

### **Community Health Risk**

Impacts associated with the project exposing sensitive receptors or the general public to substantial pollutant concentrations is evaluated by assessing the health risk, in terms of cancer risk or hazards and PM<sub>2.5</sub> levels, posed by the placement of new sources of TAC emissions near existing sensitive receptors or placement of new sensitive receptors near existing sources. Specifically, according to BAAQMD, the project would also have a significant air quality impact if the construction or operation phase would expose persons to substantial levels of TACs, such that the probability of contracting cancer exceeds 10 in one million or if it would expose persons to pollutants such that a non-cancer Hazard Index of 1.0 would be exceeded. In addition, a significant impact would occur if construction or operation of the project would result in an increase of annual average ambient concentration of PM<sub>2.5</sub> of more than 0.3 µg/m<sup>3</sup>. The project would have a significant cumulative health risk impact if combined cancer risk associated with all local permitted stationary sources and major roadways plus the risks associated with the project exceeds 100 in one million, or if the non-cancer Hazard Index exceeds 10.

Following BAAQMD guidance, the cancer risks reported are based on several conservative assumptions that likely result in an overestimate of cancer risk. These include:

- Assumption of a 70-year continuous exposure (i.e., 24 hours per day, 350 days per year, 70 years);
- Use of BAAQMD age-sensitivity factors for applying cancer risk to 3rd trimester fetuses, infants and small children. These factors result in cancers risks that are up to 10 times greater than adult risks. If children are not likely to reside continuously at the location of the Maximum Exposed Individual (MEI), then the cancer risks are substantially over predicted.
- Cancer risks were predicted for outdoor exposure. Indoor exposures are likely to be less due to settling of particulate and filtering through building surfaces.

### **Odors**

Impacts related to the project creating or exposing a substantial number of people to objectionable odors is evaluated based on the potential for the project to generate odors that could affect nearby sensitive receptors in a manner that would cause frequent complaints. BAAQMD considers five or more confirmed odor complaints per year averaged over three years as a significant odor impact from a facility.

## Impacts and Mitigation Measures

### *Air Quality Plan Consistency*

#### **Impact AIR-1: The Project could conflict with or obstruct implementation of the applicable air quality plan. (Less than Significant)**

The BAAQMD is the regional agency responsible for overseeing compliance with State and federal laws, regulations, and programs within the San Francisco Bay Area Air Basin. The BAAQMD, with assistance from the Association of Bay Area Governments and the Metropolitan Transportation Commission has prepared and implements specific plans to meet the applicable laws, regulations, and programs. Among them are the Carbon Monoxide Maintenance Plan (1994), the 2001 Ozone Attainment Plan, and the Bay Area 2010 CAP. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality impacts. In formulating compliance strategies, the BAAQMD relies on planned land uses established by local general plans. When a project would include a proposed change to planned uses (e.g., by requesting a general plan amendment), the project may depart from the assumptions used to formulate the 2010 CAP in such a way that the cumulative result of incremental changes may hamper or prevent the BAAQMD from achieving its goals. This is because land use patterns influence transportation needs, and motor vehicles are the primary source of air pollution. The proposed project would not change the existing land uses or require a general plan amendment that would result in greater population growth in Marin County than currently projected. While the proposed project would have traffic associated with it, this traffic would serve the existing or projected growing population of the area.

Another criterion in evaluating the proposed project's consistency with the 2010 CAP is whether the project includes applicable control measures contained in the 2010 CAP. The proposed project includes applicable 2010 CAP control measures since it includes (as part of the proposed project or implementation of Mitigation Measure GHG-2 [in Section 4.F, *Greenhouse Gases and Climate Change*]) trip reduction measures, encompassing shuttle service; safe access for pedestrians and cyclists; promotion of rideshare services; improved bicycle and pedestrian access and facilities; a land use pattern that facilitates walking, bicycling and transit use; parking strategies that allow for reduced parking ratios; and enhanced energy efficiency standards that could incorporate distributed renewable energy, cool roofing, and/or cool paving; tree planting; and coordination with *511 Rideshare*, a San Francisco Bay Area organization that provides assistance to employers relative to travel demand management (TDM). In addition, the existing Marin General Hospital TDM strategies include valet parking and the provision of shuttle transit services. Furthermore, the hospital coordinates with *511 Rideshare*, a San Francisco Bay Area organization that provides assistance to employers relative to travel demand management.

Finally, the proposed project would not conflict with implementation of control measures contained in the 2010 CAP. The proposed project would promote, rather than hinder, implementation of the air quality control measures by including features that enhance bicycle, transit, and pedestrian movement and sustainability measures that reduce energy consumption for water and space heating (natural gas combustion). As a result, impacts would be less than significant.

**Mitigation:** None required

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### ***Construction Emissions***

#### **Impact AIR-2: Construction of the Project would result in short-term construction equipment exhaust emissions that could contribute to existing or projected air quality standard violations. (Potentially Significant)**

BAAQMD has established recommended thresholds of significance for ozone precursor pollutants (ROG and NO<sub>x</sub>), PM2.5, and PM10 to assist lead agencies in evaluating air quality impacts of projects in the Bay Area. For construction emissions, these thresholds are 54 pounds per day for NO<sub>x</sub>, ROG, and PM2.5, and 82 pounds per day for PM10. The PM10 and PM2.5 thresholds are for exhaust emissions only. The thresholds are compared against average daily construction emissions, recognizing that construction activities vary from day to day. There are no specific quantitative significance thresholds for fugitive dust since the BAAQMD recommends that significance be determined based on the use of Best Management Practices to mitigate potential dust impacts.

The URBEMIS2007 modeling relied upon preliminary construction plans and model defaults to estimate emissions that would be associated with the proposed project. Modeling was conducted for Phases I through IV, with construction beginning in the first year of 2012 and continuing to 2018. URBEMIS2007 modeling was conducted for each construction phase. Construction activities modeled in URBEMIS2007 included demolition, trenching (if applicable), mass grading, building construction, paving, and finishing (architectural coatings) (Illingworth & Rodkin, 2012). URBEMIS2007 modeling output for each construction phase is included in Appendix C to this Draft EIR.

The land use type and size of a project are entered into the URBEMIS2007 model, along with the estimated site acreage. The model makes estimates of construction activity and truck hauling based on this information. The model is adjusted where project-specific information is known. The model provides daily and annual emissions associated with the construction activity. This includes emissions from use of on-site heavy equipment, off-site truck movements from hauling of fill material off site, worker travel, and architectural coatings (e.g., painting). For truck hauling of soil material, the model default assumes 20 cubic-yard trucks would make 20-mile roundtrips. The load factors for construction equipment were adjusted downwards by 33 percent from the URBEMIS2007 model defaults to be consistent with 2010 CARB estimates for off-road equipment load factors (CARB, 2010b).

#### **Phase I – Hillside Parking Structure**

Construction of the Hillside Parking Structure would result in emissions in 2012 and early 2013. URBEMIS2007 does not have a parking structure land use type, so a warehouse land use type was used to simulate the construction emissions from a building type that does not have active interior uses (Illingworth & Rodkin, 2012). The overall square footage of this structure (total

floor areas, assuming six stories) was computed at 136,700 square feet on an approximated 0.8-acre footprint. Construction associated with Phase I is assumed to begin in 2012 and be completed in the first half of 2013. Conservatively, construction activities would include the hauling of approximately 18,000 cubic yards of soil off site.<sup>1</sup> Some demolition would occur as parking spaces (asphalt) and clinic buildings are removed. Since much of the parking structure would include concrete or prefabricated materials, emissions of architectural coatings are considered negligible and are not included in the construction emission estimates. Estimated annual and average daily construction emissions for Phase I are reported in **Table 4.B-4**.

**TABLE 4.B-4  
 PHASE I ESTIMATED CONSTRUCTION EXHAUST EMISSIONS**

Scenario	ROG	NO <sub>x</sub>	PM10	PM2.5
Late Year 2012 Construction Emissions	3.9 lbs/day	36.5 lbs/day	1.6 lbs/day	1.5 lbs/day
	0.16 tons/year	1.42 tons/year	0.07 tons/year	0.06 tons/year
Early Year 2013 Building Emissions	1.5 lbs/day	12.5 lbs/day	0.6 lbs/day	0.6 lbs/day
	0.02 tons/year	0.18 tons/year	0.05 tons/year	0.05 tons/year
<i>BAAQMD Thresholds</i>	<i>54 lbs/day</i>	<i>54 lbs/day</i>	<i>82 lbs/day</i>	<i>54 lbs/day</i>
<i>Significant?</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>

SOURCE: Illingworth and Rodkin, 2012.

**Phase II - Site Preparation and Bon Air Road Parking Structure**

Site preparation and construction of the Bon Air Road Parking Structure would result in emissions in mid 2013 through 2014. As discussed above, URBEMIS2007 does not have a parking structure land use type, so a warehouse land use type was also used to model construction emissions associated with Phase II (Illingworth & Rodkin, 2012). The overall square footage of this structure (total floor areas, assuming five stories) was computed at 175,000 square feet on an approximate 1.1-acre footprint. Construction is assumed to begin in mid-2013 and be mostly completed at the end of 2014. Conservatively, construction activities would include the hauling of approximately 20,000 cubic yards of soil off site.<sup>2</sup> Some demolition activities would occur as parking spaces (asphalt) are removed. Since much of the parking structure would include concrete or prefabricated materials, emissions of architectural coatings were considered negligible and are not included in the construction emission estimates. Estimated annual and average daily Phase II construction emissions are reported in **Table 4.B-5**.

<sup>1</sup> Volume of soil off-haul for Phase I was based on preliminary estimates that were overestimated. Accurate estimate is 15,000 cubic yards, as reported in Section 4.N, *Transportation and Circulation*, under *Construction-Related Traffic*.  
<sup>2</sup> Volume of soil off-haul for Phase II was based on preliminary estimates that were overestimated. Accurate estimate is 17,000 cubic yards, as reported in Section 4.N, *Transportation and Circulation*, under *Construction-Related Traffic*.

**TABLE 4.B-5  
 PHASE II ESTIMATED CONSTRUCTION EXHAUST EMISSIONS**

<b>Scenario</b>	<b>ROG</b>	<b>NO<sub>x</sub></b>	<b>PM10 Exhaust</b>	<b>PM2.5 Exhaust</b>
Late Year 2013 Construction Emissions	4.5 lbs/day	45.0 lbs/day	1.9 lbs/day	1.7 lbs/day
	0.11 tons/year	0.99 tons/year	0.05 tons/year	0.04 tons/year
Year 2014 Building Emissions	1.7 lbs/day	13.3 lbs/day	0.7 lbs/day	0.6 lbs/day
	0.14 tons/year	1.11 tons/year	0.05 tons/year	0.05 tons/year
<i>BAAQMD Thresholds</i>	<i>54 lbs/day</i>	<i>54 lbs/day</i>	<i>82 lbs/day</i>	<i>54 lbs/day</i>
<i>Significant?</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>

SOURCE: Illingworth and Rodkin, 2012.

**Phase III - Ambulatory Services Building**

Construction of the five-story, 100,000-square foot Ambulatory Services Building would result in emissions in mid 2013 through 2014. Finishing work, which mostly includes application of architectural coatings, would occur in late 2014 through early 2015. A 100,000-square foot hospital type land use was modeled in URBEMIS2007 (Illingworth & Rodkin, 2012). The 100,000-square foot building was estimated to lie on an approximate two-acre footprint. Estimated annual and average daily Phase III construction emissions are reported in **Table 4.B-6**.

**TABLE 4.B-6  
 PHASE III ESTIMATED CONSTRUCTION EXHAUST EMISSIONS**

<b>Scenario</b>	<b>ROG</b>	<b>NO<sub>x</sub></b>	<b>PM10 Exhaust</b>	<b>PM2.5 Exhaust</b>
Late Year 2013 Construction Emissions	0.81 lbs/day	6.9 lbs/day	0.3 lbs/day	0.3 lbs/day
	0.04 tons/year	0.35 tons/year	0.02 tons/year	0.02 tons/year
Year 2014 Building and Coating Emissions	3.0 lbs/day	24.1 lbs/day	1.1 lbs/day	1.0 lbs/day
	0.12 tons/year	0.82 tons/year	0.04 tons/year	0.04 tons/year
Year 2015 Coating Emissions	21.4 lbs/day	9.1 lbs/day	0.7 lbs/day	0.7 lbs/day
	1.08 tons/year	0.14 tons/year	0.01 tons/year	0.01 tons/year
<i>BAAQMD Thresholds</i>	<i>54 lbs/day</i>	<i>54 lbs/day</i>	<i>82 lbs/day</i>	<i>54 lbs/day</i>
<i>Significant?</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>

SOURCE: Illingworth & Rodkin, 2012.

**Phase IV - Hospital Replacement Building and Potential Pedestrian Bridge**

Construction of the 300,000-square foot Hospital Replacement Building along with demolition of structures would result in emissions in early 2015 through 2017 with some minor emissions occurring in 2018. Conservatively, construction of this phase would include hauling of

approximately 120,000 cubic yards of soil.<sup>3</sup> Finishing work, which mostly includes application of architectural coatings, would occur in 2016 through 2017. A 300,000-square foot hospital type land use was modeled in URBEMIS2007 (Illingworth & Rodkin, 2012). The 300,000-square foot building was estimated to lie on an approximate four-acre footprint. Estimated annual and average daily Phase IV construction emissions are reported in **Table 4.B-7**.

**TABLE 4.B-7  
 PHASE IV ESTIMATED CONSTRUCTION EXHAUST EMISSIONS**

Scenario	ROG	NO <sub>x</sub>	PM10 Exhaust	PM2.5 Exhaust
Year 2015 Construction Emissions	4.9 lbs/day	50.6 lbs/day	2.0 lbs/day	1.9 lbs/day
	0.26 tons/year	2.24 tons/year	0.10 tons/year	0.09 tons/year
Year 2016 Building Construction and Paving	43.4 lbs/day	14.5 lbs/day	1.0 lbs/day	0.9 lbs/day
	0.62 tons/year	0.86 tons/year	0.05 tons/year	0.04 tons/year
Year 2017 Building Construction and Coating Emissions	43.3 lbs/day	5.4 lbs/day	0.3 lbs/day	0.3 lbs/day
	2.85 tons/year	0.52 tons/year	0.03 tons/year	0.02 tons/year
<i>BAAQMD Thresholds</i>	<i>54 lbs/day</i>	<i>54 lbs/day</i>	<i>82 lbs/day</i>	<i>54 lbs/day</i>
<i>Significant?</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>

SOURCE: Illingworth & Rodkin, 2012.

### Phase V - Central and East Wing Renovations

Construction activities during this phase of work would mostly include interior construction work that would not utilize large construction equipment. As a result, emissions would be minor and much lower than those associated with any of the other proposed construction phases.

### Summary of Emissions

It is possible that some of the construction work for various phases may overlap. As a result, overall daily emissions may be higher than those reported above. In 2015, construction emissions associated with Phase III and Phase IV may overlap such that NO<sub>x</sub> emissions could be as high as 59.7 pounds per day (Illingworth & Rodkin, 2012). This would exceed the BAAQMD threshold of 54 pounds per day. As a result, NO<sub>x</sub> emissions during overlapping construction phases in 2015 may exceed BAAQMD thresholds. Therefore, the impact is considered to be potentially significant.

**Mitigation Measure AIR-2:** The measures listed below to control diesel exhaust emissions associated with demolition, grading and new construction shall be implemented. These measures shall apply to all phases even though the only potential exceedance of a threshold is in 2015 (or through Phase III):

<sup>3</sup> Volume of soil off-haul for Phase IV was based on preliminary estimates that were overestimated. Accurate estimate is 101,000 cubic yards, as reported in Section 4.N, *Transportation and Circulation*, under *Construction-Related Traffic*.



1. Prior to the commencement of construction activities, the developer or contractor will provide a plan for approval by the District or BAAQMD demonstrating that the heavy-duty (>50 horsepower) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NO<sub>x</sub> reduction and 45 percent particulate reduction. The NO<sub>x</sub> reduction will be based on a comparison to URBEMIS2007 emissions estimates for this project (see Appendix C to this Draft EIR). This plan will address all equipment that will be on site for more than two working days.
2. Diesel particulate filters (or features that provide equivalent level of PM<sub>2.5</sub> emissions reductions) shall be installed on all diesel-powered equipment with engines larger than 50 horsepower that will be working on the site for more than two working days. These features are anticipated to provide at least a 45 percent reduction in PM<sub>2.5</sub> exhaust emissions.
3. During building construction, establish on-site electric power to reduce the use of diesel-powered generators.
4. Arrange for service to provide on-site meals for construction workers to avoid travel to off-site locations.
5. Stage construction equipment at least 200 feet from existing or new habitable residences.
6. Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes in accordance with the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations. Clear signage will be provided for truck operators and construction workers at all access points.
7. All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Require an on-site disturbance coordinator to ensure that the construction period mitigation measures are enforced. This coordinator will respond to complaints regarding construction activities and construction caused nuisances. The phone number of this disturbance coordinator will be clearly posted at the construction site and provided to nearby residences. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. A log documenting any complaints and the timely remedy or outcome of such complaints will be kept.

Construction period overlapping NO<sub>x</sub> emissions associated with Phase III and Phase IV would be reduced by approximately 15 to 20 percent with Mitigation Measure AIR-2. According to the BAAQMD's *CEQA Air Quality Guidelines*, a 5-percent reduction is achievable with implementation of measures 6 through 8 above. Other measures would further slightly reduce NO<sub>x</sub> and reduce other pollutants, such as diesel exhaust emissions in the form of PM<sub>2.5</sub>. However, there would be emissions from on-road vehicle traffic (e.g., haul trucks and worker traffic) that cannot be reduced from these measures. Therefore, maximum average daily NO<sub>x</sub> emission with the mitigation measures in place would be reduced from approximately 59.7

pounds per day to approximately 51.0 pounds per day. This would be a 14.6 percent reduction. This emission level would not exceed the BAAQMD emissions threshold for average daily NO<sub>x</sub> emissions. Implementation of Mitigation Measure AIR-2 would reduce this impact to less than significant.

**Significance after Implementation of Mitigation Measure:** Less than Significant

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### ***Construction Dust***

**Impact AIR-3: Construction of the Project would result in short-term generation of fugitive dust that could contribute to existing or projected air quality standard violations. (Potentially Significant)**

Dust would be generated during demolition, grading, and construction activities associated with the project. The amount of dust generated would be highly variable and is dependent on the size of the area disturbed, amount of activity, soil conditions, and meteorological conditions. Typical winds during late spring through summer are from the west. Nearby sensitive land uses are residences that are separated by roadways or open space. Closest residences would be about 200 feet from most grading activities; however, most construction activity would occur at distances greater than 200 feet. These nearby residences could be adversely affected by dust if appropriate control measures are not employed during project construction. In addition, construction dust emissions can contribute to regional PM<sub>10</sub> emissions.

Although these construction activities would be temporary, they would have the potential to cause both nuisance and health air quality impacts. PM<sub>10</sub> is the pollutant of greatest concern associated with dust. If uncontrolled, PM<sub>10</sub> levels downwind of actively disturbed areas could possibly exceed State standards. In addition, dust fall on adjacent properties could be a nuisance. If uncontrolled, dust generated by grading and construction activities represents a significant impact. The BAAQMD *CEQA Air Quality Guidelines* consider fugitive dust, or PM<sub>10</sub> emissions, from construction activities to be less than significant if best management practices are used. Implementation of the BAAQMD's recommended basic construction mitigation measures for fugitive dust (see Mitigation Measure AIR-3) would reduce the fugitive dust-related construction impacts associated with the project to less than significant.

**Mitigation Measure AIR-3:** The contractor shall implement the following BAAQMD recommended basic fugitive dust mitigation measures:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

**Significance after Implementation of Mitigation Measure:** Less than Significant.

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### ***Operational Emissions***

#### **Impact AIR-4: The Project would result in long-term operational emissions of criteria pollutants that could contribute to existing or projected air quality standard violations. (Less than Significant)**

The project would expand the hospital, which would increase traffic trips and potentially energy consumption. This would lead to increased emissions. In addition, the project would replace existing sources of stationary air pollutants with new sources. Emission sources associated with the proposed project would mostly be from vehicle travel. There would also be emissions from area sources. These mostly include natural gas combustion for space and water heating, emissions from gas-powered landscape equipment, and consumer products that mostly include solvents and paints. Operational emissions for the project were computed using the URBEMIS2007 model with adjustments (Illingworth & Rodkin, 2012). As discussed above, the maximum project size was used for input to the model. Unless otherwise noted below, the model defaults for the San Francisco Bay Area were used. Emissions modeling information is provided in Appendix C to this Draft EIR.

#### **Land Use Types**

The basis for URBEMIS2007 emissions estimates are the land use types and sizes. The project buildings result in air pollutant emissions due mostly to the consumption of natural gas. The project size at completion of Phase IV is based on total hospital campus size of approximately 677,000 square feet. The building uses were broken down by types that fit into the URBEMIS2007 modeling choices for building types. A hospital type building was used to represent the proposed hospital with 235 beds. A medical office building type of 100,000 square feet was selected to represent the new medical offices and future offices or non-acute care outpatient services.

#### **Model Year**

The URBEMIS2007 model uses mobile source emission factors from CARB's EMFAC2007 model. This model is sensitive to the year selected, since vehicle emissions have and continue to be reduced through emission controls installed on new vehicles. The older vehicles that emit much higher rates of air pollution are being replaced each year by the lower emitting vehicles through attrition. The EMFAC2007 model predicts the effects of adopted vehicle emission standards and fleet turnover on future emissions (i.e., standards adopted through 2006). The model does not reflect newer standards enacted since that are included in the latest update of the model (i.e., EMFAC2011). However, URBEMIS2007 has not been updated to accommodate the

EMFAC2011 model. If it were, lower emissions would be predicted. Calendar year 2018 was selected for operational air pollutant emissions, since this would be about the earliest conceived year that the project could possibly be occupied after completion of the replacement hospital. Later years would have lower emissions, mostly because of vehicles with lower emissions replacing older vehicles on the road. Year 2035 was modeled to represent cumulative build-out, including full build-out of the project.

### **Traffic**

Operational emissions are mostly produced by vehicle trips. Typically, the model assigns trip generation rates that are sensitive to the land use or building type; however, this analysis relied upon total campus trip generation rates provided by Omni-Means Traffic Consultants as part of the project traffic study. These rates are based on the trip generation from the entire hospital site and are not based on land use type. Therefore, URBEMIS2007 model output “operational” results were adjusted to account for the predicted project daily trip generation. This trip generation rate is assumed to include all existing features of the existing hospital site that reduce vehicle travel (e.g., carpooling, transit access and pedestrian/bicycle access). The trip generation data were developed for existing 2010 conditions and future project conditions in 2018. A cumulative build out projection was provided for 2035. Using project specific traffic data provides a more accurate estimate of project emissions.

### **Entrained Roadway Dust**

Modifications to the URBEMIS2007 model road dust default settings for PM10 and PM2.5 emissions were made by adjusting the silt loading on roadways to 0.035 grams per square meter. This is the value used by BAAQMD for inventorying PM10 emissions from entrained roadway dust on arterial and collector roadways, similar to roadways that would be utilized by project traffic.

### **Area Sources**

Area sources from this project are modeled based mostly on predicted natural gas usage and landscape equipment usage. The URBEMIS2007 model was used to predict landscape-related emissions. Since natural gas usage was available for the existing facility, emissions were predicted based on natural gas usage and emission factors. Future project energy efficiency would be 20 percent greater than current Title 24 standards (prior to the 2008 Title 24 amendments). This would be achievable, because the project would be subject to the new amendments to the State Building Code.

### **Stationary Sources**

Generator emissions were predicted. BAAQMD provided information for existing hospital generator operation. The proposed project would replace these generators with two new generators that would have to meet USEPA Tier 4 emission standards. As a result, NO<sub>x</sub> and particulate matter (i.e., PM10 and PM2.5) generator emissions would be lower with the proposed project. The predicted emissions assume testing does not occur for more than one hour per day.

Daily operational emissions from the proposed project are shown in **Table 4.B-8**. These emissions represent the net increase in emissions caused by the proposed project in 2018 when the Replacement Hospital portion of the proposed project could be fully operational. Emissions in 2035 with complete operation of the project are also shown in Table 4.B-8. The total increase in average daily emissions from operation of the project is estimated to be below the significance thresholds established by the BAAQMD. Since the average daily emissions from the project would be less than the emissions thresholds for all pollutants, this would be considered a less-than-significant impact.

**TABLE 4.B-8  
 PROJECT ESTIMATED OPERATIONAL EMISSIONS (POUNDS PER DAY)**

<b>Scenario</b>	<b>ROG</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>
Existing Operation (2010)				
From URBEMIS2007*	40.3	50.6	38.5	8.1
Existing Generator Operation	<u>0.5</u>	<u>7.7</u>	<u>0.5</u>	<u>0.5</u>
Total Existing	40.8	58.3	39.0	8.6
No-Project or Existing Operation (2018)				
From URBEMIS2007*	22.7	26.1	38.3	8.0
Existing Generator Operation	<u>0.5</u>	<u>7.7</u>	<u>0.5</u>	<u>0.5</u>
Total Existing in 2018	23.2	33.8	38.9	8.5
Project Operation (2018)				
From URBEMIS2007 <sup>a</sup>	40.1	45.0	70.0	14.6
Existing Generator Operation	<u>0.7</u>	<u>2.6</u>	<u>0.1</u>	<u>0.1</u>
Total Project in 2018	40.8	47.6	70.1	14.7
<b>Project Net Increase in 2018</b>	<b>17.6</b>	<b>13.8</b>	<b>31.2</b>	<b>6.2</b>
No-Project or Existing Operation (2035)				
From URBEMIS2007*	15.8	14.9	38.3	8.0
Existing Generator Operation	<u>0.5</u>	<u>7.7</u>	<u>0.5</u>	<u>0.5</u>
Total Existing in 2035	16.3	22.6	38.8	8.5
Project Operation (2035)				
From URBEMIS2007*	25.5	21.8	72.1	14.9
Existing Generator Operation	<u>0.7</u>	<u>2.6</u>	<u>0.1</u>	<u>0.1</u>
Total Project in 2035	26.2	24.4	72.1	15.0
<b>Project Net Increase in 2035</b>	<b>10.0</b>	<b>1.8</b>	<b>33.3</b>	<b>6.5</b>
<b>BAAQMD Thresholds</b>	<b>54</b>	<b>54</b>	<b>82</b>	<b>54</b>
<b>Significant?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

<sup>a</sup> The URBEMIS2007 operational emissions were adjusted to correct for project-specific trip generation forecasts made by Omni-Means, since the traffic counts that are the basis of the forecasts were for the entire hospital campus and not individual components.

SOURCE: Illingworth & Rodkin, 2012.

In addition to the generation of ROG, NO<sub>x</sub>, PM10, and PM2.5, operations of the project would result in vehicular exhaust emissions of carbon monoxide. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the carbon monoxide standards. There is an ambient air quality monitoring station in San Rafael that measures carbon monoxide concentrations. This station is two miles from the site and representative of the most urban

portions of Marin County. The highest measured levels during the 2005 through 2009 five-year period are 3.0 ppm for the one-hour average and 1.7 ppm for the eight-hour average. These levels are well below ambient air quality standards.

The new BAAQMD CEQA Air Quality Guidelines include criteria to determine if analysis of carbon monoxide impacts is necessary. Under the screening criteria, dispersion modeling of carbon monoxide emissions is only necessary in this situation if the total hourly volume of an intersection affected by the proposed project exceeds 44,000 vehicles per hour. Intersections affected by the project would have volumes that would be less than 10 percent of the screening level volume. Therefore, it is concluded that the proposed project would not cause or contribute to a violation of an ambient air quality standard for carbon monoxide and the impact is considered less than significant.

**Mitigation:** None required

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### ***Community Health Risk***

#### **Impact AIR-5: The Project would contribute to community health risk impacts. (Potentially Significant)**

Community health risk impacts are addressed by computing the incremental cancer risk, non-cancer risk, and PM<sub>2.5</sub> exposure. For sources that involve TAC emissions of DPM, the primary concern is incremental cancer risk. The proposed project would have community risk impacts that are mostly associated with emissions of DPM. As a result, cancer risk was assessed and used to evaluate project-related community risk impacts.

Cancer risk associated with the project is addressed in two ways: (1) incremental cancer risk caused by changes in emissions of TACs from the proposed project and (2) exposure of sensitive receptors associated with the proposed project.

#### **Project TAC Emissions**

Marin General Hospital is a localized source of TAC emissions; mostly as a result of truck deliveries to the site and testing of diesel engines that power emergency generators. The proposed project would be a source of construction period TAC emissions associated with diesel equipment and vehicle exhaust. Operation of the project would change TAC emissions by increasing delivery truck traffic and replacement of existing generators with newer generators that would be required to meet the latest emissions standards required by CARB and BAAQMD. TAC emissions from the proposed project would affect nearby residences and Marin Catholic High School. The maximum predicted incremental cancer risks, hazard indices, and PM<sub>2.5</sub> concentrations from the proposed project are shown in **Table 4.B-9**. The effect of mitigation on construction activity is also shown in italics. The methodologies used to assess these impacts are described below.

**TABLE 4.B-9  
 MAXIMUM COMMUNITY RISK IMPACTS OF THE PROPOSED PROJECT**

Source	Receptor with Maximum Single Source Impact <sup>5</sup>	Maximum Cancer Risk (per million)	Maximum Hazard Index	Maximum Annual PM2.5 Concentration (µg/m <sup>3</sup> )
<b>Single Source Impacts</b>				
Construction Activities	Via Hidalgo Residential Area	14.1	0.02	0.11
<i>Construction Activities - Mitigated</i>	<i>Via Hidalgo Residential Area</i>	<i>4.2</i>	<i>&lt;0.01</i>	<i>0.04</i>
Delivery Trucks	All	<0.1	<0.01	<0.01
Removal of Generators <sup>1</sup>	Spyglass Hill Residential Area	-7.3 (-5.2) <sup>4</sup>	<0.01	-0.01
Addition of New Generators <sup>1</sup>	Spyglass Hill Residential Area	3.1 (2.2) <sup>4</sup>	<0.01	<0.01
Maximum Net Increase - Unmitigated	Via Hidalgo Residential Area	11.1	0.02	<0.11
<i>BAAQMD Threshold - Single Source</i>		<i>10</i>	<i>1.0</i>	<i>0.3</i>
<i>Significant?</i>		<i>Yes</i>	<i>No</i>	<i>No</i>
<b>Cumulative Sources</b>				
All Proposed Project Sources - Net		11.1	0.02	<0.11
Sir Francis Drake Blvd. <sup>2</sup>	>400 ft	<2.5	<0.01	<0.11
St Sebastian Church <sup>3</sup>	>600 ft	<0.7	<0.01	<0.54
Total Cumulative Sources		<14.3	<0.04	<0.76
<i>BAAQMD Threshold - Cumulative</i>		<i>100</i>	<i>10.0</i>	<i>0.8</i>
<i>Significant?</i>		<i>No</i>	<i>No</i>	<i>No</i>

NOTES:

- <sup>1</sup> Existing generators would be removed and replaced with new generators.
- <sup>2</sup> Based on BAAQMD Roadway Screening Analysis Tables.
- <sup>3</sup> Based on BAAQMD Google Stationary Source Screening Analysis Tool. Risk based on site-specific information obtained from BAAQMD and adjusted for distance.
- <sup>4</sup> Maximum impacts from generators occur at a receptor located in the Spyglass Hill residential area that is different than those for construction, which occur in the Via Hidalgo Residential area. Cancer risk in parenthesis is the maximum risk at the location of maximum cancer risk from construction.
- <sup>5</sup> A receptor grid was modeled and the maximum level from each source is reported. For cumulative sources, the maximum level resulting from a combination of all project and cumulative sources within 1,000 feet is reported.

SOURCE: Illingworth & Rodkin, 2012.

**Construction Activities**

Temporary construction activities would result in localized emissions of diesel exhaust that could result in temporary impacts to adjacent land uses. Construction equipment and truck trips would be a temporary source of DPM emissions. Existing residences to the east would be located near some of the construction areas. At some construction areas, residential dwelling units would be located within 100 to 200 feet of the edge of construction areas. However, much of the construction area would be more than 300 feet away from residential dwelling units. An air quality concern from construction activity is excess lifetime cancer risk from DPM exposure. This impact was addressed by conducting the following tasks:

- Modeling construction period exhaust PM2.5 emissions (see Tables 4.B-4, 4.B-5, 4.B-6, and 4.B-7 under Impact AIR-2, above);

- Inputting those emissions into a dispersion model to predict annual concentrations of PM<sub>2.5</sub> at nearby sensitive receptors where extended exposures could occur (i.e., residences, Marin Catholic School, and the Marin General Hospital); and
- Assessing the lifetime cancer risk and non-cancer risk caused by exposure to diesel exhaust PM<sub>2.5</sub>.

As described under Impact AIR-2, construction period exhaust emissions were computed using the URBEMIS2007 model along with projected construction activity (Illingworth & Rodkin, 2012). The project information and preliminary construction schedule was entered into the URBEMIS2007 model, which predicts anticipated construction activities and associated emissions. This analysis assumes construction of the various phases, with construction beginning in 2012 and ending in 2018.

Dispersion modeling was conducted using the ISCST3 model with a series of point sources to represent the emission sources (construction equipment) across the construction areas. A line source, comprised of a series of volume sources, was used to model emissions from trucks accessing the site during construction. The construction modeling sources and receptors are shown in Appendix C to this Draft EIR along with the other modeling assumptions.

Since representative historical meteorological data are not available, the modeling relied upon screening meteorological data provided by the BAAQMD. The screening meteorological data, which are comprised of 54 combinations of wind speed and atmospheric stability that represent meteorological conditions that may exist over a 24-hour period (daytime and nighttime conditions), are based on the meteorological conditions used by the SCREEN3 model. The screening meteorological conditions were used to model worst-hour concentrations. These worst-hour concentrations were then converted to annual concentrations, needed to address cancer, non-cancer chronic health risk impacts, and annual PM<sub>2.5</sub> concentrations, by applying the BAAQMD recommended conversion factor of 0.1 to the 1-hour concentrations.

Cancer risks were calculated using BAAQMD recommended methods for lifetime exposures, beginning with an infant. Child exposure assumes that the exposure begins for a 3rd trimester fetus and continues through the construction period, where the child is assumed to be present almost continuously throughout the entire construction period. Adult exposure assumes that an adult, who would be less susceptible to the exposure and also has a lower rate of intake of TACs per body weight, would also be exposed almost continuously to all construction emissions. Child exposures were assumed to be possible at every sensitive receptor. Nearby residences and Marin Catholic High School were assumed to be exposed over the entire 4-year construction period, and for 70 years during project operation. During construction, the exposure doses were adjusted to account for a 260 day/year exposure rather than the California Office of Environmental Health Hazards Assessment (OEHHA) default exposure period of 350 days/year for continuous exposure. Appendix C to this Draft EIR also includes a spreadsheet that shows the emission calculations used for the area source modeling and the cancer risk calculations.



Two scenarios of construction risk impacts are reported. The first scenario assumes a fleet of construction equipment that would be representative of the average fleet conditions anticipated in the URBEMIS2007/OFFROAD model. The second scenario assumes that almost all construction equipment would be equipped with diesel particulate filters (DPFs). DPFs are required on new construction equipment and will be phased into the overall construction fleet as the fleet ages and turnover occurs. CARB adopted regulations in 2007 to reduce emissions of construction equipment PM<sub>2.5</sub> exhaust and NO<sub>x</sub> emissions by requiring fleet operators to replace or retrofit equipment. In late 2011, the Office of Administrative Law approved amendments to the regulations for In-Use Off-Road Diesel-Fueled Fleets (Off-Road regulation) and Large Spark-Ignition Engine Fleet Requirements (LSI Fleet regulation) that delayed some of the requirements of the 2007 regulation.

### **Emergency Generator Emissions**

Marin General Hospital currently operates diesel engines that power emergency generators. These types of generators are required by law so that critical hospital operations requiring electricity will not be interrupted in the event of a disruption in electricity service. The generators require routine testing to ensure that they are operational if needed. Because the generators are over 50 horsepower in size, they are required to be permitted by the BAAQMD and have restrictions imposed upon their operation for routine testing and maintenance. Operational characteristics of these existing generator engines were obtained from the BAAQMD by submitting a stationary source information form request.

The existing generators would be replaced by newer generators that would have lower emissions. New diesel engines that are 50-horsepower or larger must meet the latest USEPA and CARB emission standards. By 2017, when the project generators would be installed, diesel engines meeting Tier 4 standards would be required. These engines would have emission rates that are much lower than the existing generators. As a result, TAC exposure from the replacement generators would be lower than exposure from the existing generators. The change in TAC exposure, in terms of incremental cancer risk, was modeled.

The ISCST3 model with screening meteorological conditions was used to model emissions from the new generators (Illingworth & Rodkin, 2012). Since the new generators would be located adjacent to the West Wing of the hospital and near the proposed Ambulatory Services Building, the effects of building downwash were included in the modeling. Emission source parameters and emissions rates for the new generator engines were based on manufacturer information. Maximum DPM concentrations were calculated at the same receptor locations as were used for the construction modeling. Cancer risks were calculated using annual concentrations based on the maximum modeled one-hour concentrations. The existing generators are adjacent to where the new generators would be located, and were assumed to have similar source characteristics as the new generators. Cancer risks from the existing generators were estimated by scaling their emissions, as reported by the BAAQMD, to the emissions from the new generators using the modeling results for the new generators.

### Delivery Trucks

Marin General Hospital currently receives deliveries from trucks. The larger trucks are considered all diesel-powered, while small delivery trucks are considered to be a mix of diesel and gasoline powered trucks. A list of typical delivery trucks indicates there are about 1,302 heavy-duty trucks visiting the hospital per year (approximately three to four trucks per day). Since the proposed project would increase the size of the hospital, truck deliveries were anticipated to increase. The study assumed the number of large truck deliveries would double, which is an overly cautious assumption since the hospital size would not double. Regular truck deliveries (e.g., FedEx, UPS, and beverage trucks) were not expected to increase. While Marin General Hospital may receive more volume of packages or supplies, these would still be expected to occur with the daily scheduled deliveries. The EMFAC2007 model was used to predict emissions of these deliveries, assuming a fleet year of 2018, reflecting the first year of full project operation (Illingworth & Rodkin, 2012).

### Cumulative Sources

Cumulative sources are those that are within 1,000 feet of sensitive receptors affected by TAC emissions from the proposed project. These include Sir Francis Drake Boulevard and Northern California Presbyterian Homes & Services. Community risk impacts from Sir Francis Drake Boulevard were computed using the BAAQMD Roadway Screening Tables for Marin County (May 2011 version). Sir Francis Drake impacts were based on an east-west roadway with 40,000 annual average daily traffic trips and a receptor distance of greater than 200 feet where maximum proposed project impacts would occur. Stationary source impacts were evaluated based on data provided by BAAQMD for Northern California Presbyterian Homes & Services (BAAQMD Plant #16966). These data, in the form of screening cancer risk, screening hazard level, and PM<sub>2.5</sub> level, were provided by BAAQMD in response to the project Stationary Source Inquiry Form Submittal, dated May 3, 2011 (Illingworth & Rodkin, 2012).

### Community Health Risk Impact Summary

The BAAQMD *CEQA Air Quality Guidelines* considers exposure of sensitive receptors to air pollutant levels that result in an unacceptable cancer risk or hazard to be significant. For cancer risk, which is a concern with DPM and other mobile-source TACs, BAAQMD considers an increased risk of contracting cancer that is 10 in one million chances or greater to be significant for a single source (see Table D.4-9). The BAAQMD *CEQA Air Quality Guidelines* (BAAQMD, 2011b) also consider exposure to annual PM<sub>2.5</sub> concentrations that exceed 0.3 µg/m<sup>3</sup> to be significant. Since construction of the proposed project is predicted to potentially cause an incremental cancer risk of greater than 10 excess cancer cases in one million for off-site receptors during construction, the impact is considered significant.

#### **Mitigation Measure AIR-5:** Implement Mitigation Measure AIR-2.

Mitigation Measure AIR-2 would require large construction equipment to have emissions that are 45 percent lower than recent statewide fleet averages as reported by CARB. Use of diesel particulate matter filters (or features that provide equivalent level of PM<sub>2.5</sub> emissions reductions) would be required; therefore, the URBEMIS2007 modeling was adjusted for the mitigated

conditions. Construction period DPM emissions would be reduced by 30 to 80 percent with this measure, depending on the year analyzed. Earlier years would have higher unmitigated emissions, and therefore, a greater reduction would be achieved with implementation of the mitigation measure. The effect of this mitigation measure is reflected in predicted cancer risk for construction activities. In addition, exposures would be reduced by staging equipment away from residences and limiting idle times. As a result, exposures would be reduced to ensure that residences would not be exposed to substantial pollutant concentrations in the form of DPM. With this mitigation measure, incremental cancer risk from construction would be reduced to 4.2 excess cancer cases per million.

**Significance after Implementation of Mitigation Measure:** Less than Significant

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### ***Health Risk Exposure to Hospital Receptors***

#### **Impact AIR-6: Sensitive receptors at Marin General Hospital would not be exposed to health risk impacts. (Less than Significant)**

Community risk impacts are also addressed for sensitive receptors that would be part of the proposed project. This includes patients, with the most susceptible patients being premature born infants. Community risk impacts due to TAC emissions upon the hospital were predicted for construction, generator operation, and truck deliveries. These emissions were predicted in the same manner as used to predict off-site community health risk impacts.

Dispersion modeling was conducted to predict the exposures at Marin General Hospital where sensitive receptors may be located (Illingworth & Rodkin, 2012). Hospital receptors were assumed to be inside the hospital (e.g., patients at the hospital spend most of their time indoors). The predicted community risk impacts are based on outdoor exposures. While building codes for hospitals require operable windows, most indoor air would be provided through air handling systems. Natural ventilation through windows or other openings such as louvers is considered as supplemental to the required mechanical ventilation systems. Filtration is required in hospital mechanical ventilation systems. CARB estimates a one third reduction in cancer risk between outdoor and indoor air in a residence. This reduction would be greater in a hospital, since most indoor air is mechanically supplied and conditioned with filtration.

For exposures at the hospital, an exposure period of one year was assumed. Community risk impacts for both infants and adults were predicted based on the maximum modeled exposure at any one receptor. Results are shown in **Table 4.B-10**. As indicated in the table, maximum community risk impacts at Marin General Hospital would be less than significant.

**Mitigation:** None required

**TABLE 4.B-10  
MAXIMUM COMMUNITY RISK IMPACTS AT MARIN GENERAL HOSPITAL**

Source	Maximum Cancer Risk (per million) <sup>3</sup>	Maximum Hazard Index	Maximum Annual PM2.5 Concentration (µg/m <sup>3</sup> )
Single Source Impacts (i.e., Maximum from any Single Source)			
Construction Activities	7.3	0.02	0.11
<i>Construction Activities – Mitigated</i>	1.2	<0.01	0.02
Delivery Trucks	<0.1	<0.01	<0.01
Removal of Generators <sup>1</sup>	-3.8	-<0.01	-0.04
Addition of New Generators <sup>1</sup>	1.6	<0.01	0.02
Maximum Net Increase (unmitigated)	7.3	0.02	0.11
Sir Francis Drake Blvd. <sup>2</sup>	<2.5	<0.01	<0.11
<i>BAAQMD Threshold - Single Source</i>	10	1.0	0.3
<i>Significant?</i>	No	No	No
Total Cumulative Sources (i.e., maximum from all sources at any one receptor)	<10.5	<0.04	<0.76
<i>BAAQMD Threshold - Cumulative</i>	100	10.0	0.8
<i>Significant?</i>	No	No	No

## Notes:

<sup>1</sup> Existing generators would be removed and replaced with new generators.

<sup>2</sup> Based on BAAQMD Roadway Screening Analysis Tables. Cancer risk is based upon a 70-year lifetime exposure, which would not occur for this type of receptor, so this is an over-representation of the risk and a "<" is indicated.

<sup>3</sup> Based on receptor grid placed over hospital where maximum result is reported.

SOURCE: Illingworth & Rodkin, 2012.

## Odors

### Impact AIR-7: The Project would not generate localized odors. (Less than Significant)

During construction, the various diesel powered vehicles, equipment in use onsite, and asphalt pavements (if any is used), would create localized odors. These odors would not likely be noticeable over long periods of time nor extend much beyond the project's site boundaries.

Existing operation of the hospital is not a source of odor complaints. A BAAQMD response to an October 2009 data request indicated that there were no recorded complaints (air quality or odors) associated with Marin General Hospital (Illingworth & Rodkin, 2012). Operation of the proposed project is not expected to generate noticeable odors beyond the project site. The proposed project is not near identified sources or odors that are likely to cause complaints. Therefore, potential impacts associated with odors are less than significant.

**Mitigation:** None required

## Cumulative Impacts

**Impact AIR-8: The Project would contribute to cumulative air quality degradation and to regional air quality cumulative impacts. (Potentially Significant)**

### ***Geographic Context***

All past, present and reasonably foreseeable future development within the air basin contributes to regional emissions of criteria pollutants, thus basin-wide projections of emissions is factored into assessing the cumulative effect. For cumulative sources of TACs, all existing sources within 1,000 feet of sensitive receptors affected by TAC emissions from the proposed project are considered, in combination with the project-generated TACs.

### ***Impacts***

Based on BAAQMD guidance, if a project would result in an increase in ROG, NO<sub>x</sub>, PM10, or PM2.5 of more than its respective average daily mass thresholds, then it would also be considered to contribute considerably to a significant cumulative impact. Short-term construction activities associated with the project would result in emissions that would be mitigated to less than significant levels with implementation of Mitigation Measures AIR-2 and AIR-3 (see Impacts AIR-2 and AIR-3 discussions) and long-term operations of the project would result in emissions that would be less than significant. Therefore, mass emissions that would be associated with the project would not be cumulatively considerable when combined with cumulative development in the regional air basin. Cumulative impacts associated with criteria pollutants would be less than significant or mitigated to less than significant.

As indicated above, all existing sources within 1,000 feet of sensitive receptors affected by TAC emissions from the proposed project are considered, in combination with the project-generated TACs. Cumulative sources include Sir Francis Drake Boulevard and Northern California Presbyterian Homes & Services. As indicated in Tables B.4-9 and B.4-10 (see Impacts AIR-5 and AIR-6 discussions), cumulative TAC-related impacts would be less than significant.

**Mitigation Measure AIR-8:** Implement Mitigation Measures AIR-2 and AIR-3.

**Significance after Implementation of Mitigation Measure:** Less than Significant.

## References – Air Quality

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- BAAQMD, 2011a. Annual Bay Area Air Quality Summaries website: <http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Quality-Summaries.aspx>, accessed September 5, 2011.
- BAAQMD, 2011b. *California Environmental Quality Act Air Quality Guidelines*, adopted June 2, 2010, updated May 2011.
- California Air Resources Board (CARB), 2010a. *Ambient Air Quality Standards*, last updated September 8, 2010.
- CARB, 2010b. *Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements*, Appendix D: OSM and Summary of Off-Road Emissions Inventory Update, October.
- Gauderman, James, et al., 2004. *The Effect of Air Pollution on Lung Development from 10 to 18 Years of Age*. Published in the New England Journal of Medicine; 351:1057-1067 September 9, 2004.
- Illingworth & Rodkin, Inc., 2012. *Marin Healthcare District's Marin General Hospital Replacement Building Project, Air Quality and Greenhouse Gas Emissions Assessment*, Greenbrae, California, prepared for Navigant Consulting Inc., June 5, 2012.
- Office of Information and Regulatory Affairs (OIRA), 2011. Letter sent from Cass R. Sunstein of OIRA, to USEPA Administrator Jackson, September 2, 2011.
- Peters, John M., 2004. *Epidemiologic Investigation to Identify Chronic Effects of Ambient Air Pollutants in Southern California*. Prepared for California Air Resources Board Contract Number 94-331. May.
- Sonoma Technology Inc., 2010. Memo from Stephen B. Reid, et al of Sonoma Technology Inc., to Dr. Phil Martien, Bay Area Air Quality Management District, Re: Draft documentation of the preparation of future-year emissions inventories of toxic air contaminants for the San Francisco Bay Area (Contract No. 2009-127), April 23, 2010.

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## 4.C Biological Resources

This section identifies the existing biological resources at the Marin General Hospital Campus and surrounding areas (together referred to as the “study area”), identifies the federal, State, and local regulations pertaining to biological resources within the region, and describes the impacts of the proposed project on those biological resources. As required, mitigation measures to reduce potentially significant impacts are identified. Information used in the preparation of this section was obtained from regional biological studies, biological resources reports prepared for the proposed project site (Zander Associates, 2010; Urban Forestry Associates, 2010, 2011 and 2012), reports from the California Natural Diversity Database (CNNDDB, 2012), California Native Plant Society Electronic Inventory (CNPS, 2012), and U.S. Fish and Wildlife (USFWS, 2012), a reconnaissance-level field survey, and standard biological literature.

Vegetation types and wildlife habitats were identified using a combination of existing studies and field observations. An Environmental Science Associates (ESA) staff biologist conducted a reconnaissance-level field survey of the project site and adjacent open space on August 30, 2011 to gather information and verify existing data on vegetative communities, wildlife habitats, and habitat use on and surrounding the site.

### Setting

#### Regional Setting

The project site is located in the Bay Area-Delta Bioregion, as defined by the State’s Natural Communities Conservation Program. This bioregion consists of a variety of natural communities that range from the open waters of San Francisco Bay and the Sacramento-San Joaquin Delta to salt and brackish marshes to chaparral and oak woodlands. The temperate climate is Mediterranean in nature, with relatively mild, generally wet winters and warm, dry summers. The high diversity of vegetation and wildlife found in Marin County, which reflects that of the region as a whole, is a result of soils, topographic, and micro-climate diversity that combine to promote relatively high levels of endemism.<sup>1</sup> This, in combination with the rapid pace of development in the region, has resulted in a relatively high degree of endangerment for local flora and fauna.

The project site is located approximately 1.8 miles west of San Francisco Bay and 14 miles east of the Pacific Ocean. The surrounding area is a mosaic of primarily residential areas and small towns, with fairly dense residential uses developed on wooded hillsides, mixed with large areas of public open space, such as Mount Tamalpais State Park and the Golden Gate National Recreation Area.

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<sup>1</sup> Endemism refers to the degree to which organisms or taxa are restricted to a geographical region or locality and are thus individually characterized as endemic to that area.



## Project Site

Marin General Hospital was built on flat to moderately sloping ground and, at its eastern extent was terraced into more steeply sloping hillsides. Historically, vegetation within the developed project site would have consisted of native grasslands and open oak woodlands. Today, the project site is fully developed and landscaped, and remnants of these habitat types only persist on the steep slopes to the east and south of the developed areas. While native plant species persist to some degree on these steeper, undeveloped slopes, the remaining vegetation and habitat here have been degraded through invasion of non-native plant species and vegetation management focused on fuel reduction.

Soils underlying the project site consist of two types, as mapped by the Marin County Soil Survey (USDA, NRCS, 2011): Tocaloma-McMullin-Urban Land Complex, 15-30 percent slopes and Xerorthents-Urban Land Complex, 0-9 percent slopes. Tocaloma soils are moderately deep, well drained soils derived from sandstone and shales. The McMullin series consists of shallow, well drained soils derived from shale, sandstone, basic igneous, and metamorphic rocks. McMullin soils occur on north-facing slopes in California; they are not likely to occur in the project area. The term “Urban Land” refers to areas where the soil has been covered in pavement and buildings. Xerorthents are soils, typically in urban areas, that have been mechanically mixed, through cut and fill or other disturbance to a point that the original soil type is no longer discernible.

There are no drainages, creeks, or wetlands within the project site or on the slopes above. However, Corte Madera Creek, Creekside Marsh, and the Hal Brown Park at Creekside lie to the west and across Bon Air Road from the project site. These open space areas are included within the biological resources study area for this Draft EIR due to their proximity to the hospital and the potential for impacts resulting from the proposed project on the habitat and associated wildlife.

## Vegetation Communities and Wildlife Habitats

### Grassland

Non-native annual grassland occurs on the slopes to the east and south of the developed project site as open grassland and as an understory to remnant oak woodland and under the blue-gum eucalyptus (*Eucalyptus globulus*) along the southern edge of the project site. Dominant non-native grasses include wild oats (*Avena fatua*) and rattlesnake grass (*Briza maxima*). Other herbaceous plant species observed in the non-native grasslands on-site are the native California poppy (*Eschscholzia californica*), California buttercup (*Ranunculus californicus*), hound’s tongue (*Cynoglossum grande*), and soap plant (*Chlorogalum pomeridianum*), and the non-native bristly ox-tongue (*Helminthotheca [=Picris] echioides*), redstem filaree (*Erodium cicutarium*), and English plantain (*Plantago lanceolata*). Grassland dominated by purple needlegrass (*Stipa [=Nassella] pulchra*) occurs near the top of the hill at the northern end of the project site to the east of the Emergency Room entrance (Zander Associates, 2010). This vegetation type is considered a sensitive natural community by CDFG (see *Natural Sensitive Communities* discussion, below).

Non-native annual and native perennial grasslands typically provide refuge for reptiles such as western fence lizard (*Sceloporus occidentalis*) and gopher snake (*Pituophis catenifer*), as well as grassland birds such as mourning dove (*Zenaida macroura*) and white-crowned sparrow (*Zonotrichia leucophrys*). Grasslands can also serve as important foraging grounds for aerial and ground-foraging insect eaters such as *Myotis* bat species. Mammals such as Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*), and western harvest mouse (*Reithrodontomys raviventris*), commonly forage within urban and disturbed grasslands. Small rodents often attract raptors, including red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and white-tailed kite (*Elanus leucurus*). However, the grasslands within the project site are fragmented, isolated, and of limited size, which diminishes their value as wildlife habitat in general and also reduces the likelihood that they would be used by raptors for foraging on a regular basis.

### **Oak woodland**

Small stands of oak woodland occur on the undeveloped slopes of the project site. The overstory in these stands includes coast live oak (*Quercus agrifolia*), black oak (*Quercus kelloggii*), and California bay (*Umbellularia californica*). The understory consists primarily of non-native annual grasses and a mix of native and non-native herbaceous species, as described above.

Oak woodland typically supports a higher diversity of wildlife than nearly any other vegetation type in California. However, the habitat value of the woodland remnants on the slopes above the hospital has been degraded by invasive plant species colonization, vegetation management for fuel reduction, isolation and fragmentation, and surrounding land uses. Nonetheless, numerous birds were observed using this habitat for foraging purposes, including dark-eyed junco (*Junco hyemalis*), chestnut-backed chickadee (*Poecile rufescens*), and California towhee (*Pipilo crissalis*). The same species, and others, likely nest in the trees on the slopes as well.

### **Eucalyptus stand**

A stand of mature blue-gum eucalyptus occurs on the knoll immediately to the south of the existing main hospital entrance. The understory here consists of non-native annual grasses mixed with native and non-native herbaceous species, as described above. Several mature eucalyptus also occur on the project site. Large eucalyptus can provide nesting substrate for a variety of raptors, including great horned owl and red-tailed hawk, and the trees onsite may also serve as perches for raptors that forage in the adjacent marshes (Zander Associates, 2010), as well as roosting sites for special-status bats. Whitewash under several trees on the project site was noted during the 2010 site visit conducted by Zander Associates and a single large stick nest was observed in a eucalyptus located west of the Central Wing of the existing hospital building.

### **Developed/Landscaped**

The project site is dominated by buildings and parking lots, with larger landscaped areas occurring along Bon Air Road, on the northwest side of the existing hospital's West Wing, and between the main entrance road and the existing hospital's Central Wing. Landscaped strips between the different parking lot areas are lined with shrubs and occasional small trees. The landscape palette

includes cultivars of native species, such as manzanita (*Arctostaphylos* cv.), and non-native shrubs and ground covers. Larger landscape trees on the project site include coast redwood (*Sequoia sempervirens*), coast live oak, blue-gum eucalyptus, and two species of palms (*Washingtonia filifera* and *Phoenix canariensis*). There is only one small area of turfgrass just south of the Central Wing. Trees, primarily pines and oaks, line Bon Air Road and trees and shrubs also line the median strip there. This vegetation screens ground level views from Creekside Marsh into the project site.

Developed and landscaped areas may provide limited wildlife habitat but generally support only generalist,<sup>2</sup> and often non-native wildlife species that are tolerant of human presence and activities, such as English sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), house finch (*Carpodacus mexicanus*), Norway rat (*Rattus norvegicus*), house mouse (*Mus musculus*), and pocket gophers (*Thomomys bottae*). California mule deer (*Odocoileus hemionus californicus*) tracks were observed in the landscaped strip along the Emergency Department entrance during ESA's 2011 site visit. A variety of bird species may use trees and shrubs on the project site for nesting.

### **Corte Madera Creek and Creekside Marsh**

Corte Madera Creek lies to the west of the project site at a distance of approximately 350 feet at its closest, at the hospital main entrance. The creek is hydrologically connected to San Francisco Bay, approximately 2.15 river miles distant from the project site, and is thus tidally influenced, supporting narrow fringes of northern coastal salt marsh along its banks. In the past the creek supported tidewater goby, a federally endangered species, but the species is currently thought to be extirpated from the region. Currently, Corte Madera Creek supports steelhead/rainbow trout (*Oncorhynchus mykiss irideus*) (Leidy, 2007) and is designated as Critical Habitat for steelhead, as well as for coho salmon (*Oncorhynchus kisutch*) although coho have not been observed there since 1986 (NOAA, 2008; Leidy et al., 2005).

Creekside Marsh is hydrologically connected to Corte Madera Creek and both the marsh and creek are classified by the National Wetlands Inventory as estuarine intertidal wetlands (Zander Associates, 2010) and have been documented as supporting special-status species. California black rail (*Laterallus jamaicensis coturniculus*; state threatened) and salt marsh harvest mouse (*Reithrodontomys raviventris*; federal and state endangered) were documented in the past from the vicinity of Creekside Marsh but these records are historical and neither species has been observed in the area since 1932 and 1959, respectively (CDFG, 2012). California clapper rail are known to inhabit Creekside Marsh (McBroom et al., 2011). There is a buffer of non-native annual grassland between Bon Air Road and Creekside Marsh that ranges from approximately 60 to over 300 feet in width.

### **Setting for Bird Collisions and Lighting Effects**

It is estimated that, in North America alone, millions of songbirds are killed due to collisions with buildings and other structures each year (Lochhead, 2008). Collisions are currently recognized as one of the leading causes of bird population declines worldwide (Brown et al., 2007). Daytime

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<sup>2</sup> Generalist species are able to use a variety of habitats and food sources, unlike many special-status species that are closely restricted to a specific habitat type or food source.

collisions occur most often when birds fail to recognize window glass as a barrier. Regardless of overall height, the ground floor and first few stories of buildings present the greatest hazards to most birds; reflections of attractive ground-level features like vegetation draw birds toward glass surfaces and often result in collisions. Recent increases in glass surfaces used to provide more natural light to building interiors can be considered a “biologically significant” issue, potentially affecting the viability of local and regional bird populations.<sup>3</sup> Transparent features – especially buildings where birds can see through two glass surfaces to vegetation on the other side – also attract birds and cause collisions. Corte Madera Creek and Creekside Marsh, and vegetated areas on the project site, provide potentially valuable stopover habitat for migratory birds, as well as breeding habitat. Creation of vegetated space that may attract birds adjacent to new buildings has the potential to increase avian collisions.

Many collisions are induced by artificial night lighting, particularly from large buildings, which can be especially problematic for migrating songbirds since many are nocturnal migrants (Ogden, 1996). The tendency of birds to move towards lights at night when migrating, and their reluctance to leave the sphere of light influence for hours or days once encountered, has been well documented. It has been suggested that structures located at key points along migratory routes may present a greater hazard than those at other locations (Ogden, 1996). Other research suggests that fatal bird collisions increase as light emissions increase, that weather often plays an important part in increasing the risk of collisions, and that nights with heavy cloud cover and/or precipitation present the conditions most likely to result in high numbers of collisions (Ogden, 2002). The type of light used may affect its influence on the birds: for example, studies have indicated that blinking lights or strobe lights affect birds significantly less than non-blinking lights (Gauthreaux and Belser, 2006).

Direct effects include death or injury as the birds collide with lighted structures and other birds that are attracted to the light, as well as collisions with glass during the daytime, while indirect effects include delayed arrival at breeding or wintering grounds, and reduced energy stores necessary for migration, winter survival, or subsequent reproduction (Gauthreaux and Belser, 2006).

No specific avian flight routes in and out of the project area are known, and there is no local data on bird kills due to building collisions.

## **Special-status Species**

A number of species known to occur in the project site vicinity are protected pursuant to federal and/or State endangered species laws, or have been designated CDFG Species of Special Concern. In addition, § 15380(b) of the California Environmental Quality Act (CEQA) *Guidelines* provides a definition of rare, endangered or threatened species that are not included in

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<sup>3</sup> New York City Audubon Society, Bird Safe Building Guidelines, 2007.

any listing.<sup>4</sup> Species recognized under these terms are collectively referred to as “special-status species.” For the purposes of this EIR, special-status species include:

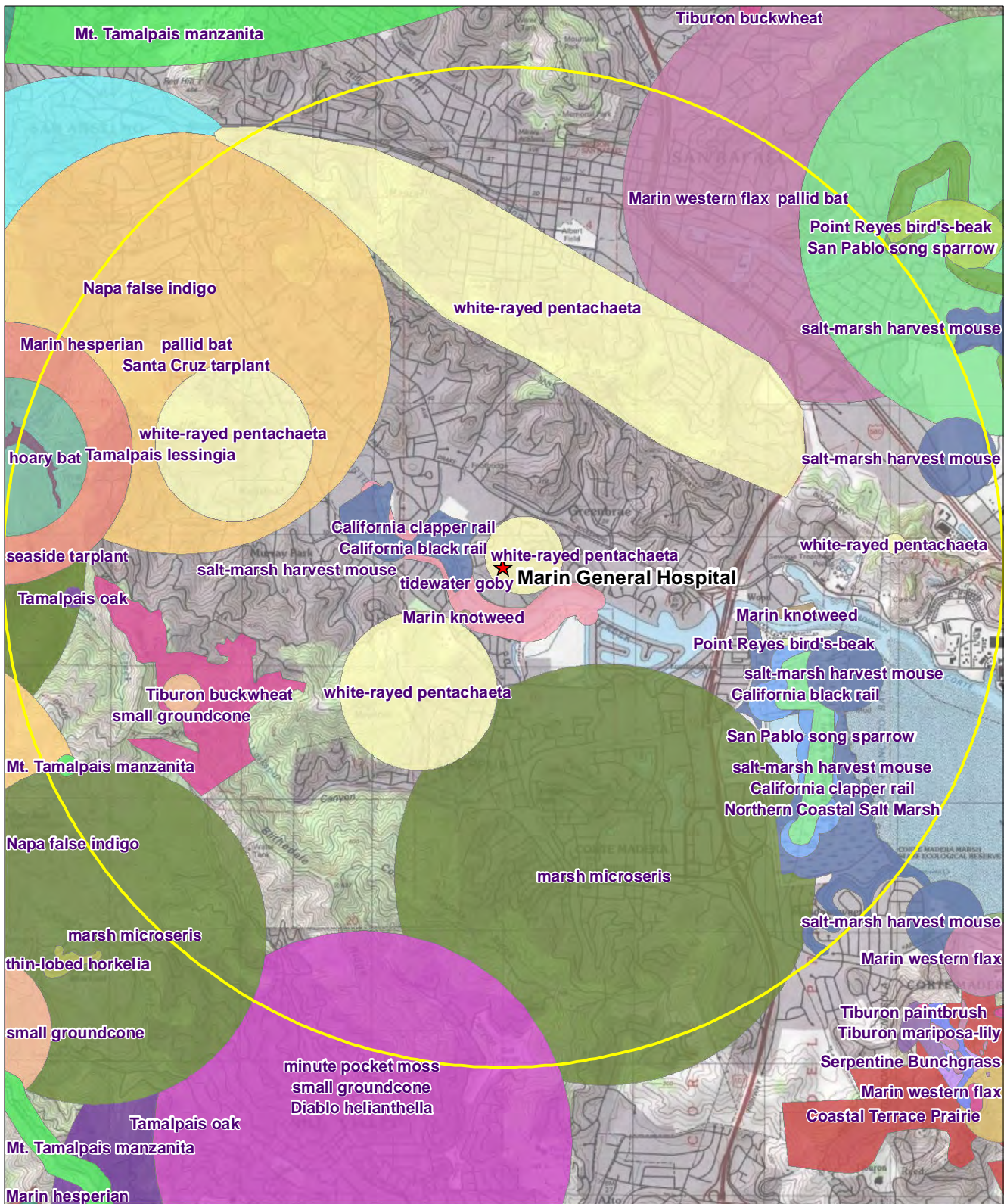
- Plant and wildlife species listed as rare, threatened or endangered under the federal or State endangered species acts;
- Species that are candidates for listing under either federal or State law;
- Species designated by CDFG as Species of Special Concern;
- Species protected by the federal Migratory Bird Treaty Act (16 U.S.C. 703-711);
- Species that may be considered rare or endangered pursuant to § 15380(b) of the CEQA *Guidelines*.

**Appendix E** to this Draft EIR provides comprehensive lists of the special-status species that have been documented from, or have potential to occur in suitable habitat within, the project area. These lists were obtained from the California Natural Diversity Database (CNDDDB) (CDFG, 2012), California Native Plant Society (CNPS) Electronic Inventory (CNPS, 2012), and the U.S. Fish and Wildlife Service (USFWS, 2012). Special-status species information was compiled for the San Rafael USGS 7.5 minute topographic quadrangle (in which the proposed project site is located) and the surrounding seven ‘topo quads,’ including San Geronimo, Novato, Petaluma Point, Bolinas, San Quentin, Point Bonita, and San Francisco North. **Figure 4.C-1** shows special-status species observations located within three miles of the project site. Based on ESA’s review of the biological literature of the region, previous EIRs and surveys in the project site vicinity, and an evaluation of the habitat conditions of the project site, many of these species were eliminated from further evaluation because (1) the project site or the immediate area does not provide suitable habitat, or (2) the known range for a particular species is outside of the project site and/or the immediate area.

The special-status species with potential to occur at the project site or in habitat afforded by adjacent Corte Madera Creek and Creekside Marsh are presented in Table E-1 in Appendix E to this Draft EIR, which includes species for which potential habitat (i.e., general habitat types) occurs within or in the vicinity of the project site. Species determined to have low potential to occur at the project site or adjacent natural habitats are listed in Table E-1 in Appendix E with the reasoning behind the determination and are generally not expected to occur there. Species observed, or with a moderate to high potential to occur at the project site or in habitat afforded by adjacent Corte Madera Creek and Creekside Marsh are discussed in detail below.

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<sup>4</sup> For example, vascular plants listed as rare or endangered or as List 1 or 2 by the CNPS are considered to meet Section 15380(b).

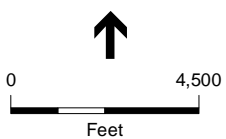


SOURCE: ESRI ArcData Online; CNDDDB, 2012

Marin General Hospital . 210606

**Figure 4.C-1**

CNDDDB Documented Special-status Species Occurrences Within 3 Miles of the Project Site



### **Species Assessed in Detail**

Of the special-status plants and animals presented in Table E-1 in Appendix E, along with the regulatory basis for their status, only the following species, which were determined to have a moderate potential to occur within the project site vicinity, were fully considered in the impact analysis (see *Approach to Analysis*, below, for discussion of occurrence potential):

- Mimic tryonia
- Central California coast steelhead
- Cooper's hawk
- Great horned owl
- Red-tailed hawk
- Red-shouldered hawk
- Northern harrier
- White-tailed kite
- American kestrel
- Salt-marsh common yellowthroat
- California clapper rail
- Western red bat
- Pallid bat

These species are described in further detail below.

### **Special-Status Plants**

No special-status plant species are expected to occur within the footprint of project buildings. Although a number of special-status grassland plant species are identified in Appendix E to this Draft EIR as occurring within the project site vicinity, there are no intact native communities remaining within the project footprint. The grasslands on the project site are small in size, fragmented, and isolated from other grasslands. They have been altered through vegetation management and, although they retain a component of native herbaceous species, are dominated by non-native annual grasses and weeds. In addition, the distribution of many of the plant species considered in Appendix E is restricted to specific habitat types or soils that are not, or never were, present within the study area, such as sandy, clay, or serpentine soils. Some of the plant species presented in Appendix E are considered by CNPS (2012) to be extirpated from the project site vicinity due to a long-standing history of disturbance. White-rayed pentachaeta (*Pentachaeta bellidiflora*) was documented historically in the vicinity of the project site. However, this species is also documented as having been extirpated from this location (CDFG, 2012) and appropriately timed surveys in 2010 did not locate the species (Zander Associates, 2010).

### **Special-Status Animals**

#### **Invertebrates**

**Mimic tryonia** (*Tryonia imitator*). This snail is found in subtidal zones in coastal lagoons and saltmarshes from Sonoma to San Diego Counties. It inhabits permanently submerged areas in a variety of sediment types and is able to withstand a wide range of salinities. Mimic tryonia is documented from marshes at China Camp, approximately 10 miles northeast of the project site, as well as along the San Rafael Bay coastline, located to the northeast of the project area.

## Fishes

**Central California coast steelhead** (*Oncorhynchus mykiss irideus*). Steelhead populations in the Central California Coast Distinct Population Segment (DPS) are listed as threatened under the Federal Endangered Species Act (FESA). Steelhead possess the ability to spawn repeatedly, maintaining the mechanisms to return to the Pacific Ocean after spawning in freshwater. Juvenile steelhead may spend up to four years residing in fresh water prior to migrating to the ocean as smolts. Corte Madera Creek supports a steelhead run between freshwater spawning and rearing areas upstream from the project area and the Pacific Ocean (Leidy, 2007). Therefore, steelhead occur seasonally in the waters adjacent to the project site.

## Birds

**Cooper's hawk** (*Accipiter cooperi*). Cooper's hawk ranges over most of North America and may be seen throughout California, most commonly as a winter migrant. Nesting pairs have declined throughout the lower-elevation, populated parts of the state. Cooper's hawk generally forages in open woodlands and wooded margins and nests in tall trees, often in riparian areas. This species is known to nest locally in Bay Area urban neighborhoods. This species may forage in and around the project area, and could potentially nest in large trees in the vicinity of the project area. Cooper's hawk is protected under § 3503.5 of the California Fish and Game Code.

**Great horned owl** (*Bubo virginianus*). Great horned owls occur throughout North America and are found in a variety of wooded habitats. These large raptors prey on small to medium-sized mammals such as voles, rabbits, skunks, and squirrels. Great horned owls can often be seen and heard at dusk, perched in large trees. They roost and nest in large trees such as pines or eucalyptus. They often use the abandoned nests of crows, ravens, or sometimes squirrels (Erlich et al., 1988; Sibley, 2000). Great horned owls may use large pines or eucalyptus located within or within line of sight to the project site for roosting or nesting and may forage over grasslands for voles and other small mammals.

**Red-tailed hawk** (*Buteo jamaicensis*). Red-tailed hawks are commonly found in woodlands and open country with scattered trees. These large hawks feed primarily on small mammals, but will also prey on other small vertebrates, such as snakes and lizards, as well as on small birds and invertebrates. Red-tailed hawks nest in a variety of trees in urban, woodland, and agricultural habitats. Large coast live oaks, as well as taller non-native trees such as Monterey pine, deodar cedar, and eucalyptus may be used by red-tailed hawks for nesting in woodlands within and adjacent to the project site.

**Red-shouldered hawk** (*Buteo lineatus*). Red-shouldered hawks are relatively common in both rural and urban situations and can be found in residential neighborhoods and along riparian corridors or other waterbodies. These hawks hunt primarily for mammals, reptiles, and amphibians (Sibley, 2001). Larger conifers, oaks, and eucalyptus provide potential nesting habitat for this species on the slopes to the east and south of the project site as well as within line of sight to the west and north of Creekside Marsh.



**Northern harrier** (*Circus cyaneus*). This species, like other raptors and birds in general, is protected under California Fish and Game Code 3503 and 3503.5<sup>5</sup>, which prohibits the taking or destroying of any bird or nest in the order of Falconiformes (falcons, kites, and hawks) and Strigiformes (owls). Northern harrier is also a California Species of Special Concern. Northern harrier nest and forage along wet meadows, sloughs, savanna, prairie, and marshes, feeding on small mammals, such as California vole and mice. Destruction of marsh habitat is the primary reason for the decline of this species. Northern harrier may use the marshes and adjacent grasslands at Creekside Marsh for foraging and nesting. **White-tailed kite** (*Elanus leucurus*) is a California resident that shifts its local distribution in response to available food supplies. This species is Fully Protected under the California Fish and Game Code. Prior to 1895 this species was common to widespread in valley and lower foothill territory, but is now rare in many sections of the state. The white-tailed kite forages in wetlands and open brushlands, usually near water and streams. Oak woodlands, valley oak or live oak, or trees near marshes are used for nesting sites. The nest made by this species is a frail platform of sticks, leaves, weed stalks, and similar materials located in trees or bushes. A combination of habitats is essential, including open grasslands, meadows or marshes for foraging and isolated dense-topped trees for perching and nesting. Large eucalyptus or conifers in the project vicinity may provide suitable nesting platforms.

**American kestrel** (*Falco sparverius*). This relatively small member of the falcon family preys on small birds and on mammals, lizards, and insects. The kestrel is most common in open habitats, such as grasslands or pastures. American kestrels usually nest in tree cavities (Sibley, 2001; Ehrlich et al., 1988). Mature eucalyptus and conifers in the project vicinity may provide this species with nesting habitat.

**Saltmarsh common yellowthroat** (*Geothlypis trichas sinuosa*). The common yellowthroat is a small warbler with a complex of subspecies. The salt marsh subspecies is recognized as a distinct breeding population, with geographic distribution, habitats, and subtle differences in morphological traits that distinguish it from other subspecies. It inhabits tidal salt and brackish marshes in winter, but breeds in freshwater to brackish marshes and riparian woodlands during spring to early summer. Nests are placed on or near the ground in dense emergent vegetation or shrubs. Saltmarsh common yellowthroat may use marsh habitat at Creekside Marsh or along Corte Madera Creek for foraging and nesting. The subspecies is a state Species of Concern due to major decline of both habitat and populations in the past decade, but is not currently listed as endangered or threatened. The common yellowthroat is also protected under the Migratory Bird Treaty Act.

**California clapper rail** (*Rallus longirostris obsoletus*). California clapper rail (listed as Endangered by the federal and state governments) live in coastal salt and brackish marshes and tidal sloughs. Year-round residents, clapper rails stay mainly in the upper to lower zones of coastal marshes that are dominated by pickleweed and cordgrass. They feed in the lower marsh zone where tidal sloughs and channels provide important foraging habitat and cover from predators. Threats to the species include loss and degradation of salt marsh habitat, encroachment

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<sup>5</sup> Raptors are also protected under CCR title 14, § 251.1, 652 and 783-786.6

of human activities, genetic isolation due to habitat fragmentation, and predation from coyotes, red fox, raptors, possibly river otter, raccoons, and feral cats. Creekside Marsh has been occupied by California clapper rail (*Rallus longirostris obsoletus*; federal and state endangered) for the past 24 years (Avocet Research Associates, 2007) and the species has been documented in the marsh in the past year (McBroom et al., 2011). Surveys were conducted in 2010 during the clapper rail breeding season and it is estimated that there were four to six clapper rails present (*ibid.*) so it is highly likely that clapper rails are breeding in the marsh.

### **Special-Status Bat Species**

The project site and adjacent habitat at Creekside Marsh and Corte Madera Creek provide potential foraging and roosting habitat for two special-status bat species. **Pallid bat** (*Antrozous pallidus*) is a California species of concern present in most low elevations in California. Preferred habitats include rocky outcrops with crevices and access to open areas, but pallid bats can be found in a variety of other habitats as well. Day roosts can be found in crevices, caves, mines, and occasionally buildings and hollow trees, while night roosts can be in more open areas such as open buildings or porches (Zeiner et al., 1990). Pallid bats are nocturnal and present year-round in most areas of California. Local CNDDDB occurrences are within the cities of San Rafael and San Anselmo, within five miles of the project area (CDFG, 2012). The **western red bat** (*Lasiurus blossevillii*) has a widespread distribution throughout California. These bats are generally solitary and roost in dense foliated trees. They are tolerant of cold temperatures and are not known to hibernate, although it is possible that they do in colder climates (Jameson and Peeters, 2004). Western red bats prefer moths and are known to forage around streetlights and floodlights at night. These special-status bat species may utilize conifers, oaks, and eucalyptus trees in and adjacent to the project site for roosting and forage over the marshes to the west.

### **Sensitive Natural Communities**

Sensitive or special-status communities include plant communities that are especially diverse, regionally uncommon, considered sensitive natural communities by California Department of Fish and Game (CDFG), or are otherwise covered by State, federal, or local regulations. The CNDDDB (CDFG, 2012) lists several sensitive natural communities as occurring in the San Rafael and seven surrounding U.S. Geological Survey 7.5 minute topographic quadrangles, including coastal brackish marsh, northern coastal salt marsh, coastal brackish marsh, coastal terrace prairie, and serpentine bunchgrass grassland. None of these communities, as described by Holland (1986), occur on the project site proper, although both Corte Madera Creek and Creekside Marsh support northern coastal salt marsh wetlands. Additionally, there is a stand of purple needlegrass grassland, also considered a sensitive natural community by CDFG, on the hill to the east of the Emergency entrance (Zander Associates, 2010).

### **Designated Critical Habitat**

USFWS designates critical habitat for certain species that it has listed as threatened or endangered. “Critical habitat” is defined in Section 3(5)(A) of the Federal Endangered Species Act as those lands within a listed species’ current range that contain the physical or biological

features that are considered essential to the species' conservation, as well as areas outside the species' current range that are determined to be essential to its conservation. Critical Habitat has been designated for Central Coast steelhead, tidewater goby (*Eucyglobius newberryi*), California red-legged frog (*Rana draytonii*), and marbled murrelet (*Brachyramphus marmoratus*) in Marin County. The project site is not located within designated critical habitat for any of these federally-listed species. However, Corte Madera Creek is designated Critical Habitat for steelhead trout.

## Regulatory Setting

This section briefly describes federal, State, and local regulations, permits, and policies pertaining to biological resources and wetlands as they apply to the project.

### Special-Status Species

#### ***Federal Endangered Species Act***

The USFWS, which has jurisdiction over plants, wildlife, and most freshwater fish, and the National Marine Fisheries Service (NMFS), which has jurisdiction over anadromous fish, marine fish, and mammals, oversee implementation of FESA. Section 7 of FESA mandates that all federal agencies consult with the USFWS and NMFS to ensure that federal agencies actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. A federal agency is required to consult with USFWS and NMFS if it determines a project "may effect" a listed species. FESA prohibits the "take"<sup>6</sup> of any fish or wildlife species listed as threatened or endangered, including the destruction of habitat that could hinder species recovery.

Under Section 9 of FESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the removal, possession, damage or destruction of any endangered plant from federal land. Section 9 also prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species and species that are proposed or under petition for listing receive no protection under Section 9 of FESA.

Section 10 of FESA requires the issuance of an "incidental take" permit before any public or private action may be taken that would potentially harm, harass, injure, kill, capture, collect, or otherwise hurt (i.e., take) any individual of an Endangered or Threatened species. The permit requires preparation and implementation of a habitat conservation plan that would offset the take of individuals that may occur incidental to implementation of the project by providing for the overall preservation of the affected species through specific mitigation measures.

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<sup>6</sup> "Take," as defined in Section 9 of the FESA, is broadly defined to include intentional or accidental "harassment" or "harm" to wildlife. "Harass" is further defined by the U.S. Fish and Wildlife Service as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, and sheltering. "Harm" is defined as an act which actually kills or injures wildlife. This may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

### ***Federal Migratory Bird Treaty Act***

The federal Migratory Bird Treaty Act (16 USC, § 703, Supplement I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

### ***California Environmental Quality Act***

The intent of CEQA is to maintain “high-quality ecological systems and the general welfare of the people of the state.” It is the policy of the State to “prevent the elimination of fish or wildlife species due to man’s activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities and examples of the major periods of California history.” CEQA forbids agencies from approving projects with significant adverse impacts when feasible alternatives or feasible mitigation measures can substantially reduce such impacts.<sup>7</sup>

CEQA requires consultation with CDFG on any project an agency initiates that is not statutorily or categorically exempt from CEQA. The CEQA *Guidelines* (§ 15065a) indicate that impacts to state- and federally listed rare, threatened, or endangered plants or animals are significant. Under CEQA *Guidelines* § 15380, impacts to other species that meet certain criteria (i.e., it can be shown that the species’ survival in the wild is in jeopardy or it is at risk of becoming endangered in the near future) but are not officially listed may also be considered significant by the lead agency (for an EIR), depending on the applicability of other laws (e.g., Migratory Bird Treaty Act) and the discretion of the agency. For example, CDFG interprets Lists 1A, 1B, and 2 of the California Native Plant Society’s *Inventory of Rare and Endangered Vascular Plants of California* to consist of plants that, in a majority of cases, would qualify for listing as rare, threatened, or endangered. However, the determination of whether an impact is significant is a function of the lead agency, absent the protection of other laws. Projects subject to CEQA review must specifically address potential impacts to listed species and provide mitigation measures if the impact is significant.

### ***California Endangered Species Act***

Under the California Endangered Species Act (CESA), CDFG has the responsibility for maintaining a list of threatened and endangered species (California Fish and Game Code § 2070). CDFG also maintains a list of “candidate species,” which are species formally noticed as being under review for addition to either the list of endangered species or the list of threatened species. In addition, CDFG maintains lists of “species of special concern,” which serve as “watch lists.” Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species could be present on the project site and determine whether the proposed project could have a potentially significant impact on such species. In addition, CDFG encourages informal consultation on any proposed project that may impact a candidate species.

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<sup>7</sup> CEQA also provides that a project might be approved in spite of residual, unmitigated significant impacts, by adoption of a statement of overriding social and economic considerations in situations where mitigations or alternatives are deemed infeasible.

### ***California Native Plant Protection Act***

State listing of plant species began in 1977 with the passage of the California Native Plant Protection Act (NPPA), which directed CDFG to carry out the legislature’s intent to “preserve, protect, and enhance endangered plants in this state.” The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants. CESA expanded upon the original NPPA and enhanced legal protection for plants. CESA established threatened and endangered species categories, and grandfathered all rare animals—but not rare plants—into the act as threatened species. Thus, there are three listing categories for plants in California: rare, threatened, and endangered.

### ***California Fish and Game Code***

Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.3 of the California Fish and Game Code prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs.

Fish and Game Code § 3511 (birds), § 4700 (mammals), § 5050 (reptiles and amphibians), and § 5515 (fish) allows the designation of a species as Fully Protected. This is a greater level of protection than is afforded by CESA, since such a designation means the listed species cannot be taken at any time.

### ***Special-Status Natural Communities***

Special-status natural communities are identified as such by CDFG’s Natural Heritage Division and include those plant communities that are naturally rare and those whose extent has been greatly diminished through changes in land use. The CNDDDB tracks 135 such natural communities in the same way that it tracks occurrences of special-status species; for each site, CNDDDB lists location, extent, habitat quality, level of disturbance, and current protection measures. CDFG is mandated to seek the long-term perpetuation of the areas in which these communities occur. While there is no statewide law that requires protection of all special-status natural communities, CEQA requires consideration of the potential impacts of a project to biological resources of statewide or regional significance.

## **Waters of the United States and Waters of the State**

### ***Definitions***

#### **Waters of the United States**

The term “waters of the United States,” as defined in the Code of Federal Regulations (33 CFR § 328.3[a]; 40 CFR § 230.3[s]), refers to:

1. All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:
  - which are or could be used by interstate or foreign travelers for recreational or other purposes; or
  - from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - which are used or could be used for industrial purposes by industries in interstate commerce.
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs (1) through (4);
6. Territorial seas; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6).
8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA (33 CFR 328.3[a][8]).

Wetlands are ecologically productive habitats that support a rich variety of both plant and animal life. The importance of wetlands has increased due to their value as recharge areas and filters for water supplies and to their widespread filling and destruction to enable urban and agricultural development. Examples of wetlands may include freshwater marsh, seasonal wetlands, and vernal pool complexes that are adjacent to waters of the U.S. In a jurisdictional sense, there are two commonly used wetland definitions, one adopted by the USEPA and the USACE, and a separate definition, originally developed by USFWS, which has been adopted by agencies in the State of California that have regulatory authority over wetlands. Both definitions are presented below.

#### **Federal Wetland Definition**

Under federal law, wetlands are a subset of "waters of the United States" and receive protection under Section 404 of the Clean Water Act (CWA). Wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration that are sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetland determination under the federal wetland

definition adopted by the USACE requires the presence of three factors: (1) wetland hydrology; (2) plants adapted to wet conditions; and (3) soils that are routinely wet or flooded [33 C.F.R. § 328.3(b)]. In January 2001, the Supreme Court of the United States ruled that certain isolated wetlands do not fall under the jurisdiction of the CWA (*Solid Waste Agency of Northwestern Cook County v. United States Army Corps of Engineers et al.*).

### **California Wetland Definition**

The CDFG and the California Coastal Commission (CCC) have adopted the USFWS Cowardin (1979) definition of wetlands. While the federal definition of wetlands requires three wetland identification parameters to be met, the Cowardin definition can be satisfied under some circumstances with the presence of only one parameter. Thus, identification of wetlands by State agencies may include areas that are permanently or periodically inundated or saturated and without wetland vegetation or soils, such as rocky shores, or areas that presume wetland hydrology based on the presence of at least one of the following: a) a seasonal or perennial dominance by hydrophytes<sup>8</sup> or b) the presence of hydric<sup>9</sup> soils. CDFG does not normally assert jurisdiction over wetlands unless they are subject to Streambed Alteration Agreements (CDFG Code Sections 1600–1616) or they support state-listed endangered species.

### **Other Waters of the U.S.**

“Other waters of the U.S.” refers to additional features that are regulated by the CWA but are not wetlands (33 CFR 328.4). To be considered jurisdictional, these features must exhibit a defined bed and bank and an ordinary high water mark. The term ordinary high water mark refers to a line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other means appropriate to the characteristics of the surrounding areas. Examples of other waters of the U.S. include rivers, creeks, ponds, and lakes.

### ***U.S. Army Corps of Engineers and U.S. Environmental Protection Agency Regulations***

The USACE and the USEPA regulate the discharge of dredged or fill material into waters of the United States, including wetlands, under Section 404 of the CWA. Projects that would result in the placement of dredged or fill material into waters of the United States require a Section 404 permit from the USACE. Some classes of fill activities may be authorized under General or Nationwide permits if specific conditions are met. Nationwide permits do not authorize activities that are likely to jeopardize the existence of a threatened or endangered species (listed or proposed for listing under the FESA). In addition to conditions outlined under each Nationwide Permit, project-specific conditions may be required by the USACE as part of the Section 404

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<sup>8</sup> A *hydrophyte* is, literally, a water-loving plant, i.e., one that is adapted to growing in conditions where the soil lacks oxygen, at least periodically during the year, due to saturation with water.

<sup>9</sup> A *hydric* soil is one that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile.

permitting process. When a project's activities do not meet the conditions for a Nationwide Permit, an Individual Permit may be issued.

Section 401 of the CWA requires an applicant for a USACE permit to obtain state certification that the activity associated with the permit will comply with applicable state effluent limitations and water quality standards. In California, water quality certification, or a waiver, must be obtained from the Regional Water Quality Control Board (RWQCB) for both Individual and Nationwide Permits.

The USACE also regulates activities in navigable waters under Section 10 of the Rivers and Harbors Act. The construction of structures, such as tidegates, bridges, or piers, or work that could interfere with navigation, including dredging or stream channelization, may require a Section 10 permit, in addition to a Section 404 permit if the activity involves the discharge of fill.

Finally, the federal government also supports a policy of minimizing "the destruction, loss, or degradation of wetlands." Executive Order 11990 (May 24, 1977) requires that each federal agency take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

In recent years several Supreme Court cases have challenged the scope and extent of USACE jurisdiction over waters of the United States and have led to several reinterpretations of that authority. The most recent of these decisions are the case of *Solid Waste Agency of Northern Cook County (SWANCC) v. the Army Corps of Engineers* (January 9, 2001) and *Rapanos v. United States* (June, 2006). The SWANCC decision found that jurisdiction over non-navigable, isolated, intrastate waters could not be based solely on the use of such waters by migratory birds. The reasoning behind the SWANCC decision could be extended to suggest that waters need a demonstrable connection with a "navigable water" to be protected under the CWA. The introduction of the term "isolated" has led to the consideration of the relative connectivity between waters and wetlands as a jurisdictionally relevant factor. The more recent *Rapanos* case further questioned the definition of "waters of the United States" and the scope of federal regulatory jurisdiction over such waters but resulted in a split decision which did not provide definitive answers but expanded on the concept that a "significant nexus" with traditional navigable waters was needed for certain waters to be considered jurisdictional.

On June 5, 2007 the USEPA and the USACE released guidance on CWA jurisdiction in response to the *Rapanos* Supreme Court decision; this guidance can be used to support a finding of CWA coverage for a particular water body when either a) there is a significant nexus between the stream or wetland in question and navigable waters in the traditional sense; or b) a relatively permanent water body is hydrologically connected to traditional navigable waters and/or a wetland has a surface connection with that water.

### **State Policies and Regulations**

State regulation of activities in waters and wetlands resides primarily with CDFG and the State Water Resources Control Board (SWRCB). In addition, the CCC has review authority for



wetland permits within its planning jurisdiction. CDFG provides comment on USACE permit actions under the Fish and Wildlife Coordination Act. CDFG is also authorized under the California Fish and Game Code, Sections 1600-1616, to enter into a Streambed Alteration Agreement with applicants and to develop mitigation measures when a proposed project would obstruct the flow or alter the bed, channel, or bank of a river or stream in which there is a fish or wildlife resource, including intermittent and ephemeral streams. The SWRCB, acting through the nine RWQCBs, must certify that a USACE permit action meets state water quality objectives (Section 401, Clean Water Act).

## Other Plans and Policies

### ***Marin Countywide Plan***

The Marin Countywide Plan is the County's long range guide for use of land and protection of natural resources. The Plan sets forth five general goals aimed at protection and conservation of the County's biological resources, as well as policies to be implemented to achieve those goals. Of these, goals and policies pertaining to natural resources that are relevant to implementation of the project include the following:

***Goal Bio-1: Enhance Native Habitat and Biodiversity.*** Effectively manage and enhance native habitat, maintain viable native plant and animal populations, and provide for improved biodiversity throughout the County.

*Policy Bio-1.1:* Protect wetlands, habitat for special-status species, sensitive natural communities, and important wildlife nursery areas and movement corridors.

*Policy Bio-1.3:* Protect woodlands, forests, and tree resources

*Policy Bio-1.5:* Promote use of native plant species

*Policy Bio-1.6:* Control spread of invasive exotic plants

*Policy Bio-1.7:* Remove invasive exotic plants

*Policy Bio-1.8:* Restrict use of herbicides, insecticides, and similar materials

*Policy Bio-1.9:* Control spread of non-native invasive animal species

***Goal Bio-2: Protection of Sensitive Biological Resources.*** Require identification of sensitive biological resources and commitment to adequate protection and mitigation, and monitor development trends and resource preservation efforts.

*Policy Bio-2.1:* Include resource preservation in environmental review

*Policy Bio-2.3:* Limit development impacts

*Policy Bio-2.4:* Preserve ecotones

*Policy Bio-2.5:* Protect wildlife nursery areas and movement corridors

*Policy Bio-2.6:* Restrict disturbance in sensitive habitat during nesting season

*Policy Bio-2.9:* Coordinate with trustee agencies

*Policy Bio-2.10:* Promote early consultation with other agencies

**Goal Bio-3: Wetland Conservation.** Take and require all feasible measures to avoid and minimize potential adverse impacts on existing wetlands and encourage programs for restoration and enhancement of degraded wetlands.

*Policy Bio-3.1:* Protect wetlands.

*Policy Bio-3.2:* Require thorough mitigation.

### **Marin County Native Tree Protection and Preservation Ordinance**

Chapter 22.27 of the Marin County Code regulates the removal of “Protected Trees” and “Heritage Trees,” which are 36 tree species defined in Section 22.130.030 of the Code under “Protected Tree and Heritage Tree.” Their removal is prohibited without a permit issued by the County, pursuant to Chapter 22.62 of the Code.

A Tree Removal Permit is required for the removal of trees in the following instances:

- More than two (2) “Protected Trees” are being removed from a developed lot in a 12-month period;
- The tree qualifies as a “Heritage Tree”;
- The tree is a “Protected Tree” or “Heritage Tree” and is located in a Stream Conservation Area or a Wetland Conservation Area;
- Any removal of “Protected Trees” on a vacant lot; and,
- The trees proposed for removal do not qualify for an exemption under Section 22.62.040 of the Marin County Code.

## **Impacts and Mitigation Measures**

### **Significance Criteria**

Based on criteria from Appendix G of the State CEQA *Guidelines*, the project would have a significant impact on biological resources if it would:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- d) 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;

- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Based on Appendix N of the Marin County Environmental Review Guidelines, the project may also have a significant impact related to biological resources if the project would:

- Would substantially reduce the number or restrict the range of a rare, endangered or threatened plant or animal (consistent with CEQA Appendix G Criterion a);
- Cause a fish or wildlife population drop to below self-sustaining levels (consistent with CEQA Appendix G Criteria a, b, and c); or
- Adversely affect significant riparian lands, wetlands, marshes, and other significant wildlife habitats (consistent with CEQA Appendix G Criteria b and c).

### **Approach to Analysis**

In addition to the significance criteria outlined above, for the analysis presented below, impacts resulting from implementation of the project were considered to be significant if they had the potential to:

- Have a substantial adverse effect on special-status species that were found to have moderate or high potential to occur;
- Result in the fill of or otherwise cause degradation of potentially jurisdictional waters; or
- Have a substantial adverse effect on areas designated as a sensitive natural community in this EIR.

### ***Species Assessed in Detail***

The preceding *Regulatory Setting* identifies special-status species that were determined to have a moderate potential to occur within the project site vicinity and fully considered in the analysis below. Potential impacts of the project on special-status species were assessed based on the literature review, professional judgment, and the following criteria:

- 1) ***A determination of susceptibility.*** This determination is a three-level process that evaluated for each species: a) potential occurrence in the study area (generally, the terrestrial and aquatic habitats of the project site); b) potential occurrence within the project footprint; or, c) absence from either the study area or proposed construction sites. If the species was determined unlikely to be found in the study area, (e.g., if no potential habitat exists for the species in the project vicinity), then the species was given no further consideration.
- 2) ***Potential for Occurrence.*** If a species was determined to have the potential to occur in the project study area, further analyses were made of life history and habitat requirements, as well as the suitability of habitat for the species found within the study area or its immediate vicinity. The results of this determination for each species are provided in the “Potential for Occurrence” column of Table E-1 in Appendix E to this Draft EIR.

- 3) **Project Impact.** If suitable habitat was determined present within the project site vicinity and the species has been documented as observed within the project site or has at least a moderate potential to occur, additional analysis considered whether the species would be impacted by the project. Both direct effects (e.g., displacement of habitat) and indirect effects (e.g., noise) were considered. In addition, life history and habitat requirements were evaluated to ascertain the likelihood and severity of impact.

As previously indicated, potential impacts resulting from implementation of the project were evaluated based on a field reconnaissance survey performed by a qualified ESA biologist and a review of the following sources:

- Existing resource information and aerial photographs of the project site and greater study area;
- Data presented in the CNDDDB (CDFG, 2012), CNPS *Electronic Inventory of Rare and Endangered Vascular Plants of California* (CNPS, 2012), and USFWS (2012) for the San Rafael, Bolinas, San Quentin, Novato, Point Bonita, Petaluma, San Geronimo, and San Francisco North USGS 7.5 minute topographic quadrangles, which include the project site and vicinity;
- Standard biological references (e.g., Hickman, 1993; Peeters and Peeters, 2005; Sibley, 2001);
- Surveys and environmental documents including specific information on species or habitats found in the biological resources study area (e.g., Zander Associates, 2010);
- Other available literature regarding the natural resources of the area (as specified in the *References* at the end of this chapter).

Once the site surveys were completed and all sources reviewed, the biologist prepared a list of special-status species that were observed or had the potential to occur in the study area, due to the presence of the basic habitat types that they inhabit, described as follows:

The biologist designated a species as having a “low potential” for occurrence if: (1) their known current distribution or range is outside of the study area, (2) only limited or marginally suitable habitat is present within the study area, (3) their specific habitat requirements (e.g., serpentine grasslands, as opposed to grasslands occurring on other soils) are not present, or (4) they are presumed, based on the best scientific information available, to be extirpated from the study area or region.

The biologist designated a species as having a “moderate potential” for occurrence if there is low to moderate quality suitable habitat within the study area or immediately adjacent areas, even though the species was not observed during biological surveys.

A species would be designated as having a “high potential” for occurrence if (1) moderate to high quality habitat is present within the study area, and (2) the study area is within the known range of the species.

A species would be designated as “observed” if they were recently observed within the study area by ESA biologists or other sources.

## Impacts Not Further Evaluated

*Habitat conservation plan or natural community conservation plan.* The project site is not located within a habitat or natural community conservation plan area, nor is it located within any other local, regional, or state conservation plan areas. Therefore, the project could have no impact on such plans. This is not discussed further in this EIR.

## Impacts and Mitigation Measures

### *Special-Status Species (Bats)*

**Impact BIO-1: Construction of the Project could adversely impact special-status bat species through removal of potential roosting habitat and through increases in noise levels during construction. (Potentially Significant)**

Insects associated with the Corte Madera Creek Creekside Marsh, and open space on the project site provide a potential food source for bats. Two species of special-status bats could potentially roost and breed in conifers, oak trees, coast redwood, palm trees, and eucalyptus within or adjacent to the project site: western red bat and pallid bat.

Tree removal associated with construction work during Phases I through IV could result in the direct mortality of special-status bats, if bats are present. Demolition and construction also have the potential to result in disturbance of roosting bats through increases in noise and human activity during the construction period. This would be a potentially significant impact. The following mitigation measure is identified to address the impact:

**Mitigation Measure BIO-1: (Applies to Phases I through IV)** The project applicant shall ensure that construction activities are conducted in a manner that avoids disturbance or mortality of bats, through surveys to determine whether bats are present. If bats are present, limit construction activities as specified below. Specifically, the project applicant shall take the following measures to avoid direct mortality of roosting special-status bats and disturbance of maternity roosts or winter hibernacula during Phases I through IV of the project:

- a) Prior to demolition and/or construction of Phases 1 through IV, a qualified bat biologist, shall conduct surveys of all potential bat habitat within 250 feet of construction activities prior to initiation of such activities. Potentially suitable habitat shall be identified visually. An acoustic detector shall be used to determine any areas of bat activity. At least four nighttime emergence counts shall be undertaken on nights that are warm enough for bats to be active. The bat biologist shall determine the type of each active roost (i.e., maternity, winter hibernaculum, day or night).
- b) If, based on the pre-construction surveys, no evidence of bats (i.e., visual or acoustic detection, guano, staining, strong odors) is present, no further mitigation is required.

If pre-construction surveys indicate that roosts are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required.

- c) Trees or buildings with evidence of bat activity shall be removed during the time that is least likely to affect bats, as determined by a qualified bat biologist. In general, roosts should not be removed if maternity bat roosts are present, typically April 15 – August 15. Roosts should not be removed if present bats are in torpor, typically when temperatures are less than 40 degrees Fahrenheit. Non-maternity bat roosts shall be removed by a qualified bat biologist, by either making the roost unsuitable for bats by opening the roost area to allow airflow through the cavity, or excluding the bats using one-way doors, funnels, or flaps.
- d) A no-disturbance buffer shall be created around active bat roosts being used for maternity purposes at a distance to be determined by the qualified bat biologist in consultation with CDFG. Bat roosts initiated within 250 feet of the project area after construction has already begun are presumed to be unaffected, and no buffer is necessary. However, the project shall avoid a “take” of individuals, including harming, harassing, or killing.
- e) If known bat roosting habitat is to be destroyed during tree removal activities, artificial bat roosts shall be constructed at least two weeks prior to such disturbance, in an undisturbed area of the property, at least 250 feet from any ongoing or future activities. The design and location of the artificial bat roost(s) shall be determined by a qualified bat biologist.

Mitigation Measure BIO-1 will ensure that bat mortality and disturbance are minimized through avoidance.

**Significance after Implementation of Mitigation Measure:** Less than Significant

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***Impacts on Special-Status Species, Wildlife Movement, Migratory Corridors, and Native Wildlife Nursery Sites (Collisions and Lighting on Birds)***

**Impact BIO-2: The Project would not have a substantial adverse effect on migratory and breeding birds through building collisions and increases in night lighting. (Less than Significant)**

**Risk Factors**

As discussed in the *Setting* (see *Setting for Bird Collisions and Lighting Effects*), no specific avian flight routes in and out of the area are known, and there is no local data on bird kills due to building collision. However, the project site is adjacent to Creekside Marsh and Corte Madera Creek. Both are potentially attractive migratory bird stopovers for both waterfowl and songbirds and are known occupied habitat for the endangered California clapper rail. Certain characteristics of the project and the project site create conditions that are attractive to birds and potentially create conditions for incidence of bird collisions and avian mortality.

New light sources may act as an attractant for nighttime migrating birds. The project site and adjacent areas currently contain street lights, parking lot lights, and building lights, and the hospital and adjacent vegetated areas are located in a developed setting, surrounded by other light sources. Existing lighting sources already provide a significant source of illumination that affects nearby unlit natural areas by raising ambient light levels. The proposed new Ambulatory Services Building and Hospital Replacement Building, in addition to the proposed parking structures and outdoor pedestrian walkways, are expected to increase the amount of light generated *at ground levels* on the project site and within the biological resources study area (which, as previously described, is the project site and surrounding areas, including Corte Madera Creek, Creekside Marsh, and the Hal Brown Park at Creekside). Also, the project includes an option (pending funding) to construct an elevated pedestrian walkway. The elevated walkway would be a covered, open air structure elevated to the second level of the Hospital Replacement Building and the third level of the Ambulatory Services Building (see Figure 3-6 in Chapter 3, Project Description). Further, the approximately 6,600 square-foot green roof proposed at the southeast side of the Hospital Replacement Building loading dock could attract birds, thereby increasing the potential to increase avian collisions with project buildings when combined with other bird-attracting characteristics.

Given the above factors, the potential for the project to result in avian collisions could be significant if not for the planned design features discussed below.

### **Project Characteristics**

The project proposes new buildings in an area that is already developed with buildings of similar scale and height. None of the new buildings would be substantially taller than the existing buildings on the project site.

While detailed exterior building materials have not been specified, the Ambulatory Services Building and the Hospital Replacement Building are proposed to be constructed primarily of glass, metal, and concrete elements; any glass would not occur in significant, uninterrupted expanses. Further, each new building would be varied in appearance, yet complementary to all other existing and proposed buildings on the campus, incorporating façade articulation with fenestration; and a combination of materials, textures, and treatments.

The elevated pedestrian walkway that could be developed would be located about 17 to 18 feet above the ground level, would not be finished with expansive glass or other bird-attractant materials, and would be located in front of other proposed and existing buildings on the site. Further, the lighting in an elevated pedestrian bridge would be downcast and interior to the walkway. Therefore, because the bridge would not be an isolated new element against a backdrop of attractants (e.g., water, vegetation, expansive glass), the location and lighting of this element would not increase the potential for avian collisions on the project site. (Impact AES-4 in Section 4.A, *Aesthetics*, discusses the potential for significant new sources of light and glare from the proposed project, but in terms of adversely affecting nighttime views in the area or causing potential “spillage” of lighting that may affect nearby residents.)

Overall, the project incorporates numerous elements that avoid the potential for avian collisions to occur on the site. Bird-safe construction standards appropriate for the level of risk created by the existing site setting and project elements described above have been incorporated into new building and landscape designs wherever applicable. The applicant has considered elements from the Bird-Safe Building Guidelines developed by the New York Audubon Society (Brown et al., 2007), the Bird Friendly Building Program developed by the Fatal Light Awareness Program ([www.flap.org](http://www.flap.org)), and the San Francisco *Standards for Bird-Safe Buildings* (City of San Francisco, 2011).

Specifically, none of the new buildings propose monolithic, undistinguishable expanses of uninterrupted glass. They would all incorporate varied materials (glass, metal and concrete), façade articulation, including articulated glass wherever glass may be used. In particular, this variation would apply to the south and east elevations of the Hospital Replacement Building where the approximately 6,600-square foot green (vegetated) roof is proposed over the service loading dock (see Figure 3-14, Landscape Concept Plan, in Chapter 3, Project Description). No mirrors will be used on buildings or in the proposed site landscaping. Because no expanse of uninterrupted glass is proposed for new buildings, the potentially bird-attracting green roof, and the new landscaped areas proposed throughout the project site would not increase the potential for bird collisions.

The project also would minimize nighttime lighting to the extent feasible for a 24-hour facility. Restricting access to the roof levels of the parking structures during nighttime hours is proposed to reduce the need for nighttime lighting to minimum requirements and to reduce energy use overall (see Section 4.N, *Utilities and Service Systems*). In addition, although building designs for the new buildings are not yet so detailed as to specify whether and how any rooftop antennas or monopole structures would be situated, the project would aim to co-locate rooftop antennas wherever feasible and avoid the use of guy wires to support any monopole structures.<sup>10</sup>

In summary, the project characteristics discussed above respond to the existing site risk factors that can result in significant avian collisions associated with the project (proximity to Creekside Marsh and Corte Madera Creek, and new nighttime lighting near areas of heavy vegetation). Taken together, the project would not adversely affect migratory and breeding birds through building collisions and increases in night lighting. The impact would be less than significant.

**Mitigation:** None required

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<sup>10</sup> A guy wire is a tensioned cable designed to add stability to structures.



***Impacts on Special-Status Species, Wildlife Movement, Migratory Corridors, and Native Wildlife Nursery Sites (Impacts of Noise and Tree and Shrub Removal on Birds)***

**Impact BIO-3: The Project could affect breeding raptors and other special-status birds through vegetation removal associated with construction. (Potentially Significant)**

The larger conifers, eucalyptus, and oaks within and adjacent to the project site provide potential raptor nesting habitat. One large stick nest was observed in a eucalyptus near the existing Central Wing during surveys conducted by Zander Associates (2010). Smaller trees and landscaping shrubs provide nesting habitat for resident and migratory songbirds within and adjacent to the project site. Tree and shrub removal could result in destruction of nests and eggs, or direct mortality of nestlings, thus impeding the use of native wildlife nursery sites. Such losses would be considered a significant impact as these resources are protected under the Migratory Bird Treaty Act and the California Fish and Game Code.

Mitigation Measures BIO-3a and BIO-3b, identified below, will protect avian reproductive success within the project footprint and will minimize potential impacts resulting from vegetation removal.

Mitigation Measures BIO-3a and BIO-3b will reduce the impact to less than significant. No further mitigation is required.

**Mitigation Measure BIO-3a: (Applies to Phases I-IV)** No more than two weeks in advance of any tree or shrub pruning, removal, ground-disturbing activity, or other construction activity that will commence during the breeding season (February 1 through August 31), a qualified wildlife biologist shall conduct pre-construction surveys of all potential nesting habitat in the vicinity of the planned activity.

Pre-construction surveys are not required for construction activities scheduled to occur during the non-breeding season (August 31 through January 31). Construction activities commencing during the non-breeding season and continuing into the breeding season do not require surveys (as it is assumed that any breeding birds taking up nests would be acclimated to project-related activities already under way).

Nests initiated during construction activities would be presumed to be unaffected by the activity, and a buffer zone around such nests would not be necessary. However, a nest initiated during construction cannot be moved or altered and the nests shall be clearly identified and the immediate area fenced to prevent destruction.

If pre-construction surveys indicate that no nests are present or that nests are inactive or potential habitat is unoccupied, no further mitigation is required. If active nests are found during pre-construction surveys, Mitigation Measure BIO-3b will be required.

**Mitigation Measure BIO-3b:** If active nests are found during pre-construction surveys, the results of the surveys shall be discussed with the CDFG and avoidance procedures shall be adopted, if necessary, on a case-by-case basis. In the event that an active nest is found, construction in the vicinity would not be initiated until avoidance measures are adopted.

Avoidance measures shall include construction buffer areas (up to several hundred feet in the case of raptors), relocation of birds, or seasonal avoidance, as needed. If buffers are created, a no-disturbance zone shall be created around active nests for the remainder of the breeding season, or until a qualified biologist determines that all young have fledged. The size of the buffer zones and types of construction activities restricted shall take into account factors such as the following:

- a) Noise and human disturbance levels at the project site and the nesting site at the time of the survey and the noise and disturbance expected during the construction activity;
- b) Distance and amount of vegetation or other screening between the project site and the nest; and
- c) Sensitivity of individual nesting species and behaviors of the nesting birds.

**Significance after Implementation of Mitigation Measures:** Less than Significant

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**Impact BIO-4: The Project could affect migratory and breeding birds indirectly through increases in ambient noise due to construction. (Potentially Significant)**

Noise pollution can have detrimental impacts on wildlife, and bird populations are particularly susceptible because they rely on acoustic signals for mating, predator evasion, and communication between adults and offspring, among other behaviors. Ellis (Ellis et al., 1991) describes studies that show “noticeably alarmed” responses in raptors to sounds within the 82 to 114 decibel (dBA<sup>11</sup>) range. At comparable levels (72-89 dBA), seabirds flushed off nests (Jehl and Cooper, 1980). These studies indicate that short-term loud noises may affect foraging and roosting birds, by temporarily disturbing these types of behaviors and, perhaps, deterring use of an area if such noises persisted over the long term. Reijnene and Foppen (1995) showed that male willow warblers (*Phylloscopus trochilus*) experience difficulties in mate attraction near highways as a result of noise pollution. This information also suggests that nesting disruption may occur if the noises persist over a longer period of time. More recent research has found certain types of unnatural noise to be disruptive to bird life at a much lower level. For example, Delaney et al. (1999) found that spotted owl flush rates in response to chain saws were apparent at levels above 46 dBA.

With regard to the effects of continuous noise on bird communities one source reports, “An increase of 10 dBA above background noise is probably acceptable in most situations” (Nicholoff, 2003). On the other hand, a 10 dBA increase in noise level is perceived by the human ear as a doubling in loudness, potentially causing an adverse response. Wildlife perception of noise appears to be generally more sensitive than that of humans; therefore, it is assumed for the purposes of this analysis that a 10 dBA increase in noise (a doubling of loudness) over the existing maximum levels should be considered to be material for birds, as well as other wild animals.

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<sup>11</sup> The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound in accordance with a weighting that reflects the facts that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency mid-range. This is called “A” weighting, and the decibel level so measured is called the A-weighted sound level (dBA).

Within the biological resources study area, increased noise pollution during construction could potentially hinder mate attraction, disrupt reproductive success of breeding birds, including the endangered California clapper rail and/or deter the general use of the biological resources study area by migratory birds for wintering, foraging, or roosting purposes.

#### **Current Noise Levels at the Proposed Project Site**

As discussed in Section 4.K, *Noise*, ambient noise levels in the project study area are relatively high and are generated primarily by automobile and hospital HVAC (heating, ventilation and air conditioning) systems. Short-term noise measurements taken in the project site vicinity resulted in average daytime noise levels ranging from 48 dBA to 72 dBA and maximum noise levels ranging from 56 to 88 dBA, depending on the location (see Section 4.K, *Noise*). Existing average daytime levels 60 feet from the center of Bon Air Road (on either side) are typically 60 to 69 dB. Long term average measurements (averaged over 24 hours) ranged from 56 dBA to 67 dBA, with maximums ranging from 76 dBA to 84 dBA. Birds that are currently resident in the study area have habituated to ambient noise levels. Birds that use the area seasonally either habituate to existing noise levels or are deterred from using the habitat there.

#### **Noise Resulting from Project Construction**

As discussed in Section 4.K, *Noise*, noise exceeding ambient levels will be produced through project construction activities. Construction activities are expected to produce maximum instantaneous noise levels typically ranging from 85 to 90 dBA L<sub>max</sub><sup>12</sup> at 50 feet from the source of the sound within the project site, and hourly average noise levels would range from 71 dBA to 89 dBA L<sub>eq</sub><sup>13</sup> measured at the same distance. When attenuated by distance,<sup>14</sup> maximum construction generated noise levels could range from 79 to 84 dBA at a distance of 100 feet; from 73 to 78 dBA at 200 feet; from 67 to 72 dBA at a distance of 400 feet, and 61 to 66 dBA at a distance of 800 feet, where they would be virtually indiscernible from existing ambient noise levels, assuming these are similar throughout the vicinity.

The western edge of the project site is adjacent to Creekside Marsh. Distances from the project site to Creekside Marsh range from approximately 130 to 300 feet; the project site is also within 350 feet of Corte Madera Creek<sup>15</sup>, both of which provide potential nesting habitat for a variety of birds, including the endangered California clapper rail. (See Figure 4.C-2 within Impact BIO-6, discussed below, which shows the 200-foot boundary line east from the Corte Madera Creekside Marsh for reference.) Through expected attenuation over distance alone, increases over existing noise levels due to most project-related construction noise would be considered indiscernible at Corte Madera Creek and much of Creekside Marsh (i.e., less than a 10 dBA increase over ambient levels). Current noise levels have not been shown to deter birds from using Creekside Marsh or Corte Madera Creek for breeding, loafing, and foraging purposes. However, it is expected that noise generated by some phases of project demolition and construction, such as demolishing existing parking lots and initial construction phases of the Phase IV Hospital

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<sup>12</sup> The L<sub>max</sub> is the maximum A-weighted noise level during the measurement period.

<sup>13</sup> The L<sub>eq</sub> is the average A-weighted noise level during a stated period of time

<sup>14</sup> Noise from a stationary source typically attenuates by 6dBA for each doubling of distance.

<sup>15</sup> As measured from the western edge of the project site.

Replacement Building, would exceed ambient noise levels by more than 10 dBA and could deter use of nearby habitat by birds and affect avian reproductive success, including that of the endangered California clapper rail. This would be considered a significant impact.

Mitigation Measure NOI-3 is specified in Section 4.K, *Noise* to minimize potential impacts resulting from project-related construction noise levels for surrounding residential areas. These measures will also help to minimize noise impacts on birds nesting within and adjacent to the project area. In addition, implementation of the mitigation measures BIO-3a and BIO-3b, above and BIO-4a below will ensure that noise impacts on breeding birds using habitat within and adjacent to the project site are minimized.

**Mitigation Measure BIO-4a: (Applies to Phase IV and other major noise generating construction and/or demolition phases occurring within 200 feet of Creekside Marsh)**

Project construction activities that would exceed existing ambient noise levels at Creekside Marsh by over 10dBA will avoid and minimize adverse effects on California clapper rail reproductive success through one of the following measures:

- a) Project construction activities shall take place September-January, outside the clapper rail breeding season of February through August); or
- b) Consistent with Mitigation Measure NOI-3 in Section 4.K, Noise, solid plywood fences shall be constructed along the western edge of the project site prior to initiation of construction to serve as noise attenuation barriers. The fencing shall be a minimum of 8 feet in height. The fences shall shield the marshes from major noise generating phases of demolition and construction and will serve to attenuate noise emanating from the project site up to 10 dBA.

**Mitigation Measure BIO-4b: Implement Mitigation Measure NOI-3.**

The combination of Mitigation Measure NOI-3 from Section 4.I, *Noise*, and the aforementioned Mitigation Measure BIO-3a, Mitigation Measure BIO-3b (if necessary), and Mitigation Measure BIO-4, will ensure that noise impacts of project construction will be minimized in the vicinity of active nests and will minimize and avoid potential adverse impacts on California clapper rail reproductive success at Creekside Marsh.

**Significance after Implementation of Mitigation Measures:** Less than Significant

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***Riparian Habitat, Sensitive Communities, Wetlands, and Endangered Species (Salmonids)***

**Impact BIO-5: The Project would not have a substantial adverse effect on Waters of the United States, Waters of the State, or critical habitat for endangered steelhead and coho salmon. (Less than Significant)**

There are no riparian or other sensitive communities, wetlands, or other waters located on the project site. Therefore, the project will not result in direct losses to sensitive communities or

jurisdictional waters. However, as noted in Section 4.I, *Hydrology and Water Quality*, the project site is proximate to the wetlands at Creekside Marsh and runoff from the hospital currently discharges, via existing stormwater infrastructure under Bon Air Road and through a 60-inch diameter outfall, directly to a channel that runs through Creekside Marsh and is hydrologically connected to Corte Madera Creek. Therefore, potential significant impacts resulting from construction of Phases I-VI and subsequent operations include, but are not limited to, degradation of water quality and aquatic and riparian habitat in Corte Madera Creek; degradation of wetland habitat in Creekside Marsh and aquatic and riparian habitat in Corte Madera Creek; and accidental discharge of sediment or toxic materials into Creekside Marsh and Corte Madera Creek. Since Corte Madera Creek is designated as critical habitat for central California coast steelhead, and coho salmon and steelhead are known to be in adjacent reaches of the Creek at least seasonally, degradation of water quality in the creek would have the potential to adversely affect these fish as well.

As discussed in Section 4.I, *Hydrology and Water Quality*, the project would be required to obtain coverage under the NPDES General Construction Permit through development of a Stormwater Pollution Prevention Plan (SWPPP) and implement site-specific BMPs in accordance with the SWPPP to control and reduce discharges of sediments and pollutants associated with construction and stormwater runoff into downstream storm drains and water bodies, including Corte Madera Creek and San Francisco Bay. Also as noted in Section 4.I, *Hydrology and Water Quality*, increases in impervious surfaces engendered by the project could result in increased sedimentation and erosion during project construction and operations. However, potential impacts due to increased erosion and sedimentation during operation would be made less than significant by required measures including post-construction stormwater quality BMPs such as bioretention, bioinfiltration, bioswale surface treatment, and other similar facilities and controls. For example, a preliminary stormwater control plan calls for 8,830 square feet of vegetated swales (LBL Architects, 2010). Hospital operations would require the storage and regular use of hazardous materials required for medical facility operations. If not properly managed, the hazardous materials could leak or spill and contaminate stormwater runoff, resulting in degradation of water quality, as discussed Section 4.H, *Hazards and Hazardous Materials*. Potential impacts resulting from hazardous materials contamination during construction and operations would be made less than significant through compliance with stringent regulations for the use and storage of these chemicals, which are also discussed in greater detail in Section 4.H, *Hazards and Hazardous Materials*. The above measures required of the project applicant are sufficient to reduce potential construction-related and operational impacts to water quality, aquatic, riparian, and wetland habitat, and jurisdictional waters, to less- than-significant levels.

**Mitigation:** None required

### ***Tree Protection and Preservation Ordinance, and Sudden Oak Death Control***

**Impact BIO-6: The Project would involve the removal of native trees protected under the Marin County Native Tree Protection and Preservation Ordinance. Tree work on the project site has the potential to spread sudden oak death syndrome. (Potentially Significant)**

There are numerous trees located on the project site. An inventory of trees located within the construction footprint included 424 trees of greater than 6-inch DBH (see **Figure 4.C-2**, Tree Inventory and Plan) (Urban Forestry Associates, 2010, 2011, 2012). Of the trees surveyed, 232 are protected under the County Native Tree Protection and Preservation Ordinance.

To the extent feasible, 16 mature palms that must be removed due to the construction of the Hospital Replacement Building will be saved and relocated elsewhere on the project site. If relocation of these mature palms is not feasible, similar species of palm will be incorporated onsite at each building's main entry point. Overall, a total of approximately 230 trees will be removed. Approximately 264 trees will be planted in new landscaping, approximately 159 trees will be retained in place for development of the project, and approximately 35 trees will be relocated within the project site. The proposed plant list includes 80 percent water-wise trees and 78 percent water-wise shrubs/groundcovers, as defined by the Marin Municipal Water District (MMWD). In addition, a number of trees were identified in the arborist survey as showing symptoms of sudden oak death syndrome (SOD). SOD presents a serious threat to the state's oak woodland resources, particularly in coastal counties, and is prevalent in Marin County. Tree work on the project site, including pruning of roots and limbs and tree removal, has the potential to spread the pathogen that causes SOD. This would be considered a significant impact.

**Mitigation Measure BIO-6a: (Applies to Phases I-IV)** Prior to construction initiation for each project phase, the project applicant shall prepare a map indicating the size and species of trees to be removed and retained. In addition, the project applicant shall do all of the following:

- a) Prior to the start of any clearing, stockpiling, excavation, grading, compaction, paving, change in ground elevation, or construction, preserved trees that occur adjacent to, or within, project construction shall be identified as preserved and clearly delineated by constructing short post and plank walls, or other protective fencing material, at the dripline of each tree.
- b) The delineation markers shall remain in place for the duration of the work.
- c) Where proposed development or other site work must encroach upon the dripline of a preserved tree, special construction techniques shall be required to allow the roots of remaining trees within the project site to breathe and obtain water (examples include, but are not limited to, use of hand equipment for tunnels and trenching, and/or allowance of only one pass through a tree's dripline). Tree wells or other techniques may be used.
- d) Excavation adjacent to any trees, when permitted, shall be in such a manner that shall cause only minimal root damage.

- e) The following shall not occur within the dripline of any retained tree: parking; storage of vehicles, equipment, machinery, stockpiles of excavated soils, or construction materials; or dumping of oils or chemicals.

**Mitigation Measure BIO-6b: (Applies to Phases I-IV):** All pruning activities of preserved trees shall be performed by a certified arborist.

- a) No more than 25 percent of a tree's canopy shall be removed during pruning activities of retained trees.
- b) If any protected preserved tree is damaged, then the project applicant shall replace the tree as required by the County.
- c) All removed trees that meet the criteria of a protected tree shall be replaced with the same species removed as required by the County.

**Mitigation Measure BIO-6c: (Applies to Phases I-IV):** The project applicant shall develop and implement a five-year monitoring program for any required replacement plantings. Applicable performance standards may include, but are not limited to: 75 percent survival rate of replacement plantings; absence of invasive plant species; and self-sustaining trees at the end of five years.

**Mitigation Measure BIO-6d: (Applies to Phases I-IV):** All tree removal and pruning activities shall include measures to avoid the spread of SOD. Such measures may include, but are not limited to the following:

*Before working:*

- a) As a precaution against spreading the pathogen, clean and disinfect pruning tools after use on confirmed or suspected infested trees or in known infested areas. Sanitize tools before pruning healthy trees or working in pathogen-free areas. Clean chippers and other vehicles of mud, dirt, leaves, organic material, and woody debris before leaving a site known to have SOD and before entering a site with susceptible hosts.
- b) Inform crews about the arboricultural implications of SOD and sanitation practices when they are working in infested areas.
- c) Provide crews with sanitation kits. (Sanitation kits should contain the following: Chlorine bleach (10/90 mixture bleach to water) or Clorox Clean-up® or Lysol®, scrub brush, metal scraper, boot brush, and plastic gloves).
- d) Sanitize shoes, pruning gear, and other equipment before working in an area with susceptible species.

*While working:*

- a) When possible, work on SOD-infected and susceptible species during the dry season (June-October). When working in wet conditions, keep equipment on paved, graveled, or dry surfaces and avoid mud.
- b) Work in disease-free areas before proceeding to infested areas.



MARIN GENERAL TREE INVENTORY

**TREES**

- TREES TO BE RETAINED IN-PLACE (159) TOTAL TREES
- TREES TO BE RELOCATED FOR FUTURE PHASES OF DEVELOPMENT (35) TOTAL TREES  
SPECIES: WASHINGTONIA FLEPERA  
PHOENIX CARARENSIS
- ✕ TREES TO BE REMOVED BASED ON FUTURE PHASES OF DEVELOPMENT (230) TOTAL TREES

TOTAL NUMBER OF TREES SURVEYED: 424

TOTAL NUMBER OF TREES PROTECTED BY MARIN TREE ORDINANCE: 232

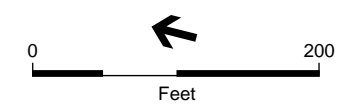
SPECIES: ACQUILIA CALIFORNICA  
ALNUS RHOMIFOLIA  
AMRIBUS MENZIESII  
QUERCUS ABRIFOLIA  
QUERCUS CHRYSOLOPIS  
QUERCUS KELLOGGII  
QUERCUS LORRAI  
QUERCUS SERRIFLORA  
UMBELLIFERA CALIFORNICA

TOTAL NUMBER OF PROTECTED TREES TO BE REMOVED: 143

TOTAL NUMBER OF TREES TO BE PLANTED PER LANDSCAPE PLAN: 264

NOTES:  
FINAL DETERMINATION OF TREES TO BE EITHER RELOCATED OR REMOVED WILL BE SUBJECT TO CONDITIONS IN THE FIELD. REFER TO TREE SURVEY PROVIDED BY URBAN FORESTRY ASSOCIATES, INC. FOR ADDITIONAL INFORMATION RELATED TO THE SPECIFIC TREES IDENTIFIED FOR RELOCATION/REMOVAL. NUMBERING SYSTEM OF TREES APPEARING ON DRAWING IS BASED ON TREE SURVEY BY URBAN FORESTRY ASSOCIATES, INC. AND IDENTIFIES TREES WITH A TRUNK DIAMETER AT BREAST HEIGHT (DBH) GREATER THAN 6".

— 200 Feet Distance from Cortez Madera Creekside Marsh to the West



SOURCE: SWA Group, 2012

Marin General Hospital . 210606  
**Figure 4.C-2**  
Tree Inventory and Plan



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- c) If possible, do not collect soil or plant material (wood, brush, leaves, and litter) from host trees in the quarantine area. Within the quarantine area, host material (e.g., wood, bark, brush, chips, leaves, or firewood) from tree removals or pruning of symptomatic or non-symptomatic host plants should remain onsite to minimize pathogen spread.

*After working:*

- a) Use all reasonable methods to sanitize personal gear and crew equipment before leaving a SOD infested site. Scrape, brush, and/or hose off accumulated soil and mud from clothing, gloves, boots, and shoes. Remove mud and plant debris by blowing out or power washing chipper trucks, chippers, bucket trucks, fertilization and soil aeration equipment, cranes, and other vehicles.
- b) Restrict the movement of soil and leaf litter under and around infected trees as spores may be found there.
- c) Tools used in tree removal/pruning may become contaminated and should be disinfected with Lysol® spray; a 70 percent or greater solution of alcohol; or a Clorox® bleach solution (1 part Clorox® bleach to 9 parts water); or Clorox Cleanup ®).

Implementation of Mitigation Measures BIO-6a through BIO-6ed would reduce impacts to trees protected under the Marin County Tree Protection and Preservation Ordinance.

**Significance after Implementation of Mitigation Measures:** Less than Significant

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## Cumulative Impacts

**Impact BIO-7: The Project combined with other past, present, and reasonably foreseeable development in the vicinity of the Project site would not result in cumulative impacts on special-status species, wetlands and other waters of the U.S. and State, and protected trees. (Less than Significant)**

### ***Geographic Context***

The geographic context for analysis of cumulative impacts to biological resources encompasses the project site and surrounding areas.

### ***Impacts***

Past projects have already caused adverse cumulative effects on biological resources in the project area. The Marin General Hospital Campus is primarily a developed and landscaped site, with areas of open space on the hills to the east and south. The open space areas are not pristine natural areas, having been disturbed through past land uses, such as grazing; fragmented and isolated by surrounding development; and altered through vegetation management. There is already an existing cumulative impact on biological resources in the project area without the project.

Environmentally protective laws and regulations have been applied with increasing rigor since the early 1970s. These include CESA, FESA, and the Clean Water Act, as described in the *Regulatory Setting* section, above. The project and other present and foreseeable future projects within the vicinity of the project site would be required to comply with local, State, and federal laws and policies. They would also be required to comply with all applicable permitting requirements of the regulatory and oversight agencies intended to address potential impacts on biological resources, including wetlands, other waters of the U.S., and special-status species. Additionally, the project and foreseeable future projects would be required to demonstrate that they would not have significant effects on these biological resources, although it is possible that some projects may be approved even though they would have significant, unavoidable impacts on biological resources.

The current impact analysis has shown that the project, after mitigation, would result in less than significant impacts on biological resources. The project would add a minor, incremental contribution to the existing cumulative impact on biological resources given the less-than-significant impacts that would result with incorporation of mitigation measures identified in this analysis. Consequently the project would not substantially reduce the number, nor would it reduce the range, of a rare, threatened, or endangered species. Neither would the project cause a fish nor wildlife population to drop below self sustaining levels. The project's contribution to the existing cumulative impact on biological resources would not be cumulatively considerable and the impact would be less than significant.

**Mitigation:** None required

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## 4.D Cultural and Paleontological Resources

This section provides an assessment of potential impacts on cultural and paleontological resources that might be present in the vicinity of the proposed project. Cultural resources include historic architectural/structural resources, archaeological resources, paleontological resources,<sup>1</sup> and human remains. Mitigation measures to reduce impacts to a less-than-significant level are identified.

### Historical Resources Setting

#### Marin County History

The name “Marin” is purportedly derived from a famous Lacatuit Chief, whose people originally occupied this northern San Francisco Bay territory (Goerke, 2007). Following the arrival of Sir Francis Drake, Sebastian Rodriguez Cermeno anchored off the coast of Marin County in 1595. A Portuguese explorer sailing for Spain, Cermeno was ordered to explore more of the coast of California and it was during this trip that his ship, the San Augustin, was shipwrecked at Drakes Bay. While his crew built a new vessel, Cermeno completed modest exploration of the Marin County area (Hoover et al., 2002). Permanent Hispanic settlement in Marin County was eventually achieved in 1817 when the Mission San Rafael was established by Padres Amaroso and Cijos (Hoover et al., 2002). During the Mexican Period, the land within Marin County was divided into several ranchos. The site on which Marin General Hospital is located today was part of the Puente de Quentin rancho granted to John Cooper in 1840. Cooper was a sailor from Boston who arrived in California in 1823. In 1826 he opened a general merchandise store in Monterey. He married Encarnacion Vallejo in 1827 and became a naturalized Mexican in 1830 (Thompson, 2003).

As with many other counties in California, the Gold Rush caused an increase in population and industry in Marin County. Saw mills opened to take advantage of the numerous redwood stands in the region. The first paper mill in California was constructed on Lagunitas Creek in West Marin County. Cattle ranching, fisheries, and dairies sparked the eventual arrival of the North Pacific Railroad. By the late 1850s several prominent Marin County towns were well established.

The project area is the site of the former Bon Air Hotel. The hotel was established in the 1880s and operated into the 1920s. The resort had a swimming pool, dance hall, and bowling alley. The circle of palm trees south of the West and Central wings of the hospital marks the approximate location of the resort’s swimming pool, thought to have been the first pool in Marin County (Bartus, 2007). The Bon Air Hotel was destroyed by fire in around 1949. Construction of Marin General Hospital began shortly thereafter in 1950. The Bon Air Hotel structure was located approximately at the junction of the Central and East wings of the hospital.

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<sup>1</sup> Paleontology is the science of the forms of life existing in prehistoric times, as represented by fossilized animals and plants.



### ***Marin General Hospital and the Halprin Gardens***

Marin General Hospital was constructed on the site of the former Bon Air Hotel from 1950-1952 and was dedicated by the hospital board of directors and county staff on May 26, 1952. This original building would become referred to as the “Central Wing” when later expansions occurred. Lawrence Halprin (1916–2009) a well-known modernist landscape architect, was chosen to design the Marin General Hospital landscape, which was completed at the same time as the main hospital complex. Mr. Halprin lived nearby in Kentfield, Marin County and had a professional practice in San Francisco and Marin County. Marin General was his first large scale landscape project after starting his own firm in 1949 (see discussion below).

When the main hospital building and site expanded in 1960 to become the East Wing, less than a decade later, Mr. Halprin provided further design consultation for the existing and expanded areas. Drawings included studies for new retaining walls, pavements, parking lots, and planting. While it is apparent from existing conditions that several elements were built according to his studies, (e.g., retaining walls), it is difficult to determine the full extent of his influence due to subsequent site modifications and the lack of full documentation. In 1986, the hospital was expanded again toward the Corte Madera Creek Marsh, creating the West Wing. The firm of Royston, Hanamoto, Alley, and Abey prepared a second plan for the hospital’s landscape. According to project construction document records, the scope of their work included the expanded, lower area that accommodated additional parking, a new hospital West Wing and the realignment of Bon Air Road.

Lawrence Halprin is recognized as one of the pre-eminent landscape architects of the twentieth century (TCLF, 2012). When Halprin began work on the Marin General Hospital project in 1950, he had recently opened his own landscape architecture firm, in September 1949, after having worked in Thomas Church’s office for the previous five years (SWA, 2011), and this project was his “first commission to design a public garden space” (SWA, 2011). The chronology included in *Lawrence Halprin: Changing Places*, the catalog for the 1986 San Francisco Museum of Modern Art’s exhibition of his work, stated that the Marin General Hospital work was representative of “his involvement in solving design problems . . . to address larger and more complex issues: from small private gardens answering the needs of an individual family, to larger public spaces having to meet the needs of many. In this plan he incorporates roads, walkways, gardens, sculpture, and activity areas appropriate for ambulatory patients” (SWA, 2011).

As with other landscape architects working in postwar California, Halprin’s initial work, during this early part of his career, was focused on residential commissions and the design of gardens. “The garden was the medium through which new concepts were expressed; it reflected aesthetic developments in art and architecture and a new social order” (SWA, 2011), or, in other words, the garden was one of the first visible expressions of what modernism could mean in terms of landscape design in California. In his early garden designs, Halprin worked with leading modernist architects on projects that exemplified the blending of modernist ideas for the house and garden with the climate and lifestyle of northern California.

During the early years of his career, Halprin rapidly built a reputation as one of the leading post-war practitioners in California's modern style of landscape architecture and designed numerous residential gardens that reflected Modernist design aesthetics interpreted to meet the climate and lifestyle of northern California. However, he ultimately was best known internationally for designing public spaces that were based on the interactions between physical space and the user of the space that reflected his life-long observation of how people move in and use outdoor spaces and in the creative processes found in nature. Halprin had a profound influence on landscape architecture through his environmental design projects and his explorations on the nature of creativity through his work as a designer, an author, a filmmaker, and a workshop facilitator. He practiced from 1945 until his death in 2009.

Because the Marin General Hospital landscape design was Halprin's first commission to design a public rather than a residential garden space, this site would appear to represent a transitional point in Halprin's early career.

## **Architectural/Structural Resources Setting**

This section is based on the historic resources evaluation report completed by SWA Group (2011) and provided as Appendix F to this EIR, and subsequent peer review by Denise Bradley (Bradley, 2011) and ESA (2011).

### ***Description of the Marin General Hospital Central/East Wing***

The Central Wing of Marin General Hospital was originally constructed in 1952. The four-story plus basement hospital building (the bottom leg of the current "Y"-shaped plan that incorporates the later East Wing addition, which is the top portion of the "Y") is constructed of reinforced concrete with a flat roof and continuous concrete awnings projecting from the southwest, southeast, and north elevations. Windows on the lower portion of the "Y" are fixed casement-style units with aluminum sashes, while windows on the upper portion of the "Y" are double-hung aluminum sash units arranged in pairs.

The hospital entrance and a concrete stair/elevator tower are located at the intersection of the "Y." Windows in the stair tower are thin, vertically-oriented aluminum sash units with fixed glazing. A semi-detached, free-form and curvilinear concrete shelter supported by circular concrete columns is located at the building entrance adjacent to the entry drive. Entrance doors are newer aluminum frame and fixed glass automatic sliding units. A concrete entrance wall with an embossed 'egg-crate' pattern runs from the exterior of the building into the lobby. The lobby has a recessed, oval-shaped plaster ceiling with indirect lighting and circular concrete columns. Interior finishes are newer and consist of vinyl tile flooring, painted plaster walls, and dropped acoustical ceiling tiles. Lobby flooring is carpeted.

Major additions are to the northeast and west. An all-concrete addition with a vertically and horizontally-scored and painted concrete exterior was added to the northeast in 1960. The West Wing was constructed in 1986 and substantially altered the western façade of the original 1952 building and reoriented the hospital entrance/exterior circulation. Newer modular buildings are

located to the south of the original hospital. The two-story, all-concrete Mental Health Building, constructed in 1967, is located to the north of the original hospital building. Located further to the north is the Marin Community Health Clinic, built in the 1970s.

### ***Evaluation of the Central/East Wing***

The original 1952-1960 Central/East Wing of the Marin General Hospital was the subject of a reconnaissance survey and evaluation by an ESA architectural historian in August 2011. This survey found that the building represents a Mid-Century Modern architectural style that was fairly typical for the period and region, but does not appear to embody the distinctive characteristics of this architectural style. Research did not reveal that the building represents the work of an important creative individual. While clearly an important facility to Marin County residents, and regardless of any architectural associations the building may have with the Mid-Century Modern style, the Central/East Wing has suffered a substantial loss of integrity with construction of the West Wing. Completed in 1986, this massive addition was placed against the western portion of the original building which radically altered its plan, appearance, use, circulation, and overall setting. Interior alterations have also occurred throughout the building as medical technology has changed since it was originally constructed and as interiors were remodeled to meet current aesthetic and code compliance standards. As such, in the opinion of the surveyor, the original Central/East Wing of Marin General Hospital is ineligible for listing in the California Register of Historical Resources (CRHR) and would not be considered an historical resource for CEQA purposes.<sup>2</sup>

### ***Description of the Halprin Gardens***

**Bar-B-Q Terrace Garden.** Existing conditions at the Bar-B-Q Garden include a circular concrete terrace made of aggregate with low rock walls surrounded by six mature palms, lawns, and some shrubbery. Newer benches are steel and concrete. Asphalt paths lead up hill to additional bench seating (original wood slatted bench and newer all-steel bench). Decomposed granite fill surface in this area appears more recent. Gentle rolling lawns slope generally to the west toward the circular terrace with westerly views of Mt. Tamalpias. A rock retaining wall and asphalt path are located mid-slope between the Bar-B-Q and Ambulatory gardens, connecting the lower (west) parking lot with the upper (east) parking lot. More recent brick stairs with pipe railing connect the lower asphalt walkway with the mid-slope path. A mix of oak trees and juniper shrubs is located on the slope between the gardens. A cluster of smaller, less mature palms is located on the northwestern edge of the Bar-B-Q Terrace Garden.

**Ambulatory Terrace Garden.** Existing conditions at the Ambulatory Terrace Garden include a semi-circular terrace at the crest of the hill with westerly views of oaks (the view of Mt. Tamalpias is obscured by trees). The earthen groundcover contains some decorative rock placement. Low, curving rock walls are located along the semi-circular terrace, with higher,

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<sup>2</sup> The CRHR is an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change” (California Public Resources Code [PRC] §5024.1[a]). The CRHR is discussed further in the *Regulatory Setting* of this section.

straight rock walls retaining two raised planting beds. A long, wooden bench is located along the higher rock wall, while a newer steel bench and circular concrete table with embossed leaf pattern is located to the west. A raised planting bed is located to the north, which contains a large, concrete statue entitled “The Life Givers.” The bronze plaque below the statue indicates it was designed by artist Robert Shinn, dated May 26, 1952. A steel flagpole is also located in this northern planting bed. The southern planting bed contains a smaller concrete statue of a mother and child figure in the same artistic style, but without a plaque. One oak tree grows out of the western edge of the terrace, while other oaks and one large eucalyptus tree grow on the slopes just outside the terrace. An aluminum plaque on the western edge of the terrace states “In Memory of Yvonne Heiman. Patio furnished by her sons and friends.”

## Prehistory and Ethnography

A framework for the interpretation of the San Francisco Bay Area is provided by Milliken et al. (2007), who have divided human history in the San Francisco Bay Area into four broad periods: the Paleoindian Period (11,500 to 8000 B.C.), the Early Period (8000 to 500 B.C.), the Middle Period (500 B.C. to A.D. 1050), and the Late Period (A.D. 1050 to 1550). Economic patterns, stylistic aspects, and regional phases further subdivide cultural patterns into shorter phases. This scheme uses economic and technological types, socio-politics, trade networks, population density, and variations of artifact types to differentiate between cultural periods.

The project area is located within the ethnographic territory of the Coast Miwok (Barrett, 1908; Kelly, 1978; Kroeber, 1925). The Coast Miwok language, a member of the Miwok subfamily of the Penutian family, is divided into two dialects: Western (or Bodega) and Southern (or Marin) that in turn is subdivided into valley and coast. *Miwok* refers to the entire language family that was spoken by Coast Miwok, as well as Lake, Valley, and Sierra Miwok. Coast Miwok territory encompassed all of present-day Marin County and parts of Sonoma County, from Duncan’s Point on the coast to between the Sonoma and Napa rivers. Each large village had a tribal leader, but there does not appear to have been defined larger organization. (Kelly, 1978:414)

By the mid-1800s Spanish missionization, diseases, raids by Mexican slave traders, and dense immigrant settlement had disrupted Coast Miwok culture, dramatically reducing the population and displacing the native people from their villages and land-based resources. By the time of California’s initial integration into the United States in the late 1840s, the Coast Miwok population had dwindled from approximately 2,000 individuals to one-eighth of its size before European contact. (Kelly, 1978:414)

In 1920 the Bureau of Indian Affairs purchased a 15.45-acre tract of land in Graton for the Marshall, Bodega, Tomales, and Sebastopol Indians. This land was put into a federal trust and these neighboring peoples that included both Coast Miwok and Southern Pomo were consolidated into one recognized group: the Graton Rancheria. In 1958 the U.S. government enacted the Rancheria Act of 1958, transferring tribal property into private ownership. Forty-four Rancherias in California were affected, including the Graton Rancheria. Since then, tribal members have continued to protect their cultural heritage and identity despite being essentially landless. On December 27, 2000

President Clinton signed into law legislation restoring federal recognition to the Federated Indians of Graton Rancheria. The tribe currently has approximately 1,100 members.

## **Archaeological Resources**

Pacific Legacy, Inc. conducted a records search at the Northwest Information Center of the California Historical Resources Information System, contacted Native Americans, and a completed a surface survey of the project area (Pacific Legacy, 2010).

### ***Records Search Results***

Records search results indicated that 30 previous cultural resources investigations have been conducted within one mile of the project area. One cultural resources study included approximately 10 percent of the current project area. No cultural resources were located during that survey.

The records search also indicated that one prehistoric archaeological resource has been previously recorded within the current project area. N.C. Nelson recorded six prehistoric shell middens during his 1907 survey of the San Francisco Bay Area that are within a one-mile radius of the project area. Nelson recorded site CA-MRN-75 east of the Bon Air Hotel, and described it as a shallow (less than 1 foot) deposit of shell covering an area 40–50 feet in diameter (Nelson, 1907). A 1995 update of the site record includes a detailed location map that places the site in the location of the proposed Ambulatory Services Building and the Bon Air Road Parking Structure. This information was based exclusively on Nelson's field notes and no physical evidence of the site was located (Ribeiro, 1995). The 1995 update also notes that construction of Marin General Hospital likely destroyed the site, especially if site constituents were represented by a shallow deposit.

### ***Native American Contact***

Pacific Legacy, Inc. contacted the Native American Heritage Commission and the culturally affiliated tribe for Marin County, the Federated Indians of Graton Rancheria (FIGR). Nick Tipon, Chairman of the Sacred Sites Protection Committee of the FIGR, responded by letter. The Tribe requested further consultation on the details of the development including the depth and extent of soil grading, excavation, and or removal; the source of funds for the project and lead agency; and consultation on proposed testing such as geotechnical bores.

### ***Archaeological Survey Methods***

Pacific Legacy Inc. completed an archaeological survey of the project area on August 27, 2010. The footprints of all of the proposed buildings, as well as a 10-meter buffer around the buildings, were intensively surveyed using narrow transects spaced no more than 10 meters apart. For proposed buildings with footprints on existing paved parking lots, the landscaping in and around the paved areas was inspected. An area of 10 meters was examined around all buildings scheduled for demolition. In areas with poor visibility due to loose surface vegetation, the ground

surface was cleared of duff to check for cultural materials. Road, landscape, and parking lot expansions were examined using the same methods.

The proposed project area is located on a series of steep hill slopes and marsh flats. Much of the project area has been leveled and many of the hillsides have been cut into or removed. The soil on the hills is medium brown loam with angular gravels, while soil on the flats along Bon Air Road is composed of sandy clay. Ninety percent of the project area is either paved or heavily landscaped. Ground visibility throughout the project area averaged less than 10 percent. Cuts in hillsides, barren areas surrounding landscaping, and animal paths were all examined for cultural material. Mussel shell was found throughout the project area on the ground surface, and often on top of groundcover indicating its recent deposition by wildlife. Vegetation on site consisted of a multitude of planted trees, shrubs, and groundcover as well as oaks, seasonal grasses, and broom. Vegetation on the project site is further described in section 4.C, *Biological Resources*.

### **Archaeological Survey Results**

No evidence of CA-MRN-75 was found during the survey. This site was not relocated, although visibility was poor due the existing parking and dense vegetation.

A sparse scatter of historic period artifacts was observed throughout the area proposed for the southern access road segment. This road expansion begins at Bon Air Road and continues south of the proposed Hospital Replacement Building and existing Risk Management Q.A. Offices (see Figure 3-4, Existing Site Buildings and Layout, in Chapter 3, *Project Description*). No features or concentrations of artifacts were identified. Archaeologists observed a limited number of historic artifacts: a burned glass fragment, a colorless machine made bottle neck and lip; a fragment of colorless pressed glass; a brick; four large oyster shells. A porcelain flatware fragment and a white glaze, improved earthenware hollowware base fragment, typical of durable hotel ware were observed. It is possible these materials are associated with Bon Air Hotel, although no intact archaeological features were discovered.

## **Geoarchaeological Review**

The San Francisco Bay Area has undergone dramatic landscape changes since humans began to inhabit the region more than 13,000 years ago. Rising sea levels and increased sedimentation into streams and rivers are among some of the changes (Helley et al., 1979). In many places, the interface between older land surfaces and alluvial fans are marked by a well-developed buried soil profile, or a paleosol. Paleosols preserve the composition and character of the earth's surface prior to subsequent sediment deposition; thus, paleosols have the potential to preserve archeological resources if the area was occupied or settled by humans (Meyer and Rosenthal, 2007). Because human populations have grown since the arrival of the area's first inhabitants, younger paleosols (late Holocene) are more likely to yield archeological resources than older paleosols (early Holocene or Pleistocene).

Information regarding the subsurface conditions of the project area was obtained through a review of a set of three geotechnical studies completed for the development project. While

geotechnical investigations are not generally conducted to observe cultural materials or locate buried soil horizons, boring logs can illuminate subsurface conditions and the potential for buried archaeological resources. Additionally boring logs may indicate evidence of an archaeological site itself, especially the identification of shell in the soil matrix. The following discussion focuses on whether any cultural materials were present; see Section 4.E, *Geology, Soils, and Seismicity*, for discussion of overall geologic conditions of the project site.

### **Hospital Replacement Building**

As part of its 2010 geotechnical investigation, Fugro West completed seven borings, 4 inches in diameter, excavated 13–30 feet below ground surface (bgs) at the location of the proposed Hospital Replacement Building. Three test pits were also excavated using a backhoe with a 24-inch bucket excavated 4–6 feet bgs. Results of the testing indicate that the knoll at the northern portion of the proposed building site is composed of Franciscan mélange consisting of sandstone with interbedded siltstone and shale. At the lower-lying portions of the project area, soils consist of unconsolidated Quaternary colluvium and artificial fill. One boring in the northwest corner of the building footprint encountered Bay Mud overlain by artificial fill.

Results of the testing indicated that up to 6 feet of fill exists in the western portion of the proposed Hospital Replacement Building site. The northeastern portion of the building will be excavated into areas of colluvium and Franciscan bedrock.

These findings are consistent with the known geologic mapping of the proposed location for the proposed Hospital Replacement Building. Neither Fugro West's report nor boring logs made any mention of cultural materials such as historic artifacts or shell in this area (Fugro West, 2010).

### **Ambulatory Services Building and Bon Air Road Parking Structure**

In its 2011 geotechnical investigation, Fugro West completed seven borings, 4–8 inches in diameter, excavated 18.5–67.5 feet bgs, in the location of the proposed Ambulatory Services Building and the Bon Air Road Parking Structure). Results of the investigation indicate that the proposed location for these two buildings is composed primarily of artificial fill overlaying Bay Mud and Quaternary deposits (alluvium and colluvium) associated with Corte Madera Creek to the west.

According to the results of the geotechnical borings, artificial fill has been deposited from 5–10 feet deep along the western portion of the proposed buildings. Plans for the Ambulatory Services Building have excavation extending only into artificial fill. The Bon Air Road Parking Structure will extend primarily into areas of artificial fill with minor excavation in the most northeastern corner into areas of colluvium.

These findings are consistent with the known geologic mapping of the proposed location for the Ambulatory Services Building and the Bon Air Road Parking Structure. As with the proposed Hospital Replacement Building, Fugro West made no mention of cultural materials in this location (Fugro West, 2011).

## Hillside Parking Structure

In its 2012 geotechnical investigation, Fugro West completed three borings, 2.4 inches in diameter, excavated 15 to 42 feet bgs, in the location of the proposed Hillside Parking Structure. Results of the investigation indicate that the area of the proposed Hillside Parking Structure is composed primarily of fill, colluvium, and Franciscan Mélange consisting of sandstone, shale, and siltstone bedrock. According to the results of the geotechnical borings, artificial fill has been deposited from 5–10 feet deep in the existing parking lot in front of the modular Marin County Community Clinic building (generally the site where the Hillside Parking Structure would be built), and the depth to bedrock ranged from as little as 1 to 4 feet bgs in the areas around the existing building. This is also an area of shallow historic slides and resulting swales.

These findings are consistent with the known geologic mapping of the proposed location for the Hillside Parking Structure. As with the proposed Hospital Replacement Building, Fugro West made no mention of cultural materials in this location (Fugro West, 2012).

## Paleontological Setting

Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. These include mineralized, partially mineralized, or unmineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains. The fossil record is the only evidence that life on earth has existed for more than 3.6 billion years. Fossils are considered nonrenewable resources because the organisms they represent no longer exist. The following sections discuss existing conditions with respect to paleontological resources in the Project area.

## Paleontological Assessment Standards

The Society of Vertebrate Paleontology (SVP) has established guidelines for the identification, assessment, and mitigation of adverse impacts on nonrenewable paleontological resources (SVP, 1995; 1996). Most practicing paleontologists in the nation adhere closely to the SVP's assessment, mitigation, and monitoring requirements as outlined in these guidelines, which were approved through a consensus of professional paleontologists. The SVP (1995) outlined criteria for screening the paleontological potential<sup>3</sup> of rock units and established assessment and mitigation procedures tailored to such potential. **Table 4.D-1** lists the criteria for high-potential, undetermined, and low-potential rock units.

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<sup>3</sup> Paleontological potential refers to the likelihood that a rock unit will yield a unique or significant paleontological resource.



**TABLE 4.D-1  
PALEONTOLOGICAL POTENTIAL CRITERIA**

<b>Paleontological Potential</b>	<b>Description</b>
High	Geologic units from which vertebrate or significant invertebrate or plant fossils have been recovered. Only invertebrate fossils that provide new information on existing flora or fauna or on the age of a rock unit would be considered significant.
Undetermined	Geologic units for which little to no information is available.
Low	Geologic units that are not known to have produced a substantial body of significant paleontological material, or which formed in such a way that precludes the preservation of fossils (e.g. intrusive igneous or plutonic rocks).

SOURCE: SVP, 1995.

## Paleontological Resource Potential

The results of a search of the University of California Museum of Paleontology (UCMP) collections database indicate that Pleistocene alluvium has been previously reported to yield vertebrate fossils of extinct mammals in at least five locations in Marin County (UCMP, 2011). One of these locations—along San Antonio Creek in northern Marin County—yielded numerous fossils of extinct mammoth and bison. Most previously recorded vertebrate fossil localities in Marin County have been associated with outcrops of Pliocene and Miocene marine sedimentary rocks on Marin’s Pacific coastline. None of these locations are in or near the project area, and the database does not have record of vertebrate fossil finds within Holocene-age stream deposits in Marin County (UCMP, 2011).

The fossil yielding potential of a particular area is highly dependent on the geologic age and origin of the rocks underlying the project site, with older sedimentary rocks usually having the greatest potential to yield significant discoveries. Geotechnical exploration of the proposed project site found that the site is underlain by bedrock units of the Franciscan Formation (sandstone and claystone with minor interbedded shale or siltstone) as well as younger surficial units, including stiff alluvium, colluvium, and soft bay mud deposits. The following is a brief description of the distribution of each unit across the project site and their fossil yielding potential:

- *Fill*: The surficial fill materials generally consist of dense clayey sands and stiff to very stiff sandy clays with varying amount of gravel. The thickness of fill generally ranges from 3 to 10 feet thick across the site (Fugro West Inc., 2010). Generally, for a fossil to have value as a cultural or scientific resource requires that it be identifiable (diagnostic), and found in-place (in-situ). Artificial fills and moved or otherwise disturbed soils have a low potential to yield unique or significant fossils because their original context can rarely be established and because earth moving commonly destroys diagnostic features.
- *Bay Mud*: The Bay Mud encountered at the site consists of soft to medium stiff highly plastic and compressible marine clay. The Bay Mud thickness across the site varies from approximately 12 feet in the northwest corner of the site to 0 feet (not encountered) in the eastern and southeastern portions of the site. The Bay Mud unit also includes a 0 to 3½ foot

thick desiccated crust of stiffer clay (Fugro West Inc., 2010). Soft bay muds are geologically young in age and are unlikely to preserve the remains of organisms due to the lack of time and burial needed for the organisms to be fossilized.

- *Colluvium*: The colluvium encountered consisted of stiff to hard sandy clay with bedrock fragments (Fugro West Inc., 2010). The colluvial materials generally located at the base of hillslopes and are derived from the upslope geologic material, which in this case consists of sandstone of the Franciscan Formation (see below).
- *Alluvium*: The alluvium encountered consisted of medium stiff to very stiff clays with some thin interbedded sand layers (Fugro West Inc., 2010). It is unknown whether this alluvium is Holocene or Pliocene in age. If the alluvium represents older deposits, they may contain significant paleontological resources.
- *Bedrock*: The bedrock encountered generally consisted of Franciscan Formation sandstone and claystone. The depth to bedrock ranged from approximately 10 feet below the ground surface (bgs) to the northeast and southeast, up to 57 feet bgs closer to Corte Madera Creek (Fugro West Inc., 2010). Fossil localities are scarce in the hills and mountains of Marin County, which consist of Franciscan Complex bedrock. Vertebrate fossils are rarely found in Franciscan bedrock due to its long history of shearing and deformation from tectonic processes. Any fossils that were originally present in rock units of the Franciscan Complex have likely been altered under high heat and pressure, chaotically mixed, or severely fractured. Thus, Franciscan Complex bedrock has a low potential to yield paleontological resources.

Based on the regional context, the location and nature of existing paleontological resource sites, and the local geology of the project area, the project site is within an area of low paleontological sensitivity.

## Regulatory Setting

### Federal

Cultural resources are protected through the National Historic Preservation Act of 1966, as amended (16 USC 470f), and its implementing regulations. Prior to implementing an “undertaking” (e.g., issuing a federal permit or federal funding), Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing or listed in the National Register of Historic Places.

Established by the National Historic Preservation Act of 1966, the National Register of Historic Places (National Register) is the nation’s master inventory of known historic resources. The National Register is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

Structures, sites, buildings, districts, and objects over 50 years of age can be listed in the National Register as significant historical resources. However, properties under 50 years of age that are of

exceptional importance or are contributors to a district can also be included in the National Register. The criteria for listing in the National Register include resources that:

- a) Are associated with events that have made a significant contribution to the broad patterns of history;
- b) Are associated with the lives of persons significant in our past;
- c) Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) Have yielded or may likely yield information important in prehistory or history.

## **State**

### ***California Register of Historical Resources (CRHR)***

The CRHR is “an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change” (California Public Resources Code [PRC] §5024.1[a]). The criteria for eligibility for the CRHR are based upon National Register criteria (PRC § 5024.1[b]; 14 California Code of Regulations [CCR] § 4850 et seq.). Certain resources are determined by the statute to be automatically included in the CRHR, including California properties formally determined eligible for, or listed in, the National Register.

To be eligible for the CRHR, a prehistoric or historic-period property must be significant at the local, State, and/or federal level under one or more of the following four criteria:

The property:

- A) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- B) Is associated with the lives of persons important in our past;
- C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- D) Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the CRHR must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance (OHP, 2012). It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the CRHR.

Additionally, the CRHR consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The CRHR automatically includes the following:

- California properties listed on the National Register and those formally Determined Eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and,
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the CRHR.

Other resources that may be nominated to the CRHR include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the CRHR, and/or a local jurisdiction register);
- Individual historical resources;
- Historical resources contributing to historic districts; and,
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

### ***California Environmental Quality Act***

CEQA (codified at PRC § 21000 et seq.) is the principal statute governing environmental review and approval of discretionary projects occurring in the State. CEQA requires lead agencies to determine, prior to approval, if a project would have a significant adverse effect on historical or unique archaeological resources.

The *CEQA Guidelines* generally recognize that a historical resource includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR (PRC § 5024.1); (2) a resource included in a local register of historical resources, as defined in PRC § 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC § 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record (*CEQA Guidelines*, § 15064.5[a]).

If a lead agency determines that an archaeological site is a historical resource, the provisions of §21084.1 of CEQA and § 15064.5 of the *CEQA Guidelines* apply. If an archaeological site does not meet the criteria for a historical resource contained in the *CEQA Guidelines*, but does meet the definition of a unique archaeological resource, then the site may be treated in accordance with the provisions of CEQA §21083.2. As defined in §21083.2 of CEQA a "unique" archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that

without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

A non-unique archaeological resource means an archaeological artifact, object or site which does not meet the criteria in PRC Section 21083.2(g), and need not be given further consideration other than the simple recording of its existence by the lead agency if it so elects. (PRC §21083.2[h]). The CEQA *Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (CEQA *Guidelines* Section 15064.5[c][4]).

Paleontological resources are addressed within CEQA *Guidelines* Appendix G, the “Environmental Checklist Form,” which addresses the potential for adverse impacts to “unique paleontological resource[s] or site[s] or ... unique geological feature[s].” This provision discusses significant fossils – remains of species or genera new to science, for example, or fossils exhibiting features not previously recognized for a given animal group – as well as localities that yield fossils significant in their abundance, diversity, preservation, and so forth. Mitigation of adverse impacts to paleontological resources is therefore required under CEQA.

## Local Regulatory Setting

### ***Marin Countywide Plan***

The following Countywide Plan goal and policies pertain to cultural resources:

***Goal HAR-1: Historical Resource Protection.*** Identify and protect archaeological and historical resources as major contributors to quality of life and community vitality in Marin.

*Policy HAR-1.1 Preserve Historical Resources:* Identify archaeological and historical resource sites.

*Policy HAR-1.2 Document Historical Information:* Provide documents, photographs, and other historical information whenever possible to be catalogued in the Anne T. Kent California Room in the Marin County Free Library.

*Policy HAR-1.3 Avoid Impacts to Historical Resources:* Ensure that human activity avoids damaging cultural resources.

*Policy HAR-1.4 Participate in Historical Preservation Efforts:* Work with federal, State, and local agencies, and interested individuals, groups, and educational organizations to obtain funding and employ other methods to preserve archaeological and historical sites.

*Policy HAR-1.5 Regulate Alteration of Historical Buildings:* Limit the ability to modify historical structures, and require development to respect the heritage, context, design, and scale of older structures and neighborhoods.

## Impacts and Mitigation Measures

### Significance Criteria

Based on criteria from Appendix G of the State CEQA *Guidelines*, the project would have a significant impact on cultural resources if it would:

- a) Cause a substantial adverse change in the significance of a historical resource that is either listed or eligible for listing in the National Register, the CRHR, or a local register of historic resources;
- b) Cause a substantial adverse change in the significance of a unique archaeological resource;
- c) Cause disturbance or destruction of a unique paleontological resource or site or unique geologic feature; or
- d) Disturb any human remains, including those interred outside of formal cemeteries.

Based on Appendix N of the Marin County Environmental Review Guidelines, the project may also have a significant impact related to cultural resources if the project would:

- Disrupt or adversely affect a prehistoric or archaeological site, or a property of historic or cultural significance to a community or ethnic or social group, or a paleontological site, except as part of a scientific study (consistent with CEQA Appendix G Criteria a, b, and c); or
- Affect a local landmark of local cultural/historical importance (consistent with CEQA Appendix G Criterion a).

### Approach to Analysis

The analysis considers impacts on both known cultural and paleontological resources as well as inadvertent discoveries within the project area. Potential impacts on architectural/structural resources are assessed by determining whether project activities would affect any such resources that have been identified as historical resources for the purposes of CEQA. While most historic buildings and many historic-period archaeological resources are generally significant because of their association with important events, people, or styles (CRHR criteria A, B, and C), the significance of most prehistoric and historic-period archaeological resources is usually assessed under Criterion D. This criterion stresses the potential for discovering important historical information within the site rather than the resource's significance as a surviving example of a type of construction or its association with an important person or event.

Once a resource has been identified as significant, it must be determined whether the project would "cause a substantial adverse change in the significance" of the resource (CEQA Guidelines 15064.5[b]). A substantial adverse change in the significance of a historical resource or unique

archaeological resource means “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired” (CEQA Guidelines Section 15064.5[b][1]). A historical resource is materially impaired through the demolition or alteration of the resource’s physical characteristics that convey its historical significance and that justify its inclusion in the CRHR (CEQA Guidelines Section 15064.5[b][2][A]).

The impact analysis for paleontological resources is based on the paleontological potential of the rock units to be disturbed by project-related excavations.

## Impacts and Mitigation Measures

### *Historical Resources*

#### **Impact CUL-1: The Project would have an impact on a historical resource as defined by PRC Section 5024.1. (Significant)**

##### **Evaluation of the Halprin Gardens**

The following evaluation of the Halprin Gardens is provided by SWA (2011) with a peer review by Bradley (2011). The Ambulatory Terrace and Bar-B-Q Terrace gardens, referred to collectively as the “Halprin Gardens,” are recommended as an historical resource as defined by CEQA §15064.5 because they meet the criteria for listing in the California Register of Historical Resources (CRHR). The Halprin Gardens meet the following CRHR criteria:

- The Halprin Gardens were created in 1952 and are 60 years of age. As such, a sufficient amount of time has passed to gain perspective about their historical significance.
- Lawrence Halprin was one of the pre-eminent landscape architects of the twentieth century. The Ambulatory Terrace and Bar-B-Q Terrace gardens are significant under CRHR Criterion C (design) as the remaining extant components of Halprin’s 1951 design (completed in 1952) for the Marin General Hospital, his first commission to design a public garden space after he established his own practice in 1949.<sup>4</sup> Previously Halprin had designed residential gardens, and the two gardens at the Marin General Hospital are significant as a transition point in his early career when he began expanding his design focus from addressing the needs of an individual client within a residential setting to addressing the needs of broader user groups within larger public settings. The Ambulatory Terrace and Bar-B-Q Terrace gardens are also significant as a link to his earlier residential garden designs and his interpretation of the Modernist design aesthetic within a garden setting. The period of significance is 1952, the year the design was completed. The Halprin Gardens embody the work of an important creative individual, and as such, they meet CRHR Criterion C.
- The Halprin Gardens also retain a sufficient amount of integrity to convey their historical significance. There are seven aspects of integrity: location, design, setting, materials,

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<sup>4</sup> As discussed in the *Regulatory Setting* in this section, CRHR Criterion C addresses whether the resource “Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.”

workmanship, feeling, and association (OHP, 2012). The characteristics of the Halprin Gardens regarding each of these aspects are as follows:

1. *Location:* The primary garden elements (stone walls, paving, and circle of palms) have remained in situ since their construction.
2. *Design:* The current condition of the gardens largely resembles the original landscape design documents created by the office of Lawrence Halprin, including the composition of the gardens as defined by stone walls, a circle of palms, bench seating, walks, and naturalistic stone and/or plant outcroppings that define distinct spaces for specific uses by hospital patients, visitors and staff.
3. *Setting:* The setting of the gardens has been impacted by the realignment of Bon Air Road and the significant hospital expansion in 1986. Specifically, views toward the marsh were reduced through the hospital West Wing addition, a new covered walkway, bus shelter, and expansion of the parking lot.
4. *Materials:* The use of stone walls in circular forms, design of stone retaining walls with specific “stepping” details, and creation of square patterns within the Bar-B-Q Terrace pavement reveal construction methods and a design motif utilized by Halprin in other projects of this era, including Ghirardelli Square in San Francisco. Subsequent updates to the landscape by others, particularly in the use of some plant materials, deviates from those employed by Halprin. One example is the introduction of palm planting in the parking lots, in contrast to Halprin’s deliberate use of the palms to describe a usable pedestrian space. Additionally, some of the ornamental shade plant materials have been replaced.
5. *Workmanship:* The gardens include rustic stone and bench details that evoke the “natural” character of the Marin environment within the design. The use of wood board to create a rectangular paving pattern is indicative of Modernist landscape architectural details of the period.
6. *Feeling:* The informal planting beds, outcroppings and contrasting use of rectangular paving patterns evoke a Modernist aesthetic and method of detailing, common during the early 1950s and 1960s landscapes. The function and intent of the spaces as they were created remain largely as designed.
7. *Association:* Overall, the Halprin gardens create a direct link between Lawrence Halprin, his early work and his close association to Marin County, where he also resided.

As a designed landscape that meets the eligibility criteria for listing in the CRHR in terms of age, association with an important creative individual (criterion C), and retains a sufficient amount of integrity to convey that association, the Halprin Gardens, including the Bar-B-Q Terrace and Ambulatory Terrace gardens, are eligible for listing in the CRHR as the work of an important creative individual. As such, they are considered a historical resource pursuant to CEQA Section 15064.5.

The project proposes a “sunken garden” as a new healing garden that would commemorate the design influence of Landscape Architect Lawrence Halprin on the project site, and to address, in part, the loss of existing historic landscapes on the site. The new healing garden would include a public plaque or element that commemorates the work and influence of Lawrence Halprin in the



northwest area of the project site (see Figure 3-14, Landscape Concept Plan, in Chapter 3, Project Description). This healing garden would incorporate hardscape materials, landscape grading and planting to evoke local, natural elements and delineate space. As feasible, the garden would incorporate materials and plants reused from existing Halprin elements onsite. The garden would incorporate plantings and furnishings to offer a wind-sheltered outdoor setting that maintains the connection of the hospital landscape with the broader natural setting, with views to Hal Brown Park, Corte Madera Marsh and Mt. Tamalpais. Plant species for this area would be colorful and fragrant.

While the new healing garden will incorporate elements consistent with the Halprin elements onsite, the Halprin Gardens would be demolished to make room for the new facilities. This impact is considered significant. Mitigation measures to reduce the impact are identified below.

**Mitigation Measure CUL-1:** The project applicant shall conduct the following:

- Pre-demolition photo-documentation, a report, and as-built drawings of the gardens in accordance with the Historic American Landscape Survey (HALS) standards. This documentation would include a HALS report in either the short form format or a longer outline format and a measured drawing of the existing conditions. A copy of all of the HALS documentation shall be provided to the Lawrence Halprin archives at the University of Pennsylvania and the Anne T. Kent California Room in the Marin County Free Library. No additional historic registries local to Marin County could be identified.
- Installation of a public plaque or element that commemorates the work of Lawrence Halprin on this site.
- Design of a new garden that commemorates Lawrence Halprin's design contributions:
  - Within a new garden, recognize Halprin's use of hardscape materials, landscape grading and planting to evoke local, natural elements and delineate space. The garden would not relocate or mimic Halprin's gardens, but could possibly reuse some materials and/or incorporate similar materials in its construction, particularly plant materials.
  - Locate the new garden in view of the Corte Madera Marsh to maintain the connection of the hospital landscape to the broader natural setting.
- Incorporate a more private garden within the hospital landscape for the purpose of respite or reflection within a natural setting. The intent would be to recall and respect rather than mimic Halprin's work. The garden could also incorporate elements that reference Halprin and his influence.
- Marin General Hospital will seek donations to commemorate Lawrence Halprin's influence on the design of the Marin General Hospital Landscape; donations could fund an intern to work with the Halprin archivist at the University of Pennsylvania or similar relevant efforts for a one-year time duration.
- Document other Bay Area designs of Halprin's from this early period in his career. This documentation would include a list of his projects, plans when available, project

locations, a written description identifying the project types and whether they were public or private commissions and photos, when possible, showing the overall character of the designs. The research could serve as an important resource for the local community and could be combined with HALS documentation, with copies sent to the University of Pennsylvania, the Marin County Free Library, or other institutions.

Demolition or destruction of a historical resource cannot be mitigated below a level of significance, however this mitigation would add to the body of knowledge about Lawrence Halprin's work and would provide further documentation of this particular design.

**Significance after Implementation of Mitigation Measures:** Significant and Unavoidable

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### ***Archaeological Resources***

#### **Impact CUL-2: The Project would have an impact on archaeological resources as defined by PRC Section 21083.2(g). (Potentially Significant)**

One prehistoric archaeological resource (CA-MRN-75) has been previously recorded in the project area in the vicinity of the existing hospital. Additionally the Bon Air Hotel was once located in the project area in the vicinity of the proposed southern access road, and cultural materials associated with the hotel may be present. Results of the geotechnical investigation indicate that much of the project area (especially the western portion) is located on up to 10 feet of artificial fill. No cultural materials, such as artifacts and shell were noted in the geotechnical boring report or logs. Based on the results of Pacific Legacy, Inc. records search and survey, as well as the results of the geotechnical investigations conducted by Fugro West, Inc., there is potential that archaeological resources are present within the project area in areas where undisturbed, native soils would be disturbed during project construction. Accidental damage or destruction of archeological resources due to ground-disturbing construction activities would be a potentially significant impact. The following mitigation measures are identified to address this impact:

**Mitigation Measure CUL-2:** A Secretary of the Interior-qualified archaeologist and a Native American monitor shall be present during ground-disturbing activities in the vicinity of Buildings 1, 2, and 3, and the Halprin Gardens. During the course of the monitoring, the archaeologist may adjust the frequency of the monitoring—from continuous to intermittent—based on observed conditions (i.e. artificial fill) and professional judgment regarding the potential to impact resources. Prior to ground-disturbing activities, an archaeological monitoring plan shall be developed that includes:

- Training program for all construction personnel involved in site disturbance activities;
- Qualifications of person responsible for conducting monitoring activities, including Native American monitors;
- The required format and content of monitoring reports, assessment, designation and mapping of sensitive cultural resource areas on final project maps;

- Person(s) responsible for overseeing and directing the monitors;
- Schedule for submittal of monitoring reports and person(s) responsible for review and approval of monitoring reports;
- Physical monitoring boundaries;
- Protocol for notifications in case of encountering of cultural resources, as well as methods of dealing with the encountered resources (e.g., collection, identification, curation);
- Methods to ensure security of cultural resources sites;
- Protocol for notifying local authorities (i.e. Sheriff, Police) should site looting or other illegal activities occur during construction.

If cultural resources are encountered during construction, all activity in the vicinity of the find shall cease until it can be evaluated by a qualified archaeologist and a Native American representative. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If the archaeologist and Native American representative determine that the resources may be significant, they will notify the County. An appropriate treatment plan for the resources shall be developed and shall be submitted to the County for review and approval. The archaeologist shall consult with Native American representatives in determining appropriate treatment for prehistoric or Native American cultural resources.

In considering any suggested mitigation proposed by the archaeologist and Native American representative, the County will determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed in other parts of the site while mitigation for cultural resources is being carried out.

**Significance after Implementation of Mitigation Measures:** Less than Significant.

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### ***Paleontological Resources***

#### **Impact CUL-3: The Project could have an impact on a paleontological resource. (Potentially Significant)**

There are no unique geological features that would be disturbed or otherwise affected by construction or operation of the project. The project could have potential construction related impacts on paleontological resources, however, which are described below.

Any construction activity involving subsurface soil excavation has the potential to disturb or destroy paleontological resources. As largely buried resources, the exact location or presence of fossils within undisturbed geologic units cannot be determined, but the relative likelihood of encountering fossils can be estimated based on the paleontological potential of the rock unit (see Table 4.D-1). Construction activities such as site preparation, grading, and utility trenches are expected to be relatively shallow in nature. However, excavation for and construction of foundations for the medical and parking facilities will involve excavations as deep as 30 feet and will disturb substantial volumes of native geologic materials with a low paleontological potential (see *Paleontological Setting*, above for discussion of paleontological potential). However, because the uniqueness or significance of a fossil locality is unknown until it is identified to a reasonably precise level, any fossil discovery, however unlikely, should be treated as potentially unique or significant until determined otherwise by a professional paleontologist (Scott and Springer, 2003). Mitigation Measure CUL-3 would require construction activities to cease in the event workers uncover a potential paleontological resource until a qualified paleontologist can make a determination on the potential significance and appropriate disposition of the find.

**Mitigation Measure CUL-3:** If a fossil or fossil bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (in accordance with Society of Vertebrate Paleontology standards). The paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA *Guidelines* Section 15064.5. The paleontologist shall notify Marin County to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the County determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project, based on the qualities that make the resource important. The excavation plan will include identification of an institution willing and able to accept fossil specimens; and emergency discovery procedures, including survey and record keeping of fossil-finds, bulk sediment sample collection and processing, specimen identification, disposition, and museum curation of any specimens and data recovered. The excavation plan shall be submitted to the County for review and approval prior to implementation.

**Significance after Implementation of Mitigation Measure:** Less than Significant.

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### ***Human Remains***

#### **Impact CUL-4: The Project could have an impact on human remains. (Potentially Significant)**

Based on the background research, there is a low potential for project activities to uncover human remains. Although no known human burials have been identified within the project area, the possibility cannot be entirely discounted. Earthmoving activities associated with project construction could result in direct impacts on previously undiscovered human remains. Disturbance of human remains during project construction would be a significant impact.

**Mitigation Measure CUL-4:** If potential human remains are encountered, the contractor will halt work in the vicinity of the find and contact the Marin County coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission. As provided in PRC §5097.98, the Native American Heritage Commission will identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent will make recommendations for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98.

**Significance after Implementation of Mitigation Measure:** Less than Significant.

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## **Cumulative Impacts**

**Impact CUL-5: The Project, combined with other past, present and reasonably foreseeable development would not have a cumulative impact on cultural resources. (Less than Significant)**

### ***Geographic Setting***

The geographic setting for the consideration of cumulative cultural resources is Marin County.

### ***Impacts***

Other past, present, or reasonably foreseeable projects in Marin County could have the potential to combine with the impacts of the proposed project to form a significant cumulative impact. This is primarily because cumulative projects that have and could happen in the area may involve excavation and demolition activities that could adversely affect historic, archaeological, or paleontological resources, or human remains. However, this analysis has not identified any other known projects in the area that would damage or destroy a garden or landscape designed by Lawrence Halprin that could combine with the significant impact identified with the project, Impact CUL-1. Also, Mitigation Measures CUL-2 through CUL-4 would also apply to any projects in Marin County that would potentially impact archaeological or paleontological resources or human remains, reducing impacts to less than significant. Therefore, no significant cumulative impacts are anticipated. The impact would be less than significant.

**Mitigation:** None required

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## 4.E Geology, Soils, and Seismicity

This section describes geologic and seismic conditions in the project vicinity and evaluates the potential for the project to result in significant impacts from exposing people or structures to geologic hazards, unsuitable soils, and/or seismic conditions, as described throughout this section. Potential impacts are discussed and evaluated, and appropriate mitigation measures are identified where necessary.

### Environmental Setting

#### Regional Physiography

The project site is located in a region of northern and central California referred to as the Coast Range Geomorphic Province<sup>1</sup> (the Coast Ranges), which lies between the Pacific Ocean and the Great Valley. The Coast Ranges are characterized by northwest-trending ridges and intervening valleys that form sub-parallel to the region's major fault lines (typically northwest-trending). Over millions of years, movement along these faults has displaced rock masses by hundreds of miles and has juxtaposed rock types of sharply contrasting origin and character. These fault-bounded rock masses are often referred to by geologists as an "assemblage," "complex," "terrane," or "tectonic block." Marin County is underlain by rocks of the Franciscan Complex—a chaotic mix of ancient seafloor sediments and volcanic rocks that have been subjected to intense heat and pressure as they were accreted onto the North American Plate. Over millions of years, tectonic forces have thrust these rocks to the surface, forming the bedrock under the hills and mountains in Marin County.

#### Site Topography

The majority of the project site is relatively flat because most of the site was previously leveled to accommodate previous development on the site, and then the existing hospital. The elevation across most of the site ranges from 10 to 20 feet above mean sea level (amsl), and a small hill to the southeast of the central and west wing that is currently used as a terraced garden rises to 45 feet amsl. The western side of the project site includes the portions of Bon Air Hill, which continues to the west and is characterized by hilly oak woodlands that rise steeply from an elevation of about 50 feet to an elevation of 130 feet amsl (an 80-foot increase). Eroded gullies and other characteristics of the hillside portion of the site suggest that it is situated within a natural drainage swale that was graded sometime in the past by cutting and filling the northeast and southwest portions of the lot, respectively (Fugro West, 2012). As a result, drainage onsite is generally directed from east to west and from north to south.

<sup>1</sup> California's geomorphic provinces are naturally defined geologic regions that display a distinct landscape or landform. Earth scientists recognize eleven provinces in California. Each region displays unique, defining features based on geology, faults, topographic relief and climate.



## Site Geology and Soils

The geology of the project area can be characterized in terms of surficial deposits and bedrock geology. Surficial deposits generally refer to loosely-bound surface materials, such as recent soils and sediment that fill swales and hollows, canyons and ravines, river and stream valleys, and large basins. Further, mapping of surficial deposits often includes areas where topography has been substantially altered by human influence through placement of artificial fills or by other means. Bedrock geology generally refers to rock, usually solid, that underlies soil or other unconsolidated, surficial material that forms the structural core of hilly and mountainous areas. The following discussion is based on three geotechnical reports completed by Fugro West, Inc. The purpose of the geotechnical reports was to characterize the surface and subsurface geology of the site, to evaluate potential geotechnical constraints, to characterize anticipated levels of ground shaking, and to provide design recommendation to reduce or eliminate potential geologic and seismic hazards. The following description of site geology and soils is based on field reconnaissance, soil borings and geologic cross sections prepared by Fugro West (Fugro West, 2010; Fugro West, 2011; Fugro West, 2012).

### ***Bedrock Geology***

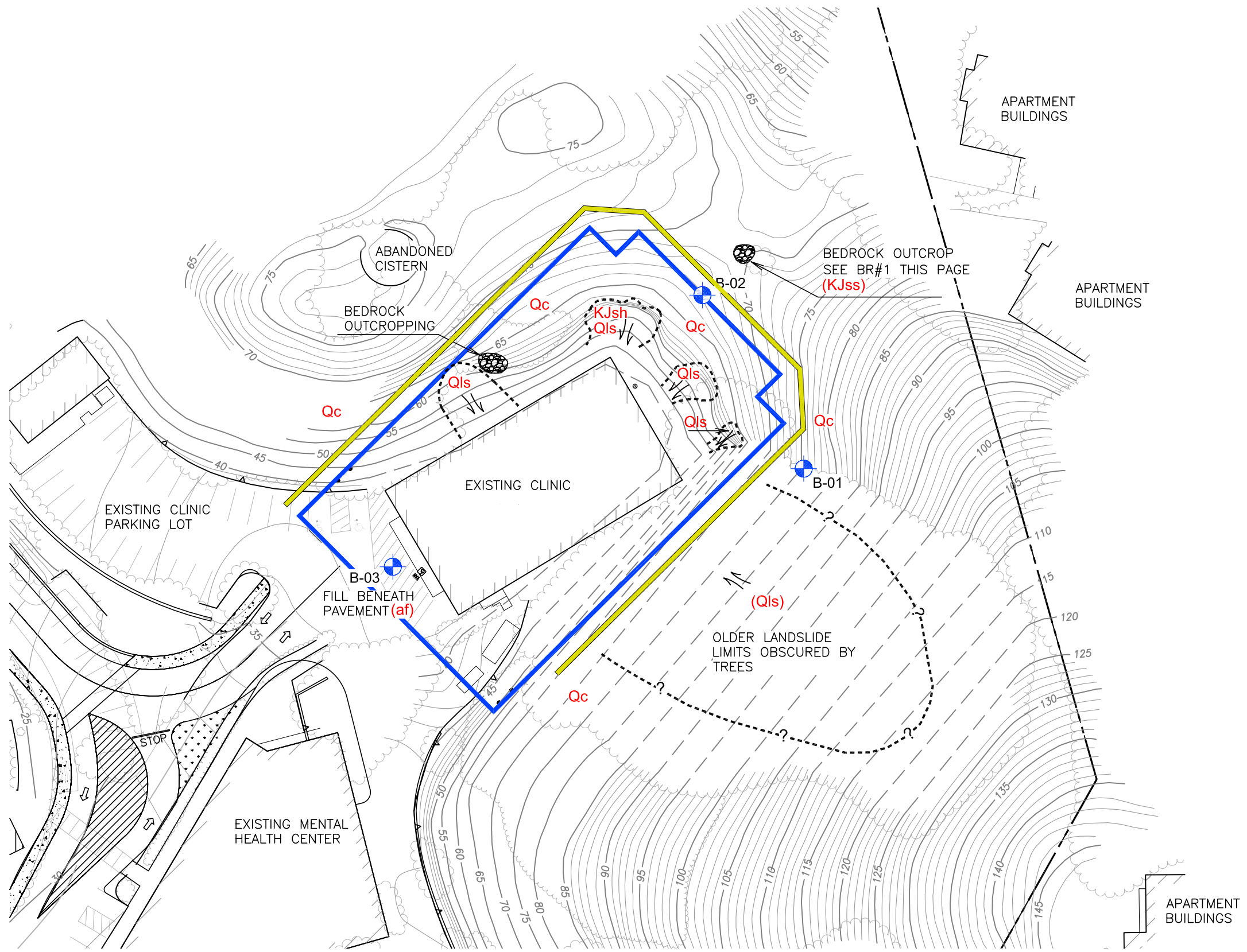
The bedrock underlying the project area is mapped as a zone of Franciscan *mélange*, consisting of blocks of altered marine sedimentary and volcanic rocks that are too small and discontinuous to map individually at a regional scale. However, soil borings and observations of bedrock exposures on the property confirm that the bedrock underlying the site consists of sandstone and claystone of the Franciscan Complex. Characteristic of the Franciscan Complex, Fugro West observed no clear or consistent bedding orientation, indicating the layers of sandstone and mudstone are regionally highly folded and sheared. **Figure 4.E-1**, Hillside Geological Conditions, illustrates the geologic characteristics of the Bon Air Hill area of the site, where the existing Marin Community Clinic currently exists and would be replaced by the proposed Hillside Parking Structure. As shown in Figure 4.E-1, the bedrock is either exposed or close to the ground surface in areas close to Bon Air Hill, and becomes progressively more deeply buried toward Corte Madera Creek and Hal Brown Park at Creekside to the west, where it is overlain by as much as 50 feet of surficial deposits.

### ***Surficial Deposits***

Most of the property is covered at the surface by a mantle of human-placed fills up to ten feet thick. This fill material was used for site preparation and as foundation material for the construction of the existing hospital complex. Fugro West observed the fill materials to be a dense mix of clays and fine sands with varying amounts of gravel. The human-placed fills are underlain by a variety of geological deposits, including estuarine Bay Muds, Holocene<sup>2</sup>-age stream deposits (alluvium), and colluvium.

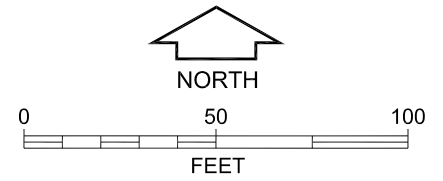
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<sup>2</sup> The Holocene refers to a geological period ranging from the present to 10,000 years ago.



- LEGEND**
- Proposed Retaining Wall
  - Proposed Parking Structure Footprint
  - B-01 Approximate Location of Exploratory Boring
  - Exposed Bedrock Outcropping
  - Qls Approximate Limits of Landslide Deposit
  - af Artificial Fill
  - Qc Colluvium
  - KJss/sh Franciscan Formation (Sandstone/Shale)
- Bedrock Outcrop BR#1 Joints**  
 strike 200°; dip 85°  
 strike 65°; dip 50°  
 strike 320°; dip 45°  
 strike 175°; dip 80° to 85°

NOTE: Majority of deposits are colluvium (Qc) and landslide (Qls) overlying Franciscan Formation (KJss/sh) sandstone and shale



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## **Bay Mud**

Soft Bay Mud deposits associated with the nearby Corte Madera Creek are found beneath artificial fills in the western portion of the project area. The Bay Mud encountered at the site consists of soft- to medium-stiff highly plastic<sup>3</sup> and compressible marine clay. The Bay Mud thickness across the site varies from approximately 12 feet in the northwest corner of the site, pinching out completely (i.e., not encountered in soil borings) in the eastern and southeastern portions of the site

## **Colluvium**

Colluvium is a term that refers to rock and soil debris that slowly builds up at the base of slopes due to gravity. Fugro West encountered colluvium overlying the alluvium and Bay Mud deposits at the base of Bon Air Hill. The colluvium encountered consists of sandy clay with numerous bedrock fragments. The colluvium progressively thins with distance away from the hillsides.

## **Alluvium**

Stiff alluvium was encountered overlying much of the Bay Mud on and near the site (Fugro West, 2010; Fugro West, 2011). The alluvium encountered consisted of stiff, highly plastic clays with some thin interbedded layers of sand.

## **Geologic Hazards**

### ***Slope Failure/Landslides***

A slope failure is a mass of rock, soil, and debris displaced down a slope under the influence of gravity by sliding, flowing, or falling. Several factors affect the susceptibility of an area to experience slope failure, including slope steepness; the material strength and bulk density of soil or bedrock; the width, orientation and pervasiveness of bedrock fractures or bedding planes; prevailing groundwater conditions; and the type and distribution of vegetation. Those features, among others, are important factors that describe the predisposition of a sloped surface to fail, while external processes such as exceptionally heavy rainfall, earthquakes, or human activities (e.g., road cuts, over-steepened slopes, large-scale vegetation removal) may trigger or reactivate a slope failure.

Landslides are common on steep slopes underlain by Franciscan rocks, which is the condition underlying much of Bon Air Hill. Fugro West reported that several recent shallow slope failures have occurred within the steep cut slopes surrounding the existing Marin Community Clinic building, most of which originated within the shallow colluvium layer exposed at the top of these cut slopes. Also shown in Figure 4.E-1, in the lower-lying regions at the base of Bon Air Hill, to the southwest of the Marin Community Clinic building and the proposed Hillside Parking Structure, a large swale is present on the slope and is confirmed by Fugro West (and previous studies cited therein) to be the site of an older shallow landslide on the northwest-facing, natural hill slope. This slope is mostly overgrown with brush and trees, which are relatively dense within

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<sup>3</sup> A soil with high plasticity is capable of being molded or deformed continuously and permanently, by relatively moderate pressure into various shapes.

the older landslide area and obscure the limits of the slide. Based on conditions encountered during Fugro West's study of this area of the project site (and previous studies cited therein), the chance of shallow landsliding as a result of seismic activity is considered moderate (Fugro West, 2012).

On the lower-lying areas of the project site, where the Hospital Replacement Building, Ambulatory Services Building, and Bon Air Road Parking Structure are proposed, the generally competent nature of the bedrock, the lack of diagnostic landslide features adjacent to the site, and the lack of unfavorable bedding or jointing, indicates that the potential for translational-type (bedrock controlled) landsliding to be very low (Fugro West 2010; Fugro West, 2011).

### **Adverse Soil Conditions**

#### **Accelerated Erosion**

Erosion is a natural process whereby soil and highly weathered rock materials are worn away and transported to another area, most commonly by water but also by wind. Natural rates of erosion can vary depending on slope, soil type, and vegetative cover. Soils containing high amounts of silt are typically more easily eroded, while coarse-grained (sand and gravel) soils are generally less susceptible to erosion. Because much of the site is currently developed, stormwater is channeled through existing storm drains and outlets. Most of the site is paved, and landscaped areas are heavily vegetated, which reduces the potential for substantial soil loss or erosion on the property as currently developed (pre-project). Existing site conditions on the non-hillside portions of the project site therefore limit the potential for substantial soil erosion issues (Fugro West, 2010; Fugro West, 2011).

The previously-mentioned observations of erosion gullies on the northeast and northwest side of the existing Marin Community Clinic on Bon Air Hill, combined with the fact that the colluvial deposits within swales historically can be source areas for debris flows during periods of heavy rainfall, the chance of a debris flow (or erosion) occurring in the hillside area of the project site is considered moderate (Fugro West, 2012).

#### **Corrosive Soils**

The corrosivity of soils is commonly related to several key parameters, including soil resistivity, the presence of chlorides and sulfates, oxygen content, and pH. Typically, the most corrosive soils are those with the lowest pH and highest concentration of chlorides and sulfates. Wet/dry conditions can result in a concentration of chlorides and sulfates as well as movement in the soil, both of which tend to break down the protective corrosion films and coatings on the surfaces of building materials. High-sulfate soils are also corrosive to concrete and may prevent complete curing, reducing its strength considerably. Low pH and/or low-resistivity soils can corrode buried or partially buried metal structures. Depending on the degree of corrosivity of the subsurface soils, building materials such as concrete, reinforcing steel in concrete structures, and bare-metal structures exposed to these soils can deteriorate, eventually leading to structural failures. The soils characterized on-site are moderately corrosive to buried metallic improvements and non-corrosive to buried concrete (Fugro West, 2011).

### **Expansive Soils**

Expansive soils are characterized by their potential “shrink-swell” behavior. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in certain fine-grained clay sediments from the process of wetting and drying. The higher the percentage of expansive minerals present in near surface soils, the higher the potential for significant expansion. The greatest effects occur when there are significant or repeated moisture content changes. Soils expansions of ten percent or more in volume are not uncommon on the site. This change in volume can exert enough force on a building or other structure to cause cracked foundations, floors and basement walls. Damage to the upper floors of the building can also occur when movement in the foundation is significant. Structural damage typically occurs over a long period of time, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. According to the geotechnical investigations for the project site, site soils have a low to moderate expansion potential (Fugro West, 2011; Fugro West, 2012).

### **Settlement**

Settlement can occur from immediate settlement, consolidation, shrinkage of expansive soil, and liquefaction. Immediate settlement occurs when a load from a structure or placement of new fill material is applied, causing distortion in the underlying materials. This settlement occurs quickly and is typically complete after placement of the final load. Consolidation settlement occurs in saturated clay from the volume change caused by squeezing out water from the pore spaces. Consolidation occurs over a period of time and is followed by secondary compression, which is a continued change in void ratio under the continued application of the load.

Soils tend to settle at different rates and by varying amounts depending on the load weight or changes in properties over an area, which is referred to as differential settlement. The non-hillside areas of the project site are generally underlain by Bay Mud, alluvial deposits, colluvium, all topped with areas of artificial fills. Because it is unknown how well prepared the fill material was, and because the soil types underlying the site are so variable in their engineering characteristics, soil could settle at different rates if not properly engineered (Fugro West, 2010; Fugro West, 2011). This is also the case at the lower areas of Bon Air Hill, but the depth of fill is near zero toward the rear of the existing Marin Community Clinic (Fugro West, 2012).

## **Regional Faulting and Seismic Hazards**

This section characterizes the region’s existing faults, describes historic earthquakes, estimates the likelihood of future earthquakes, and describes probable ground-shaking effects. The primary sources of information for this section are publications prepared by United States Geological Survey (USGS), the California Geological Survey (CGS), geotechnical studies by Fugro West (Fugro West, 2010; Fugro West, 2011; and Fugro West, 2012), and hazard mapping tools provided by the Association of Bay Area Governments (ABAG).

### **Seismic Context**

The proposed project lies within a region of California that contains many active and potentially active faults and is considered an area of high seismic activity, as shown in **Figure 4.E-2**. The

USGS along with the California Geological Survey and the Southern California Earthquake Center formed the 2007 Working Group on California Earthquake Probabilities to summarize the probability of one or more earthquakes of magnitude 6.7 or higher occurring in the state of California over the next 30 years. Accounting for the wide range of possible earthquake sources, it is estimated that the Bay Area as a whole has a 63 percent chance of experiencing an earthquake of magnitude 6.7 or higher before 2036 (USGS, 2008).<sup>4</sup> According to the working group, the individual faults posing the greatest threat to the Bay Area are the Hayward-Rodger's Creek Fault and the San Andreas Fault. Other principal faults capable of producing significant earthquakes in the Bay Area include the Calaveras, Concord–Green Valley, Marsh Creek–Greenville, and the San Gregorio faults. Thus, it is probable that the vicinity will be subject to a large earthquake sometime during the lifetime of the proposed project.

### ***Faulting and Seismicity***

**Table 4.E-1** lists active faults located within 30 miles of the project site, their distance and direction from the project site, their maximum moment magnitude earthquake, and the probability that they will generate a major earthquake.

## **Seismic Hazards**

### ***Surface Fault Rupture***

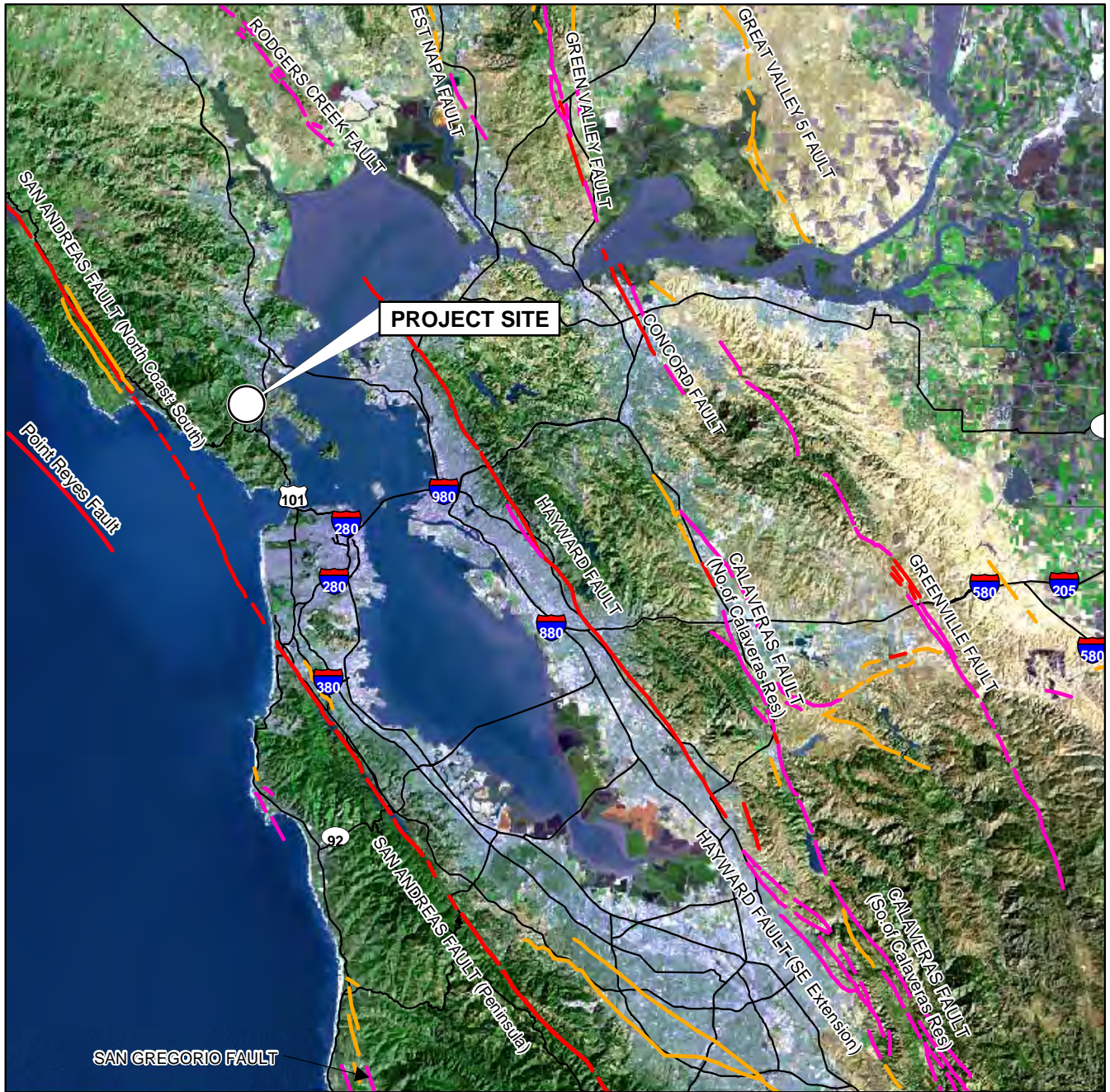
Seismically-induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude, sense, and nature of fault rupture can vary for different faults or even along different strands of the same fault. Ground rupture is considered more likely along active faults, which are referenced in **Figure 4.E-2** and **Table 4.E-1**. The project site is not within an Alquist-Priolo Fault Rupture Hazard Zone, as designated by the Alquist-Priolo Earthquake Fault Zoning Act (CDMG, 2001). Therefore, the risk of ground rupture at the site is low.

### ***Ground Shaking***

As discussed above, a major earthquake is likely to produce strong ground-shaking effects throughout the region within the next 30 years and beyond. Earthquakes on active or potentially active faults, depending on magnitude and distance from the project site, could produce a wide range of ground-shaking intensities at the project site. Historically, earthquakes have caused strong ground-shaking and damage in the San Francisco Bay Area, the most recent being the moment magnitude 6.9 Loma Prieta earthquake in October 1989. The epicenter was over 70 miles south of the project site, and this earthquake is estimated to have caused strong (Modified

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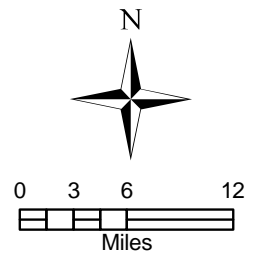
<sup>4</sup> An "active" fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 11,000 years). A "potentially active" fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. "Sufficiently active" is also used to describe a fault if there is some evidence that Holocene displacement occurred on one or more of its segments or branches (Hart, 2007).



Source: California Division of Mines and Geology (California Geological Survey)  
<http://gmw.consrv.ca.gov/shmp/index.htm>, (2000)  
 Aerial photo provided by USGS and PG&E. ([www.sfbayquakes.org](http://www.sfbayquakes.org))

**LEGEND**

- MAJOR ROAD
- POTENTIALLY ACTIVE FAULT
- HOLOCENE ACTIVE FAULT
- HISTORICALLY ACTIVE FAULT



SOURCE: Fugro West, 2010; CGS, 2012

Marin General Hospital . 210606

**Figure 4.E-2**  
Regional Fault Map



**TABLE 4.E-1  
 ACTIVE AND POTENTIALLY ACTIVE FAULTS IN THE REGION**

<b>Fault</b>	<b>Closest Distance and Direction from Project Site</b>	<b>Fault Classification</b>	<b>Historical Seismicity (M ≥ 6)<sup>a</sup></b>	<b>Maximum Moment Magnitude Earthquake (Mw)<sup>b</sup></b>
San Andreas	8 miles southwest	Active	M 6.0, 1808 M 7.1, 1989 M 7.9, 1906 M 7.0, 1838	7.9
San Gregorio	8.5 miles southwest	Active	n/a	7.0
Hayward	10.1 miles northeast	Active	M 6.75, 1836 M 6.25, 1858 M 7.0, 1868 M 6.5, 1911	7.1
Rodgers Creek	14.7 miles northeast	Active	M 6.75, 1898	7.0
West Napa	21.9 miles southeast	Active	No recorded historic event <sup>c</sup>	
Concord–Green Valley	25.5 miles northeast	Active	No recorded historic event <sup>c</sup>	6.9
Point Reyes	13.0 miles southwest	Potentially Active	No recorded historic event <sup>c</sup>	7.0
Calaveras	28.1 miles southeast	Active	M 6.1, 1984	6.8
Marsh Creek–Greenville	32.4 miles southeast	Active	M 6.25, 1889	6.9

- <sup>a</sup> Richter magnitude (M) and year for recent and/or large events. The Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave.  
<sup>b</sup> Moment Magnitude (Mw) is related to the physical size of a fault rupture and movement across a fault. Moment magnitude provides a physically meaningful measure of the size of a faulting event.  
<sup>c</sup> An “historic event” for seismic activity is one that has occurred within the past 200 years.

SOURCES: Adapted from Fugro West, 2010; CGS, 2010.

Mercalli Intensity VII<sup>5</sup>) shaking intensities at the project site (ABAG, 2003a). The areas experiencing higher ground shaking intensities were those underlain by thick sequences of alluvium on valley floor or Bay Mud, which serve to amplify ground shaking.

The primary tool that seismologists use to describe ground-shaking hazard is a probabilistic seismic hazard assessment (PSHA). The PSHA for the State of California takes into consideration the range of possible earthquake sources (including such worse-case scenarios as described above) and estimates their characteristic magnitudes to generate a probability map for ground-shaking. The PSHA maps depict values of peak ground acceleration (PGA) that have a 10 percent probability of being exceeded in 50 years. Use of this probability level allows engineers to design structures to withstand ground motions that have a 90 percent chance of NOT occurring in the

<sup>5</sup> The Modified Mercalli Intensity scale depicts shaking severity. An earthquake has a single magnitude that indicates the overall size and energy released by the earthquake. However, the amount of shaking experienced at different locations varies based on not only that overall magnitude, how far you are from the fault that ruptured in the earthquake, and whether you are on rock or thick valley deposits that shake longer and harder than rock.

next 50-years, making buildings safer than if they were merely designed for the most probable events. The PSHA indicates that at the project site, there is a 10 percent chance of exceeding PGA values of 0.46g to 0.48g over the next 50 years, depending on the strength of the underlying soil (CGS, 2011a). Areas affected by similar PGA values in the past have experienced very strong ground shaking with MMI VIII, causing significant damage to poorly built or outdated structures, while damage has been slight in specially designed structures built according to modern building codes (ABAG, 2011).

### ***Liquefaction***

Liquefaction is a transformation of soil from a solid to a liquefied state during which saturated soil temporarily loses strength resulting from the buildup of excess pore water pressure, especially during earthquake-induced cyclic loading. Soil susceptible to liquefaction includes loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits.

Four kinds of ground failure commonly result from liquefaction: lateral spread, flow failure, ground oscillation, and loss of bearing strength. *Lateral spreading* is the horizontal displacement of surficial blocks of sediments resulting from liquefaction in a subsurface layer that occurs on slopes ranging between 0.3 and 3 percent and commonly displaces the surface by as much as several feet. *Flow failures* occur on slopes greater than three degrees and are primarily liquefied soil or blocks of intact material riding on a liquefied subsurface zone. *Ground oscillation* occurs on gentle slopes when liquefaction occurs at depth and no lateral displacement takes place. Soil units that are not liquefied may pull apart from each other and oscillate on the liquefied zone. The *loss of bearing pressure* can occur beneath a structure when the underlying soil loses strength and liquefies. When this occurs, the structure can settle, tip, or even become buoyant and “float” upwards. Liquefaction and associated failures could damage foundations, roads, underground cables and pipelines, and disrupt utility service.

In addition, liquefaction can occur in unconsolidated or artificial fill sediments and other reclaimed areas along the margin of San Francisco Bay. The depth to groundwater influences the potential for liquefaction, in that sediments need to be saturated to have a potential for liquefaction. According to the site specific geotechnical reports conducted for the non-hillside areas of the project site, while groundwater is known to be shallow, these areas are expected to have a low potential to experience liquefaction because underlying soils are too clayey to liquefy (Fugro West, 2010). The potential for liquefaction in the area of the proposed Hillside Parking Structure on Bon Air Hill is considered to be negligible due to the presence of bedrock and stiff clayey soils underlying the site, as well as the lack of a shallow groundwater table below this portion of the site (Fugro West, 2012).

### ***Earthquake-Induced Settlement***

Settlement of the ground surface can be accelerated and accentuated by earthquakes. During an earthquake, settlement can occur as a result of the relatively rapid compaction and settling of subsurface materials (particularly loose, uncompacted, and variable sandy sediments above the water table) due to the rearrangement of soil particles during prolonged ground shaking.

Settlement can occur both uniformly and differentially (i.e., where adjoining areas settle at different rates). Areas of the project site underlain by artificial fill over Bay Mud could be susceptible to this type of settlement. Given the geologic setting of the project area, this area could be subjected to earthquake-induced settlement (Fugro West, 2010; Fugro West 2011). However, because bedrock is shallow on Bon Air Hill, soils encountered do not appear to be susceptible to seismically-induced settlement (Fugro West, 2012).

## Regulatory Setting

This section briefly describes the regulatory framework that applies to the project.

### Federal Earthquake Hazards Reduction Act

In October 1997, the U.S. Congress passed the Earthquake Hazards Reduction Act to “reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program.” To accomplish this, the act established the National Earthquake Hazards Reduction Program. This program was significantly amended in November 1990 by the National Earthquake Hazards Reduction Program Act, which refined the description of agency responsibilities, program goals, and objectives.

The National Earthquake Hazards Reduction Program’s mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The National Earthquake Hazards Reduction Program Act designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Other agencies designated by the National Earthquake Hazards Reduction Program Act include the National Institute of Standards and Technology, National Science Foundation, and USGS.

### California Building Code

The California Building Code (CBC) has been codified in the California Code of Regulations (CCR) as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The 2007 CBC is based on the 2006 International Building Code (IBC) published by the International Code Conference. In addition, the CBC contains necessary California amendments that are based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05

provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (e.g., flood, snow, wind) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC.

### **Essential Services Building Act**

Chapter 2 Section 16000 of the California Health and Safety Code is known as the Essential Services Building Act of 1986. The intent of the Act is to ensure that essential services buildings, which shall be capable of providing essential services to the public after a disaster, shall be designed and constructed to minimize fire hazards and to resist, insofar as practical, the forces generated by earthquakes, gravity, and winds. It is also the intent that nonstructural components vital to the operation of essential services buildings shall also be able to resist, insofar as practical, the forces generated by earthquakes, gravity, fire and winds.

### **1983 Alfred E. Alquist Hospital Seismic Safety Act (Seismic Safety Act), Senate Bill 1953 (SB 1953) and OSHPD**

All California acute care medical center properties fall under the jurisdiction of the Alquist Act, as amended in 1994 by SB 1953. The Alquist Act requires medical facilities to comply with seismic safety building standards as defined by the Office of Statewide Health Planning and Development (OSHPD) within specific time frames.

OSHPD is a department of the California Health and Human Services Agency and is responsible for carrying out the provisions of the Alquist Act and serves as the building authority for acute care facilities in lieu of local jurisdictions. OSHPD's primary goals include assessing California's healthcare infrastructure, managing the healthcare workforce, providing healthcare outcomes information to the public, insuring healthcare facilities development loans, and running the Hospital Seismic Safety Program, which enforces building seismic safety. The Hospital Building Safety Board further advises the director of OSHPD on the administration of the Act and acts as a board of appeals for hospital seismic safety issues.

The Act was adopted in part so that after a major earthquake or disaster, hospital facilities can continue to provide care to their current occupants as well as any new patients that might arrive after the event. During and after the 1994 Northridge earthquake, hospitals that were compliant with the Act sustained minimal structural damage and continued to function. Hospitals that were not compliant, sustained major damage and had to be abandoned.

### ***Compliance with the Alquist Seismic Safety Act and SB 1953 (the Act)***

For a hospital building to remain classified as an acute care hospital facility, and thus be compliant with the Act, the owner of the building must do the following:

1. Complete seismic evaluations with procedures as defined by OSHPD to identify non-compliant buildings,
2. Prepare a comprehensive plan and schedule for how each building will become compliant with the Act, within 3 years of the evaluation, and
3. Submit the report and a compliance plan to OSHPD for review and approval (1983 Alfred E. Alquist Hospital Seismic Safety Act as amended in 1994 by SB 1953).

In the process of compliance, OSHPD and the hospital building owner evaluates both nonstructural (communications, medical gas, etc.) and structural (actual building structure) components of acute care hospital facilities that might sustain damage during a shaking event. Nonstructural components are put into a Nonstructural Performance Category (NPC), and structural components are put into a Structural Performance Category (SPC). Thus, each acute care facility is assigned an NPC rating and an SPC rating that is put into OSHPD's database for review. OSHPD evaluates SPC and NPC ratings separately. As part of the ratings evaluation process, OSHPD and affiliated engineers examine structural drawings and submitted reports of upgrades, if any, that have occurred to each hospital building. These evaluations may include an onsite visit by the Area Compliance Officer (ACO) and/or the District Structural Engineer (DSE) of OSHPD. After the evaluation process, the rating is either confirmed or changed according to OSHPD's review and determination, and OSHPD provides guidance to the hospital property owner regarding further required upgrades.

### ***NPC and SPC Ratings***

Each possible NPC and SPC rating is described below. In general, low ratings (e.g., SPC-1) mean hospital building systems are not prepared for a disaster, and high ratings (e.g., SPC-4) mean hospital building systems are prepared for a disaster. If the building is determined not to be in compliance with the Act based on the following NPC and SPC ratings, seismic retrofit regulations (Division III-R) shall be applied to guide the building's retrofit, thus increasing the NPC and SPC rating of the building (Alquist Seismic Safety Act, amended by SB1953, and codified in the 2007 California Building Standards Administrative Code, Title 24, Part 1, Chapter 6). New construction that is designed and constructed to current seismic and building code standards would be exempt from NPC and SPC ratings although in full compliance with the Act.

### ***Nonstructural Ratings***

*NPC-0:* No rating was reported to OSHPD.

*NPC-1:* Basic systems used in life safety and care are not properly anchored, and will not survive an earthquake event. Communications, emergency power, medical gas, and fire alarm systems must be anchored by January 1, 2002.

*NPC-2:* Communications systems, emergency power supplies, bulk medical gas systems, fire alarm systems, and emergency lighting and exit signs are properly anchored.

*NPC-3:* Basic systems used in life safety and care are properly anchored in critical areas of the hospital. If there is not significant structural damage, basic emergency medical care should be able to continue.

*NPC-4:* All architectural, mechanical, electrical systems, components and equipment, and hospital equipment are properly anchored. If there is not significant structural damage and problems with water and sewer systems, basic emergency medical care should be able to continue.

*NPC-5:* All basic systems used in life safety and care are properly anchored. In addition, the building has water and wastewater holding tanks (integrated into the plumbing system) and an on-site fuel supply that will last through 72 hours of acute care operations. Radiological service can also continue.

### **Structural Ratings**

*SPC-0:* No rating was reported to OSHPD.

*SPC-1:* These buildings have a high risk of collapse in an earthquake, and are a significant safety hazard to the public. These buildings must be retrofitted, replaced, or removed from acute care classification by January 1, 2015.

*SPC-2:* These buildings are in compliance with pre-1973 California Building Code, but are not in compliance with the Alquist Hospital Facilities Seismic Safety Act. These buildings do not pose a significant safety hazard, but might not be functional after a strong earthquake. These buildings must be compliant with the Alquist Hospital Facilities Seismic Safety Act by January 1, 2030 or removed from acute care classification.

*SPC-3:* These buildings are compliant with the Alquist Hospital Facilities Seismic Safety Act. These buildings might sustain structural damage and might not be able to provide care after an event, but they have been constructed or reconstructed under OSHPD building permits. They can be used to January 1, 2030 and beyond.

*SPC-4:* These buildings are compliant with the Alquist Hospital Facilities Seismic Safety Act. These buildings may sustain structural damage and might not be able to provide care after an event, but they have been constructed or reconstructed under OSHPD building permits. They can be used to January 1, 2030 and beyond.

*SPC-5:* These buildings are compliant with the Alquist Hospital Facilities Seismic Safety Act. These buildings are reasonably capable of providing care after an event, and they have been constructed or reconstructed under OSHPD building permits. They can be used to January 1, 2030 and beyond.

The Central/East Wings are rated Structural Performance Category (SPC)-1. The West Wing of the existing hospital was built in 1986 and is an SPC-3 rated building that does not require structural upgrades to comply with the Seismic Safety Act. The acute care departments and services currently in the Central and East Wings would move to the proposed Hospital Replacement Building.

### **OSHPD and the CBC**

Under OSHPD requirements, the construction of new hospitals must comply with the 2007 CBC, as amended for hospitals. Institutional Group I Occupancy, as defined in Chapter 3 of the California Building Code to include hospitals with non-ambulatory patients, includes, among others, the use of a building or structure, or a portion thereof, in which people are cared for or live in a supervised environment, having physical limitations because of health or age are harbored for medical treatment or other care or treatment, or in which people are detained for penal or correctional purposes, or in which the liberty of the occupants is restricted. Non-OSHPD structures (i.e., structures that do not house OSHPD-regulated hospital functions) are subject to the 2011 California Building Code and currently applicable building codes, State and federal accessibility requirements and local regulations.

### **Marin Countywide Plan**

The 2007 Marin Countywide Plan Update includes the following policies and programs that relate to the project:

*EH-2.1: Avoid Hazard Areas.* Require development to avoid or minimize potential hazards from earthquakes and unstable ground conditions.

*EH-2.a: Require Geotechnical Reports.* Continue to require any applicant for land division, master plan, development approval, or new construction in a geologic hazard area to submit a geotechnical report prepared by a State-certified Engineering Geologist or a Registered Geotechnical Engineer that:

- evaluates soil, slope, and other geologic hazard conditions;
- commits to appropriate and comprehensive mitigation measures sufficient to reduce risks to acceptable levels, including post-construction site monitoring, if applicable;
- addresses the impact of the project on adjacent lands, and potential impacts of offsite conditions; and
- meets the requirements of other agency regulations with jurisdiction in the hazard area, such as BCDC requirements for the safety of fills consistent with the Bay Plan.

*EH-2.b: Require Construction Certification.* Require any work or construction undertaken to correct slope instability or mitigate other geologic hazard conditions to be supervised and certified by a geotechnical engineer and/or an engineering geologist.

*EH-2.i: Minimize Impacts of Site Alteration.* Amend the Development Code to strictly limit the extent of any proposed fill, excavation, or other grading activities that could create or exacerbate risks in areas susceptible to geologic hazards.

## **Impacts and Mitigation Measures**

### **Significance Criteria**

Based on criteria from Appendix G of the State CEQA *Guidelines*, the project would have a significant geology, soils, and seismicity impact if it would:

- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
  - ii. Strong seismic ground shaking;
  - iii. Seismic-related ground failure, including liquefaction;
  - iv. Landslides.
- b) Result in substantial soil erosion or the loss of topsoil.
- c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- d) Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code (1994), creating substantial risks to life or property; or
- e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Based on Appendix N of the Marin County Environmental Review Guidelines, the project may also have a significant impact related to utilities and service systems if the project:

- Is located within an Alquist Priolo Special Studies Zone, or contain a known active fault zone, or an area characterized by surface rupture that might be related to a fault (consistent with CEQA Appendix G Criterion a);
- Does the substrate consist of material that is subject to liquefaction or other secondary seismic hazards in the event of groundshaking (consistent with CEQA Appendix G Criterion a);
- Is there any evidence of static hazards, such as landsliding or excessively steep slopes, that could result in slope failure (consistent with CEQA Appendix G Criteria a and c);
- Is the site in the vicinity of soil that is likely to collapse, as might be the case with karst topography<sup>6</sup>, old mining properties or areas of subsidence caused by groundwater drawdown (consistent with CEQA Appendix G Criterion c);
- Are soils characterized by shrink/swell potential that might result in deformation of foundations or damage to structures (consistent with CEQA Appendix G Criterion e);
- Is located in a Mineral Resource Zone identified by the California Department of Mines and Geology or within an area designated as important Farmland identified by the Soil Conservation Service (U.S. Department of Agriculture) (consistent with CEQA Appendix G, *Mineral Resources* Criteria a and b; see *Issues Not Further Evaluated*, below); or

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<sup>6</sup> Karst topography refers to landforms associated with the presence of subsurface caves and porous geological formations, such as limestone and dolomite.



- Is located next to a water body that might be subject to tsunamis or seiche waves (consistent with CEQA Appendix G, *Hydrology and Water Quality* Criterion j; see *Issues Not Further Evaluated*, below).

## Issues Not Further Evaluated

This following impact analysis focuses on potential impacts of the project related to seismicity and other geologic hazards. The evaluation considered project plans, current conditions at the preferred project site, and applicable regulations and guidelines. Some of the above CEQA criteria are not considered relevant to the project, based upon project plans and data research, and therefore, they will not be evaluated further in this EIR. These issues are:

***Tsunami/seiche waves:*** The project site is located at an elevation of about 10 feet according to the USGS topographic map, and about two miles west of San Francisco Bay. There are no large enclosed bodies of water in the vicinity of the site. The project site would not be subject to tsunami or seiche waves. See the discussion of tsunamis in the *Setting* and in Impact HYD-6, in Section 4.H, *Hydrology and Water Quality*.

***Collapsible Soils:*** Soil collapse can occur in geologic environments—usually in arid climates—characterized by sandy soil rapidly deposited in thick sequences (i.e., on large alluvial fans). When these soils experience changes in saturation, either via intense precipitation, irrigation, or changing groundwater levels, soil grains rearrange themselves, densify, and may result in localized areas of collapse or subsidence. Based on the regional climate, consistent groundwater levels, and the clayey nature of the soil encountered in site soil borings, the project site is not in an environment prone to soil collapse (Fugro West, 2010). Therefore, this issue is not applicable to the project.

***Rupture of a known earthquake fault:*** The potential for surface fault rupture at the site is low. Ground rupture is considered most likely to occur along active faults, which are referenced in Table 4.E-1. As indicated previously, the project site is *not* within an Alquist-Priolo Fault Rupture Hazard Zone, and no mapped active faults are known to pass through the project area (Fugro West, 2010). The site is approximately eight miles east of the San Andreas Fault, which is the closest active fault zone. Therefore, the project would not expose persons or structures to risk of ground rupture along a fault line.

***Inadequate Support for Septic Tanks:*** As proposed, the project would continue to tie into the existing Marin County sanitary sewer infrastructure. There are no septic tanks proposed as part of the project; therefore, this issue is not applicable.

***Location within a Mineral Resource Zone identified by the California Department of Mines and Geology or within an area designated as important Farmland identified by the Soil Conservation Service:*** See Section 6.5, *Effects Found Not to be Significant*, in Chapter 6, Impact Overview and Growth Inducement.

## Compliance with Seismic Safety Act

A primary objective of the proposed project is redevelopment of the acute care facilities to comply with the Alquist Seismic Safety Act (SB 1953) by the deadline of January 1, 2030. The proposed project would assure that medical services would continue to be provided by a licensed acute care

facility on the existing site during construction and thereafter without disruption. The principal objectives also include construction of new ambulatory services building and additional parking structures which are not considered as essential structures and do not fall under the guidelines presented in *California Geological Survey – Note 48, Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings* (CGS, 2011b). The main purpose of the proposed project is to meet the provisions of SB 1953 by 2030. Construction of new acute care facility buildings according to the 2007 *California Building Code*, would meet the requirements of the Act.

## Impacts and Mitigation Measures

### ***Seismic Ground-Shaking, Landslides, and Liquefaction***

#### **Impact GEO-1: The Project would not expose people or structures to potential substantial adverse effects involving strong seismic ground-shaking and associated secondary effects due to landslides and/or weak or liquefiable soils. (Less than Significant)**

The project site is located in a seismically active region that could experience at least one major earthquake (Richter magnitude (M) 6.7 or higher) over the lifetime of the proposed project. Strong ground shaking at the site would likely occur during a moderate to severe earthquake occurring on one of the active Bay Area faults near to the project site. A characteristic earthquake on the San Andreas fault with an estimated M 7.2 could produce very strong shaking in the project area (ABAG, 2003b). Strong ground shaking also has the potential to induce other phenomena, such as landslides and liquefaction, which can indirectly cause structural damage (Fugro West, 2010).

Although landslides are common on steep slopes underlain by Franciscan rocks, the potential for landsliding in natural or constructed slopes, in or near the lower-lying areas of the project site (where the Hospital Replacement Building, Ambulatory Services Building, and Bon Air Road Parking Structure are proposed), is considered very low (Fugro West, 2011). No landslides were observed in an aerial photograph review or during site reconnaissance of this area. However, as discussed in the Setting section, geological evidence confirms that an older shallow landslide exists on the northwest-facing, natural hill slope – at the base of Bon Air Hill, to the southwest of the Marin Community Clinic building and the proposed Hillside Parking Structure (see Figure 4.E-1). The slope is mostly overgrown with dense brush and trees within the older landslide area, and Fugro West’s study of this area of the project site (and previous studies cited therein), the chance of shallow landsliding as a result of seismic activity is considered moderate (Fugro West, 2012). The geologic report prepared by Fugro West recommends specific sloping, benching, drainage, and stabilization recommendations for new cut slopes during construction to which the project would comply.

Liquefaction can occur in unconsolidated or artificial fill sediments and other reclaimed areas along the margin of San Francisco Bay. The depth to groundwater influences the potential for liquefaction, in that sediments need to be saturated to have a potential for liquefaction. Hazard maps produced by the ABAG depict liquefaction and lateral spreading hazards for the entire Bay

Area in the event of a significant seismic event.<sup>7</sup> According to the site specific geotechnical reports prepared for the lower-lying areas of the site, the project site is in an area expected to have a low potential to experience liquefaction because underlying soils are too clayey to liquefy. Building foundation elements of the Hospital Replacement Building, Ambulatory Services Building, and the Bon Air Road Parking Structure would bear deeper than the potentially-liquefiable soils; therefore, the potential for liquefaction to impact the proposed improvements is considered low (Fugro West, 2010; Fugro West, 2011). The potential for liquefaction at the proposed Hillside Parking Structure site on Bon Air Hill is considered to be negligible due to the presence of bedrock and stiff clayey soils underlying the site, as well as the lack of a shallow groundwater table below this portion of the site (Fugro West, 2012).

Ground-shaking hazards would be mitigated as necessary through the application of current industry standard geotechnical practices and seismic structural design according to the requirements found in the most recent version of the CBC. In accordance with the State Health and Safety Code, OSHPD is required to review the structural systems and related details of the construction or renovation of medical buildings with acute care facilities, as well as the recommendations of any site-specific geotechnical investigations prepared for those buildings, to ensure compliance with the Seismic Safety Act and the CBC.

In addition to reviewing the proposed structural plans, OSHPD is responsible for overseeing construction of the proposed hospital building to ensure that construction complies with the approved plans. For all proposed non-acute care facilities such as parking structures, the project sponsor would be required to adhere to the CBC and any specific or more stringent requirements contained in the Marin County Code of ordinances.

One of the primary goals of the project is to bring the acute care facilities into seismic compliance. The project does not result in a net increase in the number of hospital beds, nor does it result in a substantial increase in exposure risks to the general public from seismic hazards. Instead, the transfer of acute care facilities and hospital beds to a more seismically secure facility results in an overall benefit with respect to public risks during and after a major earthquake by ensuring medical services remain available. Construction of new structures, roads, utilities and retaining walls would be performed in accordance with the most recent version of both the CBC and the Seismic Safety Act and would ensure that the proposed project buildings and parking structures are built to withstand anticipated seismic events.

The geotechnical recommendations to be implemented as part of the project; which include specific seismic design criteria to be used in the structural design of buildings, site and soil preparation guidelines, and recommendations for anchoring, foundation, footing and retaining wall design; would prevent substantial structural damage to hospital facilities in the event of an earthquake. Before and during construction activities, site observations and/or testing by a qualified field geologist would address soil and rock conditions exposed by site grading and foundation excavations (to check that they are consistent with those encountered during the field exploration),

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<sup>7</sup> Lateral spreading is a ground failure associated with liquefaction and generally results from predominantly horizontal displacement of materials toward relatively unsupported free slope faces.

foundation excavations, subgrade preparation, fill placement and compaction (including backfill of utilities and compaction of aggregate base) (Fugro West 2010; Fugro West 2011). In addition to these characteristics, specific to the Bon Air Hill area, site observations and/or testing by a qualified field geologist will provide geologic review of all temporary and permanent excavation and cut slopes, installation and testing of tie-backs, shoring installation, and pier or footing foundation excavations (Fugro West, 2012).

### **Summary**

Because the project would result in a hospital replacement facility that is more seismically secure, and because the supporting facilities (parking structures and the Ambulatory Services Building) would be built according to CBC requirements, the impact with respect to strong seismic ground shaking and associated effects would be less than significant.

**Mitigation:** None required

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### **Soils**

**Impact GEO-2: The Project would not expose people or structures to potential substantial adverse effects involving soils that have shrink-swell characteristics or other properties (e.g., corrosivity, settlement, or collapse) that could damage foundations, underground utilities, and other sub-grade structures. (Less than Significant)**

As discussed in the Setting section, soils that contain expansive characteristics can, over a long-term exposure to wetting and drying cycles, experience volumetric changes. The effects of expansive soils can damage foundations of above-ground structures, paved roads and streets, and concrete slabs. The presence of potentially expansive soils, as defined in Section 1802A.3.2 of the 2007 California Building Code, was identified during the preliminary geotechnical investigations for the lower-lying areas of the project site. There are a number of geotechnical approaches to reduce the potential effects of expansive soils. Replacement of expansive soils with engineered fill, controlled low-strength material, or addition of soil amendments are effective means of mitigating expansive soils. However, excavated Bay Mud shall not be used as engineered fill (Fugro West, 2011). Additionally, geotechnical reports provided by Fugro West for the lower-lying areas of the project site have identified a number of recommended improvements to be implemented as part of the proposed project including additional supports for exterior “slabs-on-grade” (Fugro West, 2010, Fugro West 2011).

One potential effect of a major earthquake is settlement or densification of non-saturated liquefied soil. Soils generally susceptible to seismically-induced settlement are loose to medium dense and cohesionless. The soils encountered in the geotechnical analysis of the lower-lying areas of the project site were not considered susceptible to seismically-induced settlement (Fugro West, 2010). However, to further increase bearing support and limit the possibility of foundation settlement due to consolidation of the underlying Bay Mud, the Bon Air Road Parking Structure foundation would be supported on drilled piers driven into bedrock, or on spread footings

founded on competent bedrock, or properly compacted, moisture-conditioned, non-expansive fills suitable to support the structure. Therefore, the potential for seismically-induced settlement impacting the proposed structure is considered low (Fugro West, 2010; Fugro West, 2011).

Bedrock is expected to occur at depths of approximately 10 feet below existing grade. Because bedrock is shallow on Bon Air Hill, soils encountered do not appear to be susceptible to seismically-induced settlement. Portions of the Hillside Parking Structure, where base of footing elevation is underlain by soil, may be supported on drilled, cast-in-place, straight piers. The drilled piers would extend a minimum of five feet into rock (Fugro West, 2012).

Final geotechnical specifications also include measures to prevent other geologic hazards such as corrosivity from causing significant damage. Geotechnical reports provided by Fugro West demonstrate that native soil and bedrock materials are considered non-corrosive to buried concrete improvements. As well, the native soil and bedrock is considered “moderately corrosive” to “corrosive” to buried metallic improvements. All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron would be properly protected against corrosion where necessary. All buried metallic pressure piping such as ductile iron pipeline would also be protected from corrosion either by importing clean fill with low corrosion potential or by utilizing corrosion resistant systems. The site-specific analysis of site foundation soils guides the recommended building foundation design. Further, a corrosion engineer would be commissioned by the applicant to evaluate the specific long-term corrosion control design recommendations of the soil environment on metal, as necessary (Fugro West, 2011).

### **Summary**

Expansive soils, differential settlement, and corrosion are geotechnical issues that are routinely encountered in California, and the above measures are standard practice in the engineering and design of building foundations and other sub-grade improvements. Adherence to the CBC and implementation of the geotechnical recommendations, including those for which site observations and/or testing by a qualified field geologist would be conducted (discussed above in Impact GEO-1), would reduce potential impacts from expansive soils and other adverse soil properties to less-than-significant levels.

**Mitigation:** None required

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### ***Unstable Soils, Erosion, and Landslides***

**Impact GEO-3: The Project would not have a substantial adverse effect due to it being located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, resulting in a landslide, earthflow or other earth movement, or be subject to soil erosion or loss of topsoil. (Less than Significant)**

On Bon Air Hill, given the evidence of erosion gullies and colluvial deposits within swales on the northeast and northwest side of the existing Marin Community Clinic on Bon Air Hill, the chance

of a debris flow occurring in this vicinity of the project site is considered moderate (Fugro West, 2012). There is also evidence of an older shallow landslide on the northwest-facing, natural hill slope of Bon Air Hill, however, given that the source of the slide is attributable to a previous swale and that the area is currently heavily overgrown with dense brush and trees, the chance of shallow landsliding is considered moderate (Fugro West, 2012).

Although the project site is surrounded by slopes, the site is not expected to experience any landslides or slope failure based on site investigation and historical analysis (Fugro West, 2010). On the lower-lying areas of the project site (where the Hospital Replacement Building, Ambulatory Services Building, and Bon Air Road Parking Structure are proposed), the generally competent nature of the bedrock, the lack of diagnostic landslide features adjacent to the site, and the lack of unfavorable bedding or jointing, indicates that the potential for landsliding to be very low (Fugro West 2010; Fugro West, 2011). Further, as recommended in the geotechnical report, temporary construction slopes would not be cut into the Bay Mud layer.

Various excavations would be required to construct building foundations, to install utilities, and to remove locally weak or unsuitable soils, if encountered. The short term stability of excavations would depend primarily on the materials exposed, the length of time the excavations are left unsupported, and the amount of seepage within the materials. The geotechnical reports prepared for the project site include recommendations for sloping, benching, drainage, and stabilization, particular for new cut slopes that would be incorporated into the project. Development of the north access road and the Hillside Parking Structure will involve and require substantial grading, excavation, slope cuts, and retaining walls, as described below. It is expected that the project would involve approximately 15,000 cubic yards (CY) of excavation during the Hillside Parking Structure construction.

**North Access Road.** The steepest new cuts and deepest excavation would occur related to widening the north access road to allow vehicular access to the existing surface parking lot and proposed Hillside Parking Structure. The existing north access road would be widened approximately 24 feet to allow for additional traffic lanes, landscaping east of the proposed Bon Air Road Parking Structure, pedestrian walkways from the bus stop on Bon Air Road to the Hospital Replacement Buildings, stormwater treatment areas, and traffic signal installation. The upper surface parking lot (to remain) and County Mental Health Building (to remain) and are approximately 20-feet in elevation higher than the elevation at the intersection of Bon Air Road. This elevation difference would require grading and retaining walls along portions of both sides of the north access road to the entrance of the proposed Hillside Parking Structure. Retaining wall heights vary from two feet to ten feet, including some terraced portions with excavations up to 20 feet tall.

**Hillside Parking Structure.** As shown in Figure 4.E-1, the proposed Hillside Parking Structure would be placed approximately in the same location as the Marin Community Clinic, but the footprint would be larger and the vehicle entrance elevation would be lower than the existing grade by approximately 30 inches. Site constraints include sloped hillside on three sides of the structure which would require retaining walls of at least 30 feet in height with excavations up to

20 feet. A significant cut up to 35 feet or greater would be made into the hillside surrounding the existing Marin Community Clinic, and may encounter sandstone, siltstone, and shale bedrock. It is anticipated that vertical cuts into both weathered and competent bedrock would remain stable until permanent walls can be constructed. However, localized zones of intensely fractured or crushed rock may be present that, coupled with potential groundwater seepage may result in localized slope instability in these temporary vertical cuts. The project would incorporate specific recommendations for temporary shoring and construction slopes during all activities associated with construction of the Hillside Parking Structure, as identified in the geotechnical report (Fugro West, 2012). Especially steep, permanent slopes in bedrock would be evaluated by a certified engineering geologist during excavation operations.

All excavations that would be deeper than five feet and would be entered by workers would be shored or sloped for safety in accordance with Occupational Safety and Health Administration (OSHA) standards. Construction slopes shall follow OSHA Health and Safety Standards for Excavations, which provides standards for benching, sloping and shoring temporary excavations in order to protect workers (Fugro West 2011; Fugro West, 2012). If temporary slopes are required, the Contractor in no case would allow slope height, inclination, and excavation depths to exceed those specified in local, state, or federal safety regulations.

### **Summary**

As a result of the above measures, all other requirements for which site observations and/or testing by a qualified field geologist would be conducted (listed above in Impact GEO-1), and compliance with OSHA safety standards, landslides or earthflows would not present a significant impact on the project site.

Substantial and accelerated soil erosion due to storm runoff is addressed in Section 4.H, *Hydrology and Water Quality*.

**Mitigation:** None required

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## **Cumulative Impacts**

**Impact GEO-4: The Project, combined with other existing, planned, proposed, or reasonably foreseeable development in the region, would not result in cumulative geologic and soil hazards. (Less than Significant)**

### ***Geographic Context***

The geographic context considered for the cumulative geology and seismicity impacts include past, ongoing and reasonably foreseeable future projects in the vicinity that could potentially result in cumulative geologic hazards when combined with potential geologic hazards of the project.

## **Impacts**

As discussed above, the project would be exposed to significant seismic hazards, which would be reduced to less-than-significant levels with incorporation of the geotechnical recommendations to be implemented as part of the project. The entire Bay Area is within a seismically-active region with a wide range of geologic and soil conditions. These conditions can vary widely across a given area. Thus the potential for impacts to people and structures related to seismic hazards is more localized or even site-specific, and therefore, difficult to have a combined effect.

Development of the project would incrementally increase the number of people working at the project site, thus exposing more people to seismic and geological hazards. Other cumulative development in the area (as described in Table 4-1 in the introduction to this Chapter 4) have and will continue to collectively increase the number of people living and working in the area. However, each of these projects would be required to adhere to all the applicable building codes and ordinances as well as all federal, state, and local programs, requirements and policies pertaining to building safety and construction permitting. As noted above, SB 1953 requires that the project buildings provide acute care services and attain SPC ratings of 3 or greater. The project would evaluate seismic safety in older buildings, such as the Central and East wings of the existing hospital, and would construct new buildings to stricter building codes, specifically those intended to heighten seismic safety of the medical buildings, such as the hospital replacement facility. Therefore, the project, combined with other past, ongoing or reasonably foreseeable development in the area, would not result in a cumulatively significant impact by exposing people or structures to risk related to geologic hazards, soils, and/or seismic conditions.

**Mitigation:** None required

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## 4.F Greenhouse Gases and Climate Change

This section describes the background for greenhouse gas (GHG) emissions and climate change and presents applicable regulations that pertain to the reduction of GHG emissions. This section also discusses the GHG-related impacts that could result from construction and operation of the proposed project and identifies appropriate mitigation measures when necessary.

### Setting

Global temperatures are affected by naturally occurring and anthropogenic-generated (generated by humankind) atmospheric gases, such as water vapor, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O) (IPCC, 2007). Gases that trap heat in the atmosphere are called GHGs. Solar radiation enters the Earth's atmosphere from space, and a portion of the radiation is absorbed at the surface. The Earth emits this radiation back toward space as infrared radiation. GHGs, which are mostly transparent to incoming solar radiation, are effective in absorbing infrared radiation and redirecting some of this back to the Earth's surface. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This is known as the greenhouse effect. The greenhouse effect maintains a habitable climate. Emissions of GHGs from human activities, such as electricity production, motor vehicle use, and agriculture are elevating the concentration of GHGs in the atmosphere, and are reported to have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Other than water vapor, the GHGs contributing to global warming include the following gases:

- CO<sub>2</sub> (carbon dioxide) is primarily a byproduct of fuel combustion;
- N<sub>2</sub>O (nitrous oxide) is a byproduct of fuel combustion and also associated with agricultural operations such as fertilization of crops;
- CH<sub>4</sub> (methane) is commonly created by off-gassing from agricultural practices (e.g. livestock), wastewater treatment, and landfill operations;
- Chlorofluorocarbons (CFCs) that were widely used as refrigerants, propellants, and cleaning solvents, but their production has been mostly reduced by international treaty;
- Hydrofluorocarbons (HCFCs) are now used as a substitute for CFCs in refrigeration and cooling; and
- Perfluorocarbons and sulfur hexafluoride (SF<sub>6</sub>) emissions are commonly created by industries such as aluminum production and semiconductor manufacturing.

Gases in the atmosphere can contribute to the greenhouse effect both directly and indirectly. Direct effects occur when the gas itself absorbs outgoing radiation. Indirect effects occur when gases cause chemical reactions that produce other GHGs or prolong the existence of other GHGs. The Global Warming Potential (GWP) concept is used to compare the ability of each GHG to trap heat in the atmosphere relative to CO<sub>2</sub>, which is the most abundant GHG. CO<sub>2</sub> has a potential of 1, expressed as CO<sub>2</sub>e. Other GHGs, such as CH<sub>4</sub> and N<sub>2</sub>O are commonly found in the atmosphere but at much lower concentrations. However, the GWP for methane is 21, while N<sub>2</sub>O has a GWP of 310. Other trace gases, such as CFCs and HCFCs, which are halocarbons that contain chlorine,

have much greater GWPs. Fortunately these gases are found at much lower concentrations and many are being phased out as a result of global efforts to reduce destruction of stratospheric ozone. In the United States, CO<sub>2</sub> emissions account for about 83 percent of the CO<sub>2</sub>e emissions, followed by CH<sub>4</sub> at about 10 percent, and N<sub>2</sub>O at about 5 percent (USEPA, 2011).

The world's leading climate scientists have reached consensus that global climate change is underway, is "very likely" caused by humans, and warmer temperatures and rises in sea level "would continue for centuries," no matter how much humans control future emissions. A report of the Intergovernmental Panel on Climate Change (IPCC), an international group of scientists and representatives concludes that "The widespread warming of the atmosphere and ocean, together with ice-mass loss, support the conclusion that it is extremely unlikely that global climate change of the past 50 years can be explained without external forcing, and very likely that it is not due to known natural causes alone." (IPCC, 2007)

Human activities have exerted a growing influence on some of the key factors that govern climate by changing the composition of the atmosphere and by modifying vegetation. The concentration of CO<sub>2</sub> in the atmosphere has increased from the burning of coal, oil, and natural gas for energy production, transportation sources, and the removal of forests and woodlands around the world to provide space for agriculture and other human activities. Emissions of other GHGs, such as CH<sub>4</sub> and N<sub>2</sub>O, have also increased due to human activities. Since the Industrial Revolution (i.e., about 1750), global atmospheric concentrations of CO<sub>2</sub> have risen about 36 percent, due primarily to the combustion of fossil fuels (IPCC, 2007).

The IPCC predicts a temperature increase of between 2 and 11.5 degrees Fahrenheit (°F) (1.1 and 6.4 degrees Celsius) by the end of the 21st Century under six different scenarios of emissions and CO<sub>2</sub> equivalent (CO<sub>2</sub>e) concentrations (IPCC, 2007). Sea levels are predicted to rise by 7 to 23 inches (0.18 to 0.59 meters) during this time, with an additional 3.9 to 7.8 inches possible depending upon the rate of polar ice sheet melting from increased warming. The IPCC states that the increase in hurricane and tropical cyclone strength since 1970 can likely be attributed to human-generated GHGs.

## Regulatory Setting

Global climate change resulting from GHG emissions is an emerging environmental concern being raised and discussed at the international, national, state, and local level. At each level, agencies are considering strategies to reduce emissions of gases that contribute to global warming.

### Federal

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC). The U.S. Environmental Protection Agency (USEPA) is developing rulemaking to regulate GHGs under the Clean Air Plan (note that a 2007 Supreme Court ruling held that the USEPA can regulate GHG emissions).

As part of the commitments to UNFCCC, the USEPA has developed an inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases. This inventory is periodically updated with the latest update being 2011. USEPA reports that total U.S. emissions have risen by 7.3 percent from 1990 to 2009 to 6,633 million metric tons of CO<sub>2</sub>e (MMTCO<sub>2</sub>e) per year, while emissions decreased by 6.1 percent from 2008 to 2009. The decrease was primarily due to a decrease in economic output (resulting in lower energy consumption) and a decrease in the carbon density of fuels used to generate electricity. The inventory notes that the electric power industry is the highest emitter by economic sector at 33 percent. The transportation sector emits about 27 percent of CO<sub>2</sub>e emissions, with 60 percent of those emissions coming from personal automobile use. Residential uses, primarily from energy use, accounted for 20 percent of CO<sub>2</sub>e emissions (USEPA, 2011).

As a part of USEPA's responsibility to develop and update an inventory of U.S. GHG emissions and sinks, USEPA compared trends of other various U.S. data. Over the period between 1990 and 2009, GHG emissions grew at a rate of about 0.4 percent per year. Population growth was higher at 1.1 percent, while electricity consumption was at 1.5 percent and fossil fuel use grew at 0.5 percent. Gross domestic product grew at a much higher rate of 2.5 percent.

## State of California

The State of California is concerned about GHG emissions and their effect on global climate change. The State recognizes that "there appears to be a close relationship between the concentration of greenhouse gases in the atmosphere and global temperatures" and that "the evidence for climate change is overwhelming." The effects of climate change on California, in terms of how it would affect the ecosystem and economy, remain uncertain. The State has many areas of concern regarding climate change with respect to global warming. According to the *2006 Climate Action Team Report*, the following climate change effects and conditions can be expected in California over the course of the next century:

- A diminishing Sierra snowpack declining by 70 to 90 percent, threatening the state's water supply;
- Increasing temperatures from 8.0 to 10.4 °F under the higher emission scenarios, leading to a 25 to 35 percent increase in the number of days ozone pollution levels are exceeded in most urban areas;
- Coastal erosion along the length of California and seawater intrusion into the Sacramento River Delta from a 4- to 33-inch rise in sea level. This would exacerbate flooding in already vulnerable regions;
- Increased vulnerability of forests due to pest infestation and increased temperatures;
- Increased challenges for the state's important agricultural industry from water shortages, increasing temperatures, and saltwater intrusion into the Delta; and
- Increased electricity demand, particularly in the hot summer months.

California emissions of GHGs or CO<sub>2</sub>e emissions were estimated at 484 MMTCO<sub>2</sub>e, which is about seven percent of the emissions from the entire United States. It is estimated that the United States contributes up to 35 percent of the world's CO<sub>2</sub>e emissions. Transportation is the largest source of GHG emissions in California, contributing about 40 percent of the emissions. Electricity generation is second at over 20 percent, but California does import electricity during the summer bringing energy sources up to about 25 percent. Industrial activities account for about 20 percent of the state's emissions. Transportation is the largest source of GHG emissions in California, followed by industrial sources and electric power generation. On a per-person basis, GHG emissions are lower in California than most other states; however, California is a populous state and the second largest emitter of GHG in the United States.

Under a "business as usual" scenario, emissions of GHG in California are estimated to increase to approximately 600 MMTCO<sub>2</sub>e by 2020. California Air Resources Board (CARB) staff has estimated the 1990 statewide emissions level to be 427 MMTCO<sub>2</sub>e, therefore, requiring a reduction of almost 30 percent in emissions by 2020 to meet 1990 levels.

CARB updated the future 2020 forecast in light of the economic downturn and updated the 2020 projected annual emissions to 545 MMTCO<sub>2</sub>e. Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan (see *Scoping Plan*, below) baseline inventory were included, further reducing the baseline inventory to 507 MMTCO<sub>2</sub>e. Thus, an estimated reduction of 80 million metric tons of CO<sub>2</sub>e is necessary to reduce statewide emissions to meet the AB 32 target (discussed below) by 2020.

### ***State of California Executive Order S-3-05***

In June 2005, the Governor of California signed Executive Order S-3-05, which identified the California Environmental Protection Agency (CalEPA) as the lead coordinating State agency for establishing climate change emission reduction targets in California. A "Climate Action Team", a multi-agency group of State agencies, was set up to implement Executive Order S-3-05. Under this order, the State plans to reduce GHG emissions to 80 percent below 1990 levels by 2050. GHG emission reduction strategies and measures to reduce global warming were identified by the California Climate Action Team in 2006.

### ***Assembly Bill (AB) 32***

In 2006, the governor of California signed AB 32, the Global Warming Solutions Act, into legislation. The Act requires that California cap its GHG emissions at 1990 levels by 2020. This legislation requires CARB to establish a program for statewide GHG emissions reporting and monitoring/enforcement of that program. In 2007, CARB published a list of discrete GHG emissions reduction measures that could be implemented immediately. CARB is currently developing rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. CARB's Early Action Plan identified regulations and measures that could be implemented in the near future to reduce GHG emissions.

### **Assembly Bill (AB) 1493**

Many of the measures to reduce GHG emissions from transportation will come from CARB. AB 1493, the *Pavley Bill*, directed CARB to adopt regulations to reduce emissions from new passenger vehicles. CARB's *AB32 Early Action Plan* released in 2007 included a strengthening of the Pavley regulation for 2017 and included a commitment to develop a low carbon fuel standard (LCFS). In April 2009, CARB adopted the new LCFS aimed at diversifying the variety of fuels used for transportation. This regulation is designed to increase the use of alternative fuels, replacing 20 percent of the fuel used by cars in California with clean alternative fuels by 2020. These fuels include electricity, biofuels, and hydrogen.

CARB is relying on increased fuel efficiency to reduce GHG emissions substantially. California had proposed a State standard to increase the fuel economy of new cars. The new federal standards proposed would apply to new vehicles sold beginning in 2012, and ultimately require an average fuel economy standard of 35.5 miles per gallon (mpg) in 2016. This surpasses the previous 2007 standard of 35 mpg for 2020 model vehicles established in 2007. On June 30, 2009, the USEPA announced that it will grant California's wavier request enabling the State to enforce the GHG standards for new motor vehicles, beginning with the current model year.

### **Scoping Plan**

CARB is targeting other sources of emissions. The main measures to reduce GHG emissions were contained in the *AB 32 Scoping Plan* that was approved in late 2008. This plan included a range of GHG reduction actions. Central to the plan is a cap and trade program covering 85 percent of the state's emissions. This program will be developed in conjunction with the Western Climate Initiative, comprised of seven states and three Canadian provinces, to create a regional carbon market. The plan also proposes that utilities produce a third of their energy from renewable sources such as wind, solar, and geothermal, and proposes to expand and strengthen existing energy efficiency programs and building and appliance standards. The plan also includes full implementation of the Pavley standards to provide a wide range of less polluting and more efficient cars and trucks to consumers who will save on operating costs through reduced fuel use. It also calls for development and implementation of the Low Carbon Fuel Standard, which will require oil companies to make cleaner domestic-produced fuels. The regulatory process began in 2009 to implement the plan. The details in regulating emissions and developing targeted fees to administer the program will be developed through this process. The measures are scheduled to be enacted by 2012.

### **Title 24 - California Energy Efficiency Standards**

Energy Efficiency Standards for Residential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2008 California Green Building Standards (CCR Title 24, Part 11) went into effect in 2009.

### **Senate Bill 375**

In 2008, California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 would develop emissions-reduction goals that regions can apply in planning activities. SB 375 provides incentives for local governments and developers to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable and sustainable communities and revitalizing existing communities. The legislation also allows developers to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB would work with the metropolitan planning organizations to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

### **California's Heavy Duty Vehicle GHG Reduction Measure**

On December 12, 2008 (one day after adopting the AB32 Climate Action Plan), CARB adopted the Heavy Duty Vehicle Greenhouse Gas Emission Reduction Measure that requires long-haul truckers to install fuel efficient tires and aerodynamic devices on their trailers. This measure will reduce GHG emissions through improved fuel economy.

## **Local**

### **Marin Countywide General Plan**

The Marin Countywide Plan is the County's long range guide for use of land and protection of natural resources. The Plan sets forth policies and programs to be used by the public, planning staff, and decision makers when reviewing and analyzing proposed developments. General Plan Section 3.6, *Energy and Green Building*, provides the following applicable goals, policies, and programs to increase building energy efficiency to reduce GHG emissions (MCCDA, 2007).

*Goal EN-3: Adopt Green Building Standards.* Integrate green building requirements into the development review and building permit process.

*Implementing Program EN-3.b: Require Green Building Practices for Nonresidential Development.* Consider incentives and/or the discretionary permit process to require new nonresidential development and remodels to utilize U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) rating system.

*Implementing Program EN-3.c: Divert Construction Waste.* Continue to implement and improve the Construction and Demolition Waste Recovery Ordinance, requiring building projects to recycle or reuse a minimum of 50 percent of unused or leftover building materials.

### **Marin County Greenhouse Gas Reduction Plan**

In October of 2006, the Marin County Board of Supervisors adopted the *Marin County Greenhouse Gas Reduction Plan*. The Plan sets a target to reduce GHG emissions 15-20 percent below year 1990 levels by the year 2020 for internal government emissions and a reduction of 15 percent below 1990 levels Countywide. The Plan identifies resources and programs to reduce GHG emissions in concert with internal measures already in place through the Department of Public Works and adopted in the Countywide Plan Update (which was adopted in November, 2007). These reduction measures in the Plan address emissions from building energy use, transportation, waste management, and land use (Marin County, 2006). The County's Greenhouse Gas Reduction Plan is not a "qualified" plan, per Bay Area Air Quality Management District (BAAQMD) standards.

### **Marin County Ordinances**

The following Marin County ordinances may apply to the proposed project:

*County of Marin Ordinance 3389*: Section 19.07.010 states that a minimum of 50 percent of construction and demolition material from projects should be reused or recycled. This ordinance applies to all building and demolition permits.

*County of Marin Ordinance 3533*: Green building standards for commercial construction and remodels are provided in County Ordinance 3533. For new construction (including additions to existing buildings) of buildings between 5,000 to 49,999 square feet, the minimum compliance threshold must meet LEED® Silver standards. For buildings of 50,000 square feet and greater, the minimum compliance threshold must meet LEED® Gold standards.

## **Impacts and Mitigation Measures**

### **Significance Criteria**

Based on criteria from Appendix G of the State CEQA *Guidelines*, the project would have a significant impact if it would:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Appendix N of the Marin County Environmental Review Guidelines does not specify significance criteria for GHG emissions or climate change.

The BAAQMD CEQA Air Quality Guidelines include quantitative thresholds for evaluating GHG emissions from projects and plans and guidelines for assessing these impacts (BAAQMD, 2011). The thresholds include a bright line emissions threshold of 1,100 metric tons of CO<sub>2</sub>e per year or an emission efficiency metric of 4.6 metric tons of CO<sub>2</sub>e per year per service population. Service population for this project would be equivalent to the number of full-time workers.



In December 2010, the California Building Industry Association (BIA) filed a lawsuit in Alameda County Superior Court challenging the thresholds developed by BAAQMD for its CEQA Air Quality Guidelines (Alameda County Superior Court Case No. RG10-548693). In March 2012, the Superior Court found that adoption of those thresholds by the BAAQMD in its CEQA Air Quality Guidelines is a CEQA project and BAAQMD is to cease dissemination and publication of the thresholds and their implementing CEQA Air Quality Guidelines and calculators. The ruling did not address the scientific basis for the thresholds. At this time, BAAQMD is currently not recommending the use of its significance thresholds in compliance with the writ of mandate directing it not to enforce its thresholds.

The BAAQMD's rescinded GHG thresholds were intended to provide a quantitative method for evaluating a project's impact on GHG emissions with respect to meeting the State's AB 32 climate protection goals. BAAQMD provided an analysis of existing and projected GHG emissions in the air basin that were the basis for setting the thresholds. The analysis prepared by BAAQMD (Appendix D of the 2011 CEQA Air Quality Guidelines) provided justification and substantial evidence supporting the two quantitative thresholds identified. The Court's ruling did not judge the validity of those thresholds in meeting AB 32's GHG reduction goals. Therefore, the Marin Healthcare District has determined that the BAAQMD quantitative thresholds previously identified by BAAQMD are reasonable for evaluating the effect of GHG emissions from the proposed project.

Another quantitative way to evaluate GHG emissions that would be generated under the proposed project is to determine whether the proposed project would be consistent with the overall AB 32 goal to reduce California's 2020 GHG emissions to 1990 levels. CARB originally determined that GHG emissions must be reduced 28 percent below the "business as usual" (BAU) 2020 projection to meet the AB 32 GHG reduction mandate specified in law. However, CARB recently re-evaluated the 2020 business as usual baseline in light of the economic downturn (CARB, 2011). The re-evaluation indicates that now a 22 percent reduction in emissions would be necessary to meet the AB 32 target. Accordingly, the evaluation of the effect of GHG emissions from the proposed project is also based on an assessment of whether the project in year 2020 would result in GHG emissions 22 percent below the BAU scenario for the project.

The project would also result in a significant impact if it would conflict with any applicable Marin Countywide General Plan goals, policies, and programs, or Marin County ordinances adopted to increase building energy efficiency or to reduce GHG emissions; this is considered the qualitative analysis.

## **Approach to Analysis**

GHG emissions associated with the development of the proposed project were computed. The California Air Pollution Control Officers Association (CAPCOA) and the BAAQMD *CEQA Air Quality Guidelines* provide guidance for calculating project emissions. Estimation of emissions from area sources, mobile sources, and electricity usage is recommended by CAPCOA and BAAQMD. Construction emissions were estimated using the URBEMIS2007 model with project-specific inputs, and the operations emissions were estimated using the California Emissions

Estimator Model (CalEEMod). These computer models estimate GHG emissions from land use developments using statewide emission inventory models for mobile sources (i.e., EMFAC2007) and off-road construction equipment (i.e., OFFROAD2007). The CalEEMod model (version 2011.1.1) was used to predict GHG emissions from project operations since it includes the latest assumptions for computing CO<sub>2</sub>e emissions for the various operational sources that would be associated with the project (i.e., traffic, electricity generation, natural gas consumption, area sources, water usage, and solid waste land filling) using the most up-to-date factors.

## Impacts and Mitigation Measures

### *Greenhouse Gas Emissions (Construction)*

#### **Impact GHG-1: Construction of the Project would result in increased GHG emissions, but would incorporate best management practices. (Less than Significant)**

The BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. The BAAQMD recommends that agencies calculate the emissions and disclose that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable. Best management practices may include, but are not limited to using alternative fueled (e.g., biodiesel, electric) construction vehicles/equipment of at least 15 percent of the fleet; using local building materials of at least 10 percent; and recycling or reusing at least 50 percent of construction waste or demolition materials.

URBEMIS2007 modeling was conducted to provide the estimate of construction GHG emissions. Emissions associated with construction were assumed to occur over the period of 2012 through 2018. There would be minor construction emissions following 2018 associated with interior finishing work for Phase IV construction and refurbishing. Phase V is not anticipated to involve prolonged use of heavy construction equipment, and therefore, CO<sub>2</sub> emissions during this phase would be minor compared to Phases I through IV.

Annual estimated construction GHG emissions are reported in **Table 4.F-1** for Phases I through IV. Construction of the project would emit up to 520 metric tons of CO<sub>2</sub> annually (in 2015 with Phases III and IV), for a total of 2,163 metric tons over the six-year construction period. This emissions estimate is associated with on-site construction equipment, truck traffic, and construction worker traffic. Although BAAQMD has not established a threshold for construction emissions, a conservative comparison of the estimated emissions of 520 metric tons of CO<sub>2</sub> annually to the BAAQMD operational threshold of 1,100 annual metric tons CO<sub>2</sub>e would indicate a less-than-significant impact for the construction period emissions.

**Mitigation:** None required

**TABLE 4.F-1  
 ESTIMATED PROJECT GHG CONSTRUCTION EMISSIONS**

Scenario	CO <sub>2</sub> (metric tons)
<b>Phase I</b>	
Late Year 2012 Construction Emissions	267
Early Year 2013 Building Emissions	47
<b>Phase II</b>	
Late Year 2013 Construction Emissions	124
Year 2014 Building Emissions	339
<b>Phase III</b>	
Late Year 2013 Construction Emissions	42
Year 2014 Building and Coating Emissions	168
Year 2015 Coating Emissions	26
<b>Phase IV</b>	
Year 2015 Construction Emissions	494
Year 2016 Building Construction and Paving	379
Year 2017 Building Construction and Coating Emissions	277
<b>Total</b>	<b>2163</b>

SOURCE: Illingworth & Rodkin, 2012.

### ***Greenhouse Gas Emissions (Operations)***

#### **Impact GHG-2: Operations of the Project would result in increased GHG emissions. (Potentially Significant)**

The CalEEMod modeling of operational emissions from existing conditions, no project, and the project were conducted using project-specific traffic data and energy consumption projections. BAU emissions for 2020 were computed by modeling the unmitigated project, assuming 2010 default emission factors and usage rates. Emissions are higher under the BAU scenario primarily because the CalEEMod 2010 default vehicle and electricity emission rates do not incorporate State requirements per AB 32 that will have been phased in by year 2020. Modeling inputs are described as follows:

**Year of Analysis.** Existing conditions were modeled for year 2010. Although much of the project would be completed in 2018, project GHG emissions were modeled for year 2020 to be consistent with AB 32 targets used by BAAQMD to develop GHG significance thresholds. The 2020 analysis assumed 2018 build-out conditions. In addition, the GHG emissions were modeled for the full build-out year of 2035.

**Land Use.** The project land uses input to CalEEMod included a 292,000 square-foot (sf) hospital for existing conditions and a 300,000 sf hospital and 100,000 sf medical office building along with

parking structures for the project conditions. The project size in 2018 and 2035 were assumed to be equivalent, since most work after 2018 would be interior renovation.

**Traffic.** Omni-Means provided existing daily hospital facility trip generation data based on traffic counts. These traffic counts reflect total daily traffic generated by the project under existing conditions for 2010. Omni-Means then projected daily trip generation for the proposed project in 2018 and 2035. The predicted trip generation reflected the total trips for the entire project, i.e., the hospital replacement building and ambulatory services building. The trip generation rate was computed from the Omni-Means forecasts and used as input to the CalEEMod model. Default trip lengths in CalEEMod were assumed.

**Energy Usage.** Historical Pacific Gas & Electric Company (PG&E) records were used to compute energy-related emissions for the existing hospital complex. These records included a breakdown of electricity consumption and natural gas usage. Conservative estimates of future electricity and natural gas usage for the project were computed based on a rate of 45 kilowatts per square foot of electricity consumption and 140,000 British thermal units (btu) per square foot of natural gas usage. It should be noted that these rates are well above the default values used by CalEEMod for a “Hospital” land use. Those rates were applied only to the 300,000 sf hospital. Since the ambulatory services building would be a new use, the CalEEMod default electricity consumption and natural gas usage rates for a “Medical Office” use were used to compute the additional energy-related GHG emissions from that facility. Final building design plans for the proposed Hospital Replacement Building and Ambulatory Services Building shall incorporate LEED Silver certification and the LEED for Healthcare Rating System modeled after Green Guide for Healthcare (GGHC) Green Building standards that would reduce energy-related GHG emissions. The hospital replacement building LEED score sheet targets the optimal energy performance as 30 percent better than Business As Usual (assumed to be year 2008 Title 24 Building Code requirements). Some of the measures that would be incorporated into the project are listed below. For a conservative analysis, GHG emissions associated with energy consumption were assumed to be reduced by 10 percent due to the LEED Silver certification and the incorporation of GGHC Green Building standards.

**Electricity Emission Rate.** The emission rate associated with electricity consumption was input to CalEEMod to account for PG&E’s current projected emission rate. Currently, PG&E reports a certified emission rate of 559 pounds of CO<sub>2</sub> per megawatt (PG&E, 2011). PG&E’s future rate is adjusted to account for increased use of renewable sources using the California Public Utilities Commission’s GHG Calculator that provides an independent forecast of PG&E’s emission factor. The emission factor for 2020 is 290 pounds of CO<sub>2</sub> per megawatt. There is no forecasted emission factor for years beyond 2020, so this factor was used to predict 2035 emissions.

**Energy Efficiency Features.** The proposed project would include features that increase energy efficiency and reduce the annual energy consumption of the project either directly or indirectly. The project would be designed to meet a minimum of LEED Silver certification or equivalent as well as best practices outlined in the GGHC. Such features would include:

- Programmable heating and cooling systems;
- Maximized use of natural lighting;

- Programmable emergency lighting systems;
- Tankless hot water heaters;
- High Efficiency irrigation systems;
- Low emitting insulation at walls and ceilings;
- Insulation on all hot water pipes;
- Energy Star appliances;
- Low volatile organic compound paints, caulking and construction adhesives;
- Low flow toilets, faucets and showers; and
- High efficiency air handling systems with environmentally responsible refrigerants.

**Transportation Demand Management (TDM).** The existing Marin General Hospital TDM strategies include valet parking and the provision of shuttle transit services. Furthermore, the hospital coordinates with *511 Rideshare*, a San Francisco Bay Area organization that provides assistance to employers relative to travel demand management. Adjustments for TDM strategies were not incorporated into the emissions modeling for the existing and no project scenarios.

**Water and Wastewater.** The conveyance and treatment of water and wastewater require energy that indirectly results in GHG emissions. Default CalEEMod emissions rates associated with water and wastewater conveyance were used. The model computes water usage and associated emissions, both indoors and outdoors, as well as emissions associated with projected wastewater that is also based on the model default values. The model default value is based on the sizes and types of project land uses. An emission reduction of 10 percent was applied, since the project LEED certification requirements would reduce water usage. A LEED certification requirement is to reduce potable water consumption for irrigation by 50 percent from a calculated midsummer baseline case. In addition, other measures that reduce indoor water usage would be incorporated into the project.

**Solid Waste.** The modeling assumed default GHG emission rates associated with solid waste. This includes the solid waste generation rate from the project and the associated emission rates for methane and CO<sub>2</sub>. The Marin Hazardous and Solid Waste Management Joint Powers Authority (JPA) has established a Zero Waste Goal of achieving 80 percent waste reduction by 2012 and zero disposal by 2025 (Marin County JPA, 2009). It should be noted that emissions from solid waste were not included in the BAAQMD methodology for computing their CEQA thresholds, but are included in this assessment.

**Service Population.** The per capita rate is the existing or increase in annual GHG emissions expressed in metric tons divided by the existing or increase in service population (i.e., number of full time employees). Currently, it is estimated that there are 1,126 employees. With the proposed project, employment would increase to 1,412 people in 2020 and 1,552 people in 2035. BAAQMD policy is that hospital beds or patients (at either the hospital or ambulatory services building) do not count toward the total service population. Therefore, service population is only based on the number of full time employees.

Annual unmitigated and mitigated emissions in terms of metric tons per year are provided in **Table 4.F-2** for existing and future no project uses, **Table 4.F-3** for project operations in 2020, and **Table 4.F-4** for project operation in 2035. Model output is contained in Appendix C to this Draft EIR. Inputs to the modeling are described below.

**TABLE 4.F-2  
 EXISTING AND FUTURE NO PROJECT GHG ANNUAL EMISSIONS IN METRIC TONS**

Source Category	Emissions in Metric Tons Per Year		
	Existing 2010	No Project in 2020	No Project in 2035
Area	0	0	0
Energy	4,529	3,495	3,495
Mobile	6,059	4,627	4,098
Waste	1,435	1,435	1,435
Water	89	62	62
Total:	12,112	9,620	9,091
Modeling Adjustments:	Modeled using CalEEMod for 292,000 square foot hospital, using model default inputs except project-specific inputs for traffic generation and energy usage.		

SOURCE: Illingworth & Rodkin, 2012.

**TABLE 4.F-3  
 PROJECT 2020 GHG ANNUAL EMISSIONS IN METRIC TONS**

Source Category	Emissions in Metric Tons Per Year		
	Proposed Project in 2020 BAU	Proposed Project in 2020	Proposed Project in 2020 Mitigated
Area	0	0	0
Energy	6,269	3,939	3,932
Mobile	10,028	7,640	7,105
Waste	1,965	1,965	1,769
Water	124	77	77
Total:	18,386	13,621	12,883
Modeling Adjustments:	Modeled using CalEEMod for 300,000 square foot hospital and 100,000 square foot medical office building, using model default inputs except project-specific inputs for traffic generation and energy usage. Mitigation measures include 7 percent reduction in mobile emissions due to TDM and 10 percent reduction assumed for emissions associated with waste generation.		

SOURCE: Illingworth & Rodkin, 2012.

**TABLE 4.F-4  
 PROJECT 2035 GHG ANNUAL EMISSIONS IN METRIC TONS**

Source Category	Emissions in Metric Tons Per Year	
	Proposed Project in 2035	Proposed Project in 2035 Mitigated
Area	0	0
Energy	3,939	3,932
Mobile	7,017	6,526
Waste	1,965	1,769
Water	77	77
Total:	12,998	12,304
Modeling Adjustments:	Modeled using CalEEMod for 300,000 square foot hospital and 100,000 square foot medical office building, using model default inputs except project-specific inputs for traffic generation and energy usage. Mitigation measures include 7 percent reduction in mobile emissions due to TDM and 10 percent reduction assumed for emissions associated with waste generation.	

SOURCE: Illingworth & Rodkin, 2012.

Table 4.F-2 presents a summary of the results of the CalEEMod model analysis in terms of annual metric tons of CO<sub>2</sub>e emissions associated with existing and no project conditions. Assuming no project conditions, the existing hospital would have annual emissions in 2020 of 9,620 metric tons of CO<sub>2</sub>e. This would represent a decrease from existing conditions, which are 12,112 metric tons CO<sub>2</sub>e per year, as both mobile emissions and electricity emission rates decrease between existing conditions (i.e., 2010) and the year 2020. The majority of the emissions would be associated with hospital-generated traffic.

As stated in Table 4.F-3, the proposed project would increase emissions to 13,621 metric tons of CO<sub>2</sub>e annually in 2020. Approximately 56 percent of the emissions would be associated with project-related traffic. Although the proposed project would increase in size slightly between 2020 and 2035, emissions would decrease slightly as state-wide vehicle emission rates decrease. Emissions that would occur in 2035 are presented in Table 4.F-4. With full implementation of the proposed project, 2035 emissions are predicted to be 12,998 metric tons CO<sub>2</sub>e annually. As stated in **Table 4.F-5**, the proposed project would increase emissions in 2020 by 1,508 metric tons annually over existing conditions (for 2010) and by 885 metric tons for 2035. The increase in GHG emissions in 2020 caused by the proposed project would exceed the BAAQMD threshold of 1,100 metric tons of CO<sub>2</sub>e.

In terms of per capita emissions, the proposed project would emit 5.3 metric tons of CO<sub>2</sub>e annually per capita in 2020 and 2.1 metric tons of CO<sub>2</sub>e per capita in 2035. Although the proposed project per capita emissions would be lower than the existing conditions per capita emissions of 10.8 metric tons of CO<sub>2</sub>e, the proposed project per capita emissions in 2020 would continue to exceed the BAAQMD significance threshold of 4.6 metric tons CO<sub>2</sub>e per capita annually.

**TABLE 4.F-5  
 SUMMARY OF PRE-MITIGATION GHG EMISSIONS**

Scenario	GHG Emissions		
	Annual Emissions (metric tons CO <sub>2</sub> e /year)	Increase Over Existing Conditions (metric tons CO <sub>2</sub> e /year)	Per Capita Emissions <sup>a</sup> (metric tons CO <sub>2</sub> e /year/capita)
Existing conditions in 2010	12,112	--	10.8
No project in 2020	9,620	--	8.5
Proposed project in 2020	13,621	1,508	5.3
Proposed project - BAU in 2020	18,386	6,274	21.9
Project percent below BAU	25.9 percent	--	--
Proposed project in 2035	12,998	885	2.1

<sup>a</sup> Per capita emissions for existing conditions and the no project scenario reflect existing or no project emissions divided by the number of existing full time employees. Per capita emissions for the proposed project scenarios reflect the increase in emissions compared to existing conditions divided by the increase in full time employees compared to the existing number of full time employees.

SOURCE: Illingworth & Rodkin, 2012.

BAU emissions for 2020 were computed by modeling the unmitigated project, assuming 2010 default emission factors and usage rates. Emissions are higher under this scenario, primarily because vehicle emission rates and electricity emission rates are higher. Emission rates for vehicle exhaust and electricity generation would decrease primarily as a result of State requirements that are already in place and built into the CalEEMod model default values. When compared to the BAU scenario, the proposed project would have emissions that are approximately 26 percent lower.

Project GHG emissions are considered significant because the increase in annual emissions in 2020 caused by the project would be greater than 1,100 metric tons and the per capita emissions would exceed 4.6 metric tons per year.

**Mitigation Measure GHG-2:** The Project shall include the following features to reduce energy consumption that could reduce the GHG emissions associated with the proposed project.

- *Additional Transportation Demand Management Strategies.* The project applicant shall implement the following Transportation Demand Management (TDM) program strategies, in addition to maintaining the existing Marin General Hospital valet parking and shuttle transit service TDM strategies:
  - a) Develop and implement a Marin General Hospital employee commute program with specific actions and goals to provide on-site information to employees about commute alternatives to and from Marin General Hospital; designate an employee transportation coordinator (ETC) to facilitate the program;
  - b) Provide carpool and vanpool matching for Marin General Hospital employees, working together with *511 Rideshare*, Transportation Authority of Marin, or other agency or organization with this objective;



- c) Incorporate employee showers and additional secured bicycle parking facilities to encourage bicycle use by Marin General Hospital employees;
- d) Participate in the Emergency Ride Home (ERH) program for Marin County employers when it is made available by the County;

Within one calendar year after patient occupancy of the Hospital Replacement Building, the project applicant shall submit to the County Department of Public Works (or otherwise as designated by the County) documentation sufficient to demonstrate implementation of each of the aforementioned strategies. Each of the strategies shall also be extended to include employees of the Ambulatory Services Building, when that building is operational.

- *Reduce Waste Generation.* At both the HRB and ASB, waste management and recycling programs shall be implemented to minimize solid waste production to reduce the energy use associated with both disposing of waste and producing products. At a minimum, the applicant shall provide employee information, instructional signage at waste areas; and designated recycling bins to promote avoiding products with excessive packaging, recycling, buying refills instead of new items, separating food and landscaping waste (if composting such waste is elected for the program), and using rechargeable batteries, wherever feasible and consistent with hospital operations and regulations. For modeling purposes, GHG emissions associated with landfilling of waste were assumed to be reduced by 10 percent, consistent with an expected reduction in waste generation. Although not accounted for in the emissions estimates, this measure would also achieve additional GHG emissions reductions related to energy savings associated with reuse of materials.

The rooftops of the Hillside and Bon Air Road parking structures have been identified as potential locations for installation of a photovoltaic (PV) system (solar panels) to generate electricity. An area of approximately 2,700 square feet on top (center aisles only) of the Hillside structure and 7,200 square feet on top (center aisles only) of the Bon Air structure could be utilized for electricity generation. However, the applicant has not obtained funding to develop a PV system on these structures at the time this analysis was prepared. Therefore, no reduction in GHG emissions resulting from a PV system is assumed in the GHG analysis modeling. Moreover, since GHG emission impacts can be mitigated to less-than-significance based on other measures discussed above, a PV system is not required as a mitigation measure. If the project applicant secures funding for installation and operation of a PV system on the parking structures, the GHG emissions associated with the proposed project could be further reduced.

*TDM Program Measures Effectiveness.* The estimated project emissions, assuming implementation of Mitigation Measure GHG-2, are presented in **Table 4.F-6**. The TDM program strategies identified in Mitigation Measure GHG-2 “a” through “d” are based on proposed project recommendations by *511 Rideshare* staff, which they based on their consideration of TDM issues identified by the County and on *511 Rideshare*’s Marin General Hospital employee survey results (described in Impact TRA-4 in Section 4.M, *Transportation and Circulation*). The focus of the selected TDM program strategies is increased carpool and vanpool use by employees, and match services by the hospital (i.e., ridesharing). The relatively high “drive alone” rate and long commute lengths experienced by the hospital’s employees, low transit use (due to transit

**TABLE 4.F-6  
 SUMMARY OF MITIGATED GHG EMISSIONS**

Scenario	GHG Emissions		
	Annual Emissions (metric tons CO <sub>2</sub> e /year)	Increase Over Existing Conditions (metric tons CO <sub>2</sub> e /year)	Per Capita <sup>a</sup> Emissions (metric tons CO <sub>2</sub> e /year/capita)
Existing conditions in 2010	12,112	--	10.8
Mitigated proposed project in 2020	12,883	771	2.7
Proposed project - BAU in 2020	18,386	6,274	21.9
Mitigated proposed project in 2020 percent below BAU	29.9 percent	--	--
Mitigated proposed project in 2035	12,304	192	0.45

<sup>a</sup> Per capita emissions for existing conditions reflect existing emissions divided by the number of existing full time employees. Per capita emissions for the proposed project scenarios reflect the increase in emissions compared to existing conditions divided by the increase in full time employees compared to the existing number of full time employees.

SOURCE: Illingworth & Rodkin, 2012.

schedules that are not well-suited for many hospital employees' shift times), as well as employee survey feedback, all suggest that carpools and vanpools would be attractive alternative travel modes for employee commuting at the hospital. Ridesharing is one of the most common and cost effective alternative modes, particularly in areas that are not well served by public transit (Victoria, 2010). The effectiveness of the strategies identified in Mitigation Measure GHG-2 is heightened by the fact that these strategies respond directly to the incentives and alternative modes that employees identified as workable and key to their decision to shift modes.

With implementation of the identified TDM program strategies, 511 Rideshare staff indicates that Marin General Hospital vehicle trips could be reduced by 10 to 15 percent over a two- to five-year period. For modeling purposes, a conservative seven percent reduction in vehicle trips is assumed to be achieved by implementing TDM strategies, which is less than the standard of 10 to 15 percent reduction estimated by *511 Rideshare* (as discussed in detail in Impact TRA-4 in Section 4.M, *Transportation and Circulation*). Experience indicates that ridesharing programs typically attract 5 to 15 percent of commute trips if they offer information and encouragement (Victoria, 2010). It is worth noting that the GHG emissions would continue to be less than significant even if the assumed vehicle trip reduction through TDM was reduced to six percent.

Assuming the conservative seven percent TDM reduction and the other measures listed in Mitigation Measure GHG-2, implementation of Mitigation Measure GHG-2 would reduce the annual 2020 net emissions increase to 771 metric tons and would reduce the 2020 per capita emissions to 2.7 metric tons. The emissions would not exceed the BAAQMD annual CO<sub>2</sub>e thresholds of 1,100 metric tons or 4.6 metric tons per capita. As a result, the impact would be reduced to a less-than-significant level with respect to the BAAQMD CEQA Air Quality Guideline thresholds. In addition, the proposed project emissions in 2020 are estimated to be approximately 30 percent lower than emissions associated with the BAU scenario in 2020. As a

result, the future reductions in GHG emissions achieved with the project would not conflict with AB 32 emissions reduction targets. The GHG emissions impact associated with the proposed project would be less than significant with mitigation.

**Significance after Implementation of Mitigation Measure:** Less than Significant

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### ***Greenhouse Gas Emission Reduction Plans***

#### **Impact GHG-3: The Project would not conflict with an applicable plan, policy, or regulation adopted to reduce GHGs. (Less than Significant)**

As discussed under Impacts GHG-1 (GHG Emissions-Construction), and GHG-2 (GHG Emissions-Operations), the project would incorporate many characteristics and strategies that help implement reduction strategies identified in AB 32, and the Governor’s EO S-3-05. Many have been incorporated into the project, as discussed in GHG-1 and GHG-2 and specified in Section 3.5.5, *Sustainability Elements*, in Chapter 3, Project Description. Further, the implementation of Mitigation Measure GHG-2 would reduce GHG emissions from the project to the degree attributed in this analysis. To the extent that specific measures identified above in Mitigation Measure GHG-2 are implemented beyond the levels assumed in this analysis, additional reductions would occur.

Marin County Municipal Code 3533 requires that commercial buildings of 50,000 square feet and greater must meet a minimum compliance threshold of achieving LEED® Gold standards. While the proposed Hospital Replacement Building and Ambulatory Services Building would each exceed 50,000 square feet in area these facilities are designated as public facilities/public institutional uses (i.e., not commercial uses), thus the project would not be subject to a LEED® Gold standard.<sup>1</sup> Regardless, the project’s stated goal is to achieve a rating equivalent to LEED® Silver and the LEED® for Healthcare Rating System modeled after the GGHC, employing the best practices outlined in the GGHC. The LEED® building certification program encourages sustainable green building and development practices through a suite of rating systems that recognize projects that implement strategies for better environmental and health performance.

Although the County’s adopted *Marin County Greenhouse Gas Reduction Plan*, which includes measures to reduce GHG emissions (primarily associated with internal government GHG emissions), is not a “qualified” GHG reduction plan pursuant to the BAAQMD standards, it does represent applicable County policy. Given that the project would be built with sustainable design principles, including its goal to achieve a rating equivalent to LEED® Silver and the LEED® for Healthcare Rating System modeled after the GGHC, it is anticipated that the project would not directly conflict with any applicable Marin Countywide General Plan goals, policies, or programs, or Marin County ordinances adopted to increase building energy efficiency or to

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<sup>1</sup> Section 22.14.020C of the Marin County Zoning Ordinance specifies that the “Public Facilities (PF)” zoning/combining district (which is designated on the project site) applies to public facilities or institutional uses where government, education, or other institutional facility is the primary use of the site. The designation is consistent with the public and quasi-public land use category in the Marin Countywide Plan.

reduce GHG emissions. Overall, for the reasons discussed above, the project is not considered to conflict with applicable plans, policies, or regulations adopted to reduce GHG emissions. The impact would be less than significant.

**Mitigation:** None required

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## Cumulative Impact

### **Impact GHG-4: The incremental GHG impact of the Project would be cumulatively considerable (Potentially Significant)**

GHG emissions is inherently a cumulative concern in that the significance of GHG emissions is determined based on whether such emissions would have a cumulatively considerable impact with regard to global climate change. Although the geographic scope of cumulative impacts related to GHG emissions is global, this analysis focuses on the state, the region, and this project's direct and/or indirect generation of GHG emissions. The project would result in an increase of CO<sub>2</sub>e emissions that would have a significant impact on the environment prior to implementation of mitigation measures (see Impact GHG-2 discussion). However, with implementation of Mitigation Measure GHG-2, the increase of CO<sub>2</sub>e emissions would not exceed the significance thresholds. Therefore, the project-specific incremental impact on GHG emissions would not be cumulatively considerable and the impact would be reduced to less than significant.

**Mitigation Measure GHG-4:** Implement Mitigation Measure GHG-2.

**Significance after Implementation of Mitigation Measure:** Less than Significant

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## References – Greenhouse Gases and Climate Change

- Bay Area Air Quality Management District (BAAQMD), 2011. *California Environmental Quality Act Air Quality Guidelines*, adopted June 2, 2010, updated May 2011.
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## 4.G Hazards and Hazardous Materials

This section describes hazards in the vicinity of the project area and hazardous materials use at the project site. This section also presents regulations that pertain to hazards and hazardous materials based on the current conditions and a regulatory database search for the project site and surroundings. The analysis in this section discusses whether construction and/or operation of the proposed project could pose hazardous conditions to the public. This section identifies potential impacts and appropriate mitigation measures when necessary.

### Setting

Marin General Hospital uses hazardous materials and generates hazardous and medical wastes in its operation and maintenance activities and during patient care procedures. Materials and waste may be considered hazardous if they are poisonous (toxic), can be ignited by open flame (ignitable), corrode other materials (corrosive), or react violently, explode or generate vapors when mixed with water (reactive). The term “hazardous material” is defined in law as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment.<sup>1</sup>

A hazardous waste, for the purpose of this EIR, is any hazardous material that is abandoned, discarded, or recycled.<sup>2</sup> The transportation, use, and disposal of hazardous materials, as well as the potential releases of hazardous materials to the environment, are closely regulated. Medical waste can also be considered a hazardous waste and is generated or produced as a result of diagnosis, treatment, or immunization of human beings or animals, the production or testing of biologicals (medicinal preparations made from living organisms), and is either a biohazardous waste or a sharps waste.<sup>3,4</sup> Cultures, blood and blood products, tissues, and body parts are all considered medical waste. The transportation and disposal of medical waste is also closely regulated under Section 118215 of the California Medical Waste Management Program.<sup>5</sup> In addition, operation of airborne medical transport also poses a risk to human health and safety.

### Hospital Chemicals and Medical Wastes

**Table 4.G-1** presents the quantities of the primary, solid, and gaseous chemicals that are currently present at the existing Marin General Hospital facility, as reported for the hazardous materials inventory compiled for the hospital’s current Hazardous Materials Management Plan

<sup>1</sup> State of California, Health and Safety Code, Chapter 6.95, Section 25501(o).

<sup>2</sup> State of California, Health and Safety Code, Chapter 6.95, Section 25124.

<sup>3</sup> The term “biologicals” means medicinal preparations made from living organisms and their products, including but not limited to, serums, vaccines, antigens and anti-toxins ( California Medical Waste Management Act, California Health and Safety Code Section 117690)

<sup>4</sup> The term “sharps waste” refers to any device having acute rigid corners, edges, or proturbences capable of cutting or piercing, including, but not limited to, hypodermic needles and broken glass items (such as pipettes and vials) contaminated with biohazardous waste (California Medical Waste Management Act, California Health and Safety Code Section 117755).

<sup>5</sup> California Medical Waste Management Act, California Health and Safety Code Sections 117600-118360.

**TABLE 4.G-1  
 HAZARDOUS MATERIALS ON-SITE AT MARIN GENERAL HOSPITAL**

<b>Chemical/Product</b>	<b>Average Daily Quantities</b>
Medical Waste	283 pounds
Diesel Fuel	10,000 gallons
Liquid Chemicals <sup>a</sup>	428 gallons
Compressed Gas <sup>b</sup>	290,000 cubic feet
Waste Oil	55 gallons*
Liquid Oxygen	200,000 cubic feet
Battery Waste	55 gallons*
Radioactive Material	2.9 curies <sup>c</sup>

<sup>a</sup> This includes Formula 445 (reference name for N,N-Diethylaminoethanol, which is a curing agent for polyurethanes and epoxy resins), formaldehyde, hydrogen peroxide, nitric acid, and peroxyacetic acid.

<sup>b</sup> Includes nitrogen and nitrous oxide.

<sup>c</sup> Total combined maximum limit of isotopes for all categories of radioactive material permitted onsite.

\* Reported only as Maximum Daily Quantity.

SOURCE: Marin General Hospital, 2010, 2011.

(Marin General Hospital, 2010). Other chemicals are currently used onsite, but generally in smaller quantities that would not pose potential hazardous risk. The use of hazardous materials usually generates hazardous waste.

### ***Radioactive Materials***

Radioactive materials contain unstable atoms that spontaneously decay, emitting detectable ionizing radiation (capable of causing chemical changes in cells). Radiation can cause acute health effects such as headache or burn, and chronic health effects such as cancer and birth defects. Most current work with radioactive materials involves handling relatively small quantities of radioactive materials. Marin General Hospital routinely maintains low-level radioactive materials onsite for medical use, however, the actual quantity varies from day to day depending on patient cases (Chun, 2012). Marin General Hospital maintains a monitoring and containment process in place to ensure that no radioactive waste above background levels leave the hospital grounds. No radioactive leaks have been documented.

### ***Biohazardous Materials***

Biohazardous materials may contain infectious agents or certain recombinant DNA molecules that contribute to human disease or mortality. The potential for disease would depend on the type of infectious agent considered. The level of potential hazard is indicated by Center for Disease Controls' (CDC) recommended biosafety level precautions. There are four biosafety levels in which higher levels indicate increased risk to the external environment. A biohazardous material is one that would generally require Biosafety Level 2 or greater storage, handling, and disposal precautions (i.e., appropriate for agents that can cause human disease through cuts, ingestion, or mucous membrane exposure, but not serious or lethal diseases through aerosol transmission).

Biosafety Level 2 is designated for work involving agents of moderate potential hazard to personnel and the environment. It includes various bacteria and viruses that cause only mild disease to humans, or are generally considered airborne such as hepatitis A, B, and C, influenza A, Lyme disease, mumps, measles, and the human immunodeficiency virus (HIV). At this biosafety level, laboratory personnel have specific training in handling pathogenic agents, there is limited access to laboratory areas, and special precautions are taken with sharps (CDC, 2009). Various types of biological materials are currently present and used at the hospital facility. The current use of biohazardous materials involves small quantities of the types of materials listed in Table 4.G-1.

## **Hazardous Building Materials Associated with Demolition**

The existing structures on the Marin General Hospital Campus vary in age between approximately 30 and 60 years old. Structural demolition or renovation of buildings may expose individuals to hazardous building materials such as lead-based paint, asbestos, or polychlorinated biphenyls (PCBs) historically used in buildings. Asbestos is a naturally occurring fibrous material that was extensively used as a fireproofing and insulating agent in building construction before such uses were banned by the U.S. Environmental Protection Agency (USEPA) in the 1970s. Lead-based paint was commonly used on interior and exterior surfaces prior to 1978, when its use was banned by the EPA. PCBs are organic oils that were formerly used, primarily as electrical insulators, in many types of electrical equipment, including transformers and capacitors. In 1979, the USEPA banned the use of PCBs in most new equipment and began a program to phase out certain existing PCB-containing equipment. Fluorescent lights and some older electrical switches also contain mercury. Fluorescent lighting ballasts manufactured after January 1, 1978, do not contain PCBs and are required to have a label clearly stating that PCBs are not present in the unit. Additional information about these materials and their potential health hazards are described in the *Regulatory Setting* below.

## **Aboveground and Underground Storage Tanks**

The project site currently includes one active 10,000-gallon diesel fuel Underground Storage Tank (UST), located beneath the parking lot near the northeast corner of the West Wing of the hospital. The UST contains diesel fuel for the emergency backup generators for Marin General Hospital. This current UST replaced a former 1,000-gallon UST which was abandoned in place in 1995. Based on documentation presented in regulatory agency files, the abandoned in place UST was filled with “flowable fill material” on April 25, 1995. No final closure documentation for the abandoned in place UST was received from regulatory agencies following abandonment of this UST (Geologica, 2011).

Two “day tank” aboveground storage tanks (ASTs) are located within the emergency generator room in the basement of the West Wing of the hospital. These ASTs each contain approximately 50 gallons of fuel and both are located within secondary containment structures. No staining was noted on the bottom of the secondary containment structures around the two ASTs (Geologica, 2011).



## **Electromagnetic Fields**

Electromagnetic fields (EMFs) are invisible lines of force present in the natural environment and wherever electricity flows. Given the levels of technology within a modern hospital necessary to support many life sustaining systems, EMFs are inherently present there, but are present in nearly any environment. Sources of EMFs are typically electrical power wiring, medical equipment, and radio frequency. For electrical power wiring, all power wiring generates small levels of EMFs, but at standard levels of electricity found in typical buildings, such as hospitals, the fields are not powerful enough to damage the body's genetic material or to directly cause cancer. Medical equipment can generate higher levels of EMFs during their normal operation, and typically these types of equipment are either contained in specifically-designed rooms or have local shielding to prevent harmful effects. Finally, regarding radio frequency, many wireless communication systems (e.g., PDAs, wireless phones) are present in a hospital, and code blue systems use higher frequency signals to communicate. However, these systems are typically low power and are similar to those present in any modern home or office.

## **Regulatory Agency Listed Sites of Environmental Concern**

The environmental setting for this section was based on a Phase I Environmental Site Assessment conducted for the project site that included a review of available regulatory agency records by Environmental Data Resources (EDR) to determine if the site or surrounding businesses or properties currently or sometime in the past, have been involved in hazardous materials generation, disposal, or the release of hazardous materials to the environment. The EDR report provided the results of an updated regulatory database review on April 1, 2011 (Geologica, 2011). The report meets the government records search requirements of the American Society for Testing Materials (ASTM) "Standard Practice for Environmental Site Assessments, E 1527-00." A summary of the database search for the project site as well as for nearby surrounding sites is given below.

The regulatory database search conducted by EDR accessed government databases including, but not limited to, the State of California Hazardous Waste and Substances List (Cortese List) and the Comprehensive Environmental Response, Compensation, and Liability System (CERCLIS). The Cortese List is a compilation of information from various sources listing potential and confirmed hazardous waste and hazardous substance sites in California and is maintained by DTSC. CERCLIS contains information on hazardous waste sites, potentially hazardous waste sites and remedial activities across the nation, including sites that are on the National Priorities List or being considered for the National Priorities List. Information in the CERCLIS database can be found on sites being assessed under the Superfund Program, hazardous waste sites, and potential hazardous waste sites. The Leaking Underground Storage Tank (LUST) Information System contains an inventory of reported leaking underground storage tank incidents and in California the LUST program is maintained and administered by the California State Water Resources Control Board.

### **Project Site**

The records search revealed that the project site is listed in the LUST, Facilities Index Systems Database (FINDS), Haznet, EMI, and California Hazardous Material Incident Reporting System (CHMIRS) databases. The listing on these databases is related to the active UST on the site, the BAAQMD permits on the site, and the site being registered as a generator of hazardous wastes.

### **Nearby Sites**

Other nearby sites identified in the following databases include the Resource Conservation and Recovery Act Small Quantity Generator (RCRIS-SQG), LUST, UST, HIST UST, CHMRIS, FINDS, and ENVIROSTOR. It should be noted that it is not uncommon for a site to be listed on two databases, for instance a CHMIRS site may also appear on the California SLICs List. Also listed are those sites that appear on regulatory databases (i.e., RCRIS-SQG) because they generate and dispose of large or small quantities of hazardous materials. However, it is assumed that the hazardous materials at these sites are packaged, documented and transported in accordance with current state and federal regulations, and that these materials do not pose a threat to public health or the environment. **Table 4.G-2**, below, provides a detailed list of nearby regulatory listed sites that generate hazardous waste; have documented petroleum or hazardous materials releases; and/or are scheduled for current or future site clean up activities.

### **Aeromedical**

As discussed in Chapter 3, Project Description, the proposed project does not include a helipad. The construction and operation of any future helipad will require separate environmental review and approval by multiple agencies. Currently helicopters are allowed to land at Hal Brown Park directly across the street from the project site. This practice will continue with the proposed project and ensure life-threatening events are treated in an expeditious manner. Therefore, impacts of helipad operation are not discussed in this document.

### **Airports**

The nearest public airports to the project are the San Rafael Airport located approximately five miles north of the project site and the Marin County Airport located approximately 15 miles northeast of the project site.

### **Schools**

There is one public school located approximately 0.31 miles northwest of the proposed project: Anthony G. Bacich Elementary located at 699 Sir Francis Drake. A private high school, Marin Catholic High School, at 675 Sir Francis Drake Boulevard, is located 0.20 miles from Marin General Hospital.

**TABLE 4.G-2  
 REGULATORY LISTED SITES NEAR THE PROJECT SITE**

Site Name	Site Location	Distance from Site <sup>a</sup>	Regulatory List
Express One Hour Photo	290 Bon Air Ctr	0	RCRIS-SQG, FINDS
Meaders Cleaners	220 Bon Air Center	0.1 mi S	RCRIS-SQG
Martin Mobile Outpatient Svc	5 Bon Air Rd Ste 121	0.2 mi SW	RCRIS-SQG
Marin Medical Laboratories	2 Bon Air Rd Ste 120	0.6 mi SW	RCRIS-SQG
Niven Nursery Site	2 Ward Street	0.7 mi S	Envirostor
Exxon Chevron Former (Case Closed)	600 Magnolia Ave	0.6 mi S	LUST <sup>c</sup>
Malin Property	203 Murray	0.6 mi. W	LUST
AT & T (Case Closed)	1100 Eliseo Dr	0.2 mi. S	LUST, UST
United Moving Inc (Case Closed)	1023 Magnolia	0.5 mi W	LUST
Union Oil Ss# 4346 (Case Closed)	501 Sir Francis Drake B	0.5 mi E	LUST
Tamalpais Union HSD- Corp Yard	325 Doherty Dr	0.6 mi S	LUST
Greenbrae Pump Station	Bon Air Shopping Center	0.1 mi N	HIST UST <sup>d</sup>
Larkspur T.S.P.	1100 South Eliseo Dr.	0.2 mi S	HIST UST
No Site Name Provided	Bon Air Rd & Via Hildal	0.1 mi. N	CHMRIS

<sup>a</sup> Distances are approximate and measured in miles.

<sup>b</sup> Resource Conservation and Recovery Act Database, Small Quantity Generator – RCRA information is USEPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the RCRA. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

<sup>c</sup> Leaking Underground Storage Tank – An inventory of reported leaking underground storage tank incidents.

<sup>d</sup> Hazardous Substance Storage Container Database of the State Water Resources Control Board

SOURCE: Geologica, 2011

## Wildfires Hazards

The California Department of Forestry and Fire Protection) has mapped high fire hazard areas in Marin County (CALFIRE, 2008). The project area has been mapped as having a low fire hazard threat.

## Regulatory Setting

### Federal

The primary federal agencies with responsibility for hazardous materials management include the U.S. Environmental Protection Agency (USEPA), U.S. Department of Labor Occupational Safety and Health Administration (Fed/OSHA), and the U.S. Department of Transportation (DOT).

Federal laws, regulations, and responsible agencies are summarized in **Table 4.G-3**.

**TABLE 4.G-3  
FEDERAL LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT**

<b>Classification</b>	<b>Law or Responsible Federal Agency</b>	<b>Description</b>
Hazardous Materials Management	Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA))	Imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of and to prevent or mitigate injury to human health or the environment in the event that such materials are accidentally released.
Hazardous Waste Handling	Resource Conservation and Recovery Act of 1976 (RCRA)	Under RCRA, the USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from "cradle to grave."
	Hazardous and Solid Waste Act	Amended RCRA in 1984, affirming and extending the "cradle to grave" system of regulating hazardous wastes. The amendments specifically prohibit the use of certain techniques for the disposal of some hazardous wastes.
Hazardous Materials Transportation	U.S. Department of Transportation (DOT)	DOT has the regulatory responsibility for the safe transportation of hazardous materials. The DOT regulations govern all means of transportation except packages shipped by mail (49 CFR).
	U.S. Postal Service (USPS)	USPS regulations govern the transportation of hazardous materials shipped by mail.
Occupational Safety	Occupational Safety and Health Act of 1970	Fed/OSHA sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries (29 CFR).
Radioactive Materials <sup>a</sup>	Atomic Energy Act	Administered by the Nuclear Regulatory Commission, the act regulates the use and control of radioactive material. <sup>b</sup>
Biosafety Standards <sup>c</sup>	The National Institutes of Health, and the Centers for Disease Control and Prevention (CDC)	Operated under the U.S. Department of Health and Human Services, these agencies establish standards for working with biohazardous materials.
Structural and Building Components (Lead-based paint, PCBs, and asbestos)	Toxic Substances Control Act	Regulates the use and management of PCBs in electrical equipment, and sets forth detailed safeguards to be followed during the disposal of such items.
	U.S. EPA	The USEPA monitors and regulates hazardous materials used in structural and building components and their effects on human health.

<sup>a</sup> U.S. Nuclear Regulatory Commission, Atomic Energy Act of 1954

<sup>b</sup> Radioactive material is any material or combination of materials that spontaneously emit ionizing radiation.

<sup>c</sup> A hazardous biologic material is any potentially harmful biologic material (including infectious agents, oncogenic viruses, and recombinant DNA) or any material contaminated with a potentially harmful biologic material.

SOURCE: ESA

State and local agencies often have either parallel or more stringent rules than federal agencies. In most cases, state law mirrors or overlaps federal law and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated. For these reasons, the requirements of the law and its enforcement are discussed under either the state or local agency section.

## State

In January 1996, the California Environmental Protection Agency (Cal EPA) adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The program has six elements: hazardous waste generators and hazardous waste on-site treatment; underground storage tanks; aboveground storage tanks; hazardous materials release response plans and inventories; risk management and prevention programs; and Unified Fire Code hazardous materials management plans and inventories. The plan is implemented at the local level. The Certified Unified Program Agency (CUPA) is the local agency that is responsible for the implementation of the Unified Program. In Marin County, the Marin County Department of Public Works is the designated CUPA for all businesses in the unincorporated area (Marin County, 2012).

### ***Hazardous Materials Management***

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that any business that handles hazardous materials prepare a Hazardous Materials Business Plan, which must include the following:<sup>6</sup>

- Details, including floor plans, of the facility and business conducted at the site;
- An inventory of hazardous materials that are handled or stored on site;
- An emergency response plan; and
- A safety and emergency response training program for new employees with annual refresher courses

### ***Hazardous Waste Handling***

The Cal EPA Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely.

Under the federal Resource Conservation and Recovery Act of 1976 (RCRA), whose responsibilities are described in Table 4.G-3, individual states may implement their own hazardous waste programs in lieu of RCRA, as long as the state program is at least as stringent as federal RCRA requirements. In California, the DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. DTSC's hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

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<sup>6</sup> Hazardous Materials Release Response Plans and Inventory Law, California Health and Safety Code, Chapter 6.95.

### ***Hazardous Materials Transportation***

The State of California has codified DOT regulations for the intrastate movement of hazardous materials in Title 26 of the California Code of Regulations (CCR), which regulates the transportation of hazardous waste originating in the state and passing through the state (26 CCR). Both federal and state regulatory programs apply in California.

The two state agencies that have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans).

The CHP enforces hazardous material and hazardous waste labeling and packing regulations to prevent leakage and spills of material in transit and to provide detailed information to cleanup crews in the event of an accident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP, which conducts regular inspections of licensed transporters to assure regulatory compliance. Caltrans has emergency chemical spill identification teams at as many as 72 locations throughout the state that can respond quickly in the event of a spill.

Carriers that routinely transport hazardous waste are licensed by the CHP, pursuant to California Vehicle Code Section 32000. Every type of hazardous waste package used by a hazardous materials shipper must undergo tests that imitate some of the possible rigors of travel. While not every package must be put through every test, most packages must be able to be: kept under running water for a time without leaking; dropped, fully loaded, onto a concrete floor; compressed from both sides for a period of time; subjected to low and high pressure; and frozen and heated alternately.

### ***Medical Waste***

Within the regulatory framework of the Medical Waste Management Act, the Medical Waste Management Program of the California Department of Health Services (CDHS) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste offsite treatment facilities and transfer stations throughout the state. The CDHS also oversees all medical waste transporters. The Medical Waste Management Program provides support and oversight to the Marin County Environmental Health Services (EHS), which enforces the Medical Waste Management Act locally (EHS, 2012).

### ***Occupational Safety***

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in Title 29 of the Code of Federal Regulations (CFR). Cal/OSHA standards are generally more stringent than federal regulations.

Cal/OSHA regulations (8 CCR) concerning the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances, and communicating hazard information relating to hazardous substances and their handling. The hazard communication program also requires that Materials Safety Data Sheets (MSDS) be available to employees, and that employee information and training programs be documented. These regulations also require preparation of emergency action plans (escape and evacuation procedures, rescue and medical duties, alarm systems, and training in emergency evacuation).

State laws, like federal laws, include special provisions for hazard communication to employees in research laboratories, including training in chemical work practices. Specific, more detailed training and monitoring is required for the use of carcinogens, ethylene oxide, lead, asbestos, and certain other chemicals listed in 29 CFR. Emergency equipment and supplies, such as fire extinguishers, safety showers, and eye washes, must also be provided and maintained in accessible places.

Cal/OSHA (8 CCR), like Fed/OSHA (29 CFR) includes extensive, detailed requirements for worker protection applicable to any activity that could disturb asbestos-containing materials, including maintenance, renovation, and demolition. These regulations are also designed to ensure that persons working near maintenance, renovation, or demolition activity are not exposed to asbestos.

### ***Radioactive Materials***

The federal Atomic Energy Act requires states to assume responsibility for the use, transportation, and disposal of low-level radioactive material and for the protection of the public from radiation hazards. The Radiologic Health Branch (RHB) of the CDHS administers the state's Radiation Control Law, which governs the storage, use, transportation, and disposal of sources of ionizing radiation (radioactive material and radiation-producing equipment). Radioactive material regulations require registration of sources of ionizing radiation, licensing of radioactive material, and protection against radiation exposure. The RHB also regulates the transportation of radioactive materials and disposal of radioactive waste. Users of radioactive materials must maintain detailed records regarding the receipt, storage, transfer, and disposal of such materials (RHB, 2011). State regulations concerning radioactive substances are included in 17 CCR. The regulations specify appropriate use and disposal methods for radioactive substances, as well as worker safety precautions and worker health monitoring programs. Radioactive materials at Marin General Hospital are regulated under its Radioactive Material License issued by the RHB.

### ***Biosafety Standards***

Similar to federal laws, state laws establish standards for working with biohazardous materials. A hazardous biologic material is any potentially harmful biologic material (including infectious agents, oncogenic viruses, and recombinant DNA) or any material contaminated with a potentially harmful biologic material. The National Institutes of Health and the Centers for Disease Control and Prevention operate under the U.S. Department of Health and Human Services and establish standards for working with biohazardous materials.

### ***Emergency Response***

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local government and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services, which coordinates the responses of other agencies, including Cal EPA, CHP, the Department of Fish and Game, the San Francisco Bay Regional Water Quality Control Board, and the Marin County Public Works Department. Marin County Fire Department is the first responder to hazardous materials incidences in unincorporated Marin County. However, the Kentfield Fire Department is the first responder for hazardous materials emergencies within the project area (MCFD, 2011).

### ***Structural and Building Components***

#### **Asbestos**

State laws and 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; and require notice to federal and local governmental agencies prior to beginning renovation or demolition that could disturb asbestos. Asbestos represents a human health risk when asbestos fibers become airborne (friable) and are inhaled into the lungs.

The Bay Area Air Management District (BAAQMD) is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified ten days in advance of any proposed demolition or abatement work. Cal/OSHA regulates asbestos removal to ensure the health and safety of workers removing asbestos containing materials and also must be notified of asbestos abatement activities.

#### **Polychlorinated Biphenyls (PCBs)**

As previously discussed, PCBs are organic oils formerly used in many types of electrical equipment and in fluorescent lighting ballasts. PCBs are highly persistent in the environment and are toxic. In 1979, the USEPA banned the use of PCBs in most new electrical equipment and began a program to phase out certain existing PCB-containing equipment. The use and management of PCBs in electrical equipment is regulated pursuant to the Toxic Substances Control Act (40 CFR).



Fluorescent lighting ballasts that contain PCBs, regardless of size and quantity, are regulated as hazardous waste and must be transported and disposed of as hazardous waste.

### **Lead and Lead-Based Paint**

The California Code of Regulations, Title 22, considers waste soil with concentrations of lead to be hazardous if it exceeds a total concentration of 1,000 parts per million (ppm) and a soluble<sup>7</sup> concentration of 5 ppm. Both the federal and California OSHAs regulate all worker exposure during construction activities that involve lead-based paint. The Interim Final Rule found in 29 CFR Part 1926.62 covers construction work where employees may be exposed to lead during such activities as demolition, removal, surface preparation for re-painting, renovation, clean up and routine maintenance. The OSHA-specified method of compliance includes, among other things, respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance, and training.

### **Aboveground and Underground Storage Tanks**

The State Regional Water Quality Control Board (SWRCB) administers the AST Program. Facilities that store petroleum in a single tank greater than 1,320 gallons or facilities that store petroleum in ASTs or containers with a cumulative storage capacity of greater than 1,320 gallons are subject to SWRCB regulations. The AST Program requires that the owners or operators file a storage statement, pay a facility fee, and prepare and implement a federal Spill Prevention Control and Countermeasure (SPCC) Plan. The SPCC Plan must discuss the procedures, methods, and equipment in place at the facility to prevent discharges of petroleum from reaching navigable waters. Two ASTs at Marin General Hospital are subject to regulation under the SWRCB AST Program: AST oversight is provided by Marin County Public Works, in accordance with the Unified Program.

State laws governing USTs specify requirements for permitting, construction, installation, leak detection monitoring, repairs, release monitoring, corrective actions, cleanup, and closure. ACEH Marin County Environmental Health Services is the local agency designated to permit and inspect USTs and to implement applicable regulations.

### ***Heliports and Helipads***

Caltrans' Division of Aeronautics issues permits for all heliports in the State of California. Heliports must meet the FAA's Final Approach and Takeoff Area standards in order to obtain a Caltrans operating permit, in addition to complying with Title 21 CCR, Airports and Heliports, which is based upon the FAA's Advisory Circular on Heliport Design.

### ***California Office of Statewide Health Planning and Development***

The Office of Statewide Health Planning and Development (OSHPD) is a department of the California Health and Human Services Agency. OSHPD serves as the regulatory building agency for all hospitals and nursing homes in California (OSHPD, 2012). Its primary goal in this regard is to ensure that patients in these facilities are safe in the event of an earthquake or other disaster,

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<sup>7</sup> Susceptible of being dissolved, especially in water.

and to ensure that the facilities remain functional after such an event in order to meet the needs of the community affected by the disaster. Refer to Section 4.E *Geology, Soils, and Seismicity*, for more information associated with OSHPD.

## Local

### ***The Marin Countywide Plan Update (2007)***

The Marin Countywide Plan is the County's long range guide for use of land and protection of natural resources. The Plan sets forth policies and programs to be used by the public, planning staff, and decision makers when reviewing and analyzing proposed developments. Goals and policies pertaining to hazards and hazardous materials that are relevant to the project include the following:

***Goal PS-4:*** Decreased Exposure to Hazardous Materials. Reduce the risks to human and environmental health from hazardous materials

***Policy PS 4.1:*** *Regulate and Reduce Hazardous Material Use.* Control the use and storage of hazardous materials to minimize their presence in, and potential dangers to, the community and environment.

### ***Hazardous Materials Management in Marin County***

The primary agencies responsible for local enforcement of state and federal laws controlling hazardous materials management include the Waste Management Division of the Marin County Department of Public Works and the Environmental Health Services Division of the Marin County Community Development Agency, the former of which is the CUPA (the local agency responsible for coordination of hazardous waste generator programs, underground fuel tank management, tiered permitting process for waste treatment, and administering the Hazardous Materials Business Plan program). The CUPA is responsible for management of leaking underground storage tank site investigation and cleanup.

Businesses that store, handle, or dispose of hazardous materials must submit a Hazardous Materials Business Plan (business plan) in accordance with the California Health and Safety Code Section 25504. The business plans must be updated every two years or within 30 days after a substantial change in site operations. The business plan must:

- List all the hazardous materials stored at a site
- Identify emergency response procedures for spills and personnel
- Identify evacuation plans and procedures
- Identify training records for personnel to substantiate annual refresher training

If hazardous materials are used or stored at a site, all employees are also required to receive hazard communication training. The purpose of the training is to ensure that employees understand the nature of the hazardous materials that they handle and can safely use, store, and dispose of the materials in accordance with Title 8, CCR. The hazard communication standard requires that employers must:

- Prepare an inventory of hazardous materials
- Make MSDS sheets available to employees
- Conduct employee training on chemical hazards and safe handling of materials
- Ensure that hazardous material containers are properly stored and labeled

Inspections of businesses that store hazardous materials are performed by the CUPA. The hazard communication requirements are enforced by Cal/OSHA.

### ***San Rafael Fire Department***

The SRFD manages the Countywide Household Hazardous Waste Program for every city in the county, except Novato. This program offers residents and small business owners an opportunity to eliminate hazardous waste from the water and landfill systems of Marin County.

## **Impacts and Mitigation Measures**

### **Significance Criteria**

Based on criteria from Appendix G of the State CEQA *Guidelines*, the project would have a significant impact regarding hazards and hazardous materials if it would:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- d) Be located on a site that 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;
- e) Be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, where the project results in a safety hazard for people residing or working in the project area;
- f) Result in a safety hazard for people residing or working in the project area for a project within the vicinity of a private airstrip;
- g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands; or
- h) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Based on Appendix N of the Marin County Environmental Review Guidelines, the project may also have a significant impact related to hazards and hazardous materials if the project would:

- Pose a public health and safety hazard through release of emissions or risk of upset (consistent with CEQA Appendix G Criteria a, b, c, d, e, f, and g);
- Interfere with emergency response plans or emergency evacuation plans (consistent with Appendix G Criterion h);
- Expose sensitive receptors to substantial pollutant concentrations (consistent with CEQA Appendix G Criteria a, b, c, d, e, f, and g); or
- Result in unsafe conditions for employees, visitors, and students (consistent with CEQA Appendix G Criteria b, c, and f).

### Issues Not Further Evaluated

This following impact analysis focuses on potential impacts of the project related to hazards and hazardous materials. Some of the CEQA criteria are determined not to be relevant to the project based on the proposed project plans and data research; therefore, they are not further evaluated further in this EIR. These criteria are:

***Vicinity of Airstrip:*** The closest airstrip to the preferred project Site is the San Rafael Airport, also known as the Smith Ranch Airport. This is a private airstrip located over three miles from the project site. Air traffic from this airstrip does not pose a safety hazard at the project site. Therefore, there is no impact.

***Wildland Fires:*** The project site is located in a developed urban area that is not susceptible to wildland fires. In addition, the project would be built according to all applicable fire safety codes. There would be no impact from wildland fires.

***Interfere with an Emergency Response Plan:*** Overall, the project would not impede an emergency access route and would continue to maintain the existing city grid system. Additionally, the project would not result in permanent road closures, and therefore, would not physically interfere with emergency response or evacuation plans. Construction activities that would result in temporary road closures would include traffic control plans to ensure emergency vehicle access and therefore would not result in an impact.

## Impacts and Mitigation Measures

### ***Transport, Use, and Disposal of Hazardous Materials***

**Impact HAZ-1: The Project would not cause a significant hazard due to the transport, use and storage of hazardous chemicals, radioactive materials, and biohazardous materials. (Less than Significant)**

Medical and administrative activities at the project site would use hazardous chemicals common in medical care, office and support settings. These chemicals would include familiar materials, such as toners, paints, lubricants, kitchen and restroom cleaners, and other maintenance materials as well as chemicals used during patient care, laboratory testing and medical diagnostics. These

common products would be used for the same purposes as in any office or residence. A medical facility cannot reasonably predict in advance every possible chemical or combination of chemicals it might use. However, estimated hazardous material use, storage, and disposal that would result from the project are presented in the discussion that follows. These estimates of use are based on Marin General Hospital's current operational uses.

### **Hazardous Materials Management**

Existing and post-project operations of Marin General Hospital involve the use of a wide range of chemical compounds and products for facilities maintenance and patient care. Among these are hazardous materials including fuels, liquid oxygen, waste oil, battery waste, various liquid chemicals and radioactive materials (see Table 4.G-1). The use, storage and disposal of these hazardous materials could result in health and safety risks for those handling the materials within the hospital as well as the community. Should any of these materials be improperly used, stored or transported, toxins could be released into the air or water; fire or explosions could occur; and exposure could cause acute or chronic health effects to workers and visitors. Because of the potential risks, acute care facilities, like Marin General Hospital, are required to comply with several regulatory controls that control the transportation, storage, use, and disposal of chemical and other materials considered a risk to public health. These controls are discussed below.

Areas within the hospital that contain hazardous chemicals, gases or bio-hazards would be equipped with proper ventilation and secondary spill containment. Most of the flammable materials stored indoors would be kept in fire safety cabinets when not in use. Until the time that they are used, hazardous materials would be stored in their original containers. As required, the hazardous materials would be stored, in each building, in locations according to compatibility and in storage enclosures (i.e., flammable material storage cabinets and biological safety cabinets) or in areas or rooms specially designed, protected, and contained for such storage, in accordance with state and local regulations for hazardous materials management (see *Regulatory Setting*, above).

Handling and use of hazardous materials and the disposal of the resulting hazardous wastes would be conducted under federal, state, and local laws and regulations for hazardous materials management, as described in the *Regulatory Setting* above. Hazardous materials would be used by personnel that have been trained in the handling and use of the material and that have received proper hazard-communication training. Potential exposure pathways and controls for these materials are identified in **Tables 4.G-4** and **4.G-5**. Hazardous materials planning and reporting requirements under the California Hazardous Materials Business Planning, California Proposition 65 notification, and Emergency Planning and Community-Right-to-Know Act would be initiated and completed, as required, for acute care facilities. Under these requirements, Marin General Hospital would submit an updated Hazardous Materials Management Plan and Hazardous Materials Business Plan to the Division of Waste Management of the Marin County Department of Public Works documenting any changes to hazardous materials storage and disposal locations and volumes that may be part of post-project operations. Compliance with these laws and regulations would reduce the risk of hazard and hazards to workers, the public, and the environment to such that they would not pose a threat to project occupants or the public.

**TABLE 4.G-4  
 EXPOSURE PATHWAYS AND CONTROLS FOR WORKERS**

<b>Exposure Pathway</b>	<b>Examples of Primary Control Measures to be Implemented, as Appropriate</b>
Inhalation (breathing a hazardous substance)	<ul style="list-style-type: none"> <li>• Working with volatile materials in fume hoods<sup>a</sup></li> <li>• Working with potentially aerosol suspended biohazardous materials in biosafety cabinets<sup>b</sup></li> <li>• Keeping containers closed when not in use</li> <li>• Wearing face masks or respirators, as necessary</li> </ul>
Contact (absorbing a hazardous substance through the skin or eyes)	<ul style="list-style-type: none"> <li>• Wearing protective clothing and shoes</li> <li>• Wearing eye protection (glasses or goggles)</li> <li>• Wearing gloves</li> <li>• Washing hands and work areas</li> <li>• Working with radioactive materials behind shields</li> </ul>
Ingestion (swallowing a hazardous substance)	<ul style="list-style-type: none"> <li>• Not eating or drinking in laboratories</li> <li>• Not storing food in laboratory refrigerators used for hazardous materials</li> <li>• Not smoking in laboratories</li> <li>• Not drawing material into glass tubes or pipettes by mouth</li> <li>• Washing hands and work areas</li> </ul>
Injection (Puncturing or cutting the skin with a contaminated object)	<ul style="list-style-type: none"> <li>• Participating in awareness training</li> <li>• Keeping sharps in puncture-resistant containers</li> </ul>
Accidents	<ul style="list-style-type: none"> <li>• Participating in emergency response training</li> <li>• Maintaining emergency equipment (e.g., safety showers, emergency eye washes, first aid kits, neutralizing substances for corrosive materials)</li> <li>• Storing flammable materials in fire-rated cabinets</li> <li>• Providing secondary containment for hazardous materials that are not in use</li> <li>• Calling Kentfield Fire Department and Hazardous Materials Emergency Response Team, if necessary</li> </ul>

<sup>a</sup> Fume hoods are cabinets with front-opening (usually sliding) glass doors connected to overhead exhaust fans that draw air from the cabinet and expel it into the atmosphere through rooftop stacks.  
<sup>b</sup> Biosafety cabinets look similar to fume hoods. They filter aerosols and remove particles from the air, but do not necessarily exhaust the filtered air to the outdoors.

**Biohazardous Materials**

Biohazardous materials may contain infectious agents or certain recombinant DNA molecules that contribute to human disease or mortality. Should Marin General Hospital workers or the public be exposed to biohazardous materials, they could potentially contract disease. The potential for disease would depend on the type of infectious agent considered. The level of potential hazard is indicated by the CDC’s recommended bio-safety level precautions. A bio-hazardous material is one that would generally require Biosafety Level 2 or greater precautions (i.e., appropriate for agents that can cause human disease through cuts, ingestion, or mucous membrane exposure, but not serious or lethal diseases through aerosol transmission.) The hospital produces approximately 8,500 pounds per month of solid biohazardous waste materials (Marin General Hospital, 2010).

**TABLE 4.G-5  
 EXPOSURE PATHWAYS AND CONTROLS FOR VISITORS, THE PUBLIC, AND THE ENVIRONMENT**

<b>Exposure Pathway</b>	<b>Examples of Primary Control Measures to be Implemented, as Appropriate</b>
Air Emissions	<ul style="list-style-type: none"> <li>Using fume hood ventilation system to dilute and subsequently disperse emissions to the atmosphere<sup>a</sup></li> </ul>
Transport To and From the Site	<ul style="list-style-type: none"> <li>Following packaging requirements specified by the U.S. Department of Transportation, the U.S. Postal Service, and the California Department of Health Services (Radiologic Health Branch and Medical Waste Program)</li> <li>Identifying container contents with appropriate labels</li> <li>Using licensed hazardous waste haulers</li> <li>Documenting hazardous waste shipments</li> </ul>
Inadvertent Sewer Disposal	<ul style="list-style-type: none"> <li>Training workers</li> <li>Collecting hazardous waste for appropriate disposal</li> <li>Monitoring wastewater from the site</li> </ul>
Inadvertent Disposal with Solid Waste	<ul style="list-style-type: none"> <li>Training laboratory workers and custodians</li> <li>Separating wastes</li> <li>Collecting hazardous waste for appropriate disposal</li> <li>Labeling trash cans</li> </ul>
Direct and Indirect Contact	<ul style="list-style-type: none"> <li>Identifying container contents with appropriate labels</li> <li>Training workers</li> <li>Implementing standard laboratory hygiene practices (e.g., wearing protective clothing and gloves, leaving protective clothing at work, and washing hands and work areas)</li> <li>Implementing medical surveillance programs to monitor the health of those who work with certain biohazardous materials.</li> <li>Monitoring the exposure of those who work with radioactive materials</li> </ul>
Waste Disposal	<ul style="list-style-type: none"> <li>Following federal and state hazardous waste disposal regulations and procedures, including hazardous waste manifest documentation</li> </ul>
Other Accidents	<ul style="list-style-type: none"> <li>Providing emergency response training</li> <li>Maintaining emergency equipment (e.g., safety showers, emergency eye washes, first aid kits, neutralizing substances for corrosive materials)</li> <li>Calling Kentfield Fire Department and Hazardous Materials Emergency Response Team, if necessary</li> </ul>

<sup>a</sup> Fume hoods are cabinets with front-opening (usually sliding) glass doors connected to overhead exhaust fans that draw air from the cabinet and expel it into the atmosphere through rooftop stacks.

SOURCE: ESA

Biohazardous wastes produced by Marin General Hospital may vary, but typically, would consist of absorbents, tissue cultures, and cell plates potentially contaminated with infectious diseases or toxins. This waste would typically be collected in plastic biohazard waste bags and pails and then labeled, stored, and disposed of by a licensed medical waste hauler in accordance with the Medical Waste Management Plan for Marin General Hospital. Potentially infectious “sharps”, including razor blades, syringes, and needles would also be collected in plastic biohazard containers. Non-infectious sharps would be collected from chemistry laboratories. All waste

materials then would be hauled to a licensed waste treatment facility in San Leandro (Marin General Hospital, 2010).

### **Radioactive Materials**

Project operations such as chemotherapy and radiation treatments would require the use of radioactive materials, as permitted through a Radioactive Materials License issued by the California Department of Health Services Radiologic Health Branch. Most work with radioactive materials would involve handling relatively small individual quantities. A maximum of 2.9 curies of radioactive materials is stored at the hospital at any time, and limits are set by source as well as by individual vial of material (see Table 4.G-1) (Marin General Hospital, 2011). Solid radioactive waste (plastic lab ware, gloves, etc.) would be segregated by the radioisotope and placed into radioactive solid drums. Waste containing isotopes with half-lives of less than or equal to 90 days would be stored onsite for decay.<sup>8</sup> After ten radioactive half-lives, this waste would then be unpacked, surveyed, and if standards are met, disposed of off-site as non-regulated waste. Waste containing radioactive isotopes with half-lives greater than 90 days would be sent off-site for proper long-term disposal and/or processing. Given that radioactive materials are regulated under the Radiation Control Law administered through the Radiologic Health Branch (RHB) of the CDHS, and Marin General Hospital does and would continue to comply with these regulations through its Radioactive Materials License, impacts associated with radioactive materials are less than significant.

### **Transport of Hazardous Materials and Hazardous Waste**

All hazardous materials would be transported to the site in accordance with applicable hazardous materials shipping regulations, as described in the *Regulatory Setting*. Radioactive material shipments would be checked for damage, external and internal contamination, and purchaser authorization for the type and amount of material in the package. Chemical, radioactive, and biohazardous waste would be picked up on a regular basis (typically at least every six weeks) and transported by a properly licensed commercial waste transporter and disposed of or recycled at a properly licensed and permitted off-site disposal and/or recycling facility. Transport of hazardous materials and hazardous waste could pose a threat to hospital occupants or the community in the event of leakage or spillage in an automobile accident or other transport incident. Potential exposure pathways and controls for these materials are identified in Tables 4.G-4 and 4.G-5.

Compliance with regulatory requirements would minimize hazards to workers, visitors, the public, and the environment. Conformance with all applicable laws and regulations would be part of the project. Thus the project would not involve the use, production, or disposal of materials in a manner that poses a hazard to people, or to animal or plant populations; creates an undue risk of upset related to human or environmental health or safety; exposes employees to working situations that exceed acceptable worker health standards; or involves violating applicable health and safety laws. Thus the project would not pose a threat to hospital occupants or the community.

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<sup>8</sup> The quantity of radioactivity decreases by one-half over the interval of time called a half-life. Decay over the interval of 10 half-lives reduces the amount of radioactivity to less than 1/1000 of the original amount.



### **Summary**

The project has the potential to expose hospital occupants and the community to hazardous materials via storage, normal uses, transport and disposal. However, laws, regulations, and standards federally administered through OSHA, DOT, RCRA, TSCA, and the EPA, as well as those required under Cal-EPA, and the CDPH would ensure that Marin General Hospital would continue implement current safeguards and standards to reduce the risk of chemical and hazardous material exposure at the hospital and in the surrounding environment. Impacts are therefore, less than significant.

**Mitigation Measure:** None required

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### ***Exposure to Hazardous Building Materials***

**Impact HAZ-2: The Project's demolition or renovation of existing structures that contain hazardous building materials would not cause a significant hazard by exposing workers, the public, or the environment to them or by generating hazardous waste. (Less than Significant)**

Demolition or renovation of existing structures during the project implementation may, depending upon the age of each building, expose construction workers, the public, or the environment to hazardous materials such as lead-based paint, asbestos, and PCBs. A survey to determine the potential presence of these substances in buildings slated for demolition or renovation has not yet been completed. However, an assessment and abatement is required to determine the potential extent of lead-based paint, asbestos, or PCBs in existing structures prior to demolition or renovation activities. Assessment and abatement of hazardous building materials is required prior to receiving a permit demolition of a structure. Once the assessments are done, specific actions are required by regulation to abate the hazards that are found.

#### **Lead-based Paint**

If lead-based paint is present and has delaminated or chipped from the surface of the structures, there is a potential for the release of airborne lead particles, unless proper lead abatement procedures are followed. Both the federal OSHA and Cal-OSHA regulate worker exposure during construction activities that disturb lead-based paint. The Interim Final Rule found in 29 CFR 1926.62 covers construction work in which employees may be exposed to lead during such activities as demolition, removal, surface preparation for repainting, renovation, cleanup, and routine maintenance. The OSHA-specified compliance includes respiratory protection, protective clothing, housekeeping, special high-efficiency filtered vacuums, hygiene facilities, medical surveillance, and training. No minimum level of lead is specified to activate the provisions of this regulation.

Additionally, demolition permitting requires that lead-abatement procedures be followed prior to demolition. This includes a lead-based paint removal plan. Elements of the plan include but are not limited to:

- Develop a removal specification approved by a Certified Lead Project Designer.
- Ensure that all removal workers are properly trained.
- Contain all work areas to prohibit off-site migration of paint chip debris.
- Remove all peeling and stratified lead-based paint on building and non-building surfaces to the degree necessary to safely and properly complete demolition activities according to recommendations of the survey. The demolition contractor shall be responsible for the proper containment and disposal of intact lead-based paint on all equipment to be cut and/or removed during the demolition.
- Provide on-site personnel and area air monitoring during all removal activities to ensure that workers and the environment are adequately protected by the control measures used.
- Clean up and/or vacuum paint chips with a high efficiency particulate air (HEPA) filter.
- Collect, segregate, and profile waste for disposal determination.
- Properly dispose of all waste.

Compliance with OSHA standards, the provisions of the demolition permit, and the lead-based paint removal plan would prevent risk of exposure to hospital workers, the public or the environment.

### **Asbestos**

Exposure to asbestos, and the resulting adverse health effects, is possible throughout the demolition phase if materials that contain asbestos are present. As previously discussed, asbestos is likely to be present in some structures on the project site due to their age, particularly the Central and East Wings of the hospital and the Information Systems and Mental Health Buildings (see Figure 3-4 in Chapter 3, *Project Description*). Based on information gathered for the Phase I Environmental Site Assessment, it appears that all of the older site buildings have undergone asbestos surveys and that much asbestos remediation has been completed. Asbestos remediation on the Marin General Hospital campus continues, and as such, asbestos is still present at isolated locations on the project site (Geologica, 2011). In structures slated for demolition or renovation as part of the project, any asbestos-containing materials would be abated in accordance with applicable regulations prior to the start of demolition or renovation activities. If asbestos is present, disturbance of the asbestos-containing materials could result in exposure of the public or construction workers to airborne asbestos fibers, unless proper asbestos abatement precautions are taken.

Asbestos abatement contractors must follow state regulations contained in 8 CCR 1529 and 8 CCR 341.6 through 341.14 where there is asbestos-related work involving 100 square feet or more of asbestos-containing material. Asbestos removal contractors must be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur must have a hazardous waste generator number assigned by and registered with the DTSC in Sacramento. Marin General Hospital and the transporter of the waste are

required to file a hazardous waste manifest that details the transportation of the material from the site and its disposal. Additionally, the hospital will need a demolition permit for the project which would require it to implement proper asbestos assessment and abatement procedures. Compliance with the California Code of Regulations and the provisions of the demolition permit would prevent risk of asbestos exposure to hospital workers, the public or the environment and thus, impacts are considered less than significant.

### **PCBs**

Fluorescent lighting ballasts manufactured prior to 1978, and electrical transformers, capacitors, and generators manufactured prior to 1977, may contain PCBs. In accordance with the Toxic Substances Control Act and other federal and state regulations, Marin General Hospital would be required to properly handle and dispose of electrical equipment and lighting ballasts that contain PCBs. If PCBs are present workers could be exposed to unacceptable levels of PCBs. However, following the provisions of the Toxic Substances Control Act would reduce impacts associated with PCB-containing material to a less than significant.

### **Mercury**

Fluorescent lights and old electrical switches in existing buildings could contain small amounts of mercury. Prior to demolition, each of these mercury-containing items would be removed and recycled, or disposed of, in accordance with regulatory requirements. Thus, the risk of mercury exposure during demolition would be less than significant.

### **EMFs**

As with any environment where electricity is used, EMFs would exist in Marin General Hospital given the electricity required for most of the technology necessary for its functions. As previously discussed, EMFs generated in the hospital setting – or most any other public or residential setting - are not powerful enough to damage the body's genetic material or to directly cause cancer. Further, EMFs are reduced by standard building practices of such as using steel conduits for electrical wiring and shielding or containing medical equipment that can generate higher levels of EMFs in specifically-designed rooms. While the project would result in additional employees on the project site, no aspect of the proposed buildings or their operations would substantially increase EMFs to harm employees or patients. Further, all building construction and hospital operations would be conducted consistent with all local, state and federal regulatory requirements and applicable codes. Thus, the risk of public hazards caused by EMFs associated with the proposed project would be less than significant.

### **Summary**

Project construction would require demolition at the project site, and thus, given the age of the buildings, there is risk of exposure to lead-based paints, asbestos and mercury. Should these substances be improperly handled during demolition they could be transmitted into the air or water and potentially cause health risks to hospital workers, the community and the public. However, regulations to assess, abate, manage, and properly dispose of hazardous building materials, as prescribed by OSHA, the Toxic Substances Control Act, and the State of California

as well as local demolition permit requirements would reduce risk of exposure to Marin General Hospital workers, the community and the environment to be less than significant.

**Mitigation:** None required

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### ***Hazardous Materials Emissions near Schools***

**Impact HAZ-3: The Project would not cause a significant hazard by emitting hazardous materials or handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. (Less than Significant)**

The nearest schools, Anthony G. Bacich Elementary (0.25 miles northwest), and Marin Catholic High School (.20 miles northwest) are close to the radius of concern and therefore could be at risk of exposure if there was a release of hazardous materials from Marin General Hospital. However, the storage, handling, and transport of hazardous materials is subject to a comprehensive regulatory structure including the Toxic Substances Control Act, hazardous material transportation requirements under DOT, and the requirements for internal controls prescribed by the facilities' Hazardous Materials Business Plan. Marin General Hospital would comply with each of these regulations during project construction and operations. As hospitals are not considered sources of hazardous materials or waste in large and potentially uncontrolled volumes, there is low risk of an exposure hazard to nearby schools. Therefore, impact related to hazardous materials impacts on schools would be less than significant.

**Mitigation:** None required

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### ***Exposure to Hazardous Materials in Soil and Groundwater***

**Impact HAZ-4: The Project would occur on a site listed in Government Code Section 65962.5 and could disturb soil and groundwater impacted by historic hazardous material use, but would not cause a significant hazard by exposing construction workers, the public, or the environment to adverse conditions related to hazardous materials handling. (Less than Significant)**

Construction activities for the project would require excavation up to a maximum depth of approximately 25 feet below grade. Excavation during construction or demolition activities for basements, parking structures, trenching for subsurface utilities, or removal of existing structures may intersect soil or groundwater contamination that is the result of past on- or off-site activities. This contact may expose construction workers, the public, future occupants, and the environment to hazardous materials during and after construction in those areas. As discussed above, the soil and groundwater in portions of the project site may have been impacted from the underground storage tank. The tank is abandoned in-place and its condition is unknown. There is no final closure documentation for the abandoned in place 1,000-gallon UST. In addition, soil samples collected

in the vicinity of the UST during closure in place activities were collected on the north and south ends of the UST at approximately five feet below ground surface (bgs). However, the depth of these samples may be inadequate to determine whether a release of petroleum hydrocarbons occurred at the site, as the bottom of the abandoned UST is likely at or below five feet bgs.

As described in Chapter 3, *Project Description*, the excavation, removal and replacement of the remaining UST would occur during site preparation. Its removal would be subject to health and safety controls prescribed by an oversight agency, which in this case is the Division of Waste Management in the Marin County Department of Public Works. Soil disturbance during construction could disperse existing petroleum-impacted soil and groundwater into the environment resulting in a significant impact. However, risk of impacts associated with the removal of the UST is low because the investigation, excavation, verification sampling, and disposal of the tank would occur under the auspices of Marin County. Marin County implements local requirements under the State UST regulations to ensure that leaking USTs are removed, properly disposed and the soil and/or groundwater is remediated to state standards. Considering that the removal and UST clean up process would be completed under regulatory oversight, the risk to the public and the environment is greatly reduced and therefore, this impact is less than significant.

**Mitigation:** None required

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### ***Accidental Release of Hazardous Substances***

**Impact HAZ-5: The Project would not cause a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Less than Significant)**

#### **Construction**

Construction activities would require the use of certain hazardous materials such as fuels, oils, solvents, and glues. Inadvertent release of large quantities of these materials into the environment could adversely impact soil, surface waters, or groundwater quality. The use of construction best management practices typically implemented as part of construction would minimize the potential negative effects to groundwater and soils. These could include the following:

- Follow manufacturer's recommendations on use, storage and disposal of chemical products used in construction;
- Avoid overtopping construction equipment fuel gas tanks;
- During routine maintenance of construction equipment, properly contain and remove grease and oils.
- Properly dispose of discarded containers of fuels and other chemicals.

## Operations

The project would increase the risk of spillage and/or accidental release of hazardous substances. Several plans are in place to address these issues. The California Office of Emergency Services administers the California Emergency Response Plan, which coordinates emergency services provided by federal, state, and local governmental agencies and private persons. Response to hazardous materials releases is one part of this plan. As required under the Hazardous Materials Release Response Inventory Law of 1985, the project sponsor must submit a hazardous material business plan. Compliance with applicable regulations would ensure protection against hazardous materials spillage and effective containment and cleanup facilities and procedures for accidental spills. Marin General Hospital would be required to comply with all federal and state laws regulating hazardous materials. Therefore, impacts associated with the accidental release of hazardous materials would be considered less than significant.

**Mitigation:** None required

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## Cumulative Impacts

**Impact HAZ-6: The Project, combined with past, present and other reasonably foreseeable development in the area, would not cause cumulative impacts with respect to hazardous materials. (Less than Significant)**

### *Geographic Setting*

Cumulative health and safety effects could occur if activities at the project site and other existing and proposed development, together, could increase risks in the neighborhood. However, most routine hazardous materials activities at the project site would be located indoors. Any indoor health or safety effects of routine hazardous materials use would be limited to the specific individuals using the materials and anyone in the immediate vicinity of the use. No interaction would occur between these routine activities and similar activities at different sites.

### *Impacts*

Cumulative health and safety impacts could occur if project-related outdoor or off-site hazards were to interact or combine with those of other existing and proposed development. This could occur through limited mechanisms: air emissions, transport of hazardous materials and waste to or from the project site, inadvertent release of hazardous materials to the sewer or non-hazardous waste landfill, and potential accidents that require hazardous materials emergency response capabilities. Air emissions are addressed in Section 4.B, *Air Quality*. The other mechanisms for cumulative off-site effects are discussed below.

Because off-site hazardous materials shipments by the project could involve the same roads used by new development in the area, the project, together with other new development, could contribute to cumulative increases in the amount of hazardous material transported to and from

the project site and the surrounding community. Hazardous materials are transported by common carriers, such as United Parcel Service and Federal Express, which would often ship small containers of hazardous materials for delivery along their routes whether or not the project is approved. Cumulative increases in the transportation of hazardous materials and wastes would cause a less-than-significant impact because the probability of such accidents is relatively low, and the use of legally required packaging minimizes the consequences of potential accidents.

The project would contribute to cumulative increases in the demand for hazardous materials emergency response capabilities in Marin County. Any growth involving increased hazardous materials use has the potential to increase the demand for emergency response capabilities in the area. However, first response capabilities and hazardous materials emergency response capabilities are currently available and sufficient for all cumulative projects. Furthermore, substantive hazardous materials accidents at the project site or vicinity are expected to be rare, and when such incidents would occur, only one such incident would be expected at any one time (except during major catastrophes, such as major earthquakes). Due to the controls in place at the site, no off-site effects would be expected. Furthermore, additional hazardous materials response services could be available through other jurisdictions, and private hazardous materials emergency response agencies could be used. Therefore, this cumulative impact would be less than significant.

**Mitigation:** None required

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## References – Hazards and Hazardous Materials

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## 4.H Hydrology and Water Quality

This section describes existing hydrologic conditions in the vicinity of the Marin General Hospital site and presents applicable regulations that pertain to hydrology, surface water, flooding, and water quality. This section also discusses the changes in hydrology and water quality that could result from construction and operation of the project and identifies potential impacts and appropriate mitigation measures when necessary.

### Setting

#### Regional Setting

The project site is located in unincorporated Marin County and lies entirely within the Corte Madera Creek watershed, which eventually drains into San Francisco Bay. The region's waterways, wetlands, and bays are the centerpiece of the United States' fourth largest metropolitan region. Because of its highly dynamic and complex environmental conditions, the basin supports an extraordinarily diverse and productive ecosystem. The basin's deepwater channels, tidelands, and marshlands provide a wide variety of habitats that have become increasingly vital to the survival of several plant and animal species.

The Corte Madera Creek watershed is characterized by a temperate climate regime, with mild temperatures and little variation in temperature extremes. The area has a typical Mediterranean climate with wet, cool winters, and warm, dry summers. According to the National Climatic Data Service, the annual mean daily temperature is 57° F. The hottest month is July with a mean daily maximum of 83 degrees Fahrenheit. The coldest month is January with a mean daily minimum temperature of 38 degrees Fahrenheit. Most of the rainfall (95 percent) occurs between October and April, with an average annual rainfall in San Rafael being 37.7 inches (Marin County, 2011).

#### Surface Water Hydrology

The Corte Madera Creek Watershed drains an area of approximately 28 square miles in Marin County, California. The surface waters within the watershed are primarily streams and creeks that have historically carried storm flows and post-storm flows from the upper watershed down in a generally southeasterly direction and discharges into San Francisco Bay about nine miles north of San Francisco (Marin County, 2011). Narrow valleys flanked by steep-sided parallel ridges, a terrain very typical of the California Coast Ranges geomorphic province, characterize the region. The most prominent feature in the terrain is 2,604-foot-high Mt. Tamalpais. A large portion of the region consists of hilly and mountainous terrain covered principally with trees and heavy underbrush although some areas are covered with grass and scattered trees. The small communities are located on narrow valley floors. In many of these valleys, planted trees and shrubs typical to many Northern California suburbs have replaced the native vegetation. In the downstream area, the terrain is a flat wide plain that merges with the tidal marshes and mudflats surrounding the San Pablo Bay. The two major upstream branches of the Corte Madera Creek are Fairfax Creek and San Anselmo Creek. After they join, the stream is known as San Anselmo Creek until it reaches Ross Creek, where it is renamed Corte Madera Creek. The tidal portion of

the creek begins at the Kentfield Rehabilitation Hospital Bridge over a concrete channel, several miles upstream from the Bay.

### **Surface Water Quality**

The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) is the public agency with primary responsibility for the protection of ground and surface water quality for all beneficial uses within Marin County, including the Corte Madera Creek watershed. According to the State Water Resources Control Board (SWRCB) Corte Madera Creek is impaired for Diazinon (SWRCB, 2007). The San Francisco Bay is impaired for 12 pollutants/stressors including but not limited to DDT (dichloro-diphenyl-trichloroethane), mercury, copper, and PCBs (polychlorinated biphenyls). Applicable water quality standards are identified within the *Water Quality Control Plan for the San Francisco Bay Region* (Basin Plan) (SFRWQCB, 2010). Water quality is assessed on a biannual basis and impairments are listed on the State of California List of Impaired Water Quality Segments (i.e., the 303(d) list). The *Regulatory Setting* below lists water quality objectives for pollutants appearing on the 303(d) list of impaired water bodies in the Corte Madera Creek watershed for surface waters within the vicinity of the proposed project. According to the 303(d) List, the San Francisco Bay and approximately 4.1 miles of Corte Madera Creek is impaired for water quality.

### **Stormwater**

The project site generally slopes from east to the west with elevations ranging from approximately 10 to 145 feet. Existing stormwater runoff from the northeast portion of the project area is captured in catch basins and swales that discharge into the Marin General Hospital storm drain system. Runoff from the southeast portion of the project area flows into a 12-inch storm drain located along the hospital's main entrance. The downhill side of the project site also contains stormwater infrastructure that collects and conveys stormwater. Additionally, stormwater runoff collected from the residential properties upstream of the site is discharged into the existing Marin General Hospital storm drain system. Stormwater collected in the project site flows into the Marin County public drainage system in Bon Air Road that eventually drains directly to Corte Madera Creek through a 60-inch diameter outfall located just southwest of the existing hospital's West Wing.

### **Sea Level Rise**

The project site is located at elevations above 10 feet above mean sea level. The rate of potential future sea level rise is difficult to project, and estimates vary substantially among the thousands of scientific research documents available on climate change and sea level rise. Based on the most widely accepted literature, the following examples provide a reasonable range of low, medium, and high estimates of future potential sea level rise that could likely occur.

1. **Low Rate of Increase:** The rate of future potential sea level rise could occur according to the low end of the range of sea level rise projections for the emissions scenarios presented in the Fourth Assessment Report by the Intergovernmental Panel on Climate Change.

Relative to sea levels in the year 2000, sea level is projected to rise three inches by 2050, and 12 inches by 2100 (IPCC, 2007).

2. **Medium Rate of Increase:** The rate of future potential sea level rise could occur according to estimates by the California Climate Change Center, which indicate that sea level is projected to rise by 23 to 55 inches by 2100 (CAT, 2010).
3. **High Rate of Increase:** Future potential sea level rise could occur at a higher rate, possibly resulting in an increase of 16 inches by 2050, and 55 inches (or higher) by 2100.

These values have been cited by both San Francisco Bay Conservation and Development Commission (BCDC) in its *Living with Rising Seas* report and the State of California in its *2009 Draft Climate Adaptation Strategy*. Both reports recommend using this upper end of each range as guidance to local and State agencies planning for sea level rise, and are consistent with recent predictions made by the Pacific Institute.

## Groundwater

For management purposes, the Department of Water Resources (DWR) has delineated groundwater basins within the project area on the basis of aerial extent of alluvial deposits, subsurface features such as faults, and selected groundwater-flow divides. The project site lies entirely within the Ross Valley Groundwater Basin as defined by DWR (DWR, 2004). The Ross Valley Groundwater Basin is approximately 2.8 square miles in extent and underlies alluvial deposits that have filled valleys and canyons. It is bounded to the east by San Francisco Bay and to the north by Corte Madera Creek. Unconsolidated Quaternary alluvium comprises the water-bearing sediments in the basin. (Additional deposits mapped within the basin include Holocene San Francisco Bay muds, which occur along the shoreline and inland as well as artificial fills.) Geotechnical borings completed on the western portion of the site where the Hospital Replacement Building, the Bon Air Road Parking Structure, and Ambulatory Services Building would be constructed indicate that groundwater levels range from 4.5 to 14 feet below ground surface (bgs) (Fugro, 2011). Geotechnical borings completed on the hillside area of the site, where the Hillside Parking Structure will be constructed, found no groundwater, likely due to the relatively shallow depth to bedrock at this portion of the project site (Fugro, 2012).

## Flood Hazards

### Flooding

The Corte Madera Creek Basin has flooded 14 times over the past 50 years. Floods causing major damage occurred in 1951, 1955, 1958, 1960, 1962, 1963, 1967, 1969, 1982–1983, and 1986. The low areas of the watershed in San Anselmo, Ross, Kentfield, and Larkspur are the most susceptible to flooding (Marin County, 2011). **Figure 4.H-1**, Area Flood Zones, shows flood zones for the 100-year flood mapped in the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM). CEQA addresses the 100-year flood zone only. No portion of the project site is mapped in the 100-year flood zone (FEMA, 2009).

### **Dam Failure**

Flooding can also occur from dam failure. This flooding is referred to as dam inundation. The State of California requires that dam inundation maps, which depict a best estimate of the extent of water flow in the event of dam failure, must be approved and maintained by the California Emergency Management Agency (CalEMA) (formerly the Office of Emergency Services). The dam inundation map is based on the unlikely scenario of a total, catastrophic earthen dam collapse, occurring in a very short time frame (seconds). The scenario is improbable but provides a worst case for planning purposes. Based on approved inundation maps or information obtained in preparation of a waiver, cities and counties with territory in the mapped inundation areas are required to adopt emergency procedures for the evacuation and control of populated areas below dams where death or personal injury could occur.

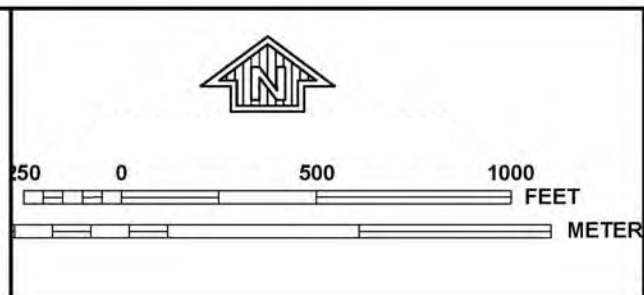
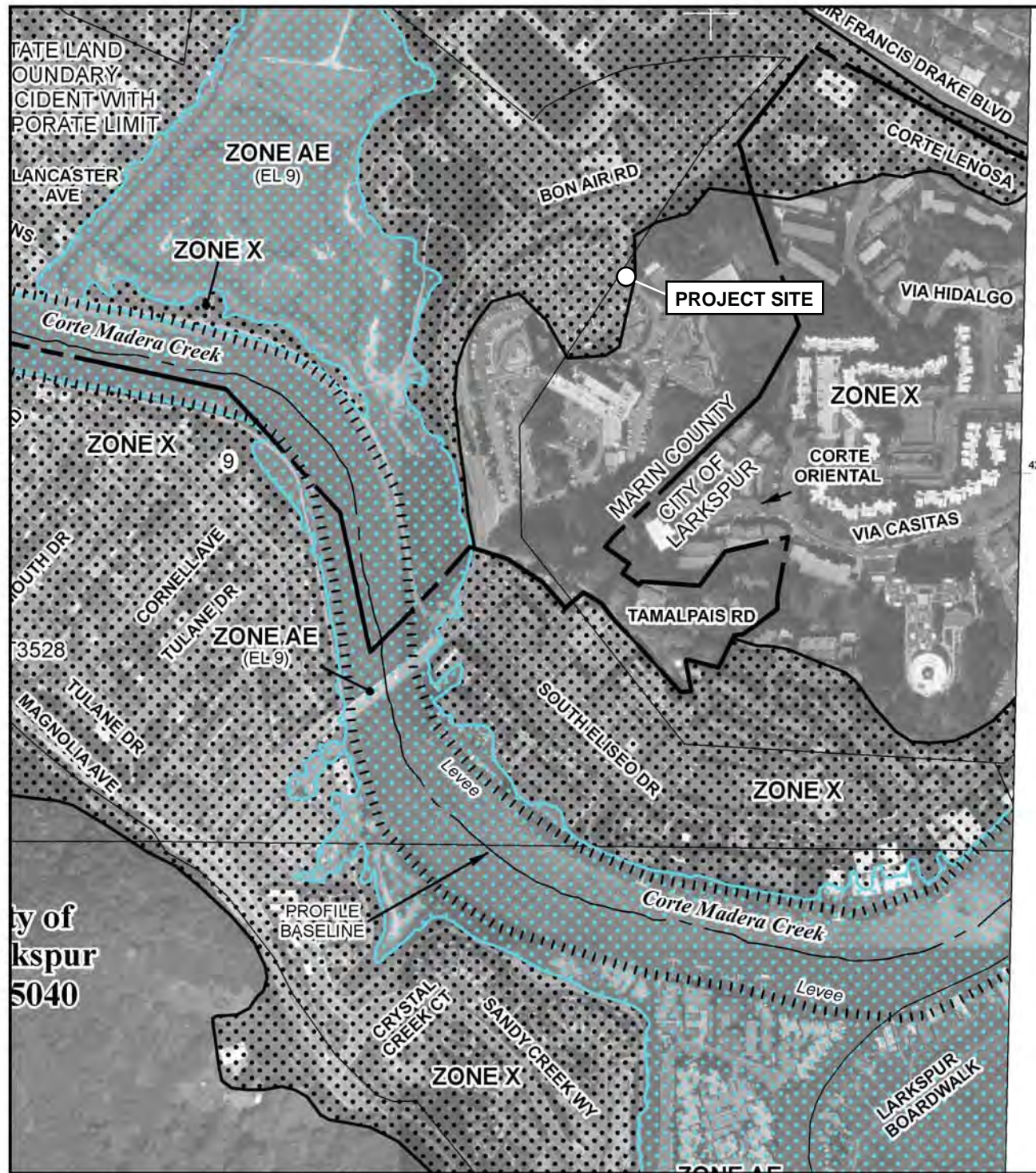
The project area is located downstream of the Phoenix Lake Dam, which is under the jurisdiction of the California Department of Water Resources, Division of Safety of Dams (DSOD). Dam failure inundation maps provided by Marin County (2012) and Stetson Engineers, Inc. (2011) indicate that portions of the communities of Ross, Kentfield, Larkspur, and Greenbrae, as well as other areas of unincorporated Marin County, may be inundated by water from Phoenix Lake if the dam should fail.<sup>1</sup> Failure of the Phoenix Lake Dam could result in dam inundation in the project area and near the project site. However, as shown in **Figure 4.H-2, Dam Failure Inundation Area**, except for a small section along the southwest border, the project site is not within the mapped dam failure area for this dam.

### **Tsunami/Seiches**

Tsunamis are waves caused by an underwater earthquake, landslide, or volcanic eruption. Seiches are waves in a semi-enclosed or enclosed body of water such as a lake, reservoir, or harbor. Inundation from tsunamis could affect low-lying areas in the vicinity of the project site including the west side of Bon Air Road and the area between Corte Madera Creek and South Eliseo Drive just south of the project site, as shown in **Figure 4.H-3, Tsunami Inundation Area**. These areas are mapped in the Tsunami Inundation Area as mapped by the California Emergency Management Agency in collaboration with the California Geologic Survey and University of Southern California (ABAG, 2011).

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<sup>1</sup> The County of Marin (2012) map is from CalEMA (formerly the Office of Emergency Services) and was first published in 1974 (the map is updated from time to time). Stetson Engineers, Inc. (2011), as part of an Integrated Regional Water Management (IRWM) grant application, produced a slightly modified map based upon more recent, higher resolution topography data for the Corte Madera Creek floodplain.



NFIP PANEL 0458D

**FIRM**  
FLOOD INSURANCE RATE MAP

MARIN COUNTY,  
CALIFORNIA  
AND INCORPORATED AREAS

PANEL 458 OF 531  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LARKSPUR, CITY OF	065040	0458	D
MARIN COUNTY	060173	0458	D
ROSS, TOWN OF	060179	0458	D
SAN RAFAEL, CITY OF	065058	0458	D

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER  
06041C0458D

EFFECTIVE DATE  
MAY 4, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)

## LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

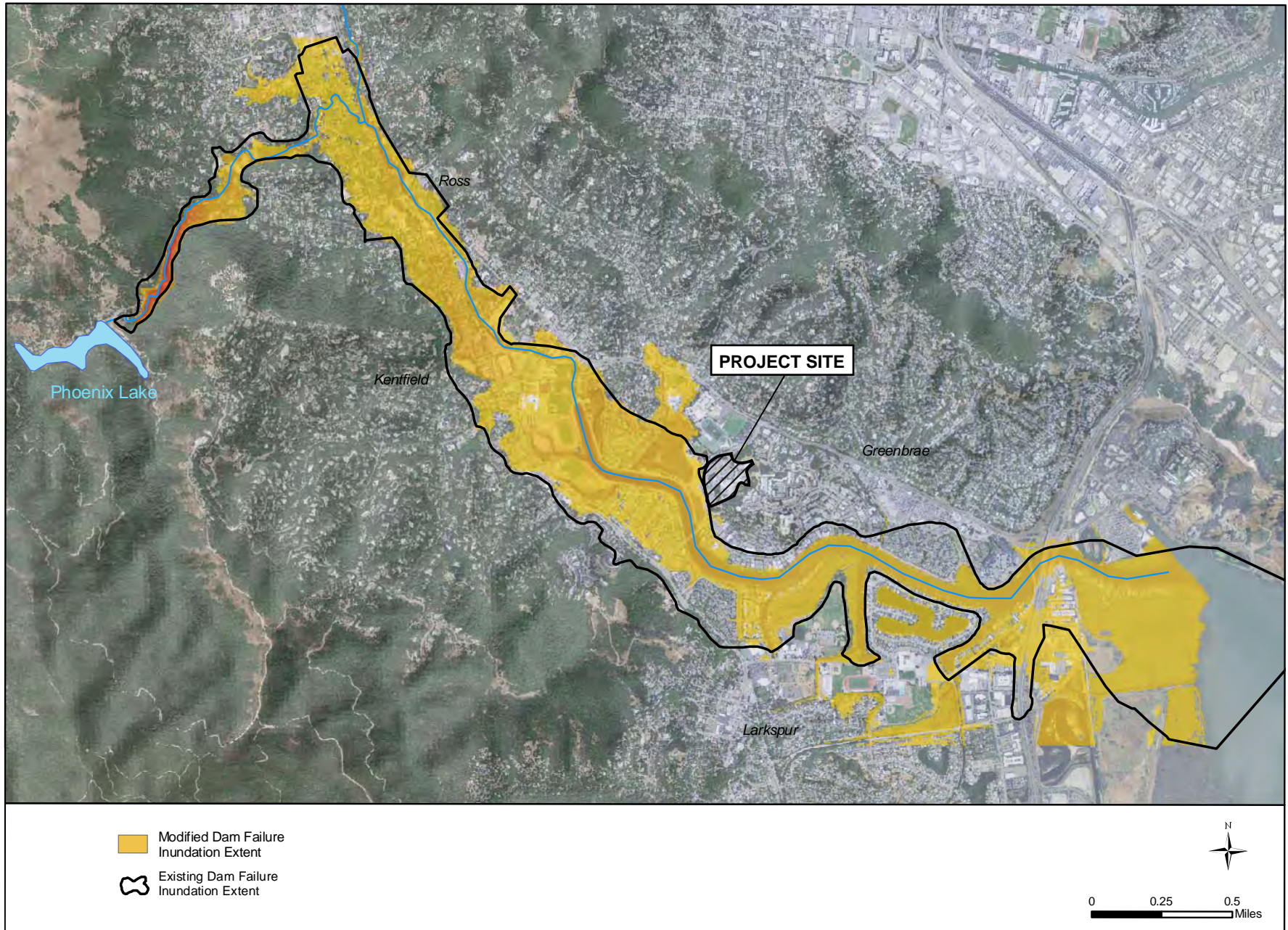
OTHER FLOOD AREAS

**ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

**ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.

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SOURCE: Stetson Engineers, Inc. (2011) (modified inundation extent);  
County of Marin (2012) (existing inundation extent)

Marin General Hospital . 210606  
**Figure 4.H -2**  
Dam Failure Inundation Area



### Tsunami Inundation Emergency Planning Map for the San Francisco Bay Region

 Tsunami Inundation Area

 Urbanized Area

Shaded to show topographical relief



Scale: 1 inch = 0.18 miles

This tsunami inundation planning map for the San Francisco Bay Region is based on modeling a number of potential earthquake sources and hypothetical extreme undersea, near-shore landslide sources.

This data was produced by CalEMA and is intended for local jurisdictional, coastal planning uses only. Data for north coastal Sonoma County is not yet available. For more information visit <http://quake.abag.ca.gov/tsunami>.

Source: California Emergency Management Agency, Coastal Region (2009)

This map is available at <http://quake.abag.ca.gov>

Disclaimer: The California Emergency Management Agency (CalEMA), the University of Southern California (USC), and the California Geological Survey (CGS) make no representation or warranties regarding the accuracy of this inundation map nor the data from which the map was derived. Neither the State of California nor USC shall be liable under any circumstances for any direct, indirect, special, incidental or consequential damages with respect to any claim by any user or any third party on account of or arising from the use of this map.

ABAG  Geographic Information Systems



## Regulatory Setting

### Federal

#### ***Federal and State Water Quality Policies***

The statutes that govern the activities under the project that may affect water quality are the federal Clean Water Act (CWA) (33 U.S.C. §1251) and the Porter-Cologne Water Quality Control Act (Porter-Cologne) (Water Code, §13000 et seq.). These acts provide the basis for water quality regulation in the project area.

The California Legislature has assigned the primary responsibility to administer and enforce statutes for the protection and enhancement of water quality to the SWRCB and its nine Regional Water Quality Control Boards (RWQCBs). The SWRCB provides state-level coordination of the water quality control program by establishing statewide policies and plans for the implementation of state and federal regulations. The nine RWQCBs throughout California adopt and implement water quality control plans that recognize the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, and water quality problems. The RWQCB adopts and implements a Water Quality Control Plan that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan (California Water Code, §13240-13247). The project area is located within the jurisdiction of the SFBRWQCB.

#### **Beneficial Use and Water Quality Objectives (CWA Section 303)**

The SFBRWQCB is responsible for the protection of the beneficial uses of waters within the coastal watersheds of Marin County. The SFBRWQCB uses its planning, permitting, and enforcement authority to meet this responsibility and has adopted the Basin Plan to implement plans, policies, and provisions for water quality management.

In accordance with state policy for water quality control, the SFBRWQCB employs a range of beneficial use definitions for surface waters, groundwater basins, marshes, and mudflats that serve as the basis for establishing water quality objectives and discharge conditions and prohibitions. The Basin Plan has identified existing and potential beneficial uses supported by the key surface water drainages throughout its jurisdiction. The existing and beneficial uses designated in the Basin Plan

for the surface water bodies in or adjacent to the project area are identified in **Table 4.H-1**. The existing uses of Ross Valley Groundwater Basin include municipal and domestic supply (MUN) and agricultural supply (AGR). Potential beneficial uses include industrial service supply (IND), and industrial process supply (PROC) (SFRWQCB, 2010).

The objective of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Under CWA Section 303(d), the State of California is required to develop a list of impaired water bodies that do not meet water quality standards and objectives.

**TABLE 4.H-1  
BENEFICIAL USES OF WATERS IN THE PROJECT AREA**

<b>Beneficial Use</b>	<b>Corte Madera Creek</b>	<b>San Francisco Bay</b>
Cold Freshwater Habitat (COLD)	E	
Fish Migration (MIG)	P	E
Preservation of Rare and Endangered Species (RARE)	E	E
Fish Spawning (SPNW)	P	E
Warm Freshwater Habitat (WARM)	E	
Wildlife Habitat (WILD)	E	E
Water Contact Recreation (REC 1)	P	E
Non-Contact Water Recreation (REC 2)	E	E
Industrial Service Supply (IND)		E
Industrial Process Supply (PROD)		E
Ocean, Commercial, and Sport Fishing (COMM)		E
Shellfish Harvesting (SHELL)		E
Estuarine Habitat (ETS)		E
Navigation (NAV)		E

E = Existing beneficial use  
P = Potential beneficial use

SOURCE: SFRWQCB, 2010

**Water Quality Certification (CWA Section 401)**

Section 401 of the CWA requires that an applicant for any federal permit (e.g., a USACE Section 404 permit) obtain certification from the state that the discharge would comply with other provisions of the CWA and with state water quality standards. For example, an applicant for a permit under Section 404 of the CWA must also obtain water quality certification per Section 401 of the CWA. For the project area, the SFBRWQCB must provide the water quality certification required under Section 401 of the CWA. Water quality certification under Section 401 of the CWA, and the associated requirements and terms, is required in order to minimize or eliminate the potential water quality impacts.

**NPDES Program (CWA Section 402)**

The CWA was amended in 1972 to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The 1987 amendments to the CWA added Section 402(p), which establishes a framework for regulating municipal and industrial *storm water* discharges under the NPDES Program. In November 1990, the U.S. Environmental Protection Agency (USEPA) published final regulations that also establish storm water permit application requirements for discharges of storm water to waters of the United States from construction projects that encompass five or more acres of soil disturbance. Regulations (Phase II Rule) that became final on December 8, 1999, expanded the existing NPDES Program to address storm water discharges from construction sites that disturb land equal to or greater than 1.0 acre and less than 5.0 acres (small construction activity). The regulations also require that

storm water discharges from small municipal separate storm sewer systems (MS4s) be regulated by an NPDES permit.

**Construction General Permit (SWRCB Order 2009-09-DWQ).** For storm water discharges associated with construction activity in the state of California, the SWRCB has adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (SWRCB Order 2009-0009-DWQ; Construction General Permit) in order to avoid and minimize water quality impacts attributable to such activities.<sup>2</sup> The Construction General Permit applies to all projects where construction activity disturbs 1.0 or more acre of soil. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which would include and specify best management practices (BMPs) designed to prevent pollutants from contacting storm water and keep all products of erosion from moving off-site into receiving waters. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. In addition, the SWPPP must contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

For the project area, the Construction General Permit is implemented and enforced by the SFBRWQCB. Dischargers are required to submit a Notice of Intent (NOI) in order to, at the discretion of the SWRCB and the SFBRWQCB, obtain coverage under the Construction General Permit. Dischargers are responsible for notifying the relevant RWQCB of violations or incidents of non-compliance, as well as for submitting annual reports identifying deficiencies of the BMPs and how the deficiencies were corrected.

The Construction General Permit requires a risk-based permitting approach, dependent upon the likely level of risk imparted by a project. To ensure compliance and protection of water quality, the permit implements monitoring, reporting, and training requirements for management of potential storm water pollutants. The permit contains several compliance items, including: (1) mandatory BMPs to reduce erosion and sedimentation, which may include incorporation of vegetated swales, setbacks and buffers, rooftop and impervious surface disconnection, bioretention cells, rain gardens, rain cisterns, implementation of pollution/sediment/spill control plans, training, and other structural and non structural actions; (2) sampling and monitoring for non-visible pollutants; (3) effluent monitoring and annual compliance reports; (4) development and adherence to a Rain Event Action Plan; (5) requirements for the post-construction period; (6) numeric action levels and effluent limits for pH and turbidity; (7) monitoring of soil characteristics on site; and (8) mandatory training under a specific curriculum.

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<sup>2</sup> SWRCB Order 2009-0009-DWQ (as amended by SWRCB Order 2010-0014-DWQ), NPDES Permit No. CAS000002, *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities*.

The project would disturb more than one acre of soil and would thus be subject to the provisions and requirements of the General Construction Permit. Marin General Hospital would submit an NOI to the SWRCB and obtain coverage under, and comply with, the General Construction Permit. As summarized previously, the preparation of a SWPPP would be required in accordance with the General Construction Permit. The SWPPP would include, but not be limited to, relevant measures, conditions, and obligations that would reduce or eliminate the impacts of construction activities on storm water and receiving water quality and quantity.

**MS4 General Permit (SWRCB Order 2003-0005-DWQ).** In 2003, the SWRCB required small municipal separate storm sewer systems (MS4s), including those in Marin County, to be regulated under a statewide Phase II NPDES permit. The Phase II NPDES permit regulates the discharge of stormwater and includes the unincorporated areas of Marin County (including the project site). The Marin County Stormwater Pollution Prevention Program's (MCSTOPPP) Action Plan 2010 functions as MCSTOPPP's required Storm Water Management Plan (SWMP) under the Phase II permit (see further discussion below, *Marin County Stormwater Pollution Prevention Program*). A revised Phase II NPDES permit is scheduled for adoption in 2012 and will go into effect in 2013.

### ***Porter-Cologne Water Quality Control Act***

The Porter-Cologne Act (codified in the California Water Code, Section 13000 *et seq.*) is the basic water quality control law for California. As mentioned above, it is implemented by the SWRCB and the nine RWQCBs. The SWRCB establishes statewide policy for water quality control and provides oversight of the RWQCBs' operations. In addition to other regulatory responsibilities, the RWQCBs have the authority to conduct, order, and oversee investigation and cleanup where discharges or threatened discharges of waste to waters of the state<sup>3</sup> could cause pollution or nuisance, including impacts to public health and the environment. Evident from the preceding regulatory discussion, the Porter-Cologne Act and the CWA overlap in many respects, as the entities established by the Porter-Cologne Act are in many cases enforcing and implementing federal laws and policies. However, there are some regulatory tools that are unique to the Porter-Cologne Act.

**Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality (SWRCB Order 2003-0003-DWQ).** The SWRCB has adopted a General Waste Discharge Requirement for specific types of low-threat discharges to the land surface (Low-Threat Discharge General Permit), including small dewatering projects related to activities such as excavation during construction. This general order describes a range of protective measures that could be applied to a broad category of activities. If discharging to the land surface is required or desired for any construction activity, the applicant would apply for and obtain coverage under this general order.

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<sup>3</sup> "Waters of the state" are defined in the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." (Water Code, § 13050 (e).)

### **Marin County Stormwater Pollution Prevention Program**

The Marin County Stormwater Pollution Prevention Program (MCSTOPPP) was formed in 1993 as a joint effort of Marin's cities, towns, and unincorporated county areas. Their goal is to:

- prevent stormwater pollution;
- protect and enhance water quality in creeks and wetlands;
- preserve beneficial uses of local waterways;
- comply with state and federal regulations.

MCSTOPPP refers to the Countywide Program and Local Programs. Countywide Program activities are conducted for the benefit of all of MCSTOPPP's member agencies and the Countywide Program assists the member agencies with Phase II NPDES stormwater permit compliance. In addition, each MCSTOPPP member agency, including the County of Marin, pursues local stormwater pollution prevention activities described in Action Plan 2010 in order to comply with the Phase II NPDES permit.

The Land Development Division of the Marin County DPW is responsible for directing compliance with Phase II NPDES permit construction and post-construction requirements for projects in unincorporated Marin, and does so through the review processes for building permits, encroachment permits, and grading or creek permits. MCSTOPPP is not the lead for projects where permits are issued in unincorporated Marin.

The Phase II NPDES permit includes general post-construction stormwater treatment and control requirements under Section D.2.e. The Phase II NPDES permit also includes more prescriptive post-construction requirements in Attachment 4 Design Standards of the General Permit. The County obtained authority to require projects to comply with the Phase II NPDES construction and post-construction requirement when it adopted ordinance changes, which are codified in Sections 24.04.627 and 23.18 of the Marin County Municipal Code. The Code outlines the requirements for stormwater pollution prevention and authorizes the County to require projects to comply with Attachment 4 Design Standards of the Phase II NPDES permit.

Projects subject to Attachment 4 Design Standards of the current Phase II NPDES Stormwater Permit (discussed above) include all discretionary development and redevelopment projects that fall into one of the following categories:

- Single-Family Hillside Residences
- 100,000 Square Foot Commercial Developments
- Automotive Repair Shops
- Retail Gasoline Outlets
- Restaurants
- Home Subdivisions with 10 or more housing units
- Parking lots 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff.

“Redevelopment” is defined as the creation or addition of at least 5,000 square feet of impervious area. Redevelopment includes, but is not limited to (1) the expansion of a building footprint or addition of a structure; (2) structural development including an increase in gross floor area and/or exterior construction or remodeling; and (3) land disturbing activities related with structural or impervious surfaces. Where redevelopment results in an increase of less than 50 percent of the impervious surfaces of a previously existing development, and the existing development is not subject to these Design Standards.

### ***The Marin Countywide Plan Update (2007)***

The Marin Countywide Plan is the County’s long range guide for use of land and protection of natural resources. The Plan sets forth policies and programs to be used by the public, planning staff, and decision makers when reviewing and analyzing proposed developments. Goals and policies pertaining to hydrology and water quality that are relevant to the project include the following:

***Goal EH-3. Safety from Flooding and Inundation.*** Protect people and property from risks associated with flooding and inundation. (Also see the Public Facilities and Water Resources sections.)

*Policy EH-3.1 Follow a Regulatory Approach.* Utilize regulations instead of flood control projects whenever possible to minimize losses in areas where flooding is inevitable.

*Policy EH-3.2 Retain Natural Conditions.* Ensure that flow capacity is maintained in stream channels and floodplains, and achieve flood control using biotechnical techniques instead of storm drains, culverts, riprap, and other forms of structural stabilization.

*Policy EH-3.3 Monitor Environmental Change.* Consider cumulative impacts to hydrological conditions, including alterations in drainage patterns and the potential for a rise in sea level, when processing development applications in watersheds with flooding or inundation potential.

***Goal WR-1. Healthy Watersheds.*** Achieve and maintain proper ecological functioning of watersheds, including sediment transport, groundwater recharge and filtration, biological processes, and natural flood mitigation, while ensuring high-quality water.

*Policy WR-1.1 Protect Watersheds and Aquifer Recharge.* Give high priority to the protection of watersheds, aquifer-recharge areas, and natural drainage systems in any consideration of land use.

*Policy WR-1.2 Restore and Enhance Watersheds.* Support watershed restoration efforts, coordinate County watershed activities with efforts by other groups, and simplify permit acquisition for watershed restoration and enhancement projects.

***Goal WR-2. Clean Water.*** Ensure that surface and groundwater supplies are sufficiently unpolluted to support local natural communities, the health of the human population, and the viability of agriculture and other commercial uses.

*Policy WR-2.1 Reduce Toxic Runoff.* Reduce the volume of urban runoff from pollutants — such as pesticides from homes, golf courses, cleaning agents, swimming pool chemicals, and road oil — and of excess sediments and nutrients from agricultural operations.

*Policy WR-2.2 Reduce Pathogen, Sediment, and Nutrient Levels.* Support programs to maintain pathogen and nutrient levels at or below target levels set by the Regional Water Quality Control Board, including the efforts of ranchers, dairies, agencies, and community groups to address pathogen, sediment, and nutrient management in urban and rural watersheds.

*Policy WR-2.3 Avoid Erosion and Sedimentation.* Minimize soil erosion and discharge of sediments into surface runoff, drainage systems, and water bodies. Continue to require grading plans that address avoidance of soil erosion and on-site sediment retention. Require developments to include on-site facilities for the retention of sediments, and, if necessary, require continued monitoring and maintenance of these facilities upon project completion.

*Policy WR-2.4 Design County Facilities to Minimize Pollutant Input.* Design, construct, and maintain County buildings, landscaped areas, roads, bridges, drainages, and other facilities to minimize the volume of toxics, nutrients, sediment, and other pollutants in stormwater flows, and continue to improve road maintenance methods to reduce erosion and sedimentation potential.

*Policy WR-2.5 Take Part in Water Quality Education.* Continue to support local stormwater and community watershed group efforts to inform the public about practices and programs to minimize water pollution.

## Impacts and Mitigation Measures

### Significance Criteria

Based on criteria from Appendix G of the State CEQA *Guidelines*, the project would have a significant impact on hydrology and water quality if it would:

- a) Violate any water quality standards or waste discharge requirements;
- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;



- e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- f) Otherwise substantially degrade water quality;
- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- j) Inundation by seiche, tsunami, or mudflow.

Based on Appendix N of the Marin County Environmental Review Guidelines, the project may also have a significant impact related to hydrology and water quality if the project would:

- Propose facilities that would be located in flood-prone area (consistent with CEQA Appendix G Criteria g, h, i, and j);
- Propose facilities that would increase off-site flood hazard, erosion, or sedimentation (consistent with Appendix G Criteria a, c, d, e, and f);
- Propose uses or facilities that would substantially degrade or deplete groundwater resources (consistent with CEQA Appendix G Criterion b);
- Propose facilities that would interfere substantially with groundwater recharge (consistent with CEQA Appendix G Criterion b); or
- Propose uses or facilities that would substantially degrade surface or groundwater quality (consistent with CEQA Appendix G Criteria a and f).

## Impacts and Mitigation Measures

### *Water Quality Standards*

**Impact HYD-1: The Project would not involve activities that would violate water quality standards or waste discharge requirements; result in substantial erosion or siltation; create or constitute substantial polluted runoff; or otherwise substantially degrade water quality. (Less than Significant)**

#### **Construction**

Construction of the project would involve ground disturbing and earthmoving activities such as vegetation removal, excavation, trenching, grading, soil stockpiling, and backfilling. Construction activities would occur in proximity to Corte Madera Creek (i.e., within approximately 350 feet of the creek) and could therefore potentially impact water quality in Corte Madera Creek and the San Francisco Bay, which is directly downstream.

During construction, exposed soil from stockpiles and excavated areas could be transported by wind or water and, if not properly managed, could accumulate in storm drains and receiving water bodies, potentially resulting in increased sediment load in receiving water bodies and adverse impacts on water quality. Stormwater runoff from the project site into nearby waterways could degrade water quality for beneficial uses by increasing channel sedimentation and suspended sediment levels (turbidity). In addition, construction activities would also utilize hazardous materials, such as petroleum-based oils, adhesives, solvents, paints, and drilling and petroleum lubricants that, if not managed appropriately, could become mobilized by runoff and contribute to non-point source pollution (see also Section 4.G, *Hazards and Hazardous Materials*, for a discussion of impacts regarding hazardous materials and contaminated soil and groundwater). Temporary storage of construction materials and equipment in work areas and staging areas also creates the potential for release of hazardous materials or sediment to nearby water bodies. Overall, these activities could result in erosion and sedimentation or a hazardous materials release during construction which would impact downstream water quality, resulting in a potentially significant impact.

The project would not discharge into receiving water bodies that are 303(d)-listed as impaired by sediment/siltation or turbidity. The project proposes to discharge to a waterbody with a designated beneficial use of spawning, reproduction and development, migration, or cold freshwater habitat. Therefore, the receiving water risk factor is moderate.

As discussed in the *Regulatory Setting*, construction projects in Marin County involving one or more acres of land disturbance would be required to obtain coverage under the NPDES General Construction Permit. In accordance with these requirements, the Marin Healthcare District or its contractor(s) would submit a NOI to the SWRCB's Division of Water Quality, develop a SWPPP, and implement site-specific BMPs in accordance with the SWPPP to control and reduce discharges of sediments and pollutants associated with construction and stormwater runoff into downstream storm drains and water bodies, including Corte Madera Creek and the San Francisco Bay. The existing water quality protection measures required of the applicant (e.g., implementation of BMPs, performance monitoring, and annual reporting to the SFBRWQCB) are sufficient to address potential construction-related water quality impacts that may result from project implementation. Erosion and sediment control measures designed for both during and after construction are integrated into the project grading and drainage plans and include inlet and biobag filter protection at all inlets and catch basins, fiber roll sediment barriers at the downhill side of all disturbed areas, and stabilized construction exits. In addition, compliant with the RWQCB and Marin County Standards, grading operations would occur between April 15 and October 15 and in accordance with an approved SWPPP for the project.

The peak stormwater discharge runoff rate after development of the project would be approximately 9.3 percent less than existing conditions; the total volume of stormwater discharge runoff would not change substantially, with an approximately 0.2 percent reduction from existing conditions.

No potential construction-related water quality impacts would necessitate implementing measures beyond those already required by the SWRCB and the SFRWQCB. Therefore, the potential construction-related water quality impacts would be less than significant.

### **Operation**

The project is replacing and creating 249,024 square feet of impervious surface, which is equivalent to approximately 47 percent of the existing impervious surface on the project site. The additional impervious surfaces could result in increased sedimentation and erosion during project operation. Additionally, project operation would require the storage and regular use of hazardous materials required for medical facility operations. If not properly managed, the hazardous materials could leak or spill and contaminate stormwater runoff, resulting in degradation of water quality.

The County MCSTOPPP (within the framework of the Phase II NPDES General Permit) specifically addresses potential stormwater impacts of, among other things, development and redevelopment projects. Potential water quality impacts addressed by the County MCSTOPPP include both construction-related impacts (i.e., short-term impacts) and the equivalent of operational impacts (i.e., long-term, chronic processes and impacts). The potential impacts of the project due to increased stormwater runoff that could convey pollutants to the storm drain system and Corte Madera Creek and that could cause erosion and sedimentation during operation would be adequately addressed by the measures and actions required by the Phase II NPDES permit MCSTOPPP. For example, the Phase II NPDES permit specifies a number of requirements for inclusion in a storm water management plan (i.e., in the MCSTOPPP Action Plan 2010), including monitoring and biological assessments. Further, the MCSTOPPP was required to set out a list of Action Plan 2010 describes Best Management Practices (BMPs) as well as measurable goals for the development and implementation of each BMP. The performance standards contained within the MCSTOPPP Action Plan 2010 serve as measurable goals and define compliance per the Phase II General Permit requirements.

In addition, the County of Marin requires project subject to Attachment 4 requirements of the Phase II NPDES permit to follow MCSTOPPP's Guidance for Applicants: Stormwater Quality Requirements for Development Projects in Marin County. The Guidance for Applicants describes the required Low Impact Development (LID) approach to compliance with Attachment 4. Potential erosion and sedimentation impacts of the project would be addressed through the Low Impact Design (LID) measures required by the MCSTOPPP. The following LID measures are proposed as part of the project: including flow-through planter boxes, biofiltration swales and infiltration basins, pervious (porous) pavement (e.g., for parking areas), and planter boxes or landscaped infiltration swales to capture roof runoff are proposed as part of the project. Additionally, potential impacts resulting from hazardous materials contamination during operations would be made less than significant through compliance with stringent regulations for the use and storage of these chemicals and is discussed in greater detail in Section 4.G, *Hazards and Hazardous Materials*. The existing water quality protection measures required of the applicant (e.g., implementing the relevant measures from the Phase II General Permit and the MCSTOPPP) would be sufficient to address potential operation-related (i.e., long-term) water quality impacts that may result from project implementation. No potential operation-related water quality impacts would necessitate

implementing measures beyond those already required by the SWRCB and the MCSTOPPP. Therefore, the potential operation-related water quality impacts would be less than significant.

**Mitigation:** None required

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## **Groundwater**

### **Impact HYD-2: The Project would not result in impacts due to the depletion of groundwater supplies or substantially interference with groundwater recharge. (Less than Significant)**

The project site is located over the Ross Valley groundwater basin. Beneficial uses within this groundwater basin include municipal and domestic supply as well as agricultural supply. If activities required for construction or operation of the project resulted in depletion of existing groundwater resources or prevented groundwater recharge such that the aquifer volume or groundwater level decreases, there would be a significant impact.

#### **Construction**

If ground-disturbing construction activities, such as grading, excavation, and trenching were to occur at a depth equal or greater than the groundwater table, construction dewatering would be required. Any such discharge has the potential, depending on the specific volume and rate, to induce erosion and cause sediment to be delivered to, or entrained and mobilized within, adjacent surface waters and stream channels. Subsequently, the water quality of these features could be degraded. Further, dewatering would result in the temporary depletion of groundwater resources. As discussed above, geotechnical borings completed onsite indicate that groundwater levels range from 4.5 to 14 feet below ground surface in the western portion of the site (Fugro, 2011), and no groundwater was encountered during field excavations in the hillside area of the site (Fugro, 2012). As a result, groundwater is likely to be encountered in some instances during construction of the Hospital Replacement Building, the Bon Air Road Parking Structure, and the Ambulatory Services Building, and dewatering would be required. However, all dewatering activities (i.e., when necessary) would be temporary in nature, confined to a small area, and would discharge directly to the land surface in the vicinity of the construction site. As a result, project construction would not result in a substantial or permanent depletion of groundwater resources. Further, construction dewatering activities would be required to comply with the Low-Threat Discharge General Permit, which sets forth practices and measures adequate for ensuring dewatering discharges to the land surface do not negatively impact the quality of nearby receiving waters. Therefore, potential construction impacts related to groundwater resources would be less than significant.

#### **Operation**

Operation of the Marin General Hospital would require water for hospital operations and landscape irrigation around the property. Water would be supplied to the project by Marin Municipal Water District (MMWD). MMWD acquires their water supplies from local watershed

in Marin and Sonoma Counties (Marin General Hospital, 2010). MMWD does not use local groundwater supplies to provide water services. Due to the relatively shallow distance to groundwater in areas of the site, as described above, the Hospital Replacement Building would have a permanent dewatering system, similar to the system that exists under the existing hospital. The system would involve a subsurface gravity system sized for the anticipated flow of underground water and would not noticeably lower or deplete groundwater resources because the drainage points will be located at the existing groundwater level. The scale of the project is not one that would vastly increase the impervious surface area on the site, so it would not prevent groundwater recharge. Also, the system would flow through footing drains and into the existing storm drainage system that drains the property; all dewatering activities would be required to comply with the Low-Threat Discharge General Permit discussed above to ensure no adverse effect to receiving waters.

Given that the project would be adequately served by water supplies already designated for use by MMWD and would not require additional water supply entitlements, and given that operational dewatering would not substantially or permanently deplete groundwater resources, operational impacts to groundwater supplies would be less than significant.

**Mitigation:** None required

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### ***Drainage Patterns***

**Impact HYD-3: The Project would not alter existing drainage patterns, which could result in increased pollutant loading in stormwater runoff, leading to violation of water quality standards of receiving waters or increase the volume of stormwater runoff, leading to flooding in downstream areas. (Less than Significant)**

Currently, stormwater flows to the southeast over the project site. Construction of the project would involve grading, excavation and the installation of surface improvements that would alter the natural flow of runoff in the area. As stated in Impact HYD-1, project implementation could also increase the amount of impervious surfaces onsite resulting in increased erosion and sedimentation as well as increased stormwater volume flows.

The project would replace and create 249,024 square feet of impervious surface. However, this would only result in a total increase of 9,900 square feet of impervious surface. This increase represents approximately two percent of the total project site area. However, a site-specific Storm Drainage Report concluded that peak site runoff volumes would decrease from 266,340 cubic feet per second (cfs) to 265,832 cfs, as a result of implementation of LID design strategies as required by the Marin County NPDES permit and MCSTOPPP (KFPP, 2011). Peak runoff rates (for a 100-year storm event) would decrease from 53.80 (cfs) to 48.77 cfs. As discussed in the *Regulatory Setting* above, the MCSTOPPP requires that LID design or implement strategies for projects on previously developed sites when “5,000 square feet or more of impervious area is created or replaced.” If the impervious area being created or replaced is less than 50 percent of

the existing total site area, “the requirements apply only to the addition.” The Marin Healthcare District campus has an existing 530,678 square feet of site area and is creating and/or replacing a total of 249,024 square feet of impervious surface. Since the project is creating and/or replacing 47 percent of the existing site area, stormwater treatment is provided for only the new and/or replaced impervious surface on the site. In addition to reducing the discharge of stormwater pollutants to the maximum extent practicable, LID design aims to mimic the post-project site hydrology to the pre-project site hydrology. The MCSTOPPP requires developments to infiltrate runoff or provide facilities to treat stormwater runoff prior to its release from the site in addition to controlling the peak runoff rate and flow volume.

The project’s site design would minimize degradation of stormwater quality and increases in stormwater flow volumes by preserving the natural drainage features to the maximum extent practicable, while minimizing additional impervious areas. This would be achieved through several means. There are sufficient slopes from the areas to be re-graded to their ultimate stormwater collection points at the lowest portions of the site, near Bon Air Road. Additionally, the lowest elevation of the proposed sunken garden near the Bon Air Road Parking Structure (see Figure 3-5 in Chapter 3, Project Description) will be at approximately 15 feet above mean sea level. Due to the low elevation of the garden, relative to the existing grade adjacent to the Hospital Replacement Building, all the storm water would be pumped from the low point in the garden into the proposed storm drain system in the adjacent parking lot east of the hospital. The pump will direct the storm drainage through an underground force main to an underground manhole structure located in the adjacent parking lot. From this manhole, storm water will flow by gravity to the existing public storm drainage system in Bon Air Road.

The project would preserve most of existing sidewalks, roadways, and parking lots, and new ones would be graded to work with the existing site elevations as much as possible. The introduction of stormwater quality treatment features would improve the quality of the stormwater runoff from the site and maintain the overall existing on-site drainage system patterns. Additionally, the project would install 7,400 square feet of pervious pavement in parking areas adjacent to the new Hospital Replacement Building. A 6,600-square foot green roof would be used in the loading dock area. For landscaping at Marin General Hospital, the LID design approach includes bioretention facilities, flow-through planters, and other facilities using filtration through soil to the maximum extent practicable. Therefore, the existing measures required of the applicant (in conjunction with proposed site design features) are sufficient to reduce potential impacts to the drainage patterns that could result in increased erosion or flooding to a less-than-significant level.

**Mitigation:** None required

## ***Flooding***

### **Impact HYD-4: The Project would not result in significant impacts by placing structures within a 100-year flood hazard zone. (Less than Significant)**

The project site is located entirely outside of the 100-year flood zone, as shown in Figure 4.H-1. Given that all of the Marin General Hospital facilities would be constructed outside of the 100-year flood hazard zone, it would not expose people or structures to risks of loss of property and life from flooding nor would it impede or substantially redirect flood flow. Therefore impacts to floodplains would be less than significant.

**Mitigation:** None required

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### **Impact HYD-5: The Project would not expose people or structures to a significant risk of loss, injury or death resulting from flooding caused by failure of a levee or dam. (Less than Significant)**

The project is located approximately 3.5 miles southeast of the Phoenix Lake Dam. The project site is downstream from the dam, and should a dam failure occur, water would flow east toward and then along Corte Madera Creek and eventually to the San Francisco Bay. As previously shown in Figure 4.H-2, Dam Failure Inundation Area, this could result in dam inundation near the project area. However, none of the project site is within the mapped dam inundation area. Further, the DSOD requires all dam operators to comply with annual inspections and seismic standards that minimize the potential for a catastrophic failure of the dam. Therefore, risk of inundation as a result of dam failure is less than significant.

**Mitigation:** None required

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### **Impact HYD-6: The Project would not expose people or structures to a significant risk of loss, injury or death resulting from flooding caused by seiche, tsunami or mudflow. (Less than Significant)**

The project area could be susceptible to inundation in the event of a tsunami (ABAG, 2011). Inundation during a tsunami could result in flooding of existing structures and potential risks to human health if those structures are occupied or the inundation area is heavily populated. However, the depths of inundation would vary and not all the areas would necessarily be inundated under a single event (ABAG, 2011). The modeled sources of tsunamis that are most likely to affect the Bay Area include a few potential local sources but are predominantly distant events. In addition, tsunami events in the bayside portion of Marin County are very rare and there is little historical record of past events that would enable the ability to evaluate the probability of such an event occurring. As shown in Figure 4.H-3, Tsunami Inundation Area, the project site is not within the mapped tsunami inundation area (ABAG, 2011).

The project area could be susceptible to mudflow, which generally results from volcanic activity or catastrophic dam failure. As discussed in impact HYD-5 above, the project area could experience flooding as a result of failure of the Phoenix Lake Dam. As such, water flows from the dam may reach the project site. However, mudflows are more viscous and less likely to travel great distances. Consequently, the project area is not likely to experience impacts related to mudflow. Therefore, the potential of earthquake-induced flooding (mudflow) of the subject site is considered to be low.

Seiches are large waves generated in enclosed bodies of water in response to ground shaking. The Phoenix Lake Dam is approximately 3.5 miles northwest of the project site. In the event of an earthquake, a seiche generated from the lake could overtop the retention basin. However, based on the distance from the lake and the occurrence of Corte Madera Creek between the lake and the site, it is unlikely that a seiche would pose a hazard to the site. Therefore, risk of inundation by seiche is less than significant.

**Mitigation:** None required

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## Cumulative Impacts

**Impact HYD-7: The Project, in conjunction with past, present and other reasonably foreseeable development in the area, would not cause cumulative impacts with respect to hydrology and water quality. (Less than Significant)**

### *Cumulative Context*

The geographic context for the cumulative impacts associated with hydrology and water quality is Corte Madera Creek watershed and the San Francisco Bay. Current and future projects, including the proposed project, are subject to stringent regulations intended to reduce or eliminate polluted runoff and to minimize adverse changes to the natural hydrology of the area.

### *Impacts*

This project along with cumulative development occurring in the area would be required to comply with applicable federal, State, and local water quality regulations. The project, along with other projects over one acre in size, would be required to obtain coverage under the General Permit. Identification and implementation of storm water management measures that would effectively control erosion and sedimentation and other construction related pollutants would be required during construction. Other management measures, such as construction of infiltration/detention basins, would be required to be identified and implemented that would effectively treat pollutants that would be expected for the post-construction land use for certain projects.

Construction and operational related stormwater runoff from the project would be controlled by the requirements of the NPDES permit. Other new development in the area would also be required to control construction and operational stormwater by implementing State and local



requirements regarding hydrology and water quality. Adherence to these regulatory requirements will ensure that the effects of the project on surface and ground water quality and hydrology would be less than significant. The resulting contribution to the regional impairment of water quality and alteration of natural hydrology can be expected not to be cumulatively considerable, and therefore no additional mitigation is required.

**Mitigation:** None required

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## 4.1 Land Use, Plans, and Policies

### Introduction

This section describes the existing land uses, General Plan land use designations, and zoning classifications related to the proposed project and the project site. This section also describes the applicable plans and policies that guide development in the project area and evaluates the project's consistency with these plans and policies and other existing land use regulations. The evaluation of potentially significant impacts or conflicts with applicable plans and policies are identified.

### Environmental Setting

#### Land Uses in the Project Vicinity

As introduced in Chapter 3, Project Description, the project site is located at 250 Bon Air Road, Greenbrae, California, and is approximately 10 miles north of San Francisco. The site is in unincorporated Marin County between the communities of Kentfield and Greenbrae (see Figure 3-1, Project Location Map). The following is the descriptions of existing land uses in the project vicinity summarized from Chapter 3, Project Description, surrounding uses are also described and depicted in photographs provided in the *Existing Setting* in Section 4.A, *Aesthetics*; see Figures 4.A-1 through 4.A-4.

The project site is surrounded by a mix of residential, medical-related and public facility development, as well as public and private open space areas, and natural and built-up ridges, valleys, and hillside topography.

**West:** The project site is edged on the west by Bon Air Road. The Hal Brown Park at Creekside (Hal Brown Park) (formerly "Creekside Park Recreational Area") is located west of the site, directly across Bon Air Road. Hal Brown Park includes a small playground and ball field, as well as passive open space. Estuarial wetlands (Creekside Marsh) associated with Corte Madera Creek, which runs primarily to the south and west of the project site. Two paved pedestrian and bike pathways line both sides of the creek and are part of a regional bicycle route in Marin County.

**North / Northeast:** St. Sebastian's Catholic Church, the Marin Catholic High School athletic fields and associated parking lots, and the Bay Club and tennis courts are located across Bon Air Road, directly north of the existing hospital parking lot. Each of these facilities is accessed off Bon Air Road, except the high school, which is accessed from Sir Francis Drake Boulevard. A collection of medical offices buildings, nursing facilities, and four- and three-story apartment buildings are located northeast of the project site.

**East / Southeast:** Several townhome and apartment complexes are located on a ridge above and to the southeast of the project site.

**South:** Bayview Road in Larkspur, parallels the southern boundary of the site. There is a mix of single-family and multi-family residences and commercial uses on Bayview Road. The residences

on Bayview Road are the closest to the project site and are separated from the project site by a small hill and grove of eucalyptus trees. Additionally, a collection of medical office buildings are located on Bon Air Road, south of the project site.

**Surrounding Natural Characteristics:** The topography of the area includes the ridges, valleys, and rolling hills associated with the side hills of Mt. Tamalpais. The project site is within the Corte Madera Creek watershed, a 28–square-mile watershed that extends to the east peak of Mt. Tamalpais and includes the Ross Valley.

## Regulatory Setting

### Local

#### ***Marin Countywide Plan***

The Marin Countywide Plan is the County's long-range guide for use of land and protection of natural resources. The Plan sets forth policies and programs to be used by the public, planning staff, and decision makers when reviewing and analyzing proposed development. The Plan provides specific policy direction for land in unincorporated areas and general guidelines for the cities and towns of Marin. The first Countywide Plan was adopted by the Board of Supervisors in 1973 and updated in 1994. After several years of community participation and public hearings, the Plan was revised and updated by the Board of Supervisors on November 6, 2007.

The Marin Countywide Plan land use designation for the project site is Public Facility (PF). Overall land use goals and policies applicable to the proposed project are as follows:

#### **Built Environment Element**

***Goal CD-2: Balanced Communities.*** Maintain balanced communities that house and employ persons from all income groups and provide the full range of needed facilities and services.

***Goal CD-6: Confinement of Urban Development.*** Concentrate new medium- to high-intensity land uses at infill areas where services can be provided.

***Goal PFS-1: Adequate Public Facilities and Services.*** Provide basic public facilities to accommodate the level of development planned by cities and towns and the County.

#### ***Kentfield/Greenbrae Community Plan***

The Kentfield/Greenbrae Community Plan addresses the unincorporated area which is bordered by the Town of Ross and the cities of San Rafael, Larkspur and Mill Valley (Kentfield/Greenbrae Community Planning Group<sup>1</sup> and Marin County Planning Department, 1987). The intent of the Plan is stated as:

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<sup>1</sup> This group is now referred to as the Kentfield Planning Advisory Board (KPAB).

*“In general, the intent of the plan is to protect those qualities of the community which enhance it as a predominantly single family residential area. The plan seeks to limit multi-family and commercial development to the Historic Kentfield area. To ensure that new development is consistent with community characteristics the plan proposes conservation and development standards to prevent building scale from overwhelming the basic single family residential character of the Community.”*

The project site is part of “Subarea H” of the Community Plan. The following are policies of the Kentfield/Greenbrae Community Plan that are relevant to land use:

*Policy E4.* Hospital, educational, and public facility land uses should be preserved. The land use recommendations contained herein are designed to guide conservation, development, and redevelopment of parcels within the community plan area.

***Conservation and Development Standards for Subarea H***

7. Modifications to Marin General Hospital should be permitted within the following guidelines:
  - a. The hospital facility should continue to provide comprehensive medical service for Marin County.
  - b. Building mass should be minimized visually by controlling the size and location of new structures to conform with the terrain. Views from the surrounding single-family neighborhoods, Creekside Park, and the Corte Madera Creek bicycle path should be protected.
  - c. The garden on the southwest side of the hospital should be preserved if possible.
  - d. Ample on-site parking must be provided both during and after construction.
  - e. The lower parking lot should be improved with proper leveling, drainage, and landscaping such that 50% of the paved area will be shaded at mid-day within 15 years of planting.

***City of Larkspur General Plan***

While the project site is not located within the City of Larkspur, the City of Larkspur has designation over lands surrounding Marin General Hospital on three sides. City of Larkspur General Plan land use designations surrounding the project site include high density residential, low density residential, administration and professional and open space. The City’s General Plan section entitled “Land Use” identifies the following goals and policies that are relevant to the proposed project (City of Larkspur, 1990):

***Goal 6:*** Renovate and modify public buildings to meet future demands.

*Policy p:* Renovate public buildings to conform to seismic safety requirements, space needs, and use of new technology, while respecting historic values.

***Marin County Development Code and Zoning***

The County Development Code is one of the primary tools to carry out the goals, objectives, and policies of the Marin Countywide Plan and applicable community and specific plans, and is

intended to maintain consistency with the Marin Countywide Plan policies. The County Development Code designates zoning districts applicable to all unincorporated lands under the jurisdiction of Marin County. The Marin County zoning designation for the project site is Public Facilities District (PF). According to Section 22.14.020(C) of the County Development Code, the PF District is applied to land suitable for public facilities and public institutional uses, where a governmental, educational, or other institutional facility is the primary use of the site. The PF District is consistent with the public and quasi-public land use categories of the Marin Countywide Plan. Medical services and hospitals are permitted uses.

## Impacts and Mitigation Measures

### Significance Criteria

Based on criteria from Appendix G of the State CEQA *Guidelines*, the project would have a significant impact on land use, plans, and policies if it would:

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

Based on Appendix N of the Marin County Environmental Review Guidelines, the project may also have a significant impact related to land use, plans, and policies if it would:

- Call for land uses that would convert prime agricultural land to non-agricultural use or impair the productivity of prime agricultural land;
- Conflict with County land use goals or policies (consistent with Appendix G Criterion b);
- Call for land uses that would conflict with existing or proposed uses at the periphery of the project area or with other local land use plans (consistent with CEQA Appendix G Criterion b);
- Result in conversion of open space into urban or suburban scale development (consistent with CEQA Appendix G Criteria b and c);
- Conflict with local zoning (consistent with CEQA Appendix G Criterion b); or
- Result in nuisance impacts as a result of incompatible land uses (consistent with CEQA Appendix G Criteria a and b).

## Approach to Analysis

The project was evaluated for its compatibility with the applicable plans and policies identified in the *Regulatory Setting* in order to determine the potential for significant environmental impacts. The project site and the project's proposed uses were evaluated in terms of their compatibility with existing land uses surrounding and in close proximity to the project site. This section addresses the potential impacts to the land use-related plans and policies identified above in the *Regulatory Setting*. Each environmental topic section in this Chapter 4 also identifies the plans and policies that apply to the specific environmental topic addressed, and identifies any conflicts with those applicable plans and policies.

## Impacts Not Further Evaluated

***Agricultural and Forestry and Mineral Resources.*** These two environmental factors were determined during the scoping for this EIR not to be affected by the project. As categorical environmental factors addressed in Appendix G of the CEQA *Guidelines*, they are discussed in Section 6.5, *Effects Found Not to be Significant*, in Chapter 6, Impact Overview and Growth Inducement.

***Habitat conservation plan or natural community conservation plan.*** As discussed in Section 4.C, *Biological Resources*, as *Issues Not Further Evaluated*, the project site is not located within a habitat or natural community conservation plan area. Therefore, the project could have no impact to such plans since none exist. This topic is not discussed further in this EIR.

## Impacts and Mitigation Measures

### ***Land Use Consistency***

**Impact LU-1: The Project would not conflict with uses at the periphery of the project area, divide an existing community, convert open space, or result in incompatible land uses. (Less than Significant)**

The proposed project site is located within an existing developed area in Marin County. The project site is surrounded by a mix of residential, medical-related development, and open space areas at its periphery, which has steep, vegetated hillsides to the south and east. A major religious facility, St. Sebastian's Catholic Church, and Marin Catholic High School are also nearby.

The project will replace and expand existing medical facilities within the Marin General Hospital Campus with like uses, in addition to introducing a new Ambulatory Services Building with functions integral to the hospital, in addition to new parking structures specifically to serve the uses on the campus. Overall, the project does not represent a change of use or operations on the project site that would conflict with existing nearby land uses or result in nuisance effects. Most of the new buildings will be located in the internal areas of the project site, except for the Hospital Replacement Building and the Bon Air Road Parking Structure, which will be prominently located along the main access road, Bon Air Road. No public open space is designated on the project site. The southeast portion of the hospital campus is characterized by



special terrace gardens, and an “Ambulatory Terrace” view garden, which is located within an existing oak grove near the existing hospital. Both gardens are available primarily for use by hospital employees, patients, and visitors. As described in detail in Section 3.6.3, *Landscape Concept*, in Chapter 3, Project Description, some of these open spaces would be removed to accommodate the Hospital Replacement Building, and a new healing garden for patients, staff and visitors is proposed near the West Wing of the existing hospital and across the street from Hal Brown Park.

Given the project characteristics described above, the project would not conflict with surrounding land uses by introducing incompatible land uses, and would not physically divide an existing community; while the project would convert some hospital-serving gardens for other hospital uses, it would also introduce new and more prominently located hospital-serving gardens onsite. The impact is less than significant.

**Mitigation:** None required

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### ***Plan and Policy Conflicts***

**Impact LU-2: The Project would not conflict with any applicable land use plan, goal, policy, or regulation, including zoning, adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)**

As described above, the Marin Countywide Plan Land Use designation for the project site is Public Facility (PF). This designation is intended to provide public facilities such as schools, hospitals, fire stations, police stations, and other similar types of public uses and facilities. The Marin County zoning designation for the project site is Public Facilities District (PF). The PF District is applied to land suitable for public facilities and public institutional uses, where a governmental, educational, or other institutional facility is the primary use of the site. The PF zoning district is consistent with the public and quasi-public land use categories of the Marin Countywide Plan. Medical services and hospitals are permitted in the PF District; therefore, the project is consistent with the County’s land use and zoning designations.

**Table 4.I-1**, below, provides a description of applicable land use-related goals and policies previously identified in the *Regulatory Setting* and demonstrates that the project would not conflict with these policies. As discussed above in *Approach to Analysis*, other plans and policies are addressed within each environmental topic section addressed in this Chapter 4; potential impacts to other plans and policies that pertain to the respective topic addressed, and that are adopted for the purpose of avoiding or mitigating an environmental effect, are identified and discussed in the respective sections.

Although not listed in Table 4.I-1 of land use-related policies, the Countywide Plan includes *Policy HAR-1.3 Avoid Impacts to Historical Resources*, which is relevant to the proposed project which would materially impair (demolish) the historic Halprin Gardens. This impact to the physical environment is addressed in Section 4.D, *Cultural and Paleontological Resources*, and

**TABLE 4.I-1  
 GOALS AND POLICIES CONSISTENCY**

Plan	Goal/Policy	Consistency Determination
Marin Countywide Plan	<i>Goal CD-2: Balanced Communities.</i> Maintain balanced communities that house and employ persons from all income groups and provide the full range of needed facilities and services.	<b>Consistent:</b> The primary purpose of the proposed project is to ensure that Marin General Hospital would comply with the Hospital Facilities Seismic Safety Act (Seismic Safety Act) (Senate Bills [SBs] 1953 and SB 1661, SB 499, SB 90, and Assembly Bill [AB] 523) and to allow for uninterrupted operation of medical services currently provided and maintain continuity of care during a major earthquake. The project would provide a variety of jobs both during construction and operation, and would provide a needed hospital facility in the project area.
Marin Countywide Plan	<i>Goal CD-6: Confinement of Urban Development.</i> Concentrate new medium- to high-intensity land uses at infill areas where services can be provided.	<b>Consistent:</b> Instead of constructing a new seismically compliant hospital at an alternative location, the proposed project would replace the existing hospital at its current location.
Marin Countywide Plan	<i>Goal PFS-1: Adequate Public Facilities and Services.</i> Provide basic public facilities to accommodate the level of development planned by cities and towns and the County.	<b>Consistent:</b> The proposed project would replace the old Marin General Hospital with a new seismically compliant hospital in order to provide medical services in the project area.
Kentfield/Greenbrae Community Plan	<p><i>Policy E4.</i> Hospital, educational, and public facility land uses should be preserved. The land use recommendations contained herein are designed to guide conservation, development, and redevelopment of parcels within the community plan area.</p> <p><i>Conservation and Development Standards for Subarea H</i></p> <p>7. Modifications to Marin General Hospital should be permitted within the following guidelines:</p> <ul style="list-style-type: none"> <li>a. The hospital facility should continue to provide comprehensive medical service for Marin County.</li> <li>b. Building mass should be minimized visually by controlling the size and location of new structures to conform with the terrain. Views from the surrounding single-family neighborhoods, Creekside Park, and the Corte Madera Creek bicycle path should be protected.</li> <li>c. The garden on the southwest side of the hospital should be preserved if possible.</li> <li>d. Ample on-site parking must be provided both during and after construction.</li> <li>e. The lower parking lot should be improved with proper leveling, drainage, and landscaping such that 50% of the paved area will be shaded at mid-day within 15 years of planting.</li> </ul>	<p><b>Consistent:</b> The proposed project would replace the old Marin General Hospital with a new seismically compliant hospital in order to provide medical services in the project area.</p> <p><b>Consistent:</b></p> <ul style="list-style-type: none"> <li>a. The proposed project would replace the old Marin General Hospital with a new seismically compliant hospital to maintain its provision of comprehensive acute care medical service.</li> <li>b. The proposed project would not result in buildings that would conflict with the existing terrain, views of scenic resources from public areas, adjacent natural resources or public facilities. The proposed Hospital Replacement Building has been designed to minimize the structures bulk and mass, incorporating two main structures connected by a central atrium. The Hillside Parking Structure has been added as a way to remove two levels from the Bon Air Parking Structure and reduce its visual effect. Potential impacts on views are less than significant (see Section 4.A, <i>Aesthetics</i>, of this EIR).</li> <li>c. The southwest garden would be removed to accommodate the new Hospital Replacement Building. A new healing garden (sunken garden) would be located adjacent to the existing West Wing and across the street from Hal Brown Park, in part to address the loss of the existing garden. Given site constraints and the need to build parking structures and new hospital facilities while keeping the hospital open, it is not possible to preserve the Halprin Gardens. The extent that removal of the garden conflicts with historical resource policies is</li> </ul>

**TABLE 4.I-1 (Continued)  
 GOALS AND POLICIES CONSISTENCY**

Plan	Goal/Policy	Consistency Determination
		addressed in Section 4.D, <i>Cultural and Paleontological Resources</i> , of this EIR.  d. Although not an environmental impact, the project will provide ample parking onsite. The project includes two new parking structures to reduce the current parking shortage on the hospital site and benefit the surrounding neighborhood. Constructing new garages onsite limits options for locating other new structures on the project site – namely the new Hospital Replacement Building – while maintaining proper access and hospital operation,  e. The existing lower parking lot would be improved to ensure proper stormwater drainage, and ample landscaping, as shown in Figures 3-14 and 3-15 in Chapter 3, Project Description, of this EIR.
City of Larkspur General Plan	<i>Goal 6:</i> Renovate and modify public buildings to meet future demands.	<b>Consistent:</b> The proposed project would replace the old Marin General Hospital with a new seismically compliant hospital in order to provide medical services in the project area.
City of Larkspur General Plan	<i>Policy p:</i> Renovate public buildings to conform to seismic safety requirements, space needs, and use of new technology, while respecting historic values.	<b>Consistent:</b> The proposed project would replace the old Marin General Hospital with a new seismically compliant hospital in order to provide medical services in the project area.

identified as a significant and unavoidable impact in accordance with CEQA. However, the project can be found consistent with the Countywide Plan, notwithstanding County Policy HAR-1.3 and the proposed demolition. California courts recognize that general plans contain certain provisions that address many different topics and that reflect a range of competing interests. As such, compliance with every policy in a general plan is not required for a project to be approved. Instead, decision makers are allowed to make value judgments and weigh the relative merits of a specific policy against the project’s consistency with and furtherance of the objectives and policies of the general plan overall. In the case of the proposed project, while adherence to Policy HAR-1.3 would prohibit any alteration to the Halprin Gardens, consideration is also given to other Countywide Plan provisions that directly support implementation of the proposed project and that are mostly discussed in Table 4.I-1. Furthermore, Kentfield Community Plan guideline 7c states that the garden should be preserved “*if possible*” (emphasis added). This shows that the County recognizes such preservation may not be possible while upgrading the hospital because of site limitations. It also indicates that the County accepts loss of the garden if necessary to support the goal of providing high-quality medical care to the community.

In summary, the project proposes uses that are consistent with the existing land use and zoning designation for the project site, as well as applicable policies in the Marin Countywide Plan, the Kentfield/Greenbrae Community Plan, and the Larkspur General Plan. The impact is less than significant.

**Mitigation:** None required

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## Cumulative Impacts

**Impact LU-3: The Project, combined with past, present, and reasonably foreseeable projects in the area, would not result in a cumulative land use impact regarding land use, plans and policies. (Less than Significant)**

### ***Geographic Context***

The cumulative geographic context of the proposed project for land use and planning consideration consists of Marin County since cumulative effects must be considered in relationship to policies or regulations that apply countywide.

### ***Impacts***

As discussed in the impact analysis above, the proposed project would not result in significant impacts due to creating a conflict with surrounding land uses, physically dividing an existing community, or converting open space. Like past and present projects, including the proposed project, reasonably foreseeable future projects are anticipated to locate in areas considered suitable by area land use plans and zoning, as all applicable ordinances and regulations intended for the purpose of ensuring land use compatibility and avoiding nuisance effects of incompatible uses. The project vicinity is well developed as a result of past and present cumulative development. The nature of future cumulative development anticipated within the geographic context for land use effects proximate to the project site includes the approved 13-unit affordable senior housing project located about two miles northwest in Kentfield, as identified in the Marin County PropDev 46, in addition to proposed infrastructure projects (see *Cumulative Context*, in the preface to this Chapter 4, and *Planned Transportation Projects*, in Section 4.M, *Transportation and Circulation*). Together, the project and cumulative development would not divide the existing community, convert open space, result in incompatible land uses, or result in substantial conflicts with adopted local policies established to reduce environmental effects. Therefore, no cumulative land use impact is identified to which the proposed project could contribute. The impact is less than significant.

**Mitigation:** None required

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## References – Land Use, Plans, and Policies

City of Larkspur, 1990. *Larkspur General Plan: 1990-2010*, prepared by Naphtali H. Knox & Associates, Inc. and DKS Associates.

Kentfield/Greenbrae Community Planning Group and Marin County Planning Department, 1987. *Kentfield/Greenbrae Community Plan (Final)*, available online: [http://www.co.marin.ca.us/comdev/pdf/planning/Kentfield\\_Greenbrae\\_Community\\_Plan\\_1987.PDF](http://www.co.marin.ca.us/comdev/pdf/planning/Kentfield_Greenbrae_Community_Plan_1987.PDF), adopted May.

Marin County Community Development Agency (MCCDA), 1994. *Environmental Impact Review Guidelines (EIR Guidelines): Policies and Procedures for Implementation of the California Environmental Quality Act (CEQA)*, Appendix N, Criteria for Significance and List of Ministerial Projects, adopted May 17.

Marin County Community Development Agency (MCCDA), 2007. *Marin Countywide Plan*, available online at <http://www.co.marin.ca.us/depts/cd/main/fm/TOC.cfm>, adopted November 6.

## 4.J Noise and Vibration

This section incorporates the setting information and analyses included in the Environmental Noise Assessment (Illingworth and Rodkin, Inc., 2011) conducted for the project. The setting section presents the fundamentals of environmental noise, provides a discussion of policies and standards applicable to the project, and presents the results of ambient noise measurements made at the site to document baseline noise conditions at adjacent noise-sensitive residential receivers in the site vicinity. The impacts and mitigation measures section of the project summarizes future noise levels resulting from the construction and operation of the project and provides an evaluation of potential significance of project impacts. Where appropriate, mitigation measures are recommended to reduce noise impacts resulting from the project to a less-than-significant level.

### Setting

#### Fundamentals of Environmental Noise

Noise is defined as unwanted sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB) with 0 dB corresponding roughly to the threshold of hearing. Technical terms are defined in **Table 4.J-1**.

Most of the sounds that we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound in accordance with a weighting that reflects the facts that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency mid-range. This is called “A” weighting, and the decibel level so measured is called the A-weighted sound level (dBA). In practice, the level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. Typical A-weighted levels measured in the environment and in industry are shown in **Table 4.J-2** for different types of noise. Although the A-weighted noise level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources that create a relatively steady background noise in which no particular source is identifiable. To describe the time-varying character of environmental noise, the statistical noise descriptors, L01, L10, L50, and L90, are commonly used. They are the A-weighted noise levels equaled or exceeded during 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period. A single number descriptor called the Leq is also widely used. The Leq is the average A-weighted noise level during a stated period of time.

In determining the daily level of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. Most people sleep at night and are very sensitive to noise intrusion. To account for human sensitivity to nighttime noise levels, a descriptor, DNL

**TABLE 4.J-1  
 DEFINITIONS OF ACOUSTICAL TERMS USED IN THIS REPORT**

<b>Term</b>	<b>Definitions</b>
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, $L_{eq}$	The average A-weighted noise level during the measurement period.
$L_{max}$ , $L_{min}$	The maximum and minimum A-weighted noise level during the measurement period.
$L_{01}$ , $L_{10}$ , $L_{50}$ , $L_{90}$	The A-weighted noise levels that are exceeded 1-percent, 10-percent, 50-percent, and 90-percent of the time during the measurement period.
Day/Night Noise Level, $L_{dn}$ or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 p.m. and 7:00 a.m.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels measured in the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

SOURCE: Illingworth & Rodkin, Inc., 2011.

(day/night average sound level), was developed. The DNL divides the 24-hour day into the daytime of 7:00 a.m. to 10:00 p.m. and the nighttime of 10:00 p.m. to 7:00 a.m. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Community Noise Equivalent Level (CNEL) is another 24-hour average that includes both an evening and nighttime weighting.

## **Sensitive Receptors and Existing Noise Environment**

### ***Sensitive Receptors***

Some land uses are considered more sensitive to ambient noise levels than others, due to the amount of noise exposure (in terms of both exposure duration and insulation from noise and vibration) and the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, and auditoriums are more sensitive to noise and

**TABLE 4.J-2  
 TYPICAL NOISE LEVELS IN THE ENVIRONMENT**

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet fly-over at 1,000 feet	110 dBA	Rock band
Gas lawn mower at 3 feet	100 dBA	
Diesel truck at 50 feet at 50 mph	90 dBA	Food blender at 3 feet
Noisy urban area, daytime	80 dBA	Garbage disposal at 3 feet
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area	60 dBA	Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
Quiet urban daytime	50 dBA	Large business office
Quiet urban nighttime	40 dBA	Dishwasher in next room
Quiet suburban nighttime	30 dBA	Theater, large conference room
Quiet rural nighttime	20 dBA	Library
	10 dBA	Bedroom at night, concert hall (background)
	0 dBA	Broadcast/recording studio

SOURCE: Caltrans, *Technical Noise Supplement (TeNS)*, November 2009.

vibration than are commercial and industrial land uses. Parks and other outdoor recreation areas can also be sensitive to loud noise; however, these uses can also be characterized as noise sources depending on the types of activities that occur (e.g., children playing, sports games, etc.).

The proposed project would be located in Greenbrae, California, an unincorporated community of Marin County. Sensitive receptors bound the site in all directions. Marin Catholic High School and residential receptors, north and west of the site, respectively, are also located in Greenbrae. Single-family and multi-family residential receptors east and south of the project site are located in the City of Larkspur. **Figure 4.J-1** presents an aerial photo showing the project site and proximity of sensitive receptors.

**Existing Noise Environment**

A noise monitoring survey was conducted from April 14, 2010 to April 19, 2010, to quantify the existing noise environment at the site and in the project vicinity. The noise monitoring survey included three long-term (LT) noise measurements (LT-1, LT-2, and LT-3) and three short-term (ST) noise measurements (ST-1, ST-2, and ST-3), as shown in Figure 4.J-1. The daily trend in noise levels at each of the long-term noise measurements sites are shown in Appendix D to this Draft EIR. Vehicular traffic along Bon Air Road is the predominant noise source in the site vicinity. Noise from mechanical equipment at the existing hospital also contributes to noise at night.





SOURCE: Illingworth & Rocklin, Inc., 2011; and ESA, 2011

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**Figure 4.J-1**  
Aerial Photograph Showing Noise Measurement Locations and Site Vicinity

Noise measurement location LT-1 was approximately 30 feet from the southwest property line of the hospital near adjacent residential land uses. This noise measurement location represented the noise environment resulting from traffic along Bon Air Road and the southwestern hospital entrance road. Hourly average noise levels typically ranged from 55 to 65 dBA Leq during the day, and from 48 to 58 dBA Leq at night. The calculated day-night average noise level at this location ranged from 58 to 61 dBA Ldn.

Noise measurement location LT-2 was located on the southeast property line of the hospital, between an apartment complex and condos. This noise measurement location represented the noise environment resulting from hospital operations and distant Bon Air Road traffic. Hourly average noise levels typically ranged from 51 to 63 dBA Leq during the day, and from 48 to 52 dBA Leq at night. The calculated day-night average noise level at this location ranged from 56 to 58 dBA Ldn.

Noise measurement location LT-3 was approximately 60 feet from the center of Bon Air Road. This noise measurement location represented the noise environment resulting from traffic along Bon Air Road. Hourly average noise levels typically ranged from 60 to 69 dBA Leq during the day, and from 49 to 64 dBA Leq at night. The calculated day-night average noise level at this location ranged from 64 to 67 dBA Ldn.

Short-term noise measurement ST-1 was made approximately 620 feet from the center of Bon Air Road, near single-family residences west of the hospital. The ten-minute average noise level during this time period was 48 dBA Leq. Short-term noise measurement ST-2 was made approximately 70 feet from the center of Sir Francis Drake Boulevard at Bon Air Road. The ten minute average noise level during this time period was 72 dBA Leq. Short-term noise measurement ST-3 was made at the eastern property line of the hospital. The ten-minute average noise level during this time period was 53 dBA Leq. **Table 4.J-3** summarizes the results of the short-term noise measurements, and presents the estimated Ldn levels at these locations. Figure 4.J-1 shows the measurement locations in the project vicinity.

**TABLE 4.J-3  
 SUMMARY OF SHORT-TERM NOISE MEASUREMENT DATA ON APRIL 14, 2010**

Noise Measurement Location	L <sub>max</sub>	L <sub>(1)</sub>	L <sub>(10)</sub>	L <sub>(50)</sub>	L <sub>(90)</sub>	Leq	Estimated L <sub>dn</sub>
ST-1: ~620 feet from the center of Bon Air Road. (4/14/2010, 11:00-11:10 a.m.)	56	53	50	48	46	48	50
ST-2: ~70 feet from the center of Sir Francis Drake Boulevard. (4/14/2010, 11:30-11:40 a.m.)	88	83	74	69	64	72	74
ST-3: Eastern property line of hospital. (4/14/2010, 12:00-12:10 p.m.)	60	58	56	53	49	53	56

NOTE: L<sub>dn</sub> approximated by correlating to corresponding period at long-term site.

## Regulatory Setting

### Federal Regulations

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 Code of Federal Regulations (CFR), Part 205, Subpart B. The federal truck pass-by noise standard is 80 dBA at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

### State

The State has guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The State of California also establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the State pass-by standard is consistent with the federal limit of 80 dB. The State pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dBA at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanction of vehicle operators by state and local law enforcement officials.

### Local

In California, local regulation of noise involves implementation of General Plan policies and Noise Ordinance standards. Local General Plans identify general principles intended to guide and influence development plans, and Noise Ordinances set forth the specific standards and procedures for addressing particular noise sources and activities. General Plans recognize that different types of land uses have different sensitivities toward their noise environment; residential areas are considered to be the most sensitive type of land use to noise and industrial/commercial areas are considered to be the least sensitive. Applicable regulatory background materials are contained in the Marin Countywide Plan and the Marin County Municipal Code, as the project would be under the jurisdiction of the County for this purpose.

In addition, the project site adjoins sensitive receptors located in the City of Larkspur. Although the project would not be under the jurisdiction of the City of Larkspur, regulatory background materials contained in the City of Larkspur General Plan and the City of Larkspur Municipal Code are also presented for reference below.

### ***Marin Countywide Plan***

The Noise Element of the Marin Countywide Plan identifies noise and land use compatibility standards for various land uses. Marin Countywide Plan Figure 3-41, Acceptable Noise Levels (**Table 4.J-4** in this Draft EIR section), indicates that single-family residential land uses are normally acceptable in noise environments up to 60 dBA Ldn and multi-family residential uses are normally acceptable in noise environments up to 65 dBA Ldn. Interior noise levels within residences should be maintained at or below 45 dBA Leq. Hospitals are normally acceptable in noise environments up to 70 dBA Ldn.

**TABLE 4.J-4  
 ACCEPTABLE NOISE LEVELS**

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE - L <sub>dn</sub> or CNEL (db)						
	50	55	60	65	70	75	80
Residential - Low Density Single Family, Duplex, Mobile Home							
Residential – Multiple Family							
Transient Lodging – Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business, Commercial, Professional							
Industrial, Manufacturing, Utilities, Agriculture							
<b>Normally Acceptable</b>	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.						
<b>Conditionally Acceptable</b>	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.						
<b>Normally Unacceptable</b>	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.						
<b>Clearly Unacceptable</b>	New construction or development generally should not be undertaken.						

SOURCE: California Office of Planning and Research, 2003. General Plan Guidelines.

Marin Countywide Plan Figure 3-43, Benchmarks for Allowable Noise Exposure from Stationary Noise Sources (Table 4.J-5 in this Draft EIR section), shall be used as a guide for establishing allowable noise levels produced by stationary noise sources.

**TABLE 4.J-5  
BENCHMARKS FOR ALLOWABLE NOISE EXPOSURE FROM STATIONARY NOISE SOURCES**

	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly $L_{eq}$ , dB	50	45
Maximum Level, dB	70	65
Maximum Level, dB (Impulsive Noise)	65	60

SOURCE: Marin County, *Marin Countywide Plan Update, Noise Element*, November, 2007, Figure 3-43

The Marin Countywide Plan also identifies policies and programs that the County shall implement during the environmental review of projects in order to minimize noise throughout the community. Policies presented in the Noise Element applicable to this project are as follows:

*NO-1.a Enforce Allowable Noise Levels:* Through CEQA and County discretionary review, require new development to comply with allowable noise levels.

*NO-1.b Comply with Acceptable Noise Levels:* Require discretionary permits for residential and other noise-sensitive land uses proposed near noise sources that may exceed acceptable noise levels and/or benchmarks to provide acoustical analyses; and, if necessary, commit to measures to comply with the applicable standards set out in Program NO-1.a. Amend the Development Code to include these requirements.

*NO-1.c Require Project-Specific Noise Mitigation:* Require all development to mitigate its noise impacts where the project would

- raise the  $L_{dn}$  by more than 5 dBA;
- raise the  $L_{dn}$  by more than 3 dBA and exceed the Normally Acceptable standard; or
- raise the  $L_{dn}$  by more than 3 dBA and the Normally Acceptable standard is already exceeded.

*NO-1.i Regulate Noise Sources:* Sections 6.70.030(5) and 6.70.040 of the Marin County Municipal Code establish allowable hours of operation for construction-related activities. As a condition of permit approval for projects generating significant construction noise impacts during the construction phase, construction management for any project shall develop a construction noise reduction plan and designate a disturbance coordinator at the construction site to implement the provisions of the plan.

### **Marin County Municipal Code**

Sections 6.70.030(5) and 6.70.040 of the Marin County Municipal Code establish allowable hours of operation for construction-related activities. As a condition of permit approval for projects generating significant construction noise impacts during the construction phase, construction

management for any project shall develop a construction noise reduction plan and designate a disturbance coordinator at the construction site to implement the provisions of the plan.

**6.70.030 Enumerated Noises.**

- (5) Construction Activities and Related Noise.
- a. Hours for construction activities and other work undertaken in connection with building, plumbing, electrical, and other permits issued by the community development agency shall be limited to the following:
    - i. Monday through Friday: 7:00 a.m. to 6:00 p.m.
    - ii. Saturday: 9:00 a.m. to 5:00 p.m.
    - iii. Prohibited on Sundays and Holidays (New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.)
  - b. Loud noise-generating construction-related equipment (e.g., backhoes, generators, jackhammers) can be maintained, operated, or serviced at a construction site for permits administered by the community development agency from 8:00 a.m. to 5:00 p.m. Monday through Friday only.
  - c. Special exceptions to these limitations may occur for:
    - i. Emergency work as defined in Section 22.130.030 of this code provided written notice is given to the community development director within forty-eight hours of commencing work;
    - ii. Construction projects of city, county, state, other public agency, or other public utility;
    - iii. When written permission of the community development director has been obtained, for showing of sufficient cause;
    - iv. Minor jobs (e.g., painting, hand sanding, sweeping) with minimal/no noise impacts on surrounding properties;
    - v. Modifications required by the review authority as a discretionary permit condition of approval.

**6.70.040 Penalty for Violation of Section 6.70.030 (5).** Violation of Section 6.70.030 (5) of this code is enforceable as an infraction, punishable by fines, or by administrative or civil action, except that failure to obey a directive by a peace or enforcement officer to cease the noise-generating activity shall be a misdemeanor, punishable by fines or jail time or both. In addition, cessation of some or all of the permitted work may be ordered through a stop work order issued by the building and safety division.

***City of Larkspur 1990 General Plan***

Noise Goals and Policies contained in Chapter 7, Health and Safety Element, of the City of Larkspur General Plan include the following:

***Goal II:*** Reduce the adverse effects of noise upon persons living or working in Larkspur.

*Policy u:* Ensure that all new living and work areas are developed with acceptable noise environments.

*Policy v:* For non-residential projects, use the “Land Use Compatibility Standards,” Figure 7-9 (**Table 4.J-6** in this Draft EIR section), to evaluate their suitability in particular locations.

**Goal 12:** Reduce noise levels in areas where the existing noise exceeds “normally acceptable” levels, to levels compatible with land uses in those areas, as defined in Figure 7-9, “Land Use Compatibility Standards.”

*Policy w:* Promote educational efforts that will encourage the citizens of Larkspur to improve their noise environments.

*Policy x:* Control unnecessary, excessive, and annoying noises within the city, where not preempted by federal or State control.

*Policy y:* Enforce applicable federal and State laws.

*Policy z:* Support programs to reduce community noise levels where possible within the “normally acceptable” categories shown in Figure 7-9.

**Goal 13:** Prevent the escalation of noise levels in areas where noise-sensitive uses exist.

*Policy aa:* Analyze in detail the potential noise impacts of any actions the City may take that could significantly alter noise levels in the community.

*Policy ab:* Encourage creative solutions when potential conflicts arise between noise levels and land use.

### **City of Larkspur Municipal Code**

Noise control regulations enforced in the City of Larkspur are established in **Table 4.J-7** (Title 9, Chapter 9.54, of the Larkspur Municipal Code). Exterior noise limits are established in Section 9.54.040.

#### **9.54.040 Exterior Noise Limits.**

- A. Unless otherwise specifically indicated in this chapter, it shall be unlawful for any person at any location within the City to create, or cause to be created, any noise that exceeds the applicable exterior noise limit as described in Table 4.J-7:
- B. The exterior noise limit shall be adjusted as follows:
- C. If the ambient noise level is less than that permitted by Subdivision (A), then the measured ambient noise level plus 5 dBA shall be considered the “exterior noise limit,” but in no case shall the noise level exceed the maximum permitted by Subdivision (A).
- D. If the ambient noise level exceeds that permitted by Subdivision (A), then the measured ambient level shall be considered the “exterior noise limit.”
- E. For the purposes of this ordinance schools, hospitals and convalescent homes shall be considered residential land uses. (Ord. 697 § 1 (part), 1983)

**TABLE 4.J-6  
 LARKSPUR LAND USE COMPATIBILITY STANDARDS**

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE - L <sub>dn</sub> or CNEL (db)						
	50	55	60	65	70	75	80
Residential –Single Family, Duplex, Mobile Home							
Residential – Multi Family							
Transient Lodging – Motel, Hotel							
School, Library, Church, Hospital, Nursing Home							
Auditorium, Concert Hall, Amphitheater							
Sports Arena, Outdoor Spectator Sports							
Playground, Neighborhood Park							
Golf Courses, Stable, Water Recreation, Cemetery							
Office Building, Business, Commercial & Professional							
Industrial, Manufacturing, Utilities, Agriculture							
<b>Normally Acceptable</b>	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.						
<b>Conditionally Acceptable</b>	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.						
<b>Potentially Unacceptable</b>	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.						
<b>Normally Unacceptable</b>	New construction or development should generally not be undertaken. Construction costs to make the indoor environment acceptable would be prohibitive and the outdoor environment would not be usable.						

SOURCE: California Office of Noise Control, 1975, as modified by City of Larkspur, 1982.



**TABLE 4.J-7  
 CITY OF LARKSPUR EXTERIOR NOISE LIMITS**

Receiving land use	Time	Noise level not to be exceeded for more than 30 minutes per hour (dBA)
Residential	7:00 a.m. – 10:00 p.m.	50
	10:00 p.m. – 7:00 a.m.	40
Commercial	Any time	60
Condition		Adjustment to exterior limit (dBA)
Noise contains a steady, audible tone such as a whine, screech, or hum		-5
Noise is repetitive or impulsive (e.g., hammering, riveting)		-5
Noise consists of speech or music		-5
Noise occurs more than fifteen but less than thirty minutes per hour		+5
Noise occurs more than five but less than fifteen minutes per hour		+10
Noise occurs more than one but less than five minutes per hour		+15
Noise occurs less than one minute per hour		+20

SOURCE: City of Larkspur Municipal Code, Chapter 9.54, Noise Control Regulations

**9.54.060 Exemptions.** The following activities shall be exempted from the provisions of this chapter:

- A. School bands, school athletic and school entertainment events.
- B. Outdoor gatherings, public dances, shows and sporting and entertainment events, provided said events are conducted pursuant to a license or permit by the City.
- C. Activities conducted in parks, public playgrounds and school grounds, provided such parks, playgrounds and school grounds are owned and operated by a public entity or private school.
- D. Any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work.
- E. Noise sources associated with construction, repair, remodeling, demolition, or paving of any real property, provided said activities shall only occur during the following time periods:
  - 1. Monday through Friday (excluding legal holidays) 7:00 a.m. to 6:00 p.m.; Saturday, Sunday, and legal holidays 9:00 a.m. to 5:00 p.m. This exception is granted provided that all powered construction equipment is equipped with intake and exhaust mufflers recommended by the manufacturers thereof; pavement breakers and jackhammers shall also be equipped with acoustical attenuating shields or shrouds recommended by the manufacturers thereof.
  - 2. In lieu of or in the absence of manufacturers' recommendations, the Director of Public Works shall have the authority to prescribe such means of accomplishing maximum noise attenuation as the director deems to be in the public interest, considering the available technology and economic feasibility.

3. The Director of Public Works may allow the following exception to the provisions of subsection (1) above: when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in progress be continued until a specific phase is completed, the contractor or owner may, with the consent of the Director of Public Works, be allowed to continue work after 6:00 p.m. and to operate machinery and equipment necessary to conclude the specific work in progress under conditions that will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.
- F. The sounding of any fire, burglar, or civil defense alarm, siren, whistle, or similar stationary emergency signaling device for emergency purposes or for their testing and the sounding of the fire whistle for time checks.
  - G. Devices used in conjunction with places of religious worship, such as bells, carillons, chimes, and the like.

## Impacts and Mitigation Measures

### Significance Criteria

Based on criteria from Appendix G of the State CEQA *Guidelines*, the project would have a significant impact on noise if it would cause:

- a) Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or Noise Ordinance, or applicable standards of other agencies;
- b) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;
- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- e) For a project located within an airport land use plan or where such a plan has not been adopted within two miles of a public airport or public use airport, if the project would expose people residing or working in the project area to excessive noise levels;
- f) For a project within the vicinity of a private airstrip, if the project would expose people residing or working in the project area to excessive noise levels.

Based on Appendix N of the Marin County Environmental Review Guidelines, the project may also have a significant impact related to noise if the project would:

- Generate noise that would conflict with Countywide noise standards or other state or local noise standards (consistent with CEQA Appendix G Criterion a);
- Propose land uses that substantially increase noise levels in areas of sensitive receptors (consistent with CEQA Appendix G Criterion b); or

- Proposed land uses not compatible with baseline noise levels (consistent with CEQA Appendix G Criterion c).

Quantitative thresholds are discussed in the *Approach to Analysis* discussion below.

## Approach to Analysis

Appendix G of the CEQA *Guidelines* states that a project would normally be considered to result in significant noise impacts if noise levels conflict with adopted environmental standards or plans or if noise generated by the project would substantially increase existing noise levels at sensitive receivers on a permanent or temporary basis.

The significance criteria utilized in the impact analysis were developed based on a review of local noise standards as summarized in the Regulatory Setting above. A comparison of the criteria established by Marin County and the City of Larkspur was made and showed several consistencies between the noise level standards of these two communities, particularly when adjustments were made to account for ambient noise conditions. Marin County's noise standards were selected to form the basis of significance criteria used in the noise assessment because these noise standards would be directly applicable to the proposed project as it is located in Greenbrae, an unincorporated community of Marin County. Secondly, Marin County's noise standards were selected in an effort to maintain clarity in the CEQA impact analysis. Marin County's noise standards would regulate environmental noise as it affects the project, as well as, construction and operational noise on sensitive receivers in the project vicinity, whether these receivers are located in unincorporated Marin County (Greenbrae) or the City of Larkspur.

A significant impact would be identified for a proposed land use if it would be exposed to noise levels exceeding the County's established guidelines for noise and land use compatibility. A significant noise impact would also occur if the project would expose sensitive residential receivers to noise levels exceeding Marin County noise standards. A substantial permanent noise increase would occur if the noise level increase resulting from the project is 3.0 dBA Ldn or greater at noise-sensitive land uses, with a future noise level of 60 dBA Ldn or greater, or 5.0 dBA Ldn or more where future noise levels would remain below 60 dBA Ldn.

A substantial temporary noise level increase would occur where noise from construction activities exceeds 60 dBA Leq and the ambient noise environment by at least 5.0 dBA Leq at noise-sensitive uses in the project vicinity for a period of one year or more. In the Bay Area, construction can normally occur year-round excluding brief periods when weather (i.e., substantial rain storm) makes construction activities impossible or impractical. The 60 dBA Leq noise level limit is receiver-based, and this noise level is the level at which speech interference begins to occur outdoors. One construction season is considered a reasonable duration that allows most construction projects to be built, recognizing that noise from construction activities will be short-term and there is a definitive end date to the construction activities.

## Impacts and Mitigation Measures

### *Noise and Land Use Compatibility*

#### **Impact NOI-1: The Project would not develop land uses that would be incompatible with the noise environment at and nearby the project site. (Less than Significant)**

The proposed Hospital Replacement Building would be located about 145 feet from the center of Bon Air Road. The Ambulatory Services Building will be located behind the Bon Air Road Parking Structure and about 320 feet from the center of Bon Air Road. The future noise environment at the project site would continue to result primarily from vehicular traffic along Bon Air Road and other surrounding roadways.

Future traffic noise levels are calculated to range from 60 to 63 dBA Ldn at the facades of the Hospital Replacement Building nearest Bon Air Road (approximately 145 feet from the center of the roadway), and from about 55 to 58 dBA Ldn at the facades of the Ambulatory Services Building proposed behind the Bon Air Road Parking Structure on Bon Air Road (approximately 320 feet from the center of the roadway). The Bon Air Road Parking Structure is not assumed to provide any attenuation of traffic noise along Bon Air Road because the structure will be an open air structure, not a solid-walled building.

The noise and land use compatibility guidelines are designed to screen projects and provide guidance in determining when special buildings sound insulation treatments may be necessary in order to adequately control the intrusion of environmental noise. Noise levels are required to be maintained at or below 70 dBA Ldn to be considered acceptable for hospital and medical office development. Attaining the necessary noise reduction from exterior to interior spaces is readily achievable with proper wall construction techniques, the selections of proper windows and doors, and the incorporation of forced-air mechanical ventilation systems.

Standard hospital construction methods (assumes fixed or closed windows) typically provide 30 dBA of noise reduction in interior spaces. Predicted worst-case interior noise levels within the Hospital Replacement Building (the westernmost facade of the building overlooking Bon Air Road) would be about 30 to 33 dBA Ldn. Interior noise levels attributable to exterior sources are calculated to range from 25 to 28 dBA Ldn within the Ambulatory Services Building. The impact resulting from the proposed project would be less than significant, as noise levels within the Hospital Replacement Building and Ambulatory Services Building will comply with County of Marin Acceptable Noise Level Standards.

**Mitigation:** None required

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## **Construction Noise**

### **Impact NOI-2: Construction of the Project would substantially and temporarily increase noise levels in areas of sensitive receptors and exceed the ambient noise environment. (Significant)**

Initial construction activities for the first phase would start in 2012, and all major construction associated with the project (construction of the Hillside Parking Structure, Bon Air Road Parking Structure, Ambulatory Services Building, and the Hospital Replacement Building, and elevated pedestrian bridge, if implemented) is expected to be completed by 2020.

Each construction stage includes a range of specific construction activities that are relevant to assessing the duration and intensity of certain construction effects. Major components of site preparation (or Site Make Ready) may involve demolition of existing structures, grading of the development areas, and installation and/or relocation of utility lines.

Major components of building construction would involve excavation and drilling piers to support building foundations, constructing the building frame (superstructure), pouring concrete/asphalt, and completing the interior of each building (finish work) with architectural coatings. Impact pile driving is not an anticipated construction technique.

Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receptors. Construction noise impacts primarily occur when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise sensitive land uses, or when construction noise lasts over extended periods of time. Where noise from construction activities exceeds 60 dBA Leq and exceeds the ambient noise environment by at least 5.0 dBA Leq at noise-sensitive uses in the project vicinity for a duration of one year or more, the impact would be considered significant.

Construction activities generate considerable amounts of noise, especially during the demolition phase and the construction of project infrastructure when heavy equipment is used. The highest noise levels would be generated during demolition, site preparation, grading, excavation, and foundation construction when heavy equipment operates on site. **Table 4.J-8** presents the typical range of hourly average noise levels generated by different phases of construction measured at a distance of 50 feet. Hourly average noise levels generated by demolition and construction of a hospital are about 75 dBA to 89 dBA Leq measured at a distance of 50 feet from the center of a busy construction site. The range of hourly average noise levels generated by the construction of parking garages is 71 dBA to 89 dBA Leq measured at a distance of 50 feet. Maximum instantaneous noise levels would typically range from 85 to 90 dBA Lmax. Construction generated noise levels drop off at a rate of about 6.0 dBA per doubling of distance between the source and receptor. Shielding provided by barriers or structures can provide an additional 10 dBA noise reduction at distant receivers.

**TABLE 4.J-8  
 TYPICAL NOISE LEVEL RANGE AT 50 FEET FROM CONSTRUCTION SITES (DBA, LEQ)**

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I - All pertinent equipment present at site.  
 II - Minimum required equipment present at site.

SOURCE: USEPA, 1973.

**Table 4.J-9** presents the typical range of hourly average noise levels generated by different phases of construction at the nearest sensitive receivers. Residential uses east and south of the site along Via Hidalgo, Spyglass Hill, Corte Oriental, and Bayview Road, would be as close as 200 feet from major construction activities. Residential uses located to the southwest (Harvard Drive), and northwest (Berens Drive), and Marin Catholic High School would be a minimum of 650 feet from major construction activities occurring on site. During periods of construction, noise levels would be elevated substantially, and are anticipated to exceed 60 dBA Leq and the ambient by 5.0 dBA Leq or more. The construction of the project would result in a substantial temporary noise level increase at neighboring noise-sensitive properties, resulting in a significant impact.

Proposed construction activities are also anticipated to cause elevated noise levels on site, which may affect the usability of some patient rooms or existing medical offices, particularly when construction occurs in areas near or within existing occupied buildings. As stated previously, maximum instantaneous noise levels would typically range from 85 to 90 dBA Lmax at 50 feet, and hourly average noise levels would range from 71 dBA to 89 dBA Leq measured at the same distance.

Maximum instantaneous noise levels within some patient rooms or existing medical offices are calculated to range from 55-60 dBA Lmax when construction activities occur at 50 feet from existing buildings. Maximum instantaneous noise levels would exceed 50 dBA Lmax, resulting in a potential for activity interference and sleep disturbance.

Average interior noise levels within some patient rooms or existing medical offices are calculated to range from 41-59 dBA Leq when construction activities occur at 50 feet from existing buildings. Hourly average noise levels would at times exceed 45 dBA Leq, resulting in a potential for activity interference and sleep disturbance. Interior noise levels within this range would render some patient rooms and medical office spaces essentially unusable without mitigation.

**TABLE 4.J-9  
 RANGE OF CONSTRUCTION RELATED NOISE LEVELS BY PHASE (DBA, L<sub>Eq</sub>)**

Construction Phase	Location of Activity (Duration)	Receiver - Distance to Construction	Range of Hourly Average Noise Levels at Nearby Receivers
I	Hillside Parking Structure (2012-2013)	Source Level – 50 feet	71-89
		Via Hidalgo – 200 feet	59-77
		Spyglass Hill – 300 feet	55-73
		Corte Oriental – 400 feet	53-71
		Bayview Road – 900 feet (Shielded by Buildings – 10 dBA reduction)	36-54
		Harvard Drive – 1,500 feet (Shielded by Buildings – 10 dBA reduction)	31-49
		Berens Drive – 1,750 feet	40-58
		Marin Catholic High School - 1,150 feet	44-62
II	Site Preparation and Bon Air Road Parking Structure (2013-2015)	Source Level – 50 feet	71-89
		Via Hidalgo – 550 feet	50-68
		Spyglass Hill – 700 feet (Shielded by Buildings – 10 dBA reduction)	38-56
		Corte Oriental – 850 feet (Shielded by Buildings – 10 dBA reduction)	36-54
		Bayview Road – 850 feet (Shielded by Buildings – 10 dBA reduction)	36-54
		Harvard Drive – 1,000 feet	45-63
		Berens Drive – 1,100 feet	44-62
		Marin Catholic High School - 850 feet	46-64
III	Ambulatory Services Building (2013-2015)	Source Level – 50 feet	75-89
		Via Hidalgo – 550 feet	54-68
		Spyglass Hill – 550 feet (Shielded by Buildings – 10 dBA reduction)	44-68
		Corte Oriental – 400 feet (Shielded by Buildings – 10 dBA reduction)	47-61
		Bayview Road – 575 feet (Shielded by Buildings – 10 dBA reduction)	44-58
		Harvard Drive – 1,050 feet (Shielded by Buildings – 10 dBA reduction)	39-53
		Berens Drive – 1,375 feet	46-60
		Marin Catholic High School - 1,000 feet (Shielded by Buildings – 10 dBA reduction)	39-53
IV	Hospital Replacement Building and Elevated Pedestrian Bridge (2015-2018)	Source Level – 50 feet	75-89
		Via Hidalgo – 900 feet (Shielded by Buildings – 10 dBA reduction)	40-54
		Spyglass Hill – 775 feet (Shielded by Buildings – 10 dBA reduction)	41-55
		Corte Oriental – 325 feet	59-73
		Bayview Road – 175 feet	64-78
		Harvard Drive – 650 feet	53-67
		Berens Drive – 1,450 feet	46-60
		Marin Catholic High School - 1,375 feet (Shielded by Buildings – 10 dBA reduction)	36-50
V and VI	Central and East Wing Renovations (2019-2020)	Indoor Renovations	NA
	Nursing Unit Infill Project (2023-2025)		

SOURCE: Illingworth & Rodkin, Inc., 2011

**Mitigation Measure NOI-2:**

- a) Pursuant to Sections 6.70.030(5) and 6.70.040 of the Marin County Municipal Code, restrict noise-generating activities at the construction site or in areas adjacent to the construction site to the hours of 7:00 a.m. to 6:00 p.m., Monday through Friday and 9:00 a.m. to 5:00 p.m. on Saturday. Construction will be prohibited on Sundays and holidays. Loud noise-generating construction-related equipment (e.g., backhoes, generators, jackhammers) can be maintained, operated, or serviced at a construction site for permits administered by the community development agency from 8:00 a.m. to 5:00 p.m. Monday through Friday only.
- b) If during construction it is determined that construction noise disrupts on-going hospital operations for workers or patients within patient rooms or existing medical offices, the project shall erect temporary noise control blanket barriers along existing hospital building facades facing the construction area. The specific location and height of barriers would depend on the extent of the problem indoors. Noise control blanket barriers can be rented and quickly erected to reduce the intrusiveness of construction noise indoors. If construction noise is not problematic and does not disrupt hospital or medical office operations, the temporary noise barriers would not be necessary.
- c) Where it is feasible to block the line-of-sight to construction activities, construct solid plywood fences (minimum eight feet in height either around the construction zone or at the common property line) to shield adjacent residences or other noise-sensitive land uses prior to major noise generating phases of demolition and construction;
- d) Shield adjacent sensitive uses from stationary equipment with individual noise barriers or partial acoustical enclosures;
- e) Develop a plan to relocate patient rooms and sensitive medical offices away from areas undergoing construction;
- f) Use manually adjustable or self-adjusting back-up alarms to increase or decrease the volume of the alarm based on background noise levels. Installation and use of the back-up alarms will be consistent with OSHA (Occupational Safety and Health Administration) regulations;
- g) Utilize 'quiet' models of air compressors and other stationary noise sources where technology exists;
- h) Equip all internal combustion engine-driven equipment with intake and exhaust mufflers, which are in good condition and appropriate for the equipment;
- i) Pavement breakers and jackhammers will also be equipped with acoustical attenuating shields or shrouds recommended by the manufacturers;
- j) Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from residences or noise-sensitive land uses;
- k) Locate staging areas and construction material areas as far away as possible from residences or noise-sensitive land uses;



- l) Route all construction traffic to and from the project site via designated truck routes where possible. Prohibit construction related heavy truck traffic in residential areas where feasible;
- m) Control noise from construction workers' radios to a point that they are not audible at existing residences bordering the project site;
- n) Conduct sensitivity training to inform construction personnel about the requirements of the construction noise control plan and about methods to reduce noise;
- o) Prohibit all unnecessary idling of internal combustion engines;
- p) Notify all adjacent business, residences, and noise-sensitive land uses of the construction schedule in writing;
- q) Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler) and would require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

Although the above measures would reduce noise generated by the construction of the project, the impact would remain significant and unavoidable as a result of the extended period of time that adjacent receivers would be exposed to construction noise in excess of 60 dBA Leq and the ambient noise environment by 5.0 dBA Leq or more.

**Significance after Implementation of Mitigation Measure:** Significant and Unavoidable

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### ***Construction Vibration***

#### **Impact NOI-3: Construction of the Project could expose persons to groundborne vibration. (Potentially Significant)**

The construction of the project may generate perceptible vibration when heavy equipment or impact tools (e.g. jackhammers, hoe rams) are used in the vicinity of the existing hospital building or medical offices. Construction activities will include demolition of existing buildings and parking areas, site preparation work, foundation work, and new building framing and finishing. Removal of the existing pavement could at times produce substantial vibration. Pile driving is not proposed as part of the construction of the project, therefore damage to existing buildings adjacent to the construction site is not anticipated.

Distinctly perceptible groundborne vibration levels could be generated by heavy tracked vehicles (e.g., bulldozers or excavators) when this equipment operates within approximately 25 feet of sensitive land uses. In areas where vibration would not be expected to cause structural damage, vibration levels may still be perceptible. However, as with any type of construction, this would be

anticipated and it would not be considered significant given the intermittent and short duration of the phases that have the highest potential of producing vibration (demolition and use of jackhammers and other high power tools). By use of administrative controls described in Mitigation Measure NOI-2 above, such as notifying neighbors of scheduled construction activities and scheduling construction activities with the highest potential to produce perceptible vibration to hours with least potential to affect sensitive uses, perceptible vibration can be kept to a minimum and as such would not result in a significant impact with respect to perception.

**Mitigation Measure NOI-3:** Implement Mitigation Measure NOI-2.

**Significance after Implementation of Mitigation Measure:** Less than Significant

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### ***Operational Noise Sources***

**Impact NOI-4: The Project could generate operational noise levels that exceed standards established in the Marin Countywide Plan. (Potentially Significant)**

#### **Ambulance Operations**

Ambulances will continue to operate in their current fashion and similar frequency, and so will not cause an increase in noise levels. Thus ambulances are not considered a noise issue requiring mitigation.

#### **Mechanical Equipment**

The operation of the project would introduce new sources of noise that may permanently increase noise levels at existing residences located southeast of the Hospital Replacement Building and Ambulatory Services Building. Major pieces of mechanical equipment are proposed on the roof of the building. These major pieces of equipment include chillers, pumps, air handlers, and cooling towers. Noise levels from mechanical equipment can be estimated based on the capacity of the equipment. Some capacity information was provided on the roof plan of the proposed Hospital Replacement Building. Where information was not provided, credible worst-case assumptions were made regarding equipment capacities. The nearest residences to the project site are located at the end of the Corte Oriental cul-de-sac about 450 feet from the center of the proposed Hospital Replacement Building roof on the hill to the southeast. These residents would have an unobstructed sound transmission path to the rooftop mechanical equipment. (Distances to residences shown in Table 4.J-9 are different because they are measured from the nearest edge of the construction area, versus the center of the roof.)

It is assumed that the rooftop chiller room, where chillers and pumps would be located, would be a fully enclosed room with ventilation openings, and it would have a roof. From a preliminary analysis of noise from the chillers located inside a standard chiller room, it was determined that noise from the chillers and pumps would not make a significant contribution to the total mechanical equipment noise radiated from the roof if standard controls are included in the ventilation paths. The mechanical systems were described in the schematic design submittal (October 20, 2010).

Cooling towers are described as “three induced draft cooling towers ...”. Of the various types of cooling towers, the noisiest type is the induced draft propeller type tower. Assuming this type of tower, the cumulative noise from the three cooling towers is calculated to be as high as about 54 dBA at the nearest residence. A similar analysis of cumulative noise from the rooftop air handlers indicates that the noise solely from the air handlers would be as high as 41 dBA at the nearest sensitive receptor. The cooling towers would be the dominant noise sources.

The Marin County General Plan noise level limit for continuous noise from proposed stationary mechanical equipment is 50 dBA during the daytime and 45 dBA during the nighttime. Projected noise levels from the rooftop mechanical equipment would exceed the daytime limit by four dBA and the nighttime limit by 9.0 dBA. Results of the ambient noise survey indicate that the existing nighttime noise level resulting from mechanical equipment at the hospital is approximately 48 dBA. Noise from the new cooling towers would also exceed existing noise levels resulting from the hospital’s existing mechanical equipment.

No other sources of heating, ventilating, and air conditioning equipment were identified that could make a significant contribution to community noise levels in the surrounding areas.

#### **New Generator Plant**

A new generator plant is proposed in the existing West Wing basement to provide standby power in the event of a utility power outage. The basement would house two Caterpillar Model 3516c T2 HV 60 Hz diesel generators approximately 18 feet below grade. The generators would run continuously during power outages and would be periodically tested to ensure operational readiness. A review of the preliminary acoustical enclosure plan shows that acoustical baffling would be located near the air inlet and generator discharge. Engine exhaust would be muffled prior to exiting the basement. New generator stacks will be routed via the West Wing basement to the roof via the route of existing generator stacks.

Manufacturer’s sound data indicate that operational noise levels from one generator would be about 99 dBA at a distance of 50 feet during testing and emergency operations (100-percent load). Noise levels are calculated to reach 75 dBA at the nearest residential receivers 800 feet to the east along Via Hidalgo that would have line of sight to the new generator plant, and would be less at other area receivers given the attenuation provided by intervening buildings for those located slightly closer (Spyglass Hill, Corte Oriental, and Bayview Road receivers) or additional attenuation resulting with increased distance from the noise source. Noise levels would be about three dBA higher if both generators were to be tested at the same time or during emergency conditions when both generators were required to run.

Noise levels resulting from the infrequent operation of the generators for testing purposes would be audible at the nearest receiving properties, but would not result in a significant noise impact provided that testing is limited to daytime hours only. The generator testing will continue to occur as it does under existing conditions.

However, predicted noise levels in the ambulance bay and at the facades of adjacent buildings would be sufficiently high to interfere with speech communication and may pose problems within

adjacent medical offices or patient rooms. Additional noise control, in the form of high-performance (hospital or critical grade) mufflers, additional banks of silencers, or acoustical louvers, would be necessary to reduce noise levels in the ambulance bay to 85 dBA or less. The additional noise control would also serve to reduce noise increases experienced by the surrounding community during testing or emergency operations.

### **Service Loading Dock**

The Hospital Replacement Building would include a new loading dock with five truck spaces at the first floor level. The new loading dock would be covered with a “green roof,” essentially screening the loading dock from view from patients, hospital rooms, and project site neighbors. However, the study does not assume that the roof will provide any attenuation of truck or loading dock operation noise. No loading dock currently exists on the project site; service trucks park along the existing service road at the southern end of the project site and truck lifts are used to load and unload supplies. Consistent with the operational air quality analysis in Section 4.B, *Air Quality*, this service loading dock noise assessment conservatively assumes the number of large truck deliveries would double with the project, although regular truck deliveries (e.g., FedEx, UPS, and beverage trucks) were not expected to increase. This would increase the existing three to four trucks per day to six to eight trucks per day. While Marin General Hospital may receive more volume of packages or supplies, these would still be expected to occur with the daily scheduled deliveries.

Heavy truck deliveries generate maximum instantaneous noise levels of 70 to 75 dBA L<sub>max</sub> at a distance of 50 feet. Smaller delivery trucks typically generate maximum noise levels of 60 to 65 dBA L<sub>max</sub> at the same distance. Low speed truck noise results from a combination of engine, exhaust, and tire noise as well as the intermittent sounds of back-up alarms, horns, door slams, and releases of compressed air associated with truck/trailer air brakes. The noise levels can vary depending on the type and directivity of the sound, but maximum noise levels are typically in the range of 65 to 75 dBA L<sub>max</sub> at a distance of 50 feet. By definition, a maximum instantaneous noise level measured using a sound-level meter’s slow response setting lasts one second or less. The maximum noise level standard would be the most restrictive criteria in the assessment of truck delivery noise, as truck deliveries are characterized as loud infrequent events. Noise generated by loading dock activities and slow moving trucks would drop off at a rate of about six dB per doubling of distance between the noise source and receiver.

The proposed loading dock would eliminate the need for service trucks to park along the existing service road at the southern end of the project site, approximately 160 to 240 feet from the nearest residential receivers along Corte Oriental, to load and unload supplies. Maximum noise levels from truck circulation activities would be similar to existing conditions as the truck circulation route would not change substantially with the proposed project. Heavy truck deliveries are calculated to result in maximum instantaneous noise levels of 60 to 65 dBA L<sub>max</sub> at a distance of 160 feet, and smaller delivery trucks are calculated to generate maximum noise levels of 50 to 55 dBA L<sub>max</sub> at the same distance. Maximum instantaneous noise levels from truck circulation along the south boundary of the site would not exceed the daytime or nighttime noise limits for maximum instantaneous noise levels at residences to the southeast or south.

The proposed loading dock would move the loading and unloading area to a point on the site approximately 320 feet from the nearest residential receivers along Corte Oriental, reducing maximum noise levels from existing loading and unloading activities, even considering the increase in the number of truck trips estimated, by 4.0 to 6.0 dBA because of the greater distance between the relocated noise source and residential receivers.

### **Parking Structures**

A 412-space Hillside Parking Structure and a 507-space Bon Air Road Parking Structure are proposed as part of the project. The Hillside Parking Structure would be five stories above ground (six parking levels) and 57 feet tall, but the rear of the structure would be cut into the hillside slope, leaving two to three stories above grade on the side and rear elevations. The Bon Air Road Parking Structure would be four stories above ground (five parking levels) and 46 feet tall. Noise calculations factored in the height of the parking structures.

Illingworth and Rodkin, Inc. conducted noise measurements near a four-story parking garage in downtown Petaluma. Noise measurements were made of typical noise generating activities occurring on the various parking levels. At each parking level, a car door was opened and closed several times, the engine was started, and the auto's horn was sounded. The noise sources were generated at the edge of each story and at a parking stall located about 50 feet from the edge. Noise measurements were also made as an auto traveled up and down the parking garage. The sounding of the auto's horn was the noisiest. Maximum instantaneous noise levels, measured about 75 feet from the façade of the garage at ground level typically ranged from 53-58 dBA Lmax. The sounding of the car horn typically ranged from 62-70 dBA Lmax.

Multi-family residences along Via Hidalgo are located approximately 180 feet east of the proposed Hillside Parking Structure and would have direct line-of-sight to parking activities on the top level. Residences to the southeast and south are located 280 to 400 feet from the Hillside Parking Structure. At the nearest residential receivers, located a distance of 180 feet from the Hillside Parking Structure, maximum instantaneous noise levels would typically range from 45-50 dBA Lmax. The sounding of the car horn near the edge of the parking structure would yield noise levels ranging from 54-62 dBA Lmax. These noises are infrequent and would not be expected to cause an increase in hourly average noise levels at the surrounding residences. The louder noises would be intermittently audible. The frequently occurring noise levels resulting from vehicle passbys, door slams, and engine starts would be below Marin County's daytime and nighttime noise limits for maximum instantaneous noise levels, 70 dBA Lmax and 65 dBA Lmax, respectively. Maximum instantaneous noise levels resulting from infrequent events such as auto horns, sounded as a warning or because of a vehicle's alarm system, would also not exceed the daytime or nighttime noise limits for maximum instantaneous noise levels.

Residences to the southeast and south are located 280 to 400 feet from the Hillside Parking Structure. At a distance of 280 feet from the Hillside Parking Structure, maximum instantaneous noise levels would typically range from 42-47 dBA Lmax. The sounding of the car horn near the edge of the parking structure would yield noise levels ranging from 51-59 dBA Lmax. At a distance of 400 feet, maximum instantaneous noise levels would typically range from 38-43 dBA

Lmax, and the sounding of the car horn near the edge of the parking structure would yield noise levels ranging from 47-55 dBA Lmax. Maximum instantaneous noise levels resulting from events occurring at the Hillside Parking Structure would not exceed the daytime or nighttime noise limits for maximum instantaneous noise levels at residences to the southeast or south.

Similarly, maximum instantaneous noise levels generated at the Bon Air Road Parking Structure, located over 550 feet from the nearest residences, would not exceed the daytime or nighttime noise limits for maximum instantaneous noise levels given the greater distance between the source of noise and receiver.

Project construction will replace surface parking lots. The remaining surface lots will continue operating as they presently do. Therefore surface parking will not cause increased noise levels.

**Mitigation Measure NOI-4a:** During final design of the project, conduct an acoustical analysis to ensure that noise resulting from the rooftop mechanical equipment on the Hospital Replacement Building complies with applicable General Plan policies. The acoustical analysis would calculate noise levels resulting from the selected equipment at the nearest sensitive receiving land uses, assess noise levels relative to applicable standards, and provide feasible and reasonable recommendations to control noise levels in accordance with the applicable limits. Particular attention will be given to the chiller room enclosure and cooling towers. Additional noise control measures might include, but are not limited to, selection of quieter equipment, baffles, packaged sound attenuators, and noise barriers. The report will be completed and submitted to the building department prior to the issuance of building permits, and will be used to determine the added noise measures required.

**Mitigation Measure NOI-4b:** During final design of the project, conduct an acoustical analysis to ensure that noise resulting from the operation of the emergency generators is reduced to 85 dBA or less (or a lower limit if necessary to minimize interference with hospital operations) in the ambulance bay. The report will be completed and submitted to the building department prior to the issuance of building permits related to installation of the generators in the West Wing, and will provide feasible and reasonable recommendations as needed to control noise levels in accordance with the applicable limits. Additional noise control measures might include, but are not limited to, high-performance (hospital or critical grade) mufflers, additional banks of silencers, or acoustical louvers. The additional noise control would also reduce noise levels in the surrounding community during testing or emergency operations.

The above measures would reduce noise generated by operation of mechanical equipment and emergency generators sufficiently to make any impacts less than significant. It is acceptable and appropriate to defer conducting more detailed acoustical analyses and adding noise control measures or redesigning project details, without risking an unmitigated significant impact. It would be premature and overly speculative to attempt to finalize the calculation of noise emissions at this stage of the project, as the approval and design process frequently results in revisions that alter the final noise production results, and the noise-generating equipment available for installation in the project may change by the time of project final design. Noise reduction techniques are well-understood, the available noise control measures are well-documented as to their effectiveness, and the nature of noise generation by the project and the location and type of sensitive receptors potentially affected by that noise are not unique and are unlikely to pose unexpected difficulty to

mitigate. Feasible and reasonable noise control measures can be identified and implemented as part of the project that will adequately mitigate any noise impacts.

**Significance after Implementation of Mitigation Measure:** Less than Significant

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### **Generated Traffic Noise**

#### **Impact NOI-5: The Project would not result in increased traffic volumes that would substantially increase noise levels at sensitive receivers in the project vicinity. (Less than Significant)**

Traffic data for area roadways, provided by Omni-Means, Inc., were reviewed to calculate the relative noise level changes expected under various traffic conditions. Twenty-four different roadway intersections were evaluated in the analysis. Link volumes under the existing plus project scenario were compared to existing conditions to calculate the noise increase attributable to the project under AM peak hour, PM peak hour, and mid-day peak hour traffic scenarios. (See Section 4.M, *Transportation and Circulation*.)

The data indicate that traffic volumes in the site vicinity would slightly increase as a result of the proposed project. Traffic noise levels due to the proposed project are calculated to increase existing traffic noise levels up to 1.0 dBA Leq during the PM peak traffic hour along Bon Air Road, north of the driveway that serves the site and by less than 1.0 dBA Leq during the AM peak hour and mid-day peak hour. The noise increase attributable to the project would be less than 1.0 dBA Ldn along this segment of Bon Air Road.

Traffic noise levels resulting from project trips are calculated to increase existing traffic noise levels by up to 1.0 dBA Leq during the PM peak traffic hour and less than 1.0 dBA Leq during the AM peak hour and mid-day peak hour along Bon Air Road, south of the project driveway. The noise increase attributable to the project along Bon Air Road, south of the project driveway would also be less than 1 dBA Ldn.

Traffic noise levels along Sir Francis Drake Boulevard and roadways located further away from the project site are all calculated to increase by less than 1.0 dBA Ldn as a result of project traffic.

**Table 4.J-10** summarizes the day-night average noise levels calculated for the existing, existing plus project, 2018 no project, and 2018 plus project traffic scenarios (consistent with the traffic analysis). Noise levels were calculated at a receiver located 75 feet from the roadway centerline. Noise levels were calculated at a receiver located 75 feet from the roadway centerline with Illingworth and Rodkin's proprietary spreadsheet-based model, which was calibrated to existing traffic noise levels measured during the noise monitoring survey. The modeling assumed that existing and future traffic volumes would continue to travel along area roadways at posted speed limits and continue to follow the same diurnal pattern. A review of the data contained in Table 4.J-9 shows that the project would increase noise levels by 0 to 1 dBA Ldn along roadways serving the site. This traffic noise increase would not be perceptible, and would not exceed the 3.0 dBA Ldn

**TABLE 4.J-10  
 TRAFFIC NOISE LEVELS AT 75 FEET FROM THE ROADWAY CENTERLINE (DBA, LDN)**

Roadway Segment	2010 Existing Conditions	Existing Plus Project Conditions	Project Noise Increase	2018 No Project Conditions	2018 Plus Project Conditions	Project Noise Increase
Bon Air Road (north of project driveway)	66.2	66.7	0.5	66.4	67.2	0.8
Bon Air Road (south of project driveway)	66.0	66.3	0.3	66.3	66.9	0.6
Sir Francis Drake Boulevard (west of Bon Air Road)	74.0	74.1	0.1	74.2	74.3	0.1
Sir Francis Drake Boulevard (east of Bon Air Road)	74.0	74.3	0.3	74.1	74.4	0.3

SOURCE: Illingworth & Rodkin, Inc., 2011

threshold established by Marin County. Therefore, the proposed project would not substantially increase ambient noise levels over a permanent basis, resulting in a less-than-significant noise impact.

**Mitigation:** None required

## Cumulative Impact

**Impact NOI-6: The Project, combined with past, present, and reasonably foreseeable projects, would not substantially increase traffic noise levels along area roadways or result in cumulatively significant temporary or operational noise or vibration effects. (Less than Significant)**

### *Geographic Context*

Development located in the vicinity of the project site and nearby sensitive receptors, and that would generate increased traffic along area roadways and intersections, as defined by the street network analyzed in the transportation analysis in Section 4.M, *Transportation and Circulation*, comprise the geographic context considered for potential cumulative noise impacts.

### *Impact*

The project would result in a significant cumulative traffic noise impact if noise levels at existing sensitive receivers would be substantially increased (i.e., 3.0 dBA Ldn above existing traffic noise levels where noise levels would exceed 60 dBA Ldn) and if the project would make a “cumulatively considerable” contribution to the overall traffic noise level increase. A “cumulatively considerable” contribution would be defined as an increase of 1.0 dBA Ldn or more attributable solely to the proposed project.



Traffic noise levels in the project vicinity are calculated to not increase substantially over the long-term as the area is generally built-out. 2035 with project traffic noise data was compared to existing traffic noise data to determine if the cumulative projects would result in a cumulative traffic noise impact. Cumulative noise levels are not expected to substantially increase (a substantial cumulative noise increase is defined as a 3.0 dBA Ldn increase above existing conditions). This is a less-than-significant impact.

Additionally, all past, present and reasonably foreseeable projects in the cumulative geographic area will be required to adhere to noise standards, limits and construction-activity regulations pursuant to the Marin County Municipal Code, and, as appropriate on a case-by-case basis, adhere to migration measures consistent with Mitigation Measure NOI-2 identified above for the project. As discussed under *Cumulative Analysis*, at the preface of Chapter 4, no known other substantial projects are anticipated to occur in proximity of the project or for an extended period of time that could combine to result in a significant cumulative construction-period noise or groundborne vibration effect to nearby sensitive receptors. An exception could be the City of Larkspur's proposed replacement of the Bon Air Bridge just south of the hospital, although the bridge replacement is anticipated to be completed before the start of construction for the proposed project (see Section 4.M, *Transportation and Circulation, Future Transportation Improvements*).

Thus, no significant cumulative construction-period noise impact would occur to which the project could contribute considerable, even though, at a project level, the project would maintain a significant and unavoidable construction-period noise impact (Impact NOI-2). Overall, the project, combined with other past, present and reasonably foreseeable projects would not result in a significant cumulative noise and vibration impact. The impact would be less than significant.

**Mitigation:** None required

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## References – Noise and Vibration

California Office of Planning and Research, 2003, *General Plan Guidelines*, October.

Caltrans, 2009, *Technical Noise Supplement*.

City of Larkspur, 1990. *City of Larkspur General Plan: 1990-2010*, Health and Safety Element, prepared by Naphtali H. Knox & Associates, Inc. and DKS Associates.

Illingworth & Rodkin, Inc., 2011. *Marin Healthcare District's Marin General Hospital Replacement Building Project Environmental Noise Assessment, Greenbrae, California*, November 3.

Marin County Community Development Agency (MCCDA), 2007. *Marin Countywide Plan*, Built Environment Element, available online at <http://www.co.marin.ca.us/depts/cd/main/fm/TOC.cfm>, adopted November 6.

U.S. Environmental Protection Agency (USEPA), 1973. *Legal Compilation on Noise Vol. 1*, p. 2-104, 1973.

## 4.K Population, Housing, and Employment

This section describes population, housing, and employment conditions and trends in Marin County and communities in the project vicinity and evaluates the potential physical effects of the project related to population, housing, and employment. This section relies primarily on employee information supplied by Marin General Hospital and on information from the U.S. Census Bureau, the California Department of Finance, the Association of Bay Area Governments (ABAG), and the Marin Countywide Plan and a population, housing, and employment assessment of the project (Conley Consulting Group, 2011).

### Regional Setting

#### Population and Housing

The project site is located in unincorporated Marin County, one of nine counties that make up the Bay Area region. According to the U.S. Census Bureau's 2010 decennial census, there were 7.1 million people living in the nine-county region in 2010.<sup>1</sup> The region's population grew by 13.0 percent between 1990 and 2000 and by 5.4 percent between 2000 and 2010; population increased by a total of about 19.0 percent over the 20-year period.

The number of housing units in the region grew by about 8.0 percent between 1990 and 2000 and by 9.0 percent between 2000 and 2010, for a total increase in housing units over this 20-year period was about 18.0 percent. The number of households (occupied housing units) increased by 10.0 percent between 1990 and 2000 and by 6.0 percent between 2000 and 2010, for a total increase of about 16.0 percent over the 20-year period.

#### Employment

The Bay Area as a whole experienced substantial job growth during the 1990s fueled by the "dot com" boom, and subsequently suffered substantial job losses between 2000 and 2010 due to the "dot com" bust and the national recession. Between 1990 and 2000, the nine-county Bay Area region gained more than 620,000 jobs, a 20.0-percent increase. Between 2000 and 2010, the Bay Area region lost more than 220,000 jobs, a 6.0-percent decrease from 2000 (ABAG, 2009).

### Local Setting

#### Population and Housing Conditions

##### *Population*

Marin County had 252,409 residents in 2010. The county's population grew by 7.5 percent between 1990 and 2000 and by 2.1 percent between 2000 and 2010, roughly half the rate at which the population of the nine-county region as a whole grew over this period. The project site is

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<sup>1</sup> The nine-county Bay Area region includes the counties of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties.

located in unincorporated Marin County between the unincorporated communities of Kentfield and Greenbrae in the Ross Valley area. Ross Valley includes the incorporated cities of Corte Madera, Larkspur, Ross, and San Anselmo and the unincorporated communities of Fairfax, Greenbrae, Kentfield, San Quentin, Sleepy Hollow, and Greenbrae Boardwalk. Together the incorporated cities of Ross Valley grew by about 7.5 percent between 1990 and 2000 and about 0.5 percent between 2000 and 2010. **Table 4.K-1** summarizes recent population and housing trends for the incorporated cities of Ross Valley, Marin County, and the nine-county Bay Area. In general, census data are not compiled for discrete unincorporated communities or areas but are provided for a county as a whole. An exception to this is the “census-designated place” (CDP), unincorporated communities for which the U.S. Census Bureau compiles demographic data through its American Community Survey. Kentfield is one such CDP. It had a population of 6,485 in 2010, having grown by 5.3 percent between 1990 and 2000 and by 2.1 percent between 2000 and 2010. The population increased by 455 residents, about 8.0 percent, over this 20-year period (U.S. Census Bureau, 1990; 2000; and 2011). **Table 4.K-2** summarizes this population and housing information for the Kentfield CDP. While part of Greenbrae is within Larkspur’s planning area, discrete demographic data are not available for Greenbrae as a community since it is unincorporated and not a CDP.

### ***Housing***

Approximately 11,500 housing units were added in Marin County between 1990 and 2010, a 19-percent increase. Housing stock in the county increased by 5,230 housing units, or about 5.2 percent, between 1990 and 2000 and by 6,220 housing units, or about 6.0 percent, between 2000 and 2010. Overall, housing in Marin County increased at a slightly faster rate than population between 1990 and 2010 – by about 11.0 percent, compared to a 10-percent increase in population.

The cities of Ross Valley collectively added about 1,400 housing units between 1990 and 2010, a 7.0-percent increase over this period. Housing stock increased by 4.7 percent between 1990 and 2000 and by 2.6 percent between 2000 and 2010, as shown in Table 4.K-1, above. In Kentfield, 266 new housing units were added between 1990 and 2010, an 11.0-percent increase. Thus, Kentfield’s housing production increased at a slightly faster pace compared to the increase in its population over this period (8.0 percent). Most (193) of the new units were added between 2000 and 2010.

## **Population and Housing Growth Projections**

### ***Association of Bay Area Governments (ABAG)***

ABAG is the official regional planning agency of the San Francisco Bay Area. Its members include the nine Bay-Area counties and the 101 cities and towns within the Bay Area. ABAG’s biennial *Projections* series provides long-term population, housing, and economic forecasts through a series of computer models. ABAG’s model results are relied on by transportation and air quality agencies, water agencies, local governments, and others.

**TABLE 4.K-1  
POPULATION AND HOUSING TRENDS IN MARIN COUNTY – 1990-2010**

<b>Geographic Area<sup>a</sup></b>	<b>1990</b>	<b>2000</b>	<b>2010</b>	<b>% Change 1990-2000</b>	<b>% Change 2000-2010</b>
<b>Population</b>					
Corte Madera	8,272	9,100	9,253	10.0%	1.7%
Fairfax	6,931	7,319	7,441	5.6%	1.7%
Larkspur	11,068	12,014	11,926	8.5%	-0.7%
Ross	2,136	2,329	2,415	9.0%	3.7%
San Anselmo	11,735	12,378	12,336	2.4%	2.7%
<i>Subtotal Ross Valley Cities</i>	<i>40,142</i>	<i>43,140</i>	<i>43,371</i>	<i>7.5%</i>	<i>0.5%</i>
Other Marin County Cities	125,877	135,414	141,611	7.6%	4.6%
Unincorporated Marin County <sup>b</sup>	64,077	68,735	67,427	7.3%	-1.9%
<b>Total Marin County</b>	<b>230,096</b>	<b>247,289</b>	<b>252,409</b>	<b>7.5%</b>	<b>2.1%</b>
Nine-County Bay Area	6,020,147	6,783,762	7,150,739	12.7%	5.4%
<b>Households</b>					
Corte Madera	3,577	3,776	3,793	5.6%	0.5%
Fairfax	3,092	3,306	3,379	6.9%	2.2%
Larkspur	5,721	6,142	5,908	7.4%	-3.8%
Ross	731	761	798	4.1%	4.9%
San Anselmo	5,125	5,267	5,243	2.8%	-0.5%
<i>Subtotal Ross Valley Cities</i>	<i>18,246</i>	<i>19,252</i>	<i>19,121</i>	<i>5.5%</i>	<i>-0.7%</i>
Other Marin County Cities	52,822	55,963	57,896	5.9%	3.5%
Unincorporated Marin County <sup>a</sup>	23,938	24,435	26,193	6.3%	3.0%
<b>Total Marin County</b>	<b>95,006</b>	<b>100,650</b>	<b>103,210</b>	<b>5.9%</b>	<b>2.5%</b>
Nine-County Bay Area	2,245,865	2,466,020	2,608,023	9.8%	5.8%
<b>Housing Units</b>					
Corte Madera	3,717	3,850	4,026	3.6%	4.6%
Fairfax	3,225	3,418	3,585	6.0%	4.9%
Larkspur	5,966	6,413	6,376	7.5%	-0.6%
Ross	759	805	884	6.1%	9.8%
San Anselmo	5,330	5,408	5,538	1.5%	2.4%
<i>Subtotal Ross Valley Cities</i>	<i>18,997</i>	<i>19,894</i>	<i>20,409</i>	<i>4.7%</i>	<i>2.6%</i>
Other Marin County Cities	54,914	57,690	61,309	5.1%	6.3%
Unincorporated Marin County <sup>b</sup>	25,836	27,406	29,496	6.1%	7.6%
<b>Total Marin County</b>	<b>99,757</b>	<b>104,990</b>	<b>111,214</b>	<b>5.2%</b>	<b>5.9%</b>
Nine-County Bay Area	2,364,926	2,552,404	2,785,948	7.9%	9.1%

<sup>a</sup> City data are for cities within their jurisdictional boundaries.

<sup>b</sup> Includes Kentfield and all other unincorporated areas of the county.

SOURCE: State of California Department of Finance, 2011; State of California Department of Finance, 2007

**TABLE 4.K-2  
 KENTFIELD<sup>a</sup> POPULATION AND HOUSING TRENDS**

	1990	2000	2010	Change 1990-2000	% Change 1990-2000	Change 2000-2010	% Change 2000-2010
Population	6,030	6,351	6,485	321	5.3%	134	2.1%
Housing Units	2,492	2,565	2,758	73	2.9%	193	7.5%

<sup>a</sup> Data are for Kentfield Census Designated Place (CDP).

SOURCE: U.S. Census Bureau, 1990; 2000; 2011

ABAG projects that the County will have about 274,300 residents and 107,400 households by 2035, the most distant year for which its current series, *Projections and Priorities 2009*, provides forecasts. This represents an increase of about 17,800 residents and 7,600 households between 2010 and 2035, as shown in **Table 4.K-3**. Because ABAG’s current projections series (ABAG, 2009) was prepared before 2010, it does not incorporate the results of the 2010 decennial census. Figures in the table for 2010 are ABAG’s estimates at the time the projections were prepared. The projections shown are for the cities within their corporate boundaries plus any unincorporated lands within the respective cities’ planning areas.

As shown, the about 17,800 residents (a 7.0-percent increase) are projected to be added to the county’s population by 2035. About 7,600 households (a 7.3-percent increase) are expected to be added by 2035. The population of Ross Valley cities collectively is expected to increase by about 4.0 percent between 2010 and 2035, although there is substantial variation in the projected growth rates of individual cities, as shown in the table. Overall the number of households in Ross Valley cities is expected to increase by about 5.0 percent, or about 1,100 households, between 2010 and 2035.

**Marin Countywide Plan**

The Marin Countywide Plan (MCCDA, 2007) is the County’s long range general plan for development in the county. It provides estimates of “theoretical buildout” that is expected to occur under the Countywide Plan. Although the plan does not specify a year by which plan buildout is expected to occur, for modeling purposes during plan preparation, 2030 was the year assumed for theoretical buildout (Drumm, 2011a).

The plan provides data from the 2000 decennial census (and data from earlier decennial censuses) for certain demographic factors and land uses and provides the theoretical buildout foreseen for each factor under the plan. **Table 4.K-4** shows Countywide Plan information for several key demographic factors, as well as data from the 2010 Census for the county as a whole. It also shows the development potential remaining under the Countywide Plan based on the difference between the theoretical buildout level and 2010 levels.

**TABLE 4.K-3  
ABAG POPULATION, HOUSEHOLD, AND EMPLOYMENT PROJECTIONS FOR MARIN COUNTY AND BAY AREA**

Geographic Area <sup>a</sup>	2000	2010 <sup>b</sup>	2020	Change 2010 -2020	% change 2010-2020	2035	Change 2010-2035	% Change 2010-2035
<b>Population</b>								
Corte Madera	9,242	9,500	9,800	300	3.2%	10,400	900	9.5%
Fairfax	8,548	8,600	8,700	100	1.2%	8,700	100	1.2%
Larkspur <sup>c</sup>	24,804	20,500	21,000	500	2.4%	21,500	1,000	4.9%
Ross	2,329	2,400	2,400	0	0%	2,400	0	0%
San Anselmo	14,740	14,900	14,900	0	0%	15,000	100	0.7%
<i>Subtotal Ross Valley Cities</i>	<i>59,663</i>	<i>55,900</i>	<i>56,800</i>	<i>900</i>	<i>1.6%</i>	<i>58,000</i>	<i>2,100</i>	<i>3.8%</i>
Other Marin County Cities	157,925	157,300	160,600	6,100	3.8%	174,800	14,200	8.8%
Remainder of County <sup>c</sup>	29,701	40,000	40,500	500	1.3%	41,500	1,500	3.8%
<b>Marin County Total</b>	<b>247,289</b>	<b>256,500</b>	<b>264,000</b>	<b>7,500</b>	<b>2.9%</b>	<b>274,300</b>	<b>17,800</b>	<b>6.9%</b>
Nine-County Bay Area	6,783,762	7,341,700	8,018,000	676,300	9.2%	9,073,700	1,732,000	23.6%
<b>Households</b>								
Corte Madera	3,850	3,990	4,190	200	5.0%	4,520	530	13.3%
Fairfax	3,778	3,780	3,830	50	1.3%	3,860	80	2.1%
Larkspur <sup>c</sup>	8,743	6,940	7,100	160	2.3%	7,345	405	5.8%
Ross	761	780	790	10	1.3%	790	10	1.3%
San Anselmo	6,103	6,150	6,180	30	0.5%	6,210	60	1.0%
<i>Subtotal Ross Valley Cities</i>	<i>23,235</i>	<i>21,640</i>	<i>22,090</i>	<i>450</i>	<i>2.1%</i>	<i>22,725</i>	<i>1,085</i>	<i>5.0%</i>
Other Marin County Cities	64,979	65,910	68,150	2,240	3.4%	71,940	6,030	9.1%
Remainder of County <sup>c</sup>	12,436	17,000	17,180	180	1.1%	17,505	505	3.0%
<b>Total Marin County</b>	<b>100,650</b>	<b>104,550</b>	<b>107,420</b>	<b>2,870</b>	<b>2.7%</b>	<b>112,170</b>	<b>7,620</b>	<b>7.3%</b>
Nine-County Bay Area	2,466,020	2,667,340	2,911,000	243,660	9.1%	3,302,780	635,440	23.8%
<b>Employment</b>			<b>2020</b>			<b>2035</b>		
Corte Madera	6,940	6,930	7,960	1,030	14.9%	9,650	2,720	39.2%
Fairfax	1,980	2,020	2,160	140	6.9%	2,290	270	13.4%
Larkspur <sup>c</sup>	12,950	11,440	11,860	420	3.7%	12,440	1,000	8.7%
Ross	860	860	890	30	3.5%	930	70	8.1%
San Anselmo	5,990	5,950	6,030	80	1.3%	6,150	200	3.4%
<i>Subtotal Ross Valley Cities</i>	<i>28,720</i>	<i>27,200</i>	<i>28,900</i>	<i>1,700</i>	<i>6.3%</i>	<i>31,460</i>	<i>4,260</i>	<i>15.7%</i>
Other Marin County Cities	94,560	94,180	100,420	6,240	6.6%	111,950	17,770	18.9%
Remainder of County <sup>c</sup>	10,900	14,220	14,460	240	1.7%	14,870	650	4.6%
<b>Total Marin County</b>	<b>134,180</b>	<b>135,600</b>	<b>143,780</b>	<b>8,180</b>	<b>6.0%</b>	<b>158,280</b>	<b>22,680</b>	<b>16.7%</b>
Nine-County Bay Area	3,753,460	3,475,840	4,040,690	564,850	16.3%	5,107,390	1,631,550	46.9%

<sup>a</sup> Data for cities include the cities and any unincorporated land included in their planning areas (ABAG subregional study areas).

<sup>b</sup> Projections presented in this table are based on ABAG's most recent projections series (ABAG, 2009) and therefore do not incorporate 2010 census data.

<sup>c</sup> In 2007 the community of Kentfield was removed from Larkspur's planning area by the Marin County Local Agency Formation Commission (LAFCO); Kentfield is now part of the unincorporated county outside the planning area of any incorporated city.

SOURCE: Association of Bay Area Governments, 2009; Marin County LAFCO, 2007.

**TABLE 4.K-4  
 FUTURE GROWTH POTENTIAL UNDER THE COUNTYWIDE PLAN**

Information Category	2000 Actual	2010 Actual	Theoretical Buildout	Remaining Growth Potential
Population	247,289	252,409	279,972	27,563
Households	100,650	103,210	118,728	15,518
Housing Units	1104,990	111,214	120,755	9,541
Jobs	122,960	135,600	151,566	15,966

SOURCE: Marin County Community Development Agency, 2007, U.S. Census Bureau, 2011.

The Countywide Plan also identifies seven distinct planning areas within the county. The project site is within the Lower Ross Valley planning area, which includes Larkspur, Corte Madera, and the unincorporated communities of Kentfield, Greenbrae, San Quentin, and the Greenbrae Boardwalk.

**Table 4.K-5** presents information from the planning area description on relevant land use and demographic categories from the Countywide Plan.<sup>2</sup>

**TABLE 4.K-5  
 DEMOGRAPHIC AND LAND USE INFORMATION  
 LOWER ROSS VALLEY PLANNING AREA**

Information Category	1980 Actual	1990 Actual	2000 Actual	Theoretical Buildout
<b>Demographics</b>				
Population	29,220	31,451	34,336	28,839
Households	11,396	11,933	12,731	13,116
Average Household Size	2.56	2.64	2.70	2.25
Jobs	12,991	20,589	22,674	19,446
<b>Land Use</b>				
Housing Units	11,693	12,394	13,168	14,189
<i>Incorporated Area</i>	8,884	9,683	10,263	11,051
<i>Unincorporated Area</i>	2,809	2,711	2,905	3,138
Commercial /Industrial Area (square feet)	See Footnote a	4,602,495	4,962,780	5,471,054
<i>Incorporated Area</i>	See Footnote a	4,260,138	4,625,843	5,131,373
<i>Unincorporated Area</i>	See Footnote a	342,357	336,937	339,681

<sup>a</sup> Table source indicates that census data were not available for this metric.

SOURCE: Marin County Community Development Agency, 2007 (Table 3-55).

<sup>2</sup> Because this table includes unincorporated areas that are not readily segregated from the rest of Marin County, it is limited to the information presented in the Countywide Plan and does not include 2010 Census information.

To summarize from Table 4.K-5 and the description of the Ross Valley Planning Area in the Countywide Plan, between 1980 and 2000:

- The population of the planning area increased by 17.6 percent;
- The number of employed residents increased by 15.9 percent;
- The number of jobs increased substantially by 74.5 percent;
- 22.0 percent of its 13,168 housing units were in the unincorporated area;
- 34.0 percent of its 5 million square feet of commercial space were located in the unincorporated area;
- The former Ross Hospital had been redeveloped into housing; and
- Additional housing, much of it affordable, was under construction near Larkspur Landing.

## **Employment**

### ***Employment Conditions***

In Marin County, nearly 22,000 jobs were added between 1990 and 2000, a 22.0-percent increase over 1990, but unlike half the other counties in the region, jobs continued to be added in Marin between 2000 and 2010. An estimated 12,600 jobs were added in the county over the past decade, a 10.0-percent increase from 2000 levels (ABAG, 2009). ABAG estimates that in 2010 there were a total of about 27,200 jobs in the incorporated cities of Ross Valley and their planning areas and a total of about 14,200 jobs in unincorporated areas of Marin County outside of cities' planning areas.

### ***Projected Job Growth***

ABAG projects that the number of jobs in Marin County will increase by 6.0 percent by 2020 (from approximately 135,600 jobs in 2010 to 143,780 in 2020), and by 17.0 percent between 2010 and 2035 (ABAG, 2009). For the Ross Valley cities together, ABAG projects that the number of jobs will also increase by about 6.0 percent between 2010 and 2020 and by about 16.0 percent between 2010 and 2035. The number of jobs in the unincorporated county outside of the cities' planning area is projected to increase by about 2.0 percent (representing approximately 240 jobs) between 2010 and 2020 and by about 5.0 percent (650 jobs) between 2010 and 2035. Table 4.K-5, above, shows ABAG's job projections for the county.



## Regulatory Setting

### State Regulations

#### ***Senate Bill 375***

Adopted into law in 2008, Senate Bill (SB) 375 links regional transportation and housing planning with State greenhouse gas (GHG) reduction goals.<sup>3</sup> The law requires the California Air Resources Board to establish for each region of the state GHG reduction targets for the automobile and light truck sector, and requires the regional transportation plan (RTP) for each region to include a “Sustainable Communities Strategy” (SCS) to achieve its GHG reduction target. The law assigns responsibility for developing the SCS for the Bay Area to the Metropolitan Transportation Commission (MTC) and ABAG. The SCS must identify the general location of uses, residential densities and building intensities in the region and identify areas within the region that will house the region’s population, including all economic segments of the population taking into account migration into the region and population growth, over the next eight and 25 years. The SCS must forecast a development pattern for the region which, when integrated with the transportation system, achieves the GHG reduction target. Plan Bay Area: Initial Vision Scenario for Public Discussion is the preliminary draft of the SCS for the Bay Area (see *Current Regional Planning Initiatives* below).

#### ***California Housing Element Requirements***

California law (Government Code Section 65580, et seq.) requires cities and counties to include as part of their General Plans a housing element to address housing conditions and needs in the community. Housing elements are prepared approximately every five years, following timetables set forth in the law. The housing element must identify and analyze existing and projected housing needs and “make adequate provision for the existing and projected needs of all economic segments of the community,” among other requirements. (See *2009 Draft Housing Element*, below.)

### Local Regulations

#### ***Marin Countywide Plan***

The Marin Countywide Plan is the County’s long range guide for the conservation and development of Marin County. The current Housing Element of the Countywide Plan was adopted in 2003 and readopted with the Countywide Plan Update in 2007. The 2003 Housing Element is included in its entirety in the Countywide Plan, and the complete list of Housing Element goals and policies is included in Section 3.8, Housing, of the Countywide Plan. Goals and policies of the Countywide pertaining to population, housing, and employment relevant to the project include the following:

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<sup>3</sup> SB 375 amended California Government Code Sections 65080, 654000, 65583, 65584.01, 65584.02, 65584.04, 65587, and 65588; added Government Code Sections 14522.1, 14522.2, and 65080.01; amended Public Resources Code (PRC) Section 21063; and added PRC Section 21159.28 and Chapter 4.2 (commencing with Section 21155) to Division 13 of the PRC relating to environmental quality.

**Goal CD-2. *Balanced Communities.*** Maintain balanced communities that house and employ persons from all income groups and provide the full range of needed facilities and services.

*Policy CD-2.1 Provide a Mix of Housing.* The range of housing types, sizes and prices should accommodate works employed in Marin County. This includes rental units affordable to lower-wage earners and housing that meets the needs of families, seniors, disable persons, and homeless individuals and families.

*Policy CD-2.10. Expand Countywide Efforts to Increase Workforce Housing Rather than Full Commercial Build-out.* Provide technical assistance and collaborate with Marin’s towns and cities to provide increased opportunities for affordable and workforce housing – especially on sites near employment centers and public transportation.

**Goal HS-3. *Efficient Use of Land.*** Use our land efficiently to meet housing needs and to implement “smart” and sustainable development principles.

*Policy HS-3.1 House Local Workers.* Strive to provide an adequate supply and variety of housing opportunities to meet the needs of Marin County’s workforce and their families, striving to match housing types and affordability with household income.

*Policy HS-3.2 Require Contributions for Workforce Housing from Nonresidential Uses.* Require specific nonresidential development proposals to contribute to the provision of affordable workforce housing, such [as] the provision of housing on-site or other alternatives of equal value.

*Policy HS-3-3. Develop Employee Housing.* Work with employers developing larger projects to ensure local housing opportunities for their employees, and engage employers to find ways to provide housing assistance as part of their employee packages. Developers of major projects in mixed use areas will be encouraged to consider and propose housing where feasible.

*Policy HS-3.21. Meet Inclusionary Requirements.* The primary intent of the inclusionary requirement is the construction of new units on-site with the focus being multi-family housing developments with deed restrictions to support long periods of affordability. Second priority for meeting inclusionary requirements shall be the construction of housing off-site or the transfer of land and sufficient cash to develop the number of affordable units required within the same community planning area.

*Implementing Program HS-3.a. Complete a Nonresidential Job/Housing Linkage Study.*

*Implementing Program HS-3.b. Adopt a Job/Housing Linkage Ordinance.*

## **2009 Draft Housing Element**

Consistent with State law, the County prepared an update of its Housing Element to establish objectives, policies and programs that respond to the county’s housing needs and conditions. The Draft Housing Element, which includes a housing needs analysis and site inventory and analysis, identifies sites with the potential to be developed to meet the county’s Regional Housing Need

Allocation (RHNA) goals for the 2007–2014 period.<sup>4</sup> The county’s RHNA allocation for the period 2007-2014 is shown in **Table 4.K-6**.

**TABLE 4.K-6  
 REGIONAL HOUSING NEEDS ALLOCATION FOR MARIN COUNTY  
 2007-2014**

	<b>Very Low (0-50% of AMI)</b>	<b>Low (51-80% of AMI)</b>	<b>Moderate (81-120%) of AMI)</b>	<b>Above Moderate (over 120% of AMI)</b>	<b>Total</b>
<b>Ross Valley Cities</b>					
Corte Madera	68	38	46	92	244
Fairfax	23	12	19	54	108
Larkspur	90	55	75	162	382
Ross	8	6	5	8	27
San Anselmo	26	19	21	47	113
<i>Subtotal Ross Valley Cities</i>	<i>215</i>	<i>130</i>	<i>166</i>	<i>363</i>	<i>874</i>
<b>Other Cities/Unincorporated</b>					
Belvedere	5	4	4	4	17
Mill Valley	74	54	68	96	292
Novato	275	171	221	574	1,241
San Rafael	262	207	288	646	1,403
Sausalito	45	30	34	56	165
Tiburon	36	21	27	33	117
Unincorporated	183	137	169	284	773
<b>Marin County Total</b>	<b>1,095</b>	<b>754</b>	<b>977</b>	<b>2,056</b>	<b>4,882</b>

NOTE: AMI = area median income

SOURCE: MCCDA 2009.

The Draft Housing Element was completed in November 2009 and submitted to the California Department of Housing and Community Development (HCD) for review and approval. However, due to HCD concerns about the feasibility of some of the identified sites, the 2009 Draft element has not been approved, and at the time this Draft EIR is being prepared, the County is continuing to work on identifying sufficient housing sites to address HCD concerns and meet current RHNA goals. The 2009 Draft Housing Element continues and builds on the goals and policies of the current element and includes the following:

***Goal 1. Use Land Efficiently.*** Use Marin’s land efficiently to meet housing needs and implement smart and sustainable development policies.

***Policy 1.1 Land Use.*** Enact policies that encourage efficient land use regulations which foster a range of housing types for our community.

<sup>4</sup> The RHNA is a state-mandated process for determining how many housing units, including affordable units, each community (or county for unincorporated areas) must plan to accommodate. As the Bay Area’s council of governments, ABAG is responsible for working with HCD to determine the amount of housing needed within the region and allocates regional total housing needs among jurisdictions. Allocations are based on factors that consider existing employment, employment growth, household growth, and household and employment growth near transit; need is determined for households in all income categories from very-low to above-moderate (ABAG, 2008).

*Policy 1.2 Housing Sites.* Recognize developable land as a scarce community resource. Protect and strive to expand the supply and residential capacity of housing sites, particularly for lower income households.

### ***Marin County Development Code Title 22, Chapter 22.22: Affordable Housing Regulations***

Chapter 22.22 of the County’s Development Code of Ordinances (Title 22) includes the following goals pertinent to population, housing, and employment:

- Ensuring that further residential, commercial, and industrial development contribute to the attainment of the housing goals of the Countywide Plan by increasing the production of housing affordable by households of very low, low and moderate income, and stimulating funds for development of low income housing; reducing the affordable housing shortage; and
- Reducing the affordable housing shortage.

#### ***Section 22.22.095 – Inclusionary Requirements for Commercial and Industrial Development.***

This section of Chapter 22.22 of the ordinance requires that any proposed commercial or industrial development, including light industrial, office/research and development, warehouse, hotel, and retail uses, shall provide affordable inclusionary residential in the amount specified. Office uses are defined to include those associated with professional, business, and medical services.

The proposed project is a “Public Facility” use pursuant to the County Zoning Ordinance and Marin Countywide Plan, including the proposed Ambulatory Services Building which will function as an integral component of the Hospital Replacement Building and other existing medical facilities on the project site. Therefore, the provisions of the ordinance are not considered to apply to the project; however, the topic is addressed in greater detail in Section 6.3.2, *Employment Growth and Population (Housing Demand for Affordable Housing)*, in Chapter 6, Impact Overview and Growth Inducement.

## **Impacts and Mitigation Measures**

### **Significance Criteria**

Based on Appendix G of the CEQA *Guidelines*, the project could have a significant impact on population, housing and employment if it would:

- a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or extension of major infrastructure in undeveloped areas); or
- b) Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.

Based on Appendix N of the Marin County Environmental Impact Review Guidelines, the project may also have a significant impact on population, housing and employment if the project would:

- Induce substantial growth or concentration of population (consistent with CEQA Appendix G Criterion a); or
- Conflict with the housing and population projections and policies as set forth in the Countywide Plan.

## Approach to Analysis

The analysis of potential project impacts related to population, housing, and employment compares the potential changes to population, housing, and/or jobs that could result from the project with existing levels of the same in the area. Projections are based on the levels of development projected to occur by the regional planning agency (ABAG) and in the County's adopted plans and policy documents.

## Impacts Not Further Evaluated

*Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.* The project is located at the existing Marin General Hospital site, where no housing currently exists, and neither housing nor people are proposed to be displaced as part of the project. Therefore, CEQA Appendix G Criterion b is not relevant and not considered further in this EIR.

See Section 6.4, *Economic Effects*, in Chapter 6, Impact Overview and Growth Inducement, for a brief discussion of potential secondary physical effects of the project on existing medical facilities in the area.

## Impacts and Mitigation Measures

### *Population Growth or Concentration*

**Impact POP-1: The Project would not induce substantial population growth or concentration of population in the area, either directly or indirectly. (Less than Significant)**

The Hospital Replacement Building would employ approximately 140 more workers than are currently employed at the Marin General Hospital site, and the Ambulatory Services Building would employ approximately 286 new workers at the site (as shown in Table 3-1 of Chapter 3, Project Description), for a total of approximately 426 new workers. The following assessment is based on reasonable yet fairly conservative assumptions about choices that new employees may make regarding relocating their households to Marin County as a result of becoming newly employed by Marin General Hospital, and about household composition. Thus, this assessment is speculative given the numerous factors regarding choice that cannot be known regarding worker choices.

The residence patterns of existing hospital workers are that 45.6 percent of workers currently both work and live in Marin County (Conley Consulting Group, 2011). However, because there are many possible and unknown factors that contributed to how or when those workers came to work and live in Marin County, this analysis conservatively assumes that all of the new employees would not be considered new population moving to Marin County. (This is a conservative assumption since some new employees would choose to relocate to Marin County.) Therefore, the project would induce population growth as a result of 426 new workers, and in some cases, their families, moving to the area.

Marin County recognizes that there is typically more than one worker per household (1.65 workers per worker household), and that both workers do not work at the same location/employer (MTC, 1998). However, again, this analysis conservatively assumes that each new worker will create a new household in Marin County. Marin County also has a current average of 2.43 persons per household (Conley Consulting Group, 2011), which is projected to remain roughly the same through the 2035 projection period according to ABAG. Therefore, a total population increase of approximately 1,036 persons is conservatively estimated to occur in the area as a result of the project.<sup>5</sup>

The new population growth resulting from the project would be due to individual employees making individual decisions on where to relocate in the general project vicinity, which would not necessarily be limited to the Ross Valley, but anywhere within Marin County. The population growth of approximately 1,036 new residents would represent 1.9 percent of the 2010 population of Ross Valley cities (55,900) and approximately 49.0 percent of the population growth ABAG projects for Ross Valley cities over the next 25 years (2,100); it would represent 0.4 percent of the 2010 population of Marin County (256,500) and 5.8 percent of the population growth ABAG projects for the county over the next 25 years (17,800). (See Ross Valley Cities and Marin County population in Table 4.K-3.)

Considering the projected population growth in the county represented by these potential new residents, the population growth induced as a consequence of project employees moving to the area would not be substantial or likely concentrated. Because the project does not include the extension of roads or other major infrastructure needed to support urban growth, it would not induce growth indirectly by removing a barrier to growth. Therefore, in summary, the project would not induce substantial population growth and the impact would be less than significant. (See Section 6.3, *Growth Inducement*, in Chapter 6, Impact Overview and Growth Inducement, for a discussion of the project's growth inducing effects related to housing and housing availability.)

**Mitigation:** None required

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<sup>5</sup> 426 new households times 2.43 average persons per household equals 1,036 persons.

### ***Consistency with Projections and Policies***

#### **Impact POP-2: The Project could conflict with housing and population projections and policies as set forth in the Countywide Plan. (Less than Significant)**

As discussed under *Local Setting* above, the Countywide Plan includes projections of future growth potential for the unincorporated area as a whole (shown in Table 4.K4, above). Although the project does not propose new housing, the jobs it would generate could indirectly generate approximately 1,036 new residents in Marin County, as discussed under Impact POP-1 above. The addition of 1,036 new residents would be well within the remaining population growth potential based on the Countywide Plan's theoretical buildout population and the county's 2010 population. As shown in Table 4.K-4, the theoretical buildout assumes the addition of 27,563 residents in the county relative to its 2000 population. A population increase of 1,036 as an indirect consequence of the new jobs provided by the project would represent 1.8 percent of the county's population growth potential under the Countywide Plan.

As discussed above, the Countywide Plan also includes information on the Lower Ross Valley Planning Area in which the project site is located (see Table 4.K-5). As shown in Table 4.K-5, the Theoretical Buildout (assumed to occur by 2030) for the Lower Ross Planning Area is less than the "2000 Actual" population shown in the table (i.e., the projection assumed a population decline by 2030). The theoretical buildout was based on a range of factors, including an aging population, with children moving out of local households, resulting in smaller household size and a smaller population, as well as the best available information at the time the Countywide Plan was prepared – which all led to the expectation of a net decline in population within the area. As determined in consultation with County staff during preparation of this Draft EIR, a project would not be assumed to conflict with the population projections simply because it adds population, which most projects would do directly or indirectly (Drumm, 2011a; 2011b).

Moreover, because the project's potential generation of new population would result from individual employees' decisions to relocate to the general vicinity of the project site, it is most likely that the new population would be distributed over a much broader area than the Lower Ross Valley. As noted above, the Countywide Plan indicates an increase in population for the county as a whole. Therefore, any new population growth resulting from the project (and that is conservatively assumed to relocate to Marin County) is likely to be distributed within multiple planning areas of the county. Thus any addition of population within the Lower Ross Planning Area resulting from the project would be minor relative to existing population, and would not substantially alter the demographic trends and factors contributing to the projected net decline in population shown in the Countywide Plan. Overall, the project would not conflict with the projected housing or population projections in the Countywide Plan.

As discussed under *Local Regulations* above, the Countywide Plan includes Policy HS-3.2 (Require Contributions for Workforce Housing from Nonresidential Uses). Chapter 22.22 (Affordable Housing Regulations) of the Marin County Code of Ordinances intends to ensure the attainment of the housing goals of the Countywide Plan through the inclusion of affordable housing units as part of a proposed non-residential development or payment of an in lieu participation fees for commercial and industrial development. As noted there, the provisions of the ordinance would not

apply to the proposed project; the nature of the project, including the Ambulatory Services Building, (an integral component of the Hospital Replacement Building) is a “Public Facility” use pursuant to the County Zoning Ordinance and Marin Countywide Plan, Therefore, the provisions of the ordinance are not considered to apply to the project.

In summary, therefore, the potential for the project to conflict with either projections or policies set forth in the Countywide Plan would be less than significant.

**Mitigation:** None required

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## **Cumulative Impacts**

**Impact POP-3: The Project, in conjunction with past, present and reasonably foreseeable projects, would not contribute to a cumulatively considerable effect related to population, housing and/or employment. (Less than Significant)**

### ***Geographic Context***

The cumulative geographic context of the proposed project for the consideration of population, housing, and employment effects is Marin County because the cumulative effects are considered in relationship to countywide population, employment, and housing data, forecasts, policies, and regulations. The geographic context for considering potential cumulative effects of induced concentration of population is narrower, since by definition the concentration of population would occur within a more focused area than the county as a whole; it includes the planning areas proximate to and including the project site – specifically the Lower Ross Valley, Upper Ross Valley, San Rafael Basin and Richardson Bay planning areas.

### ***Impacts***

The project, in conjunction with past, present, and reasonably foreseeable projects, could result in a cumulative impact due to induced population growth. However, as discussed above, the project itself would not have a significant impact related to inducing population growth; any population indirectly induced by project-related jobs would be minor relative to the existing and projected population, and likely would be distributed geographically throughout the county. Also, other cumulative projects would be required to locate in areas considered suitable for their characteristics and consistent with applicable land use plans, policies, and zoning regulations, which are specifically intended to provide for orderly population growth within the county and its subareas. Thus, a cumulative impact would not result. Moreover, the proposed project’s adherence to the County’s policies and regulations related to land use and population growth will ensure that the project’s contribution to any cumulative effect related to induced population growth would not be cumulatively considerable.

**Mitigation:** None required

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## 4.L Public Services and Recreation

This section describes existing public services and recreation conditions in the vicinity of the project site and presents applicable County and local planning documents that pertain to fire protection, police protection, schools, parks, and recreational facilities. This section also discusses the changes related to public services that could result from the proposed project and identifies potential environmental impacts.

### Setting

#### Fire Protection and Emergency Medical Service

Fire protection services are provided to the project site by the Marin County Fire Department (MCFD), and through mutual aid agreements, Kentfield Fire Protection District (KFPD). MCFD has jurisdiction over unincorporated Marin County, including the project site, and receives mutual aid under agreements with all other Marin fire agencies. The fire station closest to the project site is KFPD's Station 17, which responds first to emergency calls from the project site.

#### *Marin County Fire Department*

MCFD Headquarters is located at 33 Castle Rock Road in Woodacre (in West Marin). The Woodacre station houses department administrative staff, the Emergency Command Center, and the vehicle maintenance facility. This station serves Woodacre, Nicasio, Lucas Valley, Forest Knolls, Lagunitas, and the San Geronimo Valley. Marin County Fire Department dispatches all emergencies from the Woodacre Headquarters Emergency Command Center.

Primary responsibilities of MCFD include responding to structural fires (including dispatching water tenders to emergencies in areas with known water supply deficiencies); fighting wildland fires; providing mutual aid to wildland fire emergencies elsewhere in the state; and responding to fires as part of the California Interagency Incident Management Teams (providing operations, finance, logistics and planning leadership when a fire overwhelms a local jurisdiction).

MCFD also maintains a Fire Prevention Bureau, responsible for fire investigation and fire and life safety programs in the MCFD direct protection areas. These programs include commercial occupancy plan review, permitting and annual inspection, public education, and individual hazard abatements. The Bureau is also responsible for issuing open burning authorizations and permits in compliance with Bay Area Air Quality Management District, California Fire Code, and PRC regulations. The Bureau also oversees the Residential Wildfire Hazard Reduction Program, including defensible space education; a Vegetation Management Program for communities, ranchers and natural resource managers; and PreFire Management, a GIS-mapping and assessment program for identifying high fire-risk areas in Marin County and implementation of fire hazard reduction projects in those areas (MCFD, 2011).

MCFD is the jurisdictional authority for review and approval of plans for the Marin General Hospital project. MCFD, with input from first responder KFPD, requires all new development to

provide adequate emergency access and maintain existing citywide emergency evacuation routes. In addition, MCFD, with input from first responder KFPD, requires all new development to incorporate appropriate building and fire code requirements into project construction, such as automatic fire sprinklers, smoke detectors, fire alarm systems, adequate fire flow, backflow prevention, and fire hydrants.

MCFD is the first responder in unincorporated Marin County and coordinates with other Marin fire agencies through mutual aid agreements. MCFD provides and receives mutual aid under agreement with all other Marin fire agencies; these mutual aid agreements ensure that the closest firefighting resource responds to each emergency, without regard to jurisdictional boundaries. MCFD would not typically respond to fire or medical emergencies at Marin General Hospital. KFPD is the first responder to Marin General Hospital; additionally, on-site staff at Marin General Hospital respond to medical emergencies at the hospital.

### ***Kentfield Fire Protection District***

KFPD is headquartered at Fire Station 17, located at 1004 Sir Francis Drake Boulevard, Kentfield, CA, approximately 0.8 miles from Marin General Hospital. This location is a fully operational fire station which also serves as KFPD administrative offices (Station 17 is KFPD's only station). KFPD's first response area includes Kentfield, unincorporated Kentfield, Kent Woodlands and Greenbrae. Through mutual aid agreements, KFPD also responds to an extended area bounded by Ross Valley, the Golden Gate Bridge and Novato. Equipment at Station 17 includes a ladder truck, two engines, a car, and an Office of Emergency Services (OES) urban search and rescue fire truck. The OES truck is provided by California Emergency Management Agency (CalEMA); staffing is provided by KFPD through its contract with CalEMA<sup>1</sup>. KFPD's Station 17, remodeled and expanded in 2009, is an adequately provisioned facility to meet existing fire and emergency needs in Kentfield and the unincorporated areas adjacent to Kentfield.

KFPD employs ten full-time firefighters (two battalion chiefs, one captain, six engineers and one firefighter), as well as a fire chief and a secretary. All KFPD personnel are Emergency Medical Technician Certified and Hazardous Materials First Responder Certified, and are provided with structural and wildland fire fighting, rescue, medical and emergency management training in accordance with federal, state and locally accepted standards. KFPD also maintains a roster of 20 volunteer firefighters whose role and responsibilities are very similar to those of KFPD's professional firefighters; volunteer firefighters are CPR- and EMT-Basic trained, and respond to fires, traffic accidents, hazardous materials incidents, calls for assistance and medical emergencies. The volunteers also participate in training and firehouse activities, and participate in community service activities.

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<sup>1</sup> KFPD receives a predetermined hourly reimbursement for personnel that respond to incidents as requested through CalEMA or CalFire. KFPD receives the reimbursement for the hours their personnel are assigned to the emergency (Smith, 2011).

With 10 full time professional firefighters and 20 volunteer firefighters (the equivalent of 7 full time professional firefighters<sup>2</sup>), or 17 FTE firefighters, KFPD serves a population of approximately 10,000 residents, providing a ratio of 1.7 firefighters per 1,000 residents (Smith, 2011). KFPD does not use the latter ratio as a performance objective, but does have a standard of providing, as minimum staffing on a 24 hour / 7 day basis, three professional firefighters and one volunteer firefighter.

During summer months, KFPD conducts vegetation fuel reduction inspections on vacant lots and home properties to ensure compliance with the defensible 100 feet space requirements (KFPD, 2011). KFPD, aided by a FEMA grant, installed a siren on the roof of Station 17 to alert residents to flooding danger. KFPD works with Marin County Public Works and Marin OES to warn residents of floods (Smith, 2011). For the Marin General Hospital project, KFPD will collaborate with MCFD to review project plans and provide guidance to the applicant regarding sprinklers, hydrants, fire department connections, fire flow demands, and minimum roadway widths.

All 911 calls in KFPD's jurisdiction are received and dispatched by the Marin County Sheriff's Office at Marin County Civic Center, utilizing computer-aided dispatch (Smith, 2011).

KFPD has mutual-aid agreements with other Marin County fire departments, which, combined, provide four neighboring automatic aid engines, twelve immediate need mutual-aid engines, and eight immediate need "wildland" mutual-aid engines in total across the county. KFPD is a member of the California Inter-County Mutual-Aid Plan and the Marin County Automatic and Mutual-Aid Plan, covering emergencies and disasters such as fires, floods, mass-casualty incidents, and earthquakes. KFPD also provides paramedic service through the Ross Valley Paramedic Authority Joint Powers Agreement (KFPD, 2011).

KFPD responded to 960 calls in 2010. Of those calls, 498 were medical or first aid emergency calls, 72 were fire emergency calls, and the remainder were other non-emergency calls (Galli, 2010). KFPD has an informal goal of responding to emergency calls in the District within four to six minutes (Smith, 2011; Galli, 2011); in 2009, KFPD's average response for its two primary apparatuses, Truck 17 and Engine 17, was 4 minutes, 17 seconds (Wick, 2011<sup>3</sup>). KFPD typically responds to Marin General Hospital in one minute or less (Smith, 2011).

(This section addresses the potential increased demand for staff, facilities and equipment. See Section 4.N, *Utilities and Service Systems*, for the discussion of fire flow demand and project capacity.)

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<sup>2</sup> KFPD uses guidance from Insurance Services Office (ISO), an insurance/ risk information provider, to quantify whether it meets community fire and emergency medical needs relative to industry standards. KFPD uses ISO's guidance in counting three volunteer firefighters as one full-time equivalent firefighter. Consequently, KFPD'S 20 volunteer firefighters may be counted as 7 FTE firefighters (Smith, 2011).

<sup>3</sup> Lieutenant Don Wick of Marin County Sheriff's Office provided response times generated by the Marin County Communication Center for both Kentfield Fire Department and the Sheriff's Office.

## Police Protection

Marin County Sheriff's Office (Sherriff's Office), with mutual aid support provided by the Twin Cities Police Authority, provides police protection services to the project site and vicinity. Marin General Hospital also provides contract security onsite.

### ***Marin County Sheriff's Office***

The Sheriff's Office, headquartered at 3501 Civic Center Drive in San Rafael, provides law enforcement services to Marin General Hospital from its Kentfield Substation, at 831 College Avenue, approximately 0.7 miles from the project site. In 2009, the Sheriff's Office had 210 sworn personnel (Sheriff's Office, 2011) and the Sheriff's Office estimated that it serves a population of 69,115 residents in unincorporated Marin County (Wick, 2011). This equates to approximately 3.0 sworn personnel per 1,000 residents. The Sheriff's Office, however does not have stated target ratio of sworn personnel per residents (Wick, 2011). The Sheriff's Office is the first responder in unincorporated Marin County; 13 municipal law enforcement agencies serve the incorporated areas.

The Sheriff's Office Kentfield Substation has a daily staffing of two deputies, with assistance from 7:00 am to 3:00 pm from a contract deputy funded by the Kent Woodlands Homeowners' Association. A parking enforcement officer also works out of Kentfield Substation during the work week (Wick, 2011).

Marin General Hospital is part of the Sheriff's Office Patrol Beat 21 (Area 2). Area 2 extends from San Quentin to Sleepy Hollow Road in San Anselmo. Calls to the Sheriff's Office are received and dispatched at Marin County Civic Center. Dispatch is computer-aided, and calls are routed according to the priority. Priority 1 calls are emergency calls entailing imminent danger of death or serious injury, felonies in progress, or serious public health hazards; Priority 2 refers to urgent calls involving disputes with potential for violence, misdemeanor crimes in progress, stolen vehicle reports, and similar matters; and Priority 3 calls are non-urgent reports of incidents that do not present danger to life or property (Wick, 2011).

**Table 4.L-1** shows a breakdown of crime reported in 2009 in the vicinity of the project site and in Marin County overall. The most frequent crime reported, in both the project vicinity (Central/Western Marin) and Marin County overall was larceny.

The Sheriff's Office, in its 2010-11 Performance Plan, estimated its average number of daily calls for Priority 1 service at 22.9 calls, and average number of daily calls for priority levels at 62.9 calls (Sheriff's Office, 2010). The Sheriff's Office dispatched 30,310 calls in 2010 (Wick, 2011).

In the 2010-11 period, countywide average response time to calls for service in urban areas was 7 minutes and 30 seconds, and its average response time in rural areas was 13 minutes (Sheriff's Office, 2010). In 2010, the average response time by the Sheriff's Office to Marin General Hospital was 6 minutes and 35 seconds (Wick, 2011). The Sheriff's Office does not have a goal response time.

**TABLE 4.L-1  
2009 CRIME STATISTICS, MARIN COUNTY SHERIFF'S OFFICE**

<b>Offense</b>	<b>Area I Southern Marin</b>	<b>Area II Central/Western</b>	<b>Area III Central/ Northern</b>	<b>Area IV West Marin</b>	<b>Total</b>
	Marin City, Sausalito, Strawberry, Tam Valley, Homestead Valley, Almonte, Alto, Mount Tamalpais, Muir Beach	Greenbrae, Kentfield, Kent Woodlands, San Quentin Village, Sleepy Hollow, Fairfax, Woodacre, Forest Knolls, San Geronimo	Civic Center, Santa Venetia, Pt. San Pedro, Civic Center, Santa Venetia, Pt. San Pedro, Los Ranchitos, Marinwood, Lucas Valley, Bel Marin Keys, North Novato	Stinson Beach, Bolinas, Dogtown, Olema, Point Reyes, Inverness, Marshall, Nicasio, Hicks Valley, Tomales	
Homicide	0	0	0	0	0
Rape	1	0	1	0	2
Robbery	32	0	2	1	35
Aggravated Assault	31	20	27	7	85
Commercial Burglary	48	9	11	7	75
Residential Burglary	85	40	50	16	191
Larceny	204	154	176	57	591
Vehicle Theft	2	0	1	1	4

SOURCE: Sheriff's Office, 2011

### ***Twin Cities Police Authority***

The Twin Cities Police Department is a full service police agency for the communities of Corte Madera and Larkspur in Marin County, California. The communities consolidated police services in 1980, working under a Joint Powers agreement forming the Twin Cities Police Authority (TCPA). TCPA also shares dispatch, policing, administration and evidence processing services with the San Anselmo Police Department. TCPA's permanent headquarters (completed in 2012; adjacent to Piper Park, described below), are located at 250 Doherty Drive approximately 0.7 miles (1.4 vehicle miles) from the project site (TCPA, 2012). TCPA is staffed by a chief of police, a captain, five sergeants, nineteen police officers, three community service officers, three detectives, one school resource officer, one evidence technician, five dispatchers, one telecommunications specialist, and one dispatch supervisor (TCPA, 2012). TCPA would only respond to Marin General Hospital if it received a mutual aid call from the Sheriff's Office (Mitchell, 2011). The Sheriff's Office may request mutual aid from TCPA in low priority calls such as walk-aways from the mental health facility, or in high-priority calls, such as an altercation in the emergency room, which requires quick response from multiple agencies (Wick, 2011).

### ***Contract Security***

Marin General Hospital contracts with a private security company for the provision of security services onsite. Security offices are located in the lobby of the West Wing of the existing hospital. Security staff onsite consist of ten security officers and two valets; valets are also licensed security contractors. Security staff work shifts consisting of a day shift (6:00 am to 2:00 pm); swing shift (2:00 pm to 10:00 pm); and night shift (10:00 pm to 6:00 am). Typically, two security officers are



on duty for each shift; the day shift (Monday through Friday) has an additional service officer and two valet staff. Officers vary their patrol schedule to avoid establishing an observable routine. Staff duties include patrol, reporting, crime deterrence, audio visual assistance, patient property control, morgue release, emergency response, valet service, and maintenance of a safe environment for patients, visitors and employees. Certifications maintained by security personnel include BSIS guard licenses, assaultive behavior certifications, CPR certifications, handcuff certifications, and hazardous materials decontamination training (Vieira, 2011).

## **Schools**

There are five school districts in the vicinity of Marin General Hospital including Kentfield Elementary, Larkspur-Corte Madera, San Rafael City Elementary, San Rafael City High, Ross Elementary, and the Tamalpais Union High. A private high school, the Marin Catholic High School, at 675 Sir Francis Drake Boulevard, is located 0.2 miles from Marin General Hospital.

### ***Elementary School Districts***

The Kentfield Elementary School District is located in Kentfield, California, and is comprised of one K-4 school (a school serving grades kindergarten through four) and one middle school (serving grades five to eight). As shown in **Table 4.L-2**, total district enrollment was 629 students in the 2010-11 school year, an increase of 21 percent from the 520 students enrolled in the 2000-2001 school year. The Larkspur-Corte Madera School District is made up of one elementary school and one middle school. District enrollment in the 2010-11 school year was 1,330 students, an increase of 43% over the 2000-2001 school year. San Rafael City Elementary School District, comprised of six elementary (K-5) schools, a K-8 school, and a middle school (grades 6-8), had a 2010-11 enrollment of 4,003 students, an increase of 13 percent over the 200-2001 school year. Ross Elementary School District, comprised of one K-8 school, had an enrollment of 359 students in 2010-11 school year, a decrease of 10 percent over the 2000-01 year. Overall, the elementary and middle school districts in the vicinity of the project site have had a trend of increasing enrollment over the last ten years; for three of the districts, the 2010-2011 year represented a peak of enrollment for the previous 15 years (California SchoolFinder, 2011; CDE, 2011; Kentfield Elementary School District, 2011; Larkspur-Corte Madera School District, 2011; San Rafael City Schools, 2011).

### ***High School Districts***

San Rafael City High School District, comprised of three high schools, had a trend of increasing enrollment from 1996-97 through 2006-07, with a peak enrollment of 2,168 students in the 2006-07 school year. Enrollment has declined steadily since 2007, to a 2010-11 enrollment of 2,090. Similarly, Tamalpais Union High School District, comprised of three high schools and two alternative programs, had a trend of increasing enrollment from 1996-97 to 2006-07, with a peak enrollment in 2006-07 of 3,984; enrollment then declined between 2006-07 and 2009-10, with a slight uptick in 2010-11.<sup>4</sup> Despite these fluctuations, both high school districts showed an overall

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<sup>4</sup> Tamalpais Union High School District also offers Adult and Community Education courses; adult enrollment in these community courses is not included in this analysis.

**TABLE 4.L-2  
 SCHOOL DISTRICT ENROLLMENT TRENDS, 1996-98 THROUGH 2010-11**

District	2000-01 Enrollment	15-Year Peak Enrollment	15-Year Peak Enrollment Year	2010-2011 Enrollment	Change between 2000-01 and 2010-11
Kentfield Elementary School District	520	629	2010-11	629	+21%
Larkspur-Corte Madera School District	931	1,330	2010-11	1,330	+43%
San Rafael City Elementary School District	3,541	4,003	2010-11	4,003	+13%
Ross Elementary School District	400	414	2001-02	359	(10%)
San Rafael City High School District	2,057	2,168	2007-08	2,090	+2%
Tamalpais Union High School District	3,601	3,984	2006-07	3,984	+11%

SOURCE: CDE, 2011

increase in enrollment since 2000-01 (California SchoolFinder, 2011; CDE, 2011; San Rafael City High School District, 2011; Tamalpais Union High School District, 2011).

### **Student Generation**

The California State Allocation Board (SAB) Office of Public School Construction regulates enrollment projections for the state’s public school districts. The SAB defines a number of options to generate pupil enrollment projections and provides an approved methodology for determining the elementary, middle and high school pupils that would be generated by new residential units. This methodology is based on historical student generation rates of new residential units constructed within the school district during the previous five years.

When multiple districts with multiple yield factors are analyzed, a region’s projected enrollment may be calculated using the statewide average student yield factors as provided by the SAB. The statewide average student yield factor is 0.7 student per new dwelling unit (SAB, 2008).<sup>5</sup> These estimates are a result of statewide sampling that incorporates widely varying dwelling unit types, households, and other demographic characteristics across the state. This methodology is appropriate for considering any residential units that may be constructed as a result of increased employment at Marin General Hospital, as those new employees may require varied dwelling unit types ranging from affordable housing to high-end single family units.

### **Parks and Recreational Facilities**

The Marin Countywide Plan (see *Regulatory Setting* below) defines parks recreational facilities designed for active uses (MCCDA, 2007). Marin County Parks (Parks), a department of Marin County, oversees parks, recreational facilities and open space in Marin County, with guidance

<sup>5</sup> The statewide average student yield factors are guided by the State Allocation Board (SAB) Regulations Section 1859.2, and defined in Form SAB 50-01.

from the Parks and Open Space Commission, Bolinas Lagoon Technical Advisory Committee, and several community service areas boards.

**Parks and Recreational Facilities**

County parks include playgrounds, pools, beaches, boat launches and lakes. Recreational facilities maintained by Parks include a pool, skate park, softball fields, soccer fields, kayak/canoe launches, and tennis courts. A golf course, miniature golf course and batting cages are operated at McGinnis Park by a private concessionaire. Parks does not operate any indoor recreation centers. (Parks, 2011)

As shown in **Table 4.L-3**, there are 932 acres of developed park land within Marin County. The Marin Countywide Plan does not explicitly state a performance standard, but does reference the Quimby Act requirement of 5 acres per 1,000 people, and the National Park Association standard of 10 acres per 1,000 people. By comparison to either of these standards, Marin County has an overall deficit of active recreational park acreage.

**TABLE 4.L-3  
 PARK ACREAGE BY PLANNING AREA (EXCLUDING SCHOOLS COMPARED WITH QUIMBY ACT  
 AND NATIONAL PARK ASSOCIATION REQUIREMENTS, MARIN COUNTYWIDE PLAN**

Planning Area	Developed <sup>a</sup> Park Acreage	Quimby Act <sup>b</sup> Requirements (5 acres per 1,000 people)	Quimby Act Surplus or Deficit	National Park Association Requirements (10 acres per 1,000 people)	National Park Association Requirements Surplus or Deficit
1. Novato	153	273	(120)	545	(392)
2. Las Gallinas	60	143	(82)	286	(225)
3. San Rafael Basin	211	200	11	400	(189)
4. Upper Ross Valley	124	128	(4)	256	(132)
5. Lower Ross Valley	74	170	(95)	340	(265)
6. Richardson Bay	262	260	2	521	(285)
7. West Marin	45	62	(17)	123	(78)
<b>Total In Marin County</b>	<b>932</b>	<b>1,236</b>	<b>(304)</b>	<b>2,473</b>	<b>(1,541)</b>

<sup>a</sup> Developed for the purpose of active recreation. Includes city-owned parks.  
<sup>b</sup> Government Code Section 66477

SOURCE: MCCDA, 2007 (Marin Countywide Plan, Parks and Recreation chapter).

The County-operated park in the immediate vicinity of Marin General Hospital is Hal Brown Park at Creekside, a 26-acre park directly across Bon Air Road from the project site. This park includes a playground, turf area, picnic tables, pétanque area, health and wellness grove, amphitheater, and an overlook of Corte Madera Creek and Creekside Marsh. This popular park is in use during daytime hours all year round, with an increase in use in spring, summer and fall months. The City of Larkspur’s Recreation Department manages parks in Larkspur, including Piper Park, described below. The City of Larkspur General Plan (1990) describes 12 parks and schools used as parks together, but counts only parks toward it total park acreage. Current park

acreage in the City of Larkspur is 52 acres (Clegg, 2011). With a population of 11,926 (ABAG, 2011), there are approximately 4.4 park acres per 1,000 residents in Larkspur. Managed by the City of Larkspur's Recreation Department, Piper Park is a 22-acre park located on Doherty Drive in Larkspur (.6 miles from the project site). Recreational facilities at Piper Park include sand volleyball courts, tennis courts, softball fields, picnic benches, barbecue facilities, a playground, par course, a fishing dock, a community garden, a dog park and a playing field used for soccer, cricket, field hockey and lacrosse (City of Larkspur, 2011, Clegg, 2011). TCPA, described above, is constructing a police station at 250 Doherty Drive, adjacent to Piper Park, scheduled for completion by January 2012. The City of Larkspur's Recreation Department, located at 240 Doherty Drive, also contains a meeting room that seats 60 people. The meeting room is frequently used by community members and association; uses range from school district meetings to Taekwondo practice (Clegg, 2011; City of Larkspur, 2011).

## Open Space

The Marin County Open Space District (MCOSED) was created by voters in 1972 as the local agency responsible for public open space in Marin County. Marin County defines open space as lands "managed primarily for natural resource preservation, which, with the exception of trails used by pedestrians, mountain bicyclists, and equestrians, do not contain recreational facilities of the type found in parks." MCOSED manages 34 open space preserves in Marin County totaling approximately 15,000 acres of land (Raives, 2012). This acreage, when compared to Marin County's 252,409 residents, results in an open space ratio of 59.4 acres per 1,000 residents. MCOSED coordinates its land preservation efforts with those of Golden Gate National Recreation Area, Point Reyes National Seashore, Marin Agricultural Land Trust, California State Parks, the Marin Municipal Water District, and the North Marin Water District.

State and federal parks in the vicinity of the project and available for use by Marin County employees and residents include Mt. Tamalpais State Park, Samuel P. Taylor State Park, Point Reyes National Seashore, Muir Woods National Monument, and Golden Gate National Recreation Area. Within Marin General Hospital, open space opportunities are limited to the Halprin Gardens and the steep slopes east and south of the project site. The Halprin Gardens (Bar-B-Q Terrace Garden and Ambulatory Terrace Garden) contain bench seating, walks, and naturalistic stone and plant outcroppings. The Halprin Gardens are described in greater detail in Section 4.D, *Cultural and Paleontological Resources*. Native grasslands and open oak woodlands exist on the steep slopes to the east and south of the developed areas of the project site; informal walking trails exist in these areas.

## Regulatory Setting

### Federal

There are no federal regulations that pertain to the analysis of public services and recreation for the proposed project.

## State

### **Senate Bill 50**

The Leroy F. Greene School Facilities Act of 1998, or Senate Bill 50 (SB 50), authorizes school districts to levy developer fees to finance the construction or reconstruction of school facilities. These fees are intended to address the increased educational demands on the school district resulting from new development. Public school districts can, however, impose higher fees than those established by the SAB, provided they meet the conditions outlined in the act. Private schools are not eligible for fees collected pursuant to SB 50. Also, publicly-owned facilities are exempt, pursuant to Government Code Section 65995(d).

## Local

### **The Marin Countywide Plan Update**

The Marin Countywide Plan is the County's long range guide for use of land and protection of natural resources. The Plan sets forth policies and programs to be used by the public, planning staff, and decision makers when reviewing and analyzing proposed developments. Goals and policies pertaining to public services and recreation that are relevant to the project include the following:

#### **Public Services**

**Goal PFS-1. Adequate Public Facilities and Services.** Provide basic public facilities to accommodate the level of development planned by cities and towns and the County.

*Policy PFS-1.1 Require Cost-Sharing.* Require new development to pay for the infrastructure it requires and the public services it receives.

*Policy PFS-1.2 Plan Effectively to Minimize Costs.* Plan public facilities in cooperation with service providers to minimize short- and long-term construction, operation, and maintenance costs.

#### **Fire Safety**

**Goal EH-4 Safety from Fires.** Protect people and property from hazards associated with wildland and structural fires.

*Policy EH-4.1 Limit Risks to Structures.* Ensure that adequate fire protection is provided in new development and when modifications are made to existing structures.

*Policy EH-4.2 Remove Hazardous Vegetation.* Abate the buildup of vegetation around existing structures or on vacant properties that could help fuel fires.

*Policy EH-4.4 Ensure Adequate Emergency Response.* Ensure that there is an adequate number of trained and certified emergency medical technicians to address the increase in medical demand.

*Implementing Program EH-4.c Require Compliance with Fire Department Conditions.* Continue to refer land development and building permit applications to the County Fire Department or local fire district for review, and incorporate their

recommendations as conditions of approval as necessary to ensure public safety. Continue to require compliance with all provisions of the most recently adopted version of the California Fire Code (with local amendments).

*Implementing Program EH-4.d Review Applications for Fire Safety.* Require applicants to identify defensible space and compliance with fire safety standards, and continue to work with local and State fire agencies to ensure that California Fire Code (with local amendments), County Development Code, and State standards for construction are applied uniformly

## **Public Safety and Law Enforcement**

**Goal PS-1 Safe Neighborhoods.** Ensure that county neighborhoods remain safe places to live.

*Policy PS-1.2 Improve Infrastructure to Discourage Crime.* Remedy any public facilities with problems that might encourage criminal activity, such as low lighting and blind spots that result from landscape features or fences.

*Implementing Program PS-1.c Ensure Adequate Lighting.* Upgrade street lighting in urbanized areas where specified by community plans to fulfill neighborhood safety needs, provided that unnecessary light and glare are avoided.

*Implementing Program PS-1.e Review Structure Designs.* Involve law enforcement agencies in review of the design of new and rehabilitated buildings, including lighting and landscaping, to identify ways to increase resident safety.

## **Schools**

**Goal EDU-1: Adequate School Facilities.** Ensure that adequate school facilities are available to meet the needs of current and future Marin County residents.

*Policy EDU-1.1 Assist with School Planning.* Coordinate with the school districts to determine appropriate locations and layouts for future facilities.

*Implementing Program EDU-1.c Consider Less-Populated Areas.* Work with school districts and colleges to ensure that quality and conveniently accessible education is available in all geographic areas of the county.

## **Parks and Recreation**

**Goal PK-1: A High-Quality Parks and Recreation System.** Provide park and recreation facilities and programs to meet the various needs of all county residents.

*Policy PK-1.1 Conduct and Coordinate Park Planning.* Develop park and recreation facilities and programs to provide for active recreation, passive enjoyment, and protection of natural resources as a complement to local, state, and national parks and open space in Marin.

*Policy PK-1.2 Consider User Needs, Impacts, and Costs.* Plan and develop any needed new park and recreation facilities and programs to meet the desires of the community and protect environmental resources.

*Implementing Program PK-1.d Explore Options with Local Agencies.* Work with cities and towns and schools to determine how their facilities contribute to meeting park and recreation needs in Marin, and to determine which school fields and other recreation facilities may remain available to county residents for use during non-school hours.

*Implementing Program PK-1.e Replace Closed Facilities.* Encourage and join efforts to replace closed facilities that were operated by other local jurisdictions or the private sector.

### **City of Larkspur General Plan**

*Goal 1:* Provide park facilities and recreation programs for all age groups.

*Policy b:* Continue to maintain Piper Park as a recreation area with a balance of organized play facilities and natural areas.

### **Kentfield / Greenbrae Community Plan**

#### **Fire Protection**

*Recommendation 1.* Changes are discouraged which would decrease the Kentfield Fire Department's capacity to respond quickly and effectively to emergencies.

#### **Police Protection**

*Recommendation 1.* Maintain a sheriff's sub-station with round-the-clock staffing and adequate parking in the Kentfield/Greenbrae Planning Area.

#### **Emergency Services**

*Recommendation 1.* Improve conditions where feasible to facilitate quicker response time for emergency vehicles in residential areas.

#### **Recreation**

*Recommendation 4.* Preserve the playgrounds and playing fields at all the area's schools—Bacich, Kent, Marin Catholic, and the College of Marin—for community use.

## **Impacts and Mitigation Measures**

### **Significance Criteria**

Based on Appendix G of the State CEQA *Guidelines*, the project would have a significant impact on public services and recreation if it would:

- a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:
  - Police Services

- Fire Protection
  - Schools Facilities
  - Parks
- b) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- c) Include recreational facilities or require the construction or expansion of recreational facilities which might have adverse physical effects on the environment.

Based on Appendix N of the Marin County Environmental Review Guidelines, the project may also have a significant impact related to utilities and service systems if the project would:

- Require additional fire staff, facilities or equipment to maintain acceptable level of service (e.g. response time, rating, other) (consistent with CEQA Appendix G Criterion a)
- Require additional police/sheriff staffing, facilities or equipment to maintain acceptable service ratios (consistent with CEQA Appendix G Criterion a)
- Require additional school capacity or facilities (consistent with CEQA Appendix G Criterion a)
- Require designation of additional parkland to remain in conformance with locally acceptable or adopted park standards (consistent with CEQA Appendix G Criterion a)

## Approach to Analysis

This following impact analysis focuses on potential impacts of the project related to public services and recreation. The evaluation considered project plans, information obtained from agency representatives, publicly available data regarding public services agencies (including data published as annual reports), and existing setting conditions, including applicable regulations and guidelines.

Regarding the potential effects on parks, the analysis here focuses on public parks, consistent with the significance criteria stated in Appendix G of the CEQA Guidelines and Appendix N of the County's EIR Guidelines, although relevant aspects of open space (which the County distinguishes clearly from parks, as discussed above under *MCOSD*) are included in the *Setting* section.

## Impacts Not Further Evaluated

***Construction of Recreational Facilities.*** The project would not develop new recreational facilities, nor would it expand existing recreational facilities. Therefore, there would be no potential physical effect on the environment resulting from construction or alteration of recreational facilities. Thus, this topic is not evaluated further in this EIR.



## Impacts and Mitigation Measures

### ***Fire Protection and Emergency Medical Services***

#### **Impact PSR-1: The Project would not cause a substantial adverse physical impact due to increased demand for fire protection services and emergency medical assistance. (Less than Significant)**

Marin General Hospital is served by MCFD with assistance from KFPD Fire Station 17. MCFD, with input from first responder KFPD, requires all new development to provide adequate emergency access and maintain existing citywide emergency evacuation routes. In addition, MCFD, with input from first responder KFPD, requires all new development to incorporate appropriate building and fire code requirements into project construction, such as automatic fire sprinklers, smoke detectors, fire alarm systems, adequate fire flow, backflow prevention, and fire hydrants. The Office of Statewide Health Planning and Development (OSHPD) regulates these requirements for hospitals. OSHPD would review the proposed project plans, and the project sponsor will be required to incorporate OSHPD's conditions and requirements into the final project design, in addition to conditions established by MCFD and KFPD, as appropriate.

The project would result in an increase in onsite population, comprised primarily of new employees (see Section 4.K, *Population, Housing and Employment*). This analysis considers those new employees plus patients and visitors equivalent to those now using Marin General Hospital (see Chapter 3, Project Description, for a discussion of Project's licensed beds for patients). Project employment could also result in a slight residential population growth within the county and MCFD jurisdiction. Ultimately, these onsite and countywide population increases would result in increased calls for fire protection and emergency medical services. However, given that the size and type of structures proposed would remain similar to what is currently exists onsite (with a net increase of approximately 384,500 square feet of floor area, excluding parking structures), as well as compliance with appropriate building and fire code requirements and conformance with OSHPD standards, MCFD and first responder KFPD would continue to be able to provide adequate fire protection services without increasing staffing levels. MCFD and KFPD will continue to serve the Project site as well as the residential population of the County with existing equipment and facilities. KFPD will continue to meet its informal objective of a four to six minute response time to Kentfield and to Marin General Hospital. The project will not require the construction of any new or physically altered fire protection facilities in order to maintain acceptable performance objectives.

**Mitigation:** None required

### ***Police Protection Services***

**Impact PSR-2: The Project would not cause a substantial adverse physical impact due to increased demand for police protection services. (Less than Significant)**

The project would result in an increase in onsite population, comprised primarily of new employees; the number of patients and visitors is projected to be equivalent to those now using Marin General Hospital. As discussed in Impact PSR-1, project employment could also result in a slight residential population growth within the county and MCFD jurisdiction. Ultimately, these onsite and countywide population increases would result in increased calls for police protection and law enforcement. However, the slight increase in residential population growth will not change the Sheriff's Office staffing ratio of 3.0 sworn officers per 1,000 residents, nor will the slight increase in calls from those residences impact the Sheriff's Office's ability to meet its existing average response time of 7 minutes and 30 seconds in urban areas and 13 minutes in rural areas.

The Sheriff's Office recommends that preventative design measures, such as landscaping, lighting, and security alarms and door locks be incorporated into final project designs for new development projects. As part of standard development practices, project plans would be reviewed by the Sheriff's Office, and the project sponsor would be required to incorporate the Sheriff's Office's recommendations into the final project design. In addition, the on-site security staff would continue to conduct security operations during project construction and with operation of the proposed project. With these measures in place, Sheriff's Office and onsite security will be able to meet onsite security and law enforcement demand with existing staffing.

Neither the increase in onsite population nor the slight increase in calls from new employee residences will result in a need for increased Sheriff's Office or TCPA staffing. With no increase in staffing, new or expanded police facilities would not be required in order to maintain existing law enforcement response times at Marin General Hospital.

**Mitigation:** None required

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### ***Public Schools***

**Impact PSR-3: The Project would not cause a substantial adverse physical impact due to the need for additional school capacity or facilities. (Less than Significant)**

The proposed project would not develop new residential uses, and therefore, would not directly generate new student enrollment in school districts in Marin County. However, as described in Section 4.K, *Population, Housing, and Employment*, the proposed project would result in approximately 426 new households in the area (conservatively, one created by each new employee at the project). By applying the SAB student generation rate of 0.7 students per household this would result in approximately 298 new students in Marin County school districts. As discussed in *Setting*, above, Marin County districts in the vicinity of the project are

experiencing an overall trend of increasing enrollment. The increase of 298 additional students could incrementally contribute to the need for new school facilities.

Public facilities are exempt from the Leroy F. Greene School Facilities Act of 1998, or Senate Bill 50 (SB 50), which authorizes school districts to levy developer fees to finance the construction or reconstruction of school facilities. These fees are intended to address the increased educational demands on the school district resulting from new development. While the project could indirectly increase resident populations and, in turn, potential student enrollment in Marin County, the conservative and indirect potential increase of approximately 298 additional students that could enter the system incrementally and reside throughout Marin County would not result in the need for new or physically altered school facilities to maintain acceptable performance objectives. The impact would be less than significant.

**Mitigation:** None required

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### ***Parks***

**Impact PSR-4: The Project would not result in increased use of parks at levels that would require the designation of additional parkland to remain in conformance with locally adopted park standards. (Less than Significant)**

The proposed project would result in a population increase of approximately 1,036 new persons (based on the conservative assumption that each new worker would create a new household in Marin County, at the average county rate of 2.43 persons per household) (see Section 4.K, *Population, Housing, and Employment*). This new population is assumed to reside not only in the Ross Valley Area but anywhere within Marin County.

This anticipated increase could result in a small increase in use of parks and recreational facilities. The park standard referenced in the Main Countywide Plan is 5 acres per 1,000 residents or 10 acres per 1,000 residents. Marin County currently has 932 acres and 252,409 resident (MCCDA, 2007; U.S. Census Bureau, 2011), resulting in a ratio of 3.7 acres per 1,000 residents. Marin County does not have an objective regarding open space, but the County currently maintains 73.3 acres of open space per 1,000 residents. The addition of 1,036 potential new residents would not change any of these ratios, and their impact on parkland objectives would be less than significant.

The City of Larkspur does not state a parkland performance objective in its General Plan, but the city currently has as ratio of 4.4 park acres per 1,000 residents. New employment and possible increases in residents have been estimated at the county level. While this analysis does not speculate how many new project employees could relocate to Larkspur, the number of new residents using parks in Larkspur, in comparison to Larkspur's existing overall population would be less than significant.

In summary, the impact of hospital employees' relocation to Marin County upon existing parkland ratios would be less than significant.

**Mitigation:** None required

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### ***Recreational Facilities***

**Impact PSR-5: The Project would not result in increased use of recreational facilities that would result in substantial and/or accelerated physical deterioration of facilities. (Less than Significant)**

The project would result in an increase in daytime on-site population, comprised primarily of 426 new employees (see Section 4.K, *Population, Housing, and Employment*). This analysis considers those new employees in combination with a population of patients and visitors equivalent to those now using Marin General Hospital (see Chapter 3, Project Description, for a discussion of Project's licensed beds for patients). New employees may use recreational facilities within parks near the project site before, during and after daytime work hours; patients and visitors could also use the park during daytime hours. The closest recreational facilities to the project site are located within Hal Brown Park at Creekside (directly across Bon Air Road from Marin General Hospital) and within Piper Park, a 22-acre park on Doherty Drive in Larkspur.

Hospital shifts are 24 hours; not all of the 426 new employees would be working during the daytime. Only a small portion of day-shift employees would use the parks before, during or after work hours. Patients, visitors and hospital employees would, for the most part, use the parks passively. Such passive uses could include using park benches to eat lunch and using walking trails. The passive daytime use would not cause substantial physical deterioration of recreational facilities. These uses would not, for the most part, include active use of recreational facilities such as playgrounds, turf, the pétanque area (a game similar to bocce), or softball fields, however, these active use facilities would not experience substantial physical deterioration by the level of reasonably anticipated by new workers at the project site. Hospital employees are not expected to access the City of Larkspur Recreation Department's community meeting room. Overall, the project would not cause substantial physical deterioration of existing recreational facilities and the impact would be less than significant.

**Mitigation:** None required

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## Cumulative Impacts

**Impact PSR-6: The Project, combined with past, present, and other reasonably foreseeable development in the area, would not contribute to cumulative impacts with respect to public services and recreation. (Less than Significant)**

### ***Geographic Context***

The cumulative geographic context for public services and recreation includes all facilities within the county since potential new resident employees could potentially relocate throughout the county.

### ***Impacts***

Consistent with past projects and the proposed project, present and reasonably foreseeable projects would be required to comply with Marin County ordinances, as well as the applicable ordinances of Kentfield, Larkspur and Greenbrae regarding public services and recreation. Moreover, future projects in Marin County would be required to mitigate their contribution to the need for school facilities through the payment of school impact fees pursuant to SB 50. Payment of fees mandated under SB 50 is the mitigation measure prescribed by the statute, and payment of such fees is deemed full and complete mitigation.

Future development is also envisioned in, and guided by, the Marin Countywide Plan, the Kentfield / Greenbrae Community Plan, and the Larkspur General Plan. Service planning by local police and fire and emergency service providers considers local projections for growth, and these providers are involved in the planning and development entitlement review of new development to ensure adequate service provision.

As discussed in the project-level impacts above, the increases in employees resulting from the project and that would be new to the area could potentially cause an increase in the number of persons and students throughout the county and in the vicinity of the project site. However, the projected increases, combined with those associated with cumulative development (as shown in the tables throughout Section 4.K, *Population, Housing, and Employment*) are not expected to require new staff, facilities, or equipment to maintain service ratios, and increased use of facilities are not anticipated to result in their substantial physical deterioration. Therefore, overall, the cumulative effect of the project combined with past, present and reasonably foreseeable projects in the area on public services and recreation would be less than significant.

**Mitigation:** None required

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## 4.M Transportation and Circulation<sup>1</sup>

This section describes and evaluates issues related to Transportation and Circulation in the context of the proposed project. Discussed are the physical and regulatory setting; the baseline for determining environmental impacts; the criteria used for determining the significance of environmental impacts; and potential impacts and appropriate mitigation measures when necessary.

### Setting

The existing transportation-related context for the proposed project is described below, beginning with a description of the street network that serves the project area. Existing transit service, bicycle and pedestrian facilities, and on- and off-street parking in the vicinity of the project are also described. Intersection and freeway levels of service are then defined and current conditions for roadways and intersections in the project area vicinity are summarized.

### Existing Roadway Network

The project site is located at 250 Bon Air Road in Greenbrae, California. The project site is bounded by Bon Air Road to the west and south, Sir Francis Drake Boulevard to the north, South Eliseo Drive to the south and east, and Magnolia Avenue to the southwest. The project site is surrounded by a mix of transportation resources that provide local and regional access to the site, including U.S. Highway 101, Interstate 580, Sir Francis Drake Boulevard, and local streets, bicycle lanes, sidewalks, and transit. Primary access to the project site is via Bon Air Road. See **Figure 4.M-1** for roadways in the project area.

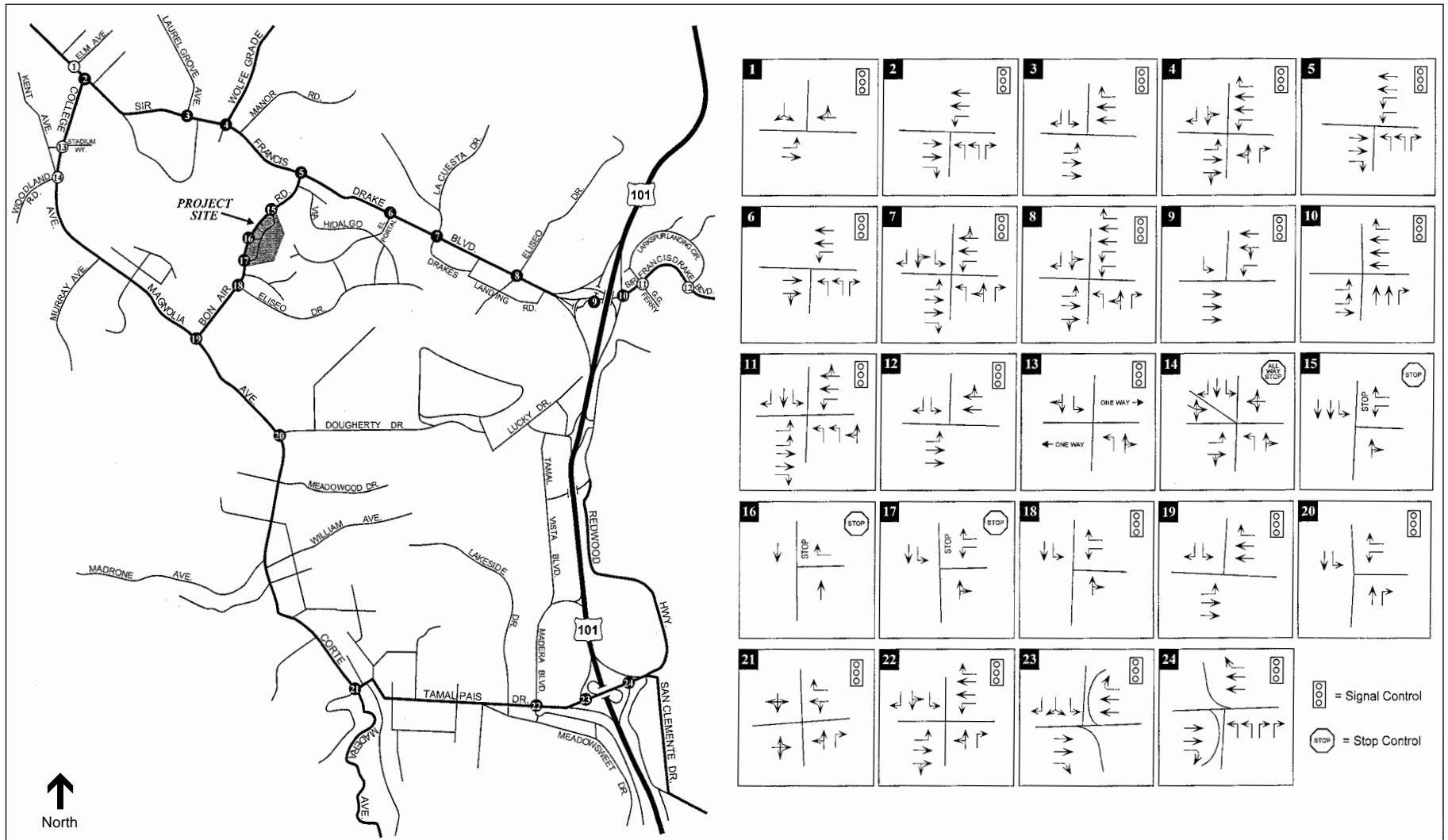
### *Regional Roadways*

**U.S. Highway 101 (U.S. 101)** is the main north-south freeway facility in Marin County. In the project study area, U.S. 101 has eight travel lanes with major north-south interchanges located at Sir Francis Drake Boulevard and Tamalpais Drive. Partial interchange on- and off-ramps are located at Fifer Avenue (southbound on/off) and Industrial Way (northbound on/off). U.S. 101 is designated as a State Highway portion of the Marin County Congestion Management Plan (CMP) roadway network from the San Francisco County line to the Sonoma County line (TAM, 2009a). On a regional basis, U.S. 101 provides access south to cities such as San Francisco, San Jose, and Gilroy and beyond and north to Novato, Santa Rosa, and Ukiah and beyond. U.S. 101 intersects Interstate 580 approximately 1.5 miles north of Sir Francis Drake Boulevard.

**Interstate 580 (I-580)** extends in an east-west direction from Marin County through Contra Costa County to Alameda County. In the project study area, I-580 connects with U.S. 101 about 1.5 miles north of Sir Francis Drake Boulevard. Extending east from U.S. 101, I-580 has four travel lanes through the Richmond-San Rafael Bridge. I-580 is designated as the State Highway portion of the CMP roadway network from U.S. 101 to the Contra Costa County Line.

<sup>1</sup> This section was prepared on the basis of the *Marin General Hospital Replacement Project Traffic Impact Analysis Final Report* (Omni-Means, August 2012), which is available in Appendix B, to this Draft EIR.





### **Local Roadways**

**Sir Francis Drake Boulevard** is classified as a primary arterial street and is a major east-west travel corridor through Marin County. Starting from Interstate 580 in the east, Sir Francis Drake Boulevard extends west through U.S. 101 and extends all the way to State Route 1 on the Point Reyes Peninsula. In the project area, the roadway passes through the communities of Larkspur, Greenbrae, and Kentfield providing access to a variety of institutional, transit, commercial, and residential uses. The roadway is primarily a four-lane arterial street with raised, landscaped medians through the study area. East of U.S. 101, the roadway temporarily widens to six travel lanes near Larkspur Landing Circle until narrowing back down to two travel lanes as it nears I-580. Sir Francis Drake Boulevard is also identified as a principal county arterial portion of the CMP roadway network.

**College Avenue** extends south from Sir Francis Drake Boulevard west of the project site and becomes Magnolia Avenue at the Larkspur City limit. In this segment, College Avenue varies from four travel lanes to two travel lanes with a two-way-left-turn-lane (TWLTL) and provides access to residential, institutional (College of Marin) and commercial areas. College Avenue is designated as a secondary arterial street as part of the *Marin Countywide Plan Technical Report* (Marin County, Department of Public Works, 2002).

**Magnolia Avenue** extends from College Avenue in a southerly direction through portions of Larkspur and Greenbrae. From Estelle Avenue, Magnolia Avenue continues as a wide two-lane roadway with a TWLTL to Murray Avenue. The roadway then widens to four travel lanes with a raised median to Bon Air Road. South of Bon Air Road, Magnolia Avenue continues as a two-lane street past Doherty Drive into the City of Larkspur. In the project area, Magnolia Avenue provides access to residential and commercial-retail areas in Larkspur. Magnolia Avenue is designated as a secondary arterial street as part of the *Marin Countywide Plan* (MCCDA, 2007a).

**Corte Madera Avenue** extends from Magnolia Avenue in a southerly direction, just south of Branch Avenue. As a two-lane roadway, Corte Madera Avenue intersects Tamalpais Drive before continuing south to provide access to residential, commercial, and open-space areas. Within the community of Corte Madera, the roadway is narrow and winding before proceeding south to Mill Valley. Corte Madera Avenue is designated as a secondary arterial street as part of the *Marin Countywide Plan*.

**Wolfe Grade** extends in a north-south direction between Sir Francis Drake Boulevard and 2nd-5th Streets in San Rafael. Wolfe Grade is a two-lane roadway that provides access primarily to residential areas in Greenbrae and Kentfield before extending north in San Rafael and accessing commercial-retail areas. Wolfe Grade is classified as a secondary arterial street as part of the *Marin Countywide Plan*.

**Laurel Grove Avenue** has both an easterly connection to Sir Francis Drake Boulevard (in Greenbrae) and a westerly connection (in Ross). Located west of the Wolfe Grade, Laurel Grove Avenue extends in a northwest direction from Sir Francis Drake Boulevard providing access

primarily to residential areas in Kentfield and Ross. A two-lane roadway, Laurel Grove Avenue is designated as a residential collector street as part of the *Marin Countywide Plan*.

**Bon Air Road** extends between Magnolia Avenue and Sir Francis Drake Boulevard and provides direct access to the project site. From Sir Francis Drake Boulevard, Bon Air Road extends south with four travel lanes until reaching the northerly driveway of the Marin General Hospital. At this access point, the roadway becomes a two-lane divided roadway with a wide, raised landscaped median and vehicle parking on both sides of the street. Continuing south past the Marin General Hospital's southern-most driveway, Bon Air Road narrows to two travel lanes before crossing over Corte Madera Creek and extending to Magnolia Avenue; no vehicle parking is allowed in this segment. Bon Air Road is considered a secondary arterial street in the *Marin Countywide Plan*.

**Doherty Drive** extends in an east-west direction between Magnolia Avenue and Lucky Drive and has two travel lanes. Providing access to institutional, recreational, and commercial uses, Doherty Drive provides a direct link to U.S. 101 for southbound-only on- and off-ramp access from Magnolia Avenue in the City of Larkspur. This roadway is classified as a commercial collector street in the *Marin Countywide Plan*.

**Tamalpais Drive** extends east-west between Redwood Avenue and Redwood Highway-San Clementine Drive just east of U.S. 101 in the Town of Corte Madera. Tamalpais Drive is a major commute corridor that provides access to U.S. 101 via a full interchange as well as major commercial-retail centers (The Corte Madera Towne Center/The Village at Corte Madera) adjacent to the highway. The roadway is a primary arterial street with four travel lanes, and has raised landscaped medians between Chapman Drive and the Corte Madera Towne Center driveway. The roadway extends east over U.S. 101 with four travel lanes to Redwood Highway. This roadway is classified as a primary roadway in the *Marin Countywide Plan*.

**El Portal Drive** is a relatively short connector street (800 feet) that extends in a north-south direction between Via Casitas and Sir Francis Drake Boulevard just east of the proposed project site. As a residential collector street, El Portal Drive has two wide travel lanes, raised landscaped medians, and vehicle parking on both sides of the street.

**La Cuesta Drive** is located east of El Portal Drive and intersects Sir Francis Drake Boulevard in a north-south direction. South of Sir Francis Drake Boulevard, La Cuesta Drive serves to provide access through a major commercial-retail center and parking areas (Bon Air Center) and has two travel lanes. North of Sir Francis Drake Boulevard, the roadway extends as a two-lane divided street then as a two-lane street providing access to residential neighborhoods.

**Eliseo Drive-Barry Way** is a wide, two-lane divided street that extends north from Sir Francis Drake Boulevard east of the proposed project site. Providing access to residential areas in Larkspur and Greenbrae, Eliseo Drive forms the north leg of the intersection with Sir Francis Drake Boulevard. Barry Way forms the southern leg of the intersection extending south from Sir Francis Drake Boulevard to Laderman Lane. Barry Way has four travel lanes between Sir Francis Drake Boulevard and Drakes Landing Road. Continuing south, the roadway narrows to two travel lanes

as it approaches Laderman Lane. Barry Way provides access to commercial-retail and residential areas south of Sir Francis Drake Boulevard.

## Transit Service

Transit service in the project area is provided by Golden Gate Transit (GGT) and Marin County Transit District (MT). Golden Gate Transit operates bus service along Sir Francis Drake Boulevard. Marin Transit serves local routes throughout Marin County through contracting with other transit service providers that include Golden Gate Transit, MV Transportation, and Marin Airporter. Overall, transit operations are served by large bus and/or shuttle services. Transit routes that serve the project site are outlined below.

**GGT Route 29** operates between the San Rafael Transit Center and Ross-San Anselmo areas (GGT, 2011). Route 29 provides direct access to the Marin General Hospital site. Route 29 operates primarily on Sir Francis Drake Boulevard in the study area between 6:30 a.m. and 9:10 p.m. with frequencies every 30-60 minutes.

**MT Route 222** (Twin Cities Shuttle) operates between San Clemente Park on Paradise Drive and the Larkspur Ferry Terminal (Marin Transit, 2011). Route 222 operates between 7:05 and 9:55 a.m. during the morning commute period and 3:10 and 7:04 p.m. during the afternoon commute period, weekdays only. Bus frequencies are approximately every hour. Route 222 travels on Tamalpais Drive, Tamal Vista Boulevard, Doherty Drive, Magnolia Avenue, Bon Air Road, South Eliseo Drive, El Portal Drive, and Sir Francis Drake Boulevard in the project study area. MT Route 222 serves the Marin General Hospital campus directly off existing transit stops on Bon Air Road.

In addition to transit services, above, Marin General Hospital operates its own shuttle service between the main parking areas fronting the existing hospital buildings and off-site satellite parking lot. Specifically, this hospital shuttle operates during peak commute periods between the main campus and the satellite parking lot at the St. Sebastian's Church to assist employees and visitors/patrons. A transit shelter is located in front of the main hospital building (west wing) to serve transit riders. Shuttle services also provide access to adjacent off-campus medical facilities related to hospital uses.

## Bicycle and Pedestrian Facilities

According to the County of Marin *Countywide Plan*, bikeways are classified as Class I (bicycle paths separated from roads), Class II (striped bicycle lanes within the paved areas of roadways), or Class III (signed bike routes that allow cyclists to share streets with vehicles). Pedestrian facilities generally include sidewalks, crosswalks, curb ramps, pedestrian signals, and streetscape amenities (e.g., benches, tree-lined buffers, etc). Existing bicycle and pedestrian facilities in the area are generally comprised of sidewalks, pedestrian crosswalks, Class I bike path, or Class II bike lanes, signalized intersections, and dedicated bicycle/pedestrian paths. Specific bicycle and pedestrian facilities serving the project site can be described as follows:

Pedestrian sidewalks and a Class I path are located on both sides of Bon Air Road directly in front of the project site. These facilities provide links to both Sir Francis Drake Boulevard to the north and Eliseo Avenue and Magnolia Avenue to the south. Along Sir Francis Drake Boulevard, there is a dedicated Class I path that extends along the northern side of the street between Barry Way-Eliseo Drive near U.S. 101 and Wolfe Grade. At the Wolfe Grade and Sir Francis Drake Boulevard intersection, a pedestrian and bicycle bridge extends north-south over Sir Francis Drake to provide access to schools and other pedestrian sidewalks along the south side of the street. West of the project site, a Class I path extends through Creekside Park and along Corte Madera Creek in an east-west direction providing access through to Kentfield and south to Larkspur and Corte Madera areas. Southwest of South Eliseo Drive, there is a Class I path along the west side of Bon Air Road that connects to the bridge crossing over Corte Madera Creek. Southwest of this bridge, Class II bike lanes and pedestrian sidewalks exist on Bon Air Road to Magnolia Avenue. Class II bicycle lanes extend north and south on Magnolia Avenue between Bon Air Road and Dartmouth Drive. South of Bon Air Road, there is a dedicated Class II lane that extends along the east side of the roadway to Doherty Drive.

A Class I path extends along the entire western frontage of the project site, between the north and south main access project site driveways paralleling Bon Air Road. The northerly driveway also has a pedestrian sidewalk that extends east from Bon Air Road along the north side of the driveway for approximately 270 feet. It is noted that there are no east-west pedestrian crosswalks on Bon Air Road at the northerly project driveway to provide a safe crossing of the roadway. The southern access driveway at Bon Air Road has pedestrian sidewalks on both sides of its entrance that connect to existing pedestrian sidewalks at Bon Air Road. As with the northern access driveway, a dedicated Class I path extends in a northwest direction from the driveway along the entire project site frontage along Bon Air Road. Pedestrian sidewalks also extend from the southerly driveway east into the project site for a short distance. There are no east-west pedestrian crosswalks on Bon Air Road at its intersection with the south access driveway.

The project site provides bicycle racks and bicycle parking stalls on-site for employees and visitors.

## **Existing Traffic Conditions**

### ***Intersection Level of Service Analysis Methodologies***

The operation of a local roadway network is commonly measured and described using a grading system called Level of Service (LOS). The LOS grading system qualitatively characterizes traffic conditions associated with varying levels of vehicle traffic, ranging from LOS A (indicating free-flow traffic conditions with little or no delay experienced by motorists) to LOS F (indicating congested conditions where traffic flows exceed design capacity and result in long delays). This LOS grading system applies to both roadway segments and intersections. **Table 4.M-1** summarizes the relationship between delay and LOS for signalized and unsignalized intersections.

**TABLE 4.M-1  
DEFINITIONS FOR INTERSECTION LEVEL OF SERVICE**

Unsignalized Intersections		Level of Service Grade	Signalized Intersections	
Description	Average Total Vehicle Delay (Seconds)		Average Control Vehicle Delay (Seconds)	Description
No delay for stop-controlled approaches.	≤10.0	A	≤10.0	Free Flow or Insignificant Delays: Operations with very low delay, when signal progression is extremely favorable and most vehicles arrive during the green light phase. Most vehicles do not stop at all.
Operations with minor delay.	>10.0 and ≤15.0	B	>10.0 and ≤20.0	Stable Operation or Minimal Delays: Generally occurs with good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average delay. An occasional approach phase is fully utilized.
Operations with moderate delays.	>15.0 and ≤25.0	C	>20.0 and ≤35.0	Stable Operation or Acceptable Delays: Higher delays resulting from fair signal progression and/or longer cycle lengths. Drivers begin having to wait through more than one red light. Most drivers feel somewhat restricted.
Operations with increasingly unacceptable delays.	>25.0 and ≤35.0	D	>35.0 and ≤55.0	Approaching Unstable or Tolerable Delays: Influence of congestion becomes more noticeable. Longer delays result from unfavorable signal progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop. Drivers may have to wait through more than one red light. Queues may develop, but dissipate rapidly, without excessive delays.
Operations with high delays, and long queues.	>35.0 and ≤50.0	E	>55.0 and ≤80.0	Unstable Operation or Significant Delays: Considered to be the limit of acceptable delay. High delays indicate poor signal progression, long cycle lengths and high volume to capacity ratios. Individual cycle failures are frequent occurrences. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
Operations with extreme congestion, and with very high delays and long queues unacceptable to most drivers.	>50.0	F	>80.0	Forced Flow or Excessive Delays: Occurs with oversaturation when flows exceed the intersection capacity. Represents jammed conditions. Many cycle failures. Queues may block upstream intersections.

SOURCE: TRB, 2000.

### **Signalized Intersections**

At signalized intersections, traffic conditions are evaluated using the 2000 *Highway Capacity Manual* (HCM) operations methodology (Transportation Research Board, 2000) and the Synchro/Simtraffic analysis software program. The operation analysis uses various intersection characteristics (e.g., traffic volumes, lane geometry, and signal phasing/timing) to estimate the average control delay experienced by motorists traveling through an intersection.

Marin County recently completed a corridor analysis for Sir Francis Drake Boulevard between U.S. 101 and College Avenue. Specifically, the Program for Arterial System Synchronization (PASS) signal timing project evaluated signalized intersections between College Avenue and U.S. 101 to improve overall vehicle progression and reduce delays (Haile, 2012). The signalized study intersections along Sir Francis Drake Boulevard affected by this new timing analysis are Wolfe Grade, La Cuesta Drive, and Eliseo Drive. All County signal timing data (including volume data) were incorporated into existing intersection analyses to be consistent with current studies. Remaining study intersections along Sir Francis Drake Boulevard were deemed to be consistent with current County operations including signal timing and overall intersection LOS.

### **Unsignalized Intersections**

For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, traffic conditions are evaluated using the HCM operations methodology and the Synchro/Simtraffic analysis software program. With this methodology, the LOS is related to the total delay per vehicle for the intersection as a whole (for all-way stop-controlled intersections), and for each stop-controlled movement or approach only (for side-street stop-controlled intersections). Total delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. This time includes the time required for a vehicle to travel from the last-in-queue position to the first-in-queue position.

### **Study Intersections**

Peak-hour intersection operations at 19 study intersections were evaluated during weekday morning (a.m.) and afternoon (p.m.) peak traffic periods (7:00-9:00 a.m. and 4:00-6:00 p.m.) (Omni-Means, 2012). Selected mid-day peak period (12:00 Noon – 2:00 p.m.) intersection turning movement counts were obtained and/or conducted at 14 project study intersections (including five not evaluated during the a.m. and p.m. peak periods) (Omni-Means, 2012).<sup>2</sup> The location and configuration of the following 24 study intersections are presented in Figure 4.M-1. The 24 study intersections are listed below.

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<sup>2</sup> Newer counts (year 2010) were compared to (year 2006) counts, and the higher volumes (2006) were used to provide a conservative analysis.

<u>Intersections</u>	<u>Control</u>	<u>Count Period</u> *
1. Elm Avenue/Sir Francis Drake Boulevard	Signal	MD only
2. College Avenue/Sir Francis Drake Boulevard	Signal	AM, MD, PM
3. Laurel Grove Avenue/Sir Francis Drake Boulevard	Signal	AM, MD, PM
4. Wolfe Grade/Sir Francis Drake Boulevard	Signal	AM, MD, PM
5. Bon Air Road/Sir Francis Drake Boulevard	Signal	AM, MD, PM
6. El Portal Drive/Sir Francis Drake Boulevard	Signal	AM, MD, PM
7. La Cuesta Drive/Sir Francis Drake Boulevard	Signal	AM, MD, PM
8. Eliseo Drive/Sir Francis Drake Boulevard	Signal	AM, MD, PM
9. U.S. 101 Southbound Ramps/Sir Francis Drake Boulevard	Signal	AM, MD, PM
10. U.S. 101 Northbound Ramps/Sir Francis Drake Boulevard	Signal	AM, MD, PM
11. Larkspur Landing West/Sir Francis Drake Boulevard	Signal	MD only
12. Larkspur Landing East/Sir Francis Drake Boulevard	Signal	MD only
13. Stadium Way/College Avenue	Signal	MD only
14. Kent Avenue-Woodland Road/College Avenue	Stop-Sign	MD only
15. Marin General Hospital North Driveway/Bon Air Road	Stop-Sign	AM / PM only
16. Marin General Hospital Mid-Site Driveway/Bon Air Road	Stop-Sign	AM / PM only
17. Marin General Hospital South Driveway/Bon Air Road	Stop-Sign	AM / PM only
18. Eliseo Drive/Bon Air Road	Signal	AM / PM only
19. Bon Air Road/Magnolia Avenue	Signal	AM / PM only
20. Doherty Drive/Magnolia Avenue	Signal	AM / PM only
21. Corte Madera Avenue/Tamalpais Drive	Signal	AM / PM only
22. Madera Boulevard/Tamalpais Drive	Signal	AM / PM only
23. U.S. 101 Southbound Off-Ramp/Tamalpais Drive	Signal	AM / PM only
24. U.S. 101 Northbound Off-Ramp/Tamalpais Drive	Signal	AM / PM only

\* MD = Mid-day

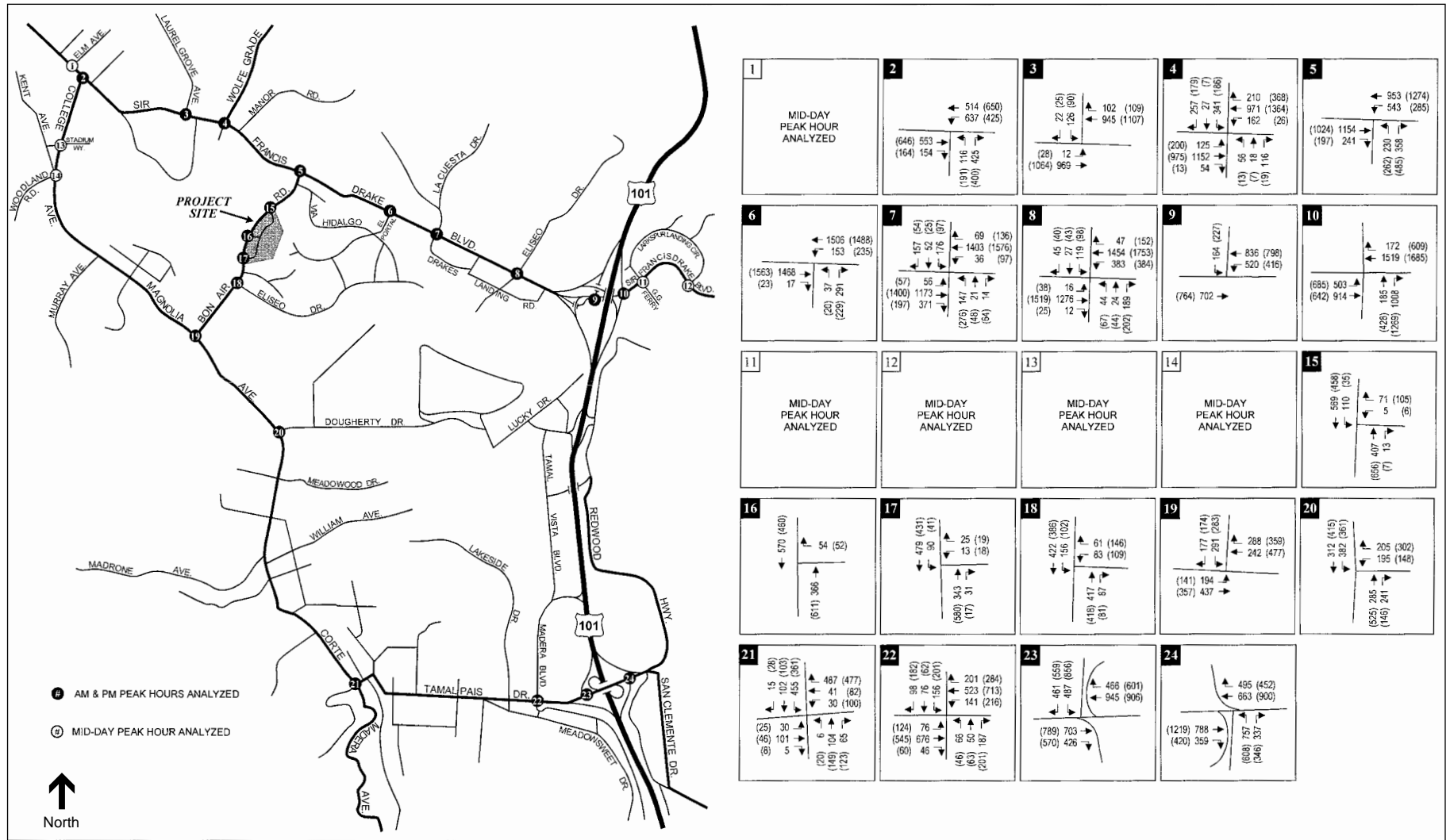
Existing study intersections a.m. and p.m. peak-hour traffic volumes are shown on **Figure 4.M-2** and existing mid-day peak-hour intersection volumes are shown in **Figure 4.M-3**.

### ***Existing Intersection Levels of Service***

#### **Weekday AM and PM Peak Hour**

Three of the 24 study intersections are currently operating at unacceptable conditions during both peak periods evaluated. The signalized intersections on Sir Francis Drake Boulevard at Wolfe Grade, La Cuesta Drive, and Eliseo Drive are operating at LOS E or F during the a.m. and p.m. peak hours. The other 21 intersections currently operate as acceptable LOS during both peak periods. The existing levels of service for the intersections are presented in **Table 4.M-2**, and LOS calculation sheets are provided in the transportation impact analysis report (Appendix B to this Draft EIR). Field observations indicate that, during peak commute periods, there are generally long vehicle queues on Sir Francis Drake Boulevard in both east-west directions. These vehicle queues typically clear intersections within one signal cycle length, but minor (side-street) traffic can take longer to clear the intersections under the most congested conditions. Peak-hour traffic along Bon Air Road generally operates under non-congested conditions. However, at unsignalized intersections on Bon Air Road between Sir Francis Drake Boulevard and South Eliseo Road, there

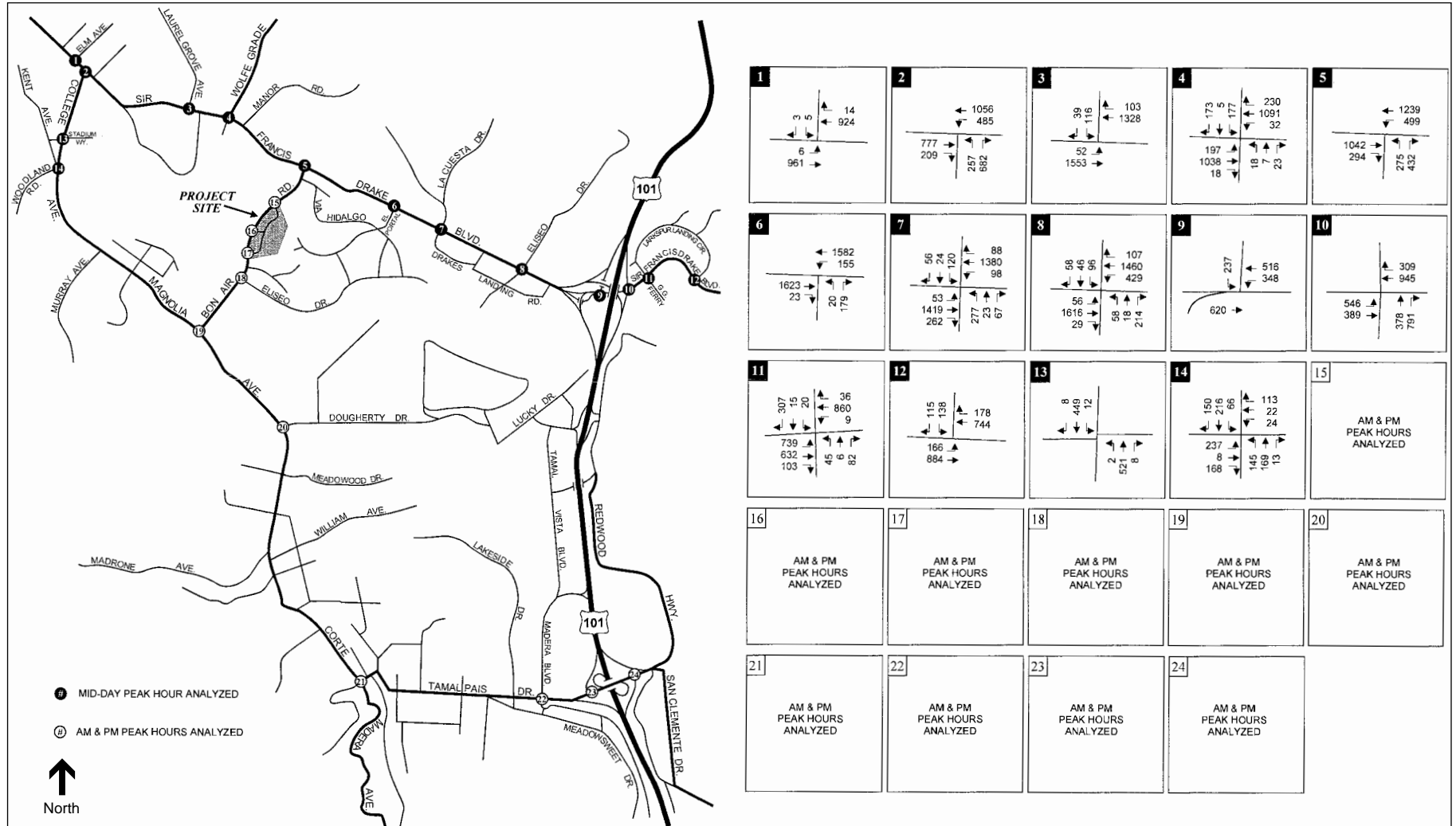




SOURCE: Omni-Means

Marin General Hospital . 210606

**Figure 4.M-2**  
Existing AM and PM Peak Hour Volumes



**TABLE 4.M-2  
EXISTING INTERSECTION LEVELS OF SERVICE (LOS)  
WEEKDAY AM AND PM PEAK HOUR**

Intersection <sup>a</sup>	Control Type <sup>b</sup>	AM Peak		PM Peak	
		Delay <sup>c</sup>	LOS	Delay <sup>c</sup>	LOS
1. Elm Avenue/Sir Francis Drake (SFD) Blvd.	Signal	MDO <sup>d</sup>	MDO	MDO	MDO
2. College Avenue/ SFD Boulevard	Signal	29.6	C	22.4	C
3. Laurel Grove Avenue/ SFD Boulevard	Signal	17.7	B	18.4	B
4. Wolfe Grade/Sir Francis Drake Blvd.	Signal	<b>&gt;80.0</b>	<b>F</b>	<b>&gt;80.0</b>	<b>F</b>
5. Bon Air Road/Sir Francis Drake Blvd.	Signal	24.9	C	19.8	B
6. El Portal Drive/ SFD Boulevard	Signal	20.4	C	24.4	C
7. La Cuesta Drive/ SFD Boulevard	Signal	<b>58.8</b>	<b>E</b>	<b>&gt;80.0</b>	<b>F</b>
8. Eliseo Drive/Sir Francis Drake Blvd.	Signal	<b>59.3</b>	<b>E</b>	<b>55.6</b>	<b>E</b>
9. U.S. 101 SB Ramps/ SFD Boulevard	Signal	10.8	B	10.3	B
10. U.S. 101 NB Ramps/ SFD Boulevard	Signal	16.8	B	25.2	C
11. Larkspur Landing W./SFD Boulevard	Signal	MDO	MDO	MDO	MDO
12. Larkspur Landing E./SFD Boulevard	Signal	MDO	MDO	MDO	MDO
13. Stadium Way/College Ave.	Signal	MDO	MDO	MDO	MDO
14. Kent Ave.-Woodland Rd./College Ave.	AWSC	MDO	MDO	MDO	MDO
15. MGH North Driveway/Bon Air Rd.	SSSC	22.2	C	22.2	C
16. MGH Mid-Driveway/Bon Air Rd.	SSSC	11.2	B	15.1	C
17. MGH South Driveway/Bon Air Rd.	SSSC	17.1	C	22.9	C
18. Eliseo Drive/Bon Air Road	Signal	29.6	C	31.5	C
19. Bon Air Road/Magnolia Boulevard	Signal	13.4	B	14.8	B
20. Doherty Drive/Magnolia Avenue	Signal	22.2	C	21.8	C
21. Corte Madera Avenue/Tamalpais Drive	Signal	34.7	C	27.8	C
22. Madera Boulevard/Tamalpais Drive	Signal	32.0	C	43.7	D
23. U.S. 101 SB Off-ramp/Tamalpais Drive	Signal	18.0	B	18.2	B
24. U.S. 101 NB Off-ramp/Tamalpais Drive	Signal	18.4	B	19.0	B

<sup>a</sup> MGH = Marin General Hospital; SFD = Sir Francis Drake Boulevard; NB = Northbound; SB = Southbound.  
<sup>b</sup> Signal = Signalized; AWSC = All-Way Stop-Controlled; SSSC = Side-Street Stop-Controlled.  
<sup>c</sup> Whole intersection weighted average total delay for signalized and all-way stop-controlled intersections (expressed in seconds per vehicle). For two-way stop controlled intersections, delays for worst approach are shown.  
<sup>d</sup> MDO = mid-day only.

Unacceptable operations are indicated in **bold** type.

SOURCE: Omni-Means, 2012.

can be long delays for minor street (stop-sign) controlled traffic leaving the hospital campus. This is particularly true at the Bon Air Road/Marin General Hospital south driveway.

**Weekday Mid-Day Peak Hour**

Two of the study intersections are currently operating at unacceptable conditions during the weekday mid-day hour. The signalized intersections on Sir Francis Drake Boulevard at La Cuesta Drive and Eliseo Drive are operating at LOS F. The other study intersections are currently operating acceptably during the weekday mid-day peak period. The existing levels of service for the intersections are presented in **Table 4.M-3**, and LOS calculation sheets are provided in the transportation impact analysis report (Appendix B to this Draft EIR).

**TABLE 4.M-3  
EXISTING INTERSECTION LEVELS OF SERVICE (LOS)  
WEEKDAY MID-DAY PEAK HOUR**

Intersection <sup>a</sup>	Control Type <sup>b</sup>	MID Peak	
		Delay <sup>c</sup>	LOS
1. Elm Avenue/Sir Francis Drake Boulevard	Signal	21.7	C
2. College Avenue/Sir Francis Drake Boulevard	Signal	26.6	C
3. Laurel Grove Avenue/Sir Francis Drake Boulevard	Signal	20.2	C
4. Wolfe Grade/Sir Francis Drake Boulevard	Signal	31.9	C
5. Bon Air Road/Sir Francis Drake Boulevard	Signal	21.9	C
6. El Portal Drive/Sir Francis Drake Boulevard	Signal	21.8	C
7. La Cuesta Drive/Sir Francis Drake Boulevard	Signal	<b>&gt;80.0</b>	<b>F</b>
8. Eliseo Drive/Sir Francis Drake Boulevard	Signal	<b>&gt;80.0</b>	<b>F</b>
9. U.S. 101 SB Ramps/Sir Francis Drake Boulevard	Signal	9.3	A
10. U.S. 101 NB Ramps/Sir Francis Drake Boulevard	Signal	16.0	B
11. Larkspur Landing W./ Sir Francis Drake Boulevard	Signal	40.2	D
12. Larkspur Landing E./ Sir Francis Drake Boulevard	Signal	16.9	B
13. Stadium Way/College Avenue	Signal	0.4	A
14. Kent Avenue-Woodland Road/College Avenue	AWSC	16.9	C

<sup>a</sup> MGH = Marin General Hospital; SFD = Sir Francis Drake Boulevard; NB = Northbound; SB = Southbound.  
<sup>b</sup> Signal = Signalized; AWSC = All-Way Stop-Controlled.  
<sup>c</sup> Whole intersection weighted average total delay for signalized and all-way stop-controlled intersections (expressed in seconds per vehicle). For two-way stop controlled intersections, delays for worst approach are shown.

Unacceptable operations are indicated in **bold** type.

SOURCE: Omni-Means, 2012.

The Woodland Road-Kent Avenue/College Avenue intersection experiences local vehicle queuing during the mid-day peak hour. This all-way-stop-controlled intersection is non-standard in design in that it has five approach legs. In addition, motorists traveling southbound on Kent Avenue or westbound on Woodland Road must stop twice if they wish to access the Farmer's Market parking lot or northbound onto College Avenue. For these reasons, some motorists may experience longer delays at this intersection due to unbalanced approach volumes combined with the nature of all-way-stop-control; however, the overall intersection operates at an acceptable LOS during the mid-day peak hour.

### ***Weekday Peak Hour Vehicle Queuing - Bon Air Road/Sir Francis Drake Boulevard***

When intersections are closely spaced and/or experience high traffic volumes, vehicle queuing can occur when existing storage capacity for turning lanes (or through traffic) is not adequate. In response to County concerns, a vehicle queuing analysis was conducted for the westbound left-turn movement at the Bon Air Road / Sir Francis Drake Boulevard intersection. Based on field observations and other reports from County Department of Public Works, the westbound left-turn lane(s) from Sir Francis Drake Boulevard can exceed their storage capacity during peak commute periods. This study has evaluated the existing a.m. peak hour (the worst case period for this condition) for adequate storage capacity

Vehicular queuing projections were estimated utilizing *SimTraffic* micro-simulation software, which is part of the Synchro/Simtraffic analysis software program, and which simulate traffic flows through the study intersections and corridor. Vehicle queuing projections are provided in terms of the 95<sup>th</sup> percentile queue lengths, which are used to design intersections. The available storage lengths for vehicle turn lanes is based on field measurements and signal cycle lengths recorded in the field during the a.m. peak commute periods and corroborated from aerial photographs of the corridor (via Google earth).

The westbound left-turn movement from Sir Francis Drake Boulevard onto Bon Air Road currently has two left-turn lanes, each with a storage capacity of 285 feet. Based on SimTraffic microsimulation for the intersection, the queuing analysis indicates that westbound left turn lanes are currently at or exceed their existing storage capacity with a 95<sup>th</sup> percentile vehicle queue of 279 feet and maximum vehicle queue of 308 feet.

### **Traffic Signal Warrant Analysis**

A traffic signal warrant analysis has been completed to determine whether existing unsignalized study intersections may require or benefit from the installation of a traffic signal. The term "signal warrant" refers to any of the eight established methods used by Caltrans to quantify the need for a traffic signal at an unsignalized intersection, described in the latest edition of the *California Manual on Uniform Traffic Control Devices* (MUTCD) (Caltrans, 2010). The California MUTCD indicates that the installation of a traffic signal should be considered only if one or more of the eight signal warrants are met. This study performed the peak-hour volume-based Warrant #3 on all three side-street stop-controlled study intersections during the weekday peak hour.

Based on MUTCD’s peak-hour warrant #3 criteria, none of the three side-street stop-controlled project study intersections would qualify for signalization with existing traffic volumes during the weekday peak hours.

### Freeway Segment Operations Analysis Methodology

Existing U.S.101 freeway segment operations have been based on available Caltrans volume data and recent transportation studies conducted for U.S. 101 Greenbrae corridor. U.S. 101 is part of the County of Marin Congestion Management Program’s (CMP) roadway system (TAM, 2009a). The CMP roadway system includes all major highways and arterial streets in Marin County. Mainline freeway volumes were obtained for the following segments in the southbound and northbound directions:

1. U.S. 101 north of Sir Francis Drake Boulevard Interchange
2. U.S. 101 between Sir Francis Drake Boulevard Interchange and Tamalpais Drive Interchange
3. U.S. 101 south of Tamalpais Drive Interchange

Based on the established CMP, the LOS standard for basic freeway segments is LOS E. This LOS standard is based on the p.m. peak-hour commute direction volume-to-capacity (V/C) ratios. However, certain freeway segments that operated at LOS F when the CMP was first initiated have been “grandfathered” into the system. For U.S. 101 freeway segments, this includes the segment between Sir Francis Drake Boulevard and I-580 (TAM, 2009a). **Table 4.M-4** summarizes the level of service criteria for evaluating freeway segments.

**TABLE 4.M-4  
LEVEL OF SERVICE CRITERIA FOR FREEWAY SEGMENTS**

Level of Service	Maximum Density Range <sup>a</sup>
A	≤ 11
B	> 11-18
C	> 18-26
D	> 26-35
E	> 35-45
F	> 45

<sup>a</sup> Maximum density based on passenger cars per hour per travel lane (pc/h/ln).

SOURCE: TRB, 2000.

Freeway segment LOS calculations have been based on mainline directional volumes (excluding high-occupancy vehicle [HOV] lanes) using HCM 2000 methodology for basic freeway segments, which differs from current TAM calculations that use the segment distance and measured travel time to obtain a vehicle speed. However, the HCM method is consistent for measuring proposed project impacts and has been used by TAM in previous monitoring studies.

### Existing Freeway Segment Levels of Service

As presented in **Table 4.M-5**, the northbound segment of U.S. 101 between Tamalpais Drive and Sir Francis Drake Boulevard is currently operating at LOS F during the p.m. peak hour. All other segments are operating at LOS D or better during the p.m. peak hour. Freeway segment LOS calculation sheets are provided in the transportation impact analysis report (Appendix B to this Draft EIR).

**TABLE 4.M-5  
EXISTING FREEWAY SEGMENT PM PEAK-HOUR LEVELS OF SERVICE (LOS)**

U.S. 101 Freeway Segment	Direction <sup>a</sup> / # of Lanes	Volume	Density <sup>b</sup>	LOS	LOS Standard
North of Sir Francis Drake Blvd	NB / 4	5,459	25.9	D	E
	SB / 3	4,452	28.2	D	E
Sir Francis Drake Blvd to Tamalpais Dr	<b>NB / 3</b>	<b>6,063</b>	<b>&gt;45</b>	<b>F</b>	<b>E</b>
	SB / 3	5,429	26.4	D	E
South of Tamalpais Drive	NB / 4	6,358	31.1	D	E
	SB / 4	5,052	24.6	C	E

<sup>a</sup> NB = Northbound; SB = Southbound

<sup>b</sup> Density calculated by maximum service flow rate (passenger cars per hour per travel lane [pc/h/ln]).

Unacceptable operations are indicated in **bold** type.

SOURCE: Omni-Means, 2012.

### Parking Conditions

Vehicle parking for existing Marin General Hospital uses is currently provided by on-site surface lots and an off-site satellite lot, for a combined total of 695 parking spaces. On-site surface parking lots provide the majority of the parking spaces serving the hospital, with 605 parking spaces in lots located primarily along the western portion of the project site (bordering Bon Air Road) and select lots located further within the campus hillside adjacent to hospital and non-hospital buildings. Marin General Hospital has a parking agreement with St. Sebastian’s Church located just northwest of the Campus on Bon Air Road to provide 90 parking spaces dedicated to hospital employees. In addition, there are 73 on-street parking spaces along Bon Air Road (both sides) along the project site frontage. These off-site parking spaces are available to the general public, patrons, and residents of other nearby uses as well as visitors/employees of Marin General Hospital, and cannot be included in a count of overall supply of parking spaces at Marin General Hospital. Observations indicate that the majority of these off-site parking spaces are filled primarily by hospital employees prior to and/or by 7:00 a.m. Therefore the project has considered the 73 on-street parking spaces in determining the demand associated with our site. The parking supply numbers only consider the on-site parking spaces in the amount of 605 in calculating parking need. The hospital acknowledges the fact that the 73 on-street spaces are available to the general public and patrons and residents of other nearby uses will compete with the hospital users for their use.

Primary access to the on-site parking facilities is provided by southwest and northwest full-access driveway entrances. The majority of parking spaces can be accessed by employees and visitors, and designated emergency and service vehicle parking lots are clearly marked (restricted).

### **Existing Parking Demand**

A comprehensive parking study was conducted for Marin General Hospital in 2010 (WSA, 2010). This study indicates that overall parking demand occupancy averages 88 percent throughout all hospital parking areas between 10:30 a.m. and 5:30 p.m. The peak parking demand was observed between 12:30 and 1:30 p.m., when overall parking occupancy reached 95 percent, or 733 occupied parking spaces. A key finding of the parking analysis indicates that on-site spaces (605 spaces) are 99 percent occupied between 11:30 a.m. and 12:30 p.m. A portion of the overall existing hospital parking demand includes ancillary uses not directly related to hospital. The surveyed 733-space parking demand includes on-site uses attributed to the Marin Clinic as well as the Marin County Health and Human Services buildings. Specific parking surveys for these on-site uses were not conducted other than to include the supply and demand as part of the total parking analysis. Therefore, as part of this updated parking analysis for existing and proposed hospital uses, overall existing parking demand has been based on the following three sources:

- Wilbur Smith and Associates parking study for Marin General Hospital;
- Count of Marin General Hospital full-time equivalent (FTE) employees (Peluso, 2011a);
- Institute of Transportation Engineers (ITE) parking research on “Clinic” and “Government Office Building” uses (ITE, 2010).

Existing total hospital parking demand currently reflects the 1,126 full-time equivalent (FTE) hospital employees, 8,000 square-foot Marin Clinic, and the existing 18,417 square-foot Marin County Health and Human Services (HHS) facility. The total peak campus demand has been determined by using the parking surveys conducted as part of the *Marin General Hospital Parking Study*. Specifically, the peak surveyed demand of 733 spaces includes all parking demand by hospital employees, patients, visitors, as well as other existing non-hospital uses; the Marin Clinic and the County HHS facility. The portion of the existing peak demand attributed to the Clinic and HHS facility has been estimated based on parking demand rates established by ITE. Barring other available information on parking demand for these non-hospital facilities (or the amount of hospital parking demand “spilling over” into these areas and/or dedicated spaces for these facilities), it is reasonable to assume a conservative parking demand for these uses. The existing parking demand solely for Marin General Hospital could be estimated as follows:

- 733-space total peak parking demand (based on parking surveys)
- (35)-space demand attributed to Marin Clinic (8,000 sq. ft. @ 4.43 spaces/1,000 sq.ft.)
- (76)-space demand attributed to Marin HHS facility (18,417sq.ft. @ 4.15 spaces/1,000 sq.ft.)
- 622-space total peak demand attributed to dedicated Marin General Hospital facilities



As calculated above, the total peak demand attributed to dedicated hospital uses equates to 622 spaces. This produces a parking ratio of 0.55 spaces/FTE hospital employee (622 spaces / 1,226 FTE). It is noted that the Marin General Hospital parking demand rate per employee is within the range cited for suburban hospitals in the ITE reference (0.31-1.71 vehicles per employee).

## Regulatory Setting

### State

#### ***California Department of Transportation***

The California Department of Transportation (Caltrans) manages interregional transportation, including management and construction of the California highway system. In addition, Caltrans is responsible for permitting and regulation of the use of state roadways. Within proximity of the project site, there are two facilities that fall under Caltrans' jurisdiction: U.S. 101 and I-580.

### Regional

#### ***Marin Countywide Plan***

The *Transportation Element*, of the Marin Countywide Plan provides guiding principles for maintaining and managing the County's transportation network. Goals, policies, and programs pertaining to transportation and circulation that are relevant to the proposed project include the following:

***Goal TR-1. Safe and Efficient Movement of People and Goods.*** Provide a range of transportation options that meets the needs of residents, businesses, and travelers.

*Policy TR-1.1, Manage Travel Demand.* Improve the operation efficiency of the transportation system by reducing vehicle travel demand and provide opportunities for other modes of travel.

*Policy TR-1.2, Maintain Service Standards.* Establish level of service standards for vehicles on streets and highways and performance standards for transit, bicycles, pedestrians, and other modes of transportation.

*Program TR-1e, Uphold Vehicle Level of Service Standards.* Uphold peak-hour vehicle level of service standard of LOS D or better for urban and suburban arterials and LOS E or better for freeways and rural expressway. Level of service standards should adhere to established standards for designated roadways in the Congestion Management Program system.

*Program TR-1g, Determine Appropriate Mitigation.* Work with the Transportation Authority of Marin to monitor traffic impacts of development and identify mitigation requirements for proposed development that would cause a drop below adopted LOS, including transportation system improvements, impact fees, Transportation Demand Management strategies, direct support of alternative travel modes, or redesign the development of projects for transportation improvements.

*Program TR-1s, Vehicle Miles Traveled (VMT) Reduction Monitoring and Implementation and Transportation Demand Management Program.* Identify and require in new developments specific transportation demand management (TDM) strategies for reducing the VMT below levels that would otherwise occur.

**Goal TR-2, Increased Bicycle and Pedestrian Access.** Expand bicycle and pedestrian facilities and access in and between neighborhoods, employment centers, shopping areas, schools, and recreational uses.

*Policy TR-2.2, Provide New Bicycle and Pedestrian Facilities.* Where appropriate, require new development to provide trails or roadways and paths for use by bicycles and/or on-street bicycle and pedestrian facilities. In-lieu fees may be accepted if warranted in certain cases.

*Program TR-2b, Adopt Standards for Pedestrian and Bicycle Access.* As appropriate, require new development and redevelopment projects to address the following: bicycle and pedestrian access internally and to other areas through easements; safe access to public transportation and construction of paths that connect with other non-motorized routes; safe road crossings at major intersections for school children and seniors; and secure, weatherproof bicycle storage facilities and shower/changing room facilities for bicycle commuters. Ensure that such facilities will have ongoing maintenance.

### **Transportation Authority of Marin**

The Transportation Authority of Marin (TAM) serves as the Congestion Management Agency (CMA) of Marin County. As the County's CMA, TAM is responsible for managing the county's blueprint to reduce congestion and improve air quality. TAM is authorized to set state and federal funding priorities for transportation improvements affecting the Marin County Congestion Management Program (CMP) transportation system (TAM, 2009a). Roadways in proximity to the project site that are designated in the CMP roadway system include U.S. 101, I-580, and Sir Francis Drake Boulevard. TAM forwards on the County's prioritized list of projects to the Metropolitan Transportation Commission (Metropolitan Planning Organization [MPO] for the San Francisco Bay Area) for incorporation into the regional list to receive state and federal funding. Programs and plans administered by TAM that are relevant to the proposed project are discussed below.

### **Congestion Management Program**

The CMP specifies a system of highways and roadways for which traffic level of service standards are established. The CMP system includes all freeways, state highways, and principal arterials in the county. The program sets level of service standards for all CMP roadway segments and intersections. Sir Francis Drake Boulevard has a level of service standard of LOS D, and the LOS standard for freeways (I-580, U.S. 101) is LOS E. The CMP also contains an element promoting the use of alternative transportation modes and ways to reduce future travel demand. Improving the county's jobs/housing balance and implementing travel demand management strategies are specifically mentioned as ways of attaining the objectives of this element of the CMP. TAM requires local jurisdictions to analyze impacts of new developments or land use policy changes on CMP facilities. TAM has adopted an annual schedule for monitoring the CMP Roadway System. The last monitoring report was completed in 2008 (TAM, 2009b).

## Impacts and Mitigation Measures

### Significance Criteria

Consistent with CEQA *Guidelines* Appendix G (Environmental Checklist), the project could have a significant impact if it would:

- a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit, non-motorized travel, and relevant components of the circulation system (including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit);
- b) Conflict with an applicable congestion management program (CMP), including, but not limited to, level of service (LOS) standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in locations that results in substantial safety risks;
- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- e) Result in inadequate emergency access; or
- f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

In addition to the criteria, above, the following standards were used to identify significant impacts of the proposed project:

### County of Marin Standards of Significance

As defined in the Transportation section of the Countywide Plan Update Final EIR (MCCDA, 2007b), significance criteria for freeways, arterials, intersections, bicycle, pedestrian, and transit would be as follows:

**Major Freeways:** LOS E is the threshold level of service established by the Marin County CMP (TAM, 2009) for U.S. 101 and I-580 for the p.m. peak period. Therefore, the project would have a significant traffic and circulation impact if it:

- Caused a freeway segment with baseline traffic volumes operating at an acceptable level of service (LOS E or better) to deteriorate to an unacceptable operation (LOS F); and/or
- For a freeway segment with baseline traffic volumes already operating unacceptably at LOS F, caused an increase in the V/C ratio of 0.01 or more.

**Major Arterials:** The County level of service standard established by the Marin County CMP (TAM, 2009a) is LOS D for urban and suburban arterials including highways that serve as arterials

(i.e., Sir Francis Drake Boulevard). Therefore, the project would have a significant traffic and circulation impact if it:

- Caused an arterial with baseline traffic volumes operating at an acceptable level of service (i.e., LOS D or better) to deteriorate to an unacceptable operation (i.e., LOS E or F); and/or
- For an arterial with baseline traffic volumes already at an unacceptable LOS, caused an increase in the calculated average V/C ratio of 0.05 or more.

**Intersections:** The project would have a significant impact on intersection operations if:

- If an intersection with baseline traffic volumes operating at an acceptable LOS (LOS D or better) deteriorates to an unacceptable LOS E or LOS F, the increase in intersection delay is a significant impact; or
- For intersections that already have an unacceptable LOS, any increase in delay at the intersection is considered a significant impact.

**Bicycle/Pedestrian:** Bicycle/pedestrian impacts would be significant if the project:

- Substantially reduced bicycle or pedestrian access; and/or
- Substantially reduced safety for bicyclists or pedestrians.

**Public Transportation:** Transit impacts would be significant if the project:

- Increased demand for public transit service to such a degree that accepted service standards are not maintained; and/or
- Reduced availability of public transit to users, or interfered with existing transit users.

**Emergency Access:** Significant impacts of the project would occur based on the following standards:

- Result in less than two emergency access routes for streets exceeding 600 feet in length unless otherwise determined to be acceptable by the Fire Chief, or his/her designee, in specific instances due to climatic, geographic, topographic, or other conditions.

## Approach to Analysis

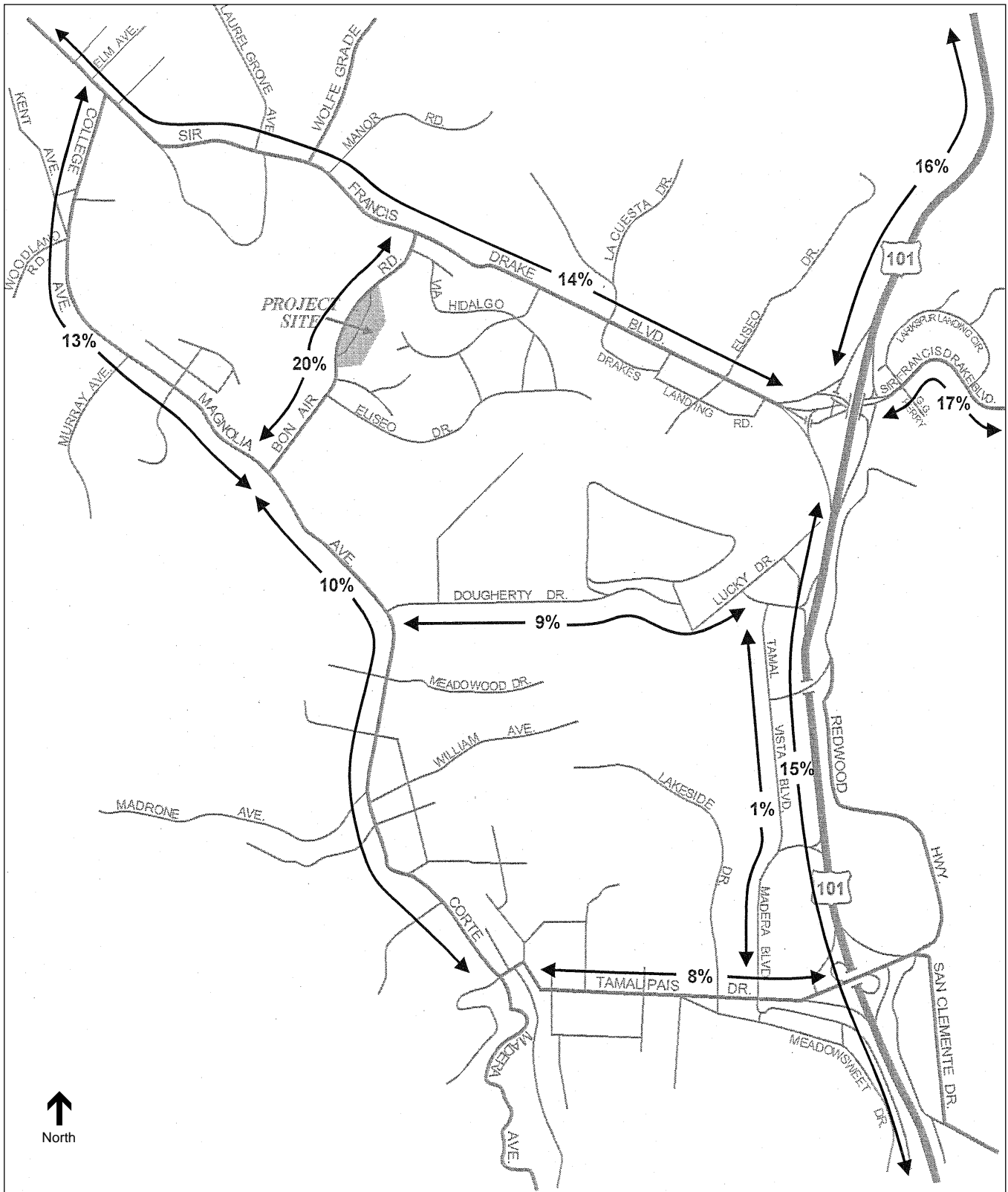
The project's potential effects on key intersections, freeway segments along U.S. 101, pedestrian, bicycle, and transit facilities as well as emergency access, and traffic safety, and measures necessary to mitigate significant impacts were identified. Three impact analysis scenarios were analyzed to determine the extent to which the project may affect the surrounding transportation environment. These impact analysis scenarios are summarized below:

1. **Existing Plus Project Conditions.** This scenario represents the full buildout of the proposed Marin General Hospital project (Phases 1 and 2) added to existing traffic volumes. This scenario analyzes the extent to which project-related traffic would affect the existing circulation system; no transportation improvements are included in this scenario.

- 2a. Near-Term (Year 2018) No Project Conditions.** This scenario represents traffic operations following distribution of approved project trips on the short-term future roadway network system between the Years 2010-2018. Traffic data from the TAM transportation model was used and includes all approved, pending, and potential projects (the latter being those not formally applied for, but which have a reasonable probability of being constructed) in the overall study area. Short-term (no project) volumes were developed from a yearly growth rate based on the TAM transportation model. In addition, any specific approved developments identified by the County or adjacent communities in the study area are included as part of short-term traffic growth. These developments represent either approved projects, approved projects under construction, and/or approved projects completed but not yet occupied. Short-term traffic volumes were projected by applying the yearly growth rate and/or approved project trips to existing a.m. and p.m. peak-hour intersection volumes. Project-related traffic was not included in the scenario.
- 2b. Near-Term (Year 2018) plus Project Conditions.** This scenario represents proposed Near-Term (Year 2018) project trips added into short-term no project volumes on the short-term future roadway network.
- 3a. Cumulative Year 2035 No Project Conditions.** This scenario represents conditions that have been based on available TAM model projections for Year 2035. Intersection capacity analyses have been completed using future year 2035 volumes at all project study intersections without proposed project traffic. Project-related traffic was not included in the scenario.
- 3b. Cumulative Year 2035 plus Project Conditions.** This scenario represents build-out of proposed project trips added into Year 2035 No Project volumes on the roadway network. As part of this task, TAM transportation model volumes were reviewed to determine what, if any, Marin General Hospital land uses are assumed in the model. The differences between the model assumptions and actual trip generation will be compared and quantified.

TAM travel demand model projections were applied in developing Year 2018 and Year 2035 traffic growth projections for project study roadways. The TAM travel demand includes traffic data for a base year (Year 2009) and a forecasted year (Year 2035). For project study roadways, the overall growth in traffic volumes averaged between two and seven percent from Year 2009 to Year 2018. The overall growth in traffic volumes averaged 13.5 percent (weighted average) over the 26-year period (2009-2035). The annual growth rate in traffic volumes was between 0.5 and one percent. The annual traffic growth projections were applied to a.m., mid-day, and p.m. peak-hour existing traffic volumes. Detailed descriptions of travel demand forecasting methodologies per study scenario are presented in the transportation impact analysis report (Appendix B to this Draft EIR). **Figure 4.M-4** presents the overall traffic growth along project study roadways.

As described above (in Existing Traffic Conditions section), the Marin County recently completed the PASS Signal Timing Project for the Sir Francis Drake Boulevard corridor between U.S. 101 and College Avenue, and the resulting signal timing and intersection LOS inputs have been incorporated into this analysis to be consistent with new corridor settings and volumes.



SOURCE: Omni-Means

Marin General Hospital . 210606

**Figure 4.M-4**  
 Travel Demand Model Average Daily Traffic  
 (ADT) Growth 2009-2035

### ***Future Transportation Improvements***

The City of Larkspur has indicated that the vehicle and pedestrian bridge on Bon Air Road between Magnolia Avenue and South Eliseo Drive will be demolished and re-constructed as part of an overall seismic upgrade project. Based on discussions with City of Larkspur Engineering staff, the bridge project is entering into final designs as of late 2011 and is currently funded. Construction of the bridge would likely begin in 2013 with completion in 2014. The bridge will be slightly wider than the existing bridge with two travel lanes and improved pedestrian/bicycle facilities. Construction of the bridge is expected to be completed before the proposed project construction would begin. However, any conflicts between the Bon Air Bridge project and proposed project construction, if there is overlap, would be addressed as part of the proposed project's construction management plan (see *Site Construction Traffic* discussion).

No other planned or funded roadway improvements were identified under existing conditions or Year 2018 condition scenarios (Haile, 2011).

Under Year 2035 conditions, the following roadway improvement projects were included consistent with recent studies conducted in the area and TAM input (Fehr & Peers, 2009):

- U.S. 101 Gap Closure Project—complete HOV lanes for all segments of northbound and southbound U.S. 101 from N. San Pedro Road to Corte Madera;
- U.S. 101 Marin City Interchange—rebuild the Marin City Interchange bridge structure to comply with current Caltrans standards;
- Tiburon Interchange Improvements—Three lanes for both eastbound and westbound directions;
- U.S. 101/I-580 interchange improvements—widen southbound to eastbound and westbound to northbound connections from one to two lanes;
- I-580 to Shoreline Parkway/Anderson Drive connection—crossing under Bernardi Bump;
- Capacity improvements for Bel Marin Keys Boulevard and Atherton Avenue;
- U.S. 101 SB auxiliary lane—between Miller Creek and N. San Pedro Road;
- South Novato Road improvement—four lanes from Center Road to U.S. 101;
- McInnis Parkway extension—from current terminus to Miller Creek.

TAM is currently developing various circulation improvement studies for the U.S. 101 Greenbrae / Twin Cities Corridor, including transportation improvements along Sir Francis Drake Boulevard, and multi-modal improvements that would improve the operations and safety of the U.S. 101 Greenbrae / Twin Cities Corridor for all users and all modes of transportation (Fay, 2010). Specifically, a new eastbound through lane would be added to Sir Francis Drake Boulevard starting west of Eliseo Drive (at the Bon Air Shopping Center Driveway) and extend east through Eliseo Drive to the U.S. 101 southbound on-ramp. The preliminary design requires additional engineering studies and may not be feasible due to right-of-way constraints. However, should the circulation

improvement be deemed appropriate for cumulative year 2035 (no project) conditions, it likely would improve traffic flow and reduce vehicle delay at the Sir Francis Drake Boulevard / Eliseo Drive intersection.

### **Project On-Site Improvements**

With proposed project uses, the existing northern driveway at Bon Air Road would be signalized. Based on MUTCD's peak-hour Warrant #3 criteria, the northern project driveway intersection would qualify for signalization with Existing "Plus-Project" and Near-Term (Year 2018) "Plus-Project" traffic volumes during the weekday p.m. peak hour. The southern project driveway intersection would not qualify for signalization with Existing "Plus-Project" or Near-Term (Year 2018) "Plus-Project" traffic volumes during the weekday a.m. or p.m. peak hour. Based on the TAM transportation model's yearly traffic growth projections along Bon Air Road and "Plus-Project" traffic volumes at the southern driveway, the intersection would qualify for signalization in the Year 2023 during the weekday p.m. peak hour. Until such time when the peak-hour signal warrant is met at the southern driveway, a left-turn refuge lane will be installed on Bon Air Road for outbound traffic. This painted refuge lane on Bon Air Road, designed to meet County standards, would require just 25 feet of storage (one vehicle) length, would be accommodated within the existing curb-to-curb width, and would not alter the travel path of northbound traffic.<sup>3</sup> See Appendix B for signal warrant calculations.

Based on discussions with Marin County Department of Public Works Transportation staff, installation of signals at the proposed project northern and southern driveways would require an encroachment permit through the County (Goralka, 2012). It is likely that the project applicant would enter into a cooperative agreement with the County and pay a yearly fee to have the County maintain signal operation and upkeep at the two project driveway signals.

### **Impacts Not Further Evaluated**

*Results in a change in air traffic patterns, including either an increase in traffic levels or a change in locations that result in substantial safety risks.* Due to the nature of the proposed project, there would be no impacts related to air traffic patterns as the project would not introduce new air traffic or interfere with existing air traffic. The nearest public airport is San Rafael Airport, about five miles north of the project site. This impact category, listed in the significance criteria above as an impact topic to consider in a CEQA evaluation, is therefore not further examined.

### **Impacts and Mitigation Measures**

**Impact TRA-1: The Project would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Existing plus Project Conditions. (Significant)**

<sup>3</sup> The pavement width for southbound traffic (through and left-turn) is 24 to 26 feet in the affected area, which is sufficient for a southbound through lane plus refuge lane.



### Trip Generation

Project trip generation estimates are presented in **Table 4.M-6**, and a complete description of trip generation methodologies is presented in the transportation impact analysis report (Appendix B to this Draft EIR). On the basis of 59 new beds to be added to the current average daily census (ADC) of 148 beds by Year 2018, and 28 beds to be added by Year 2035 (for a total of 235 beds), plus a new 100,000 square-foot ambulatory services building, the proposed project would generate about 4,440 daily trips with 310 a.m. peak-hour trips, 344 mid-day peak-hour trips, and 374 p.m. peak-hour trips for the horizon year 2018. At year 2035 build-out, the proposed project would generate about 4,771 daily trips, with 342 a.m. peak-hour trips, 377 mid-day peak-hour trips, and 410 p.m. peak-hour trips. These estimates conservatively assume 100 percent daily usage of the new beds (full occupancy).

### Trip Distribution and Assignment

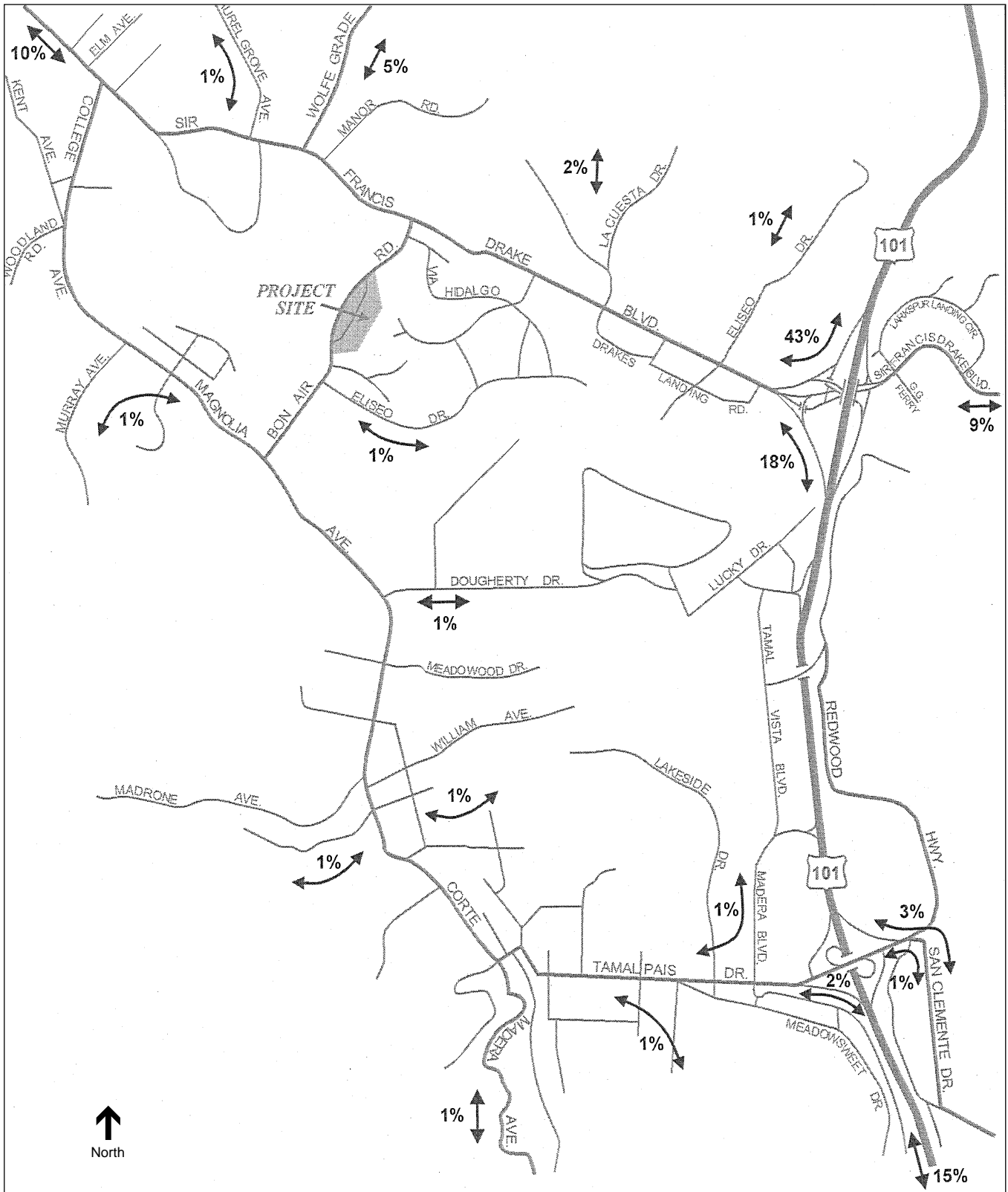
Trip distribution information of current hospital employees and patients was used to determine the distribution of project trips (Peluso, 2011b). Consideration was given to residential distributions, primary access routes in the vicinity of the hospital campus and peak-period directional traffic counts at all hospital driveways. **Figure 4.M-5** illustrates the project vehicle trip distribution throughout the roadway network.

**TABLE 4.M-6  
PROJECT TRIP GENERATION SUMMARY**

Project Component	Daily		AM Peak Hour				Mid-Day Peak Hour <sup>a</sup>			PM Peak Hour			
	Rate	Trips	Rate	Trips	In	Out	Trips	In	Out	Rate	Trips	In	Out
<b>Near-Term (Year 2018) <sup>b</sup></b>													
Hospital Beds <sup>c</sup>	11.81 <sup>c</sup>	827	1.14 <sup>c</sup>	80	57	23	85	42	43	1.31 <sup>c</sup>	92	33	59
Ambulatory Building <sup>d</sup>	36.13 <sup>d</sup>	3,613	2.30 <sup>d</sup>	230	182	48	259	127	132	2.82 <sup>d</sup>	282	76	206
<b>Near-Term Total</b>		<b>4,440</b>		<b>310</b>	<b>239</b>	<b>71</b>	<b>344</b>	<b>169</b>	<b>175</b>		<b>374</b>	<b>109</b>	<b>265</b>
<b>Cumulative (Year 2035) <sup>e</sup></b>													
Hospital Beds	11.81 <sup>c</sup>	331	1.14 <sup>c</sup>	32	23	9	33	16	17	1.31 <sup>c</sup>	36	13	23
<b>Buildout Total</b>		<b>4,771</b>		<b>342</b>	<b>262</b>	<b>80</b>	<b>377</b>	<b>185</b>	<b>192</b>		<b>410</b>	<b>122</b>	<b>288</b>

- <sup>a</sup> Mid-day project trips were derived from driveway counts at Marin General Hospital. These counts indicated that mid-day peak-hour volumes were about 92% of the p.m. peak-hour volumes with an inbound (49%) and outbound (51%) split.
- <sup>b</sup> Near-Term (Year 2018) includes the proposed 100,000 square-foot Ambulatory Building (to be operational by Year 2015), and 70 additional hospital beds (reflecting that at the time of the traffic counts, the daily bed count was 11 below the typical average).
- <sup>c</sup> Trip rates were derived from the Institute of Transportation Engineers (ITE), Trip Generation, 8<sup>th</sup> Edition (2008) for Land Use Code:610 "Hospital." Trip rates were estimated by the number of hospital beds.
- <sup>d</sup> Land use size represented in thousand square feet. The Ambulatory Building calculations were derived from ITE Trip Generation (2008) rates for a "Medical-Office Building" Land Use Code: 720. Project trips are derived from fitted curve equation because the land use generates trips at different rates depending on the size (square footage) of the space. In this case, 100,000 square-foot Ambulatory Building versus 32,000 square-foot average ITE survey site.
- <sup>e</sup> Cumulative (Year 2035) includes an additional 28 hospital beds beyond the proposed development to be operational by Year 2018.

SOURCE: ITE, 2008; Omni-Means, 2012.



SOURCE: Omni-Means Marin General Hospital . 210606  
**Figure 4.M-5**  
 Project Trip Distribution

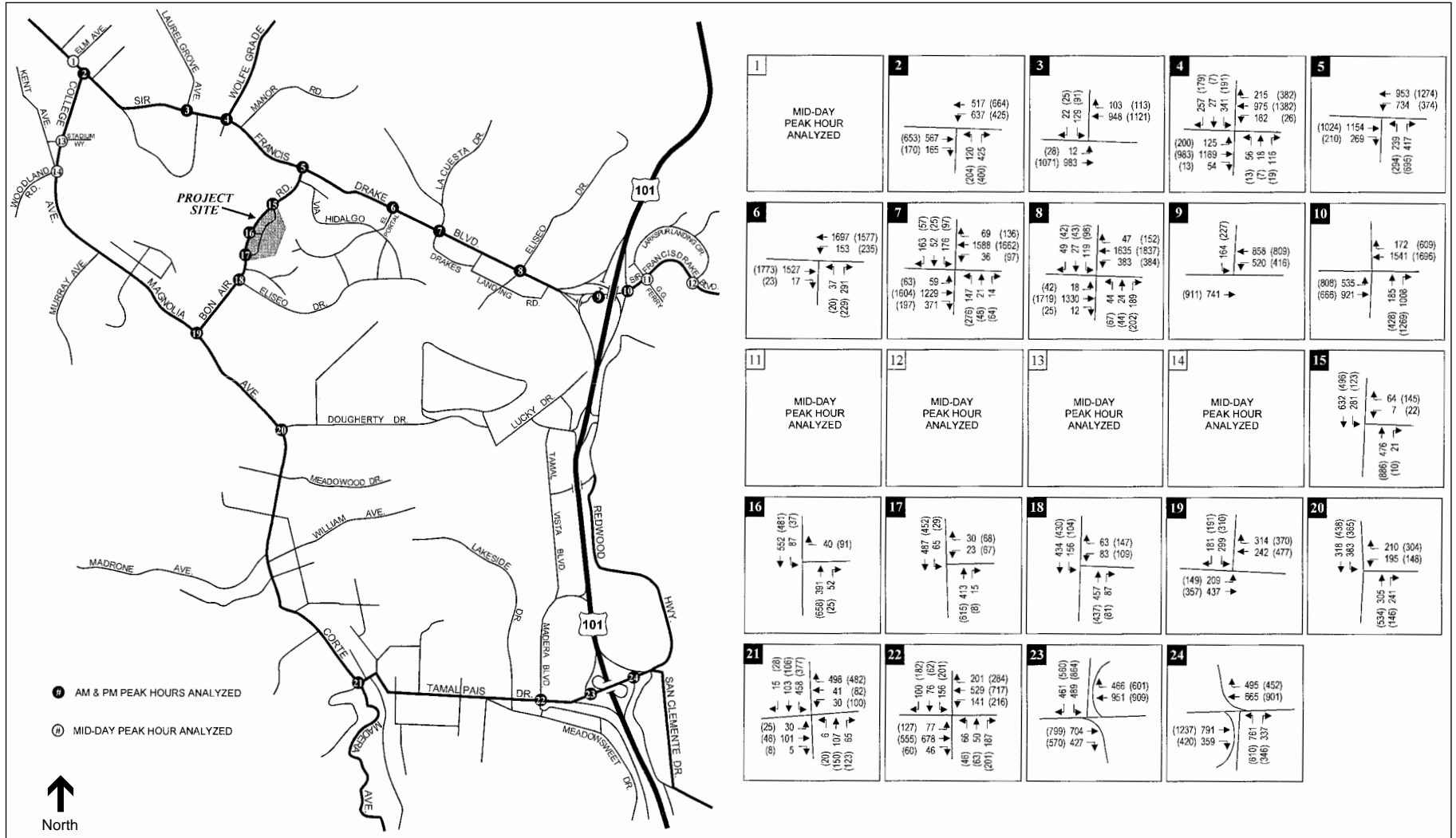
Peak-hour and mid-day vehicle trips associated with existing hospital uses were re-distributed at proposed project driveways to account for changes in vehicle access associated with changes in project site access and parking garage locations. Existing plus project buildout trips for the weekday a.m. and p.m. peak hour are shown in **Figure 4.M-6**; mid-day peak-hour trips are shown in **Figure 4.M-7**.

### ***Existing plus Project Conditions Intersection Levels of Service***

As shown in **Table 4.M-7** and **Table 4.M-8**, under Existing plus Project Conditions, the signalized intersections on Sir Francis Drake Boulevard at Wolfe Grade (a.m. and p.m. peak hours), and La Cuesta Drive and Eliseo Drive (a.m., p.m. and mid-day) would continue to operate at unacceptable service levels (LOS E-F) as under existing conditions. Based on the significance criteria (which stipulates that for intersections already operating at an unacceptable LOS without the project, any increase in delay is considered a significant impact), the project would have a significant impact at those three intersections under existing plus project conditions. The remaining study intersections would continue to operate at acceptable levels of service (LOS D or better) during the a.m., mid-day, and p.m. peak periods evaluated. LOS calculation sheets are provided in the transportation impact analysis report (Appendix B to this Draft EIR).

The *Marin Countywide Plan Updated Final EIR* indicates that to provide viable, results-oriented transportation relief to Sir Francis Drake Boulevard between Wolfe Grade and U.S. 101 under existing plus project traffic conditions, the corridor would need to be widened (MCCDA, 2007b). Specifically, the *Countywide Plan* includes the widening of Sir Francis Drake Boulevard from two to three lanes in the westbound direction, between Bon Air Road and Wolfe Grade, and between Eliseo Drive and U.S. 101. This same improvement would be necessary to improve the La Cuesta/Sir Francis Drake Boulevard intersection west of Eliseo Drive. However, the widening improvements would be constrained by existing residential and commercial development, and therefore may be infeasible. In addition, these improvements are currently unfunded. For those reasons, these improvements cannot be considered a feasible mitigation measure, and the above-described impacts would be significant and unavoidable.

As described more-fully below (see Impact TRA-4), the existing Marin General Hospital Travel Demand Management (TDM) program includes the use of valet services and shuttle transit service. In addition, as required by Mitigation Measure GHG-2 (in Section 4.F, *Greenhouse Gases and Climate Change*) the hospital will continue to coordinate with the *511 Rideshare*, TAM, or similar organization and implement TDM measures to reduce drive alone mode for employees and visitors as well as to improve pedestrian and bicycle access. Based on employee survey results from the current *511 Rideshare* program, additional TDM strategies are specified in Mitigation Measure GHG-2 and will be implemented by the project. Those TDM strategies include an employee commute program, on-site information to employees about commute alternatives, carpool and vanpool matching for employees, employee showers and additional secure bicycle parking facilities, and participation in the County's Emergency Ride Home (ERH) program.

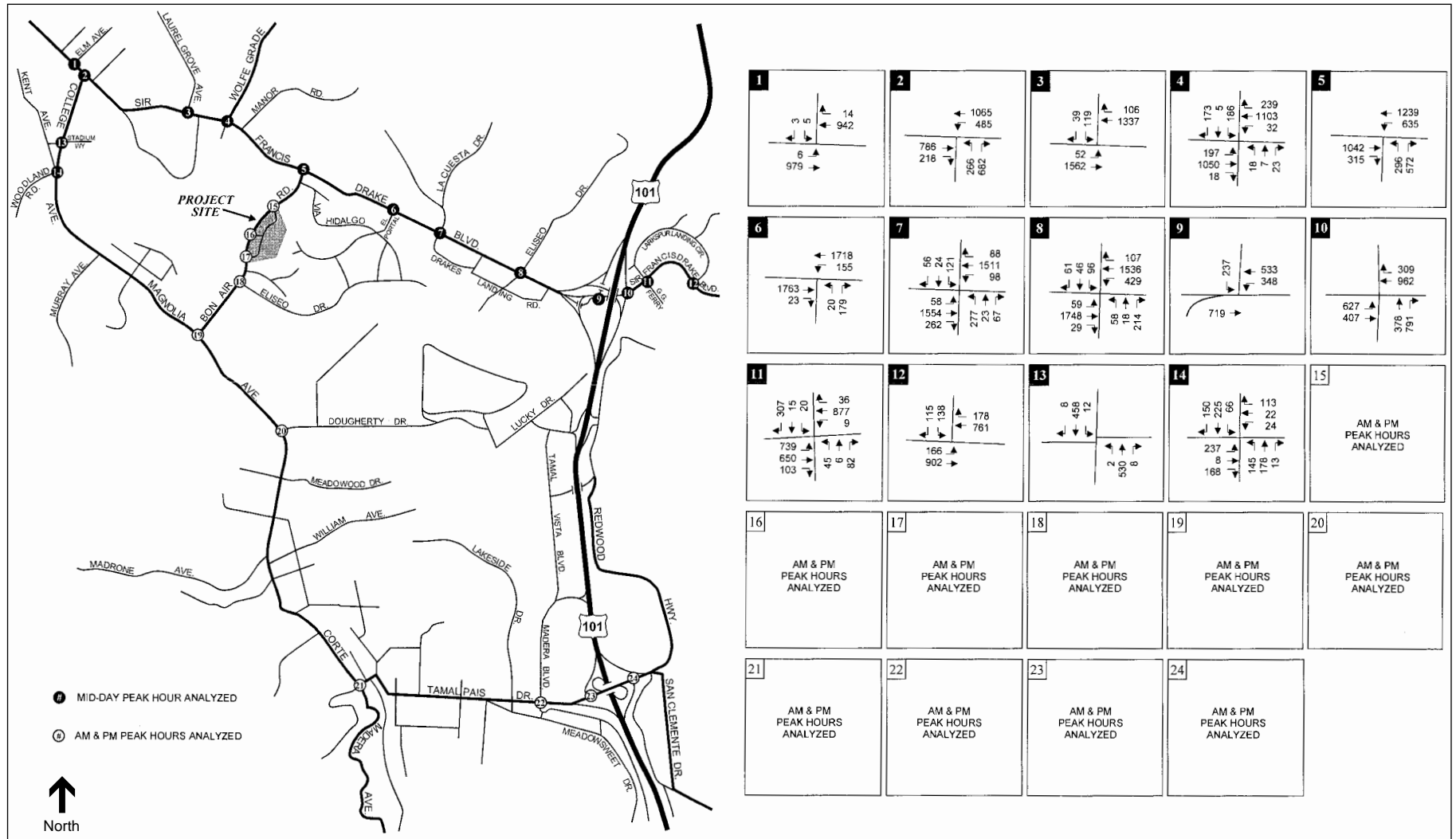


1 MID-DAY PEAK HOUR ANALYZED	2 517 (664) 637 (425)	3 22 (25) 125 (91) 103 (113) 948 (1121)	4 257 (479) 27 (7) 341 (191) 215 (382) 975 (1382) 162 (26) 125 (13) 56 (7) 18 (19) 116 (111)	5 953 (1274) 734 (374) 1154 (210) 269 (294) 239 (95) 417 (374)
6 1697 (1577) 153 (235) 1527 (23) 17 (30) 37 (229) 291 (291)	7 163 (57) 52 (25) 176 (97) 69 (136) 1588 (1662) 36 (97) 58 (1604) 1229 (197) 371 (276) 147 (48) 21 (84) 14 (14)	8 48 (42) 27 (46) 119 (86) 47 (152) 1635 (1837) 383 (384) 18 (42) 1330 (1719) 12 (25) 44 (67) 24 (44) 189 (202)	9 164 (227) 858 (809) 520 (416) 741 (911)	10 172 (609) 1541 (1656) 535 (808) 921 (666) 185 (428) 1008 (1259)
11 MID-DAY PEAK HOUR ANALYZED	12 MID-DAY PEAK HOUR ANALYZED	13 MID-DAY PEAK HOUR ANALYZED	14 MID-DAY PEAK HOUR ANALYZED	15 64 (145) 7 (22) 476 (886) 21 (10) 438 (632) 281 (123)
16 452 (481) 87 (37) 40 (91) 381 (658) 52 (25)	17 487 (452) 65 (29) 30 (58) 23 (87) 413 (615) 15 (8)	18 434 (430) 156 (104) 63 (147) 83 (109) 457 (437) 87 (81)	19 181 (191) 299 (310) 314 (370) 242 (477) 209 (149) 437 (357)	20 318 (438) 383 (365) 210 (304) 195 (146) 305 (634) 241 (146)
21 15 (28) 103 (106) 458 (377) 44 (82) 38 (100) 30 (25) 6 (48) 101 (8) 107 (5) 85 (123)	22 100 (182) 76 (62) 156 (201) 201 (284) 529 (717) 141 (216) 77 (127) 678 (555) 50 (60) 50 (46) 167 (201)	23 461 (650) 489 (664) 486 (601) 951 (909) 704 (799) 427 (570)	24 495 (452) 865 (901) 791 (1237) 359 (420) 761 (610) 337 (346)	

SOURCE: Omni-Means

Marin General Hospital . 210606

**Figure 4.M-6**  
Existing + Year 2035 Project AM and (PM) Peak Hour Volumes



**TABLE 4.M-7  
EXISTING PLUS PROJECT CONDITIONS  
INTERSECTION LEVELS OF SERVICE (LOS) WEEKDAY AM AND PM PEAK HOUR**

Intersection <sup>a</sup>	Control Type <sup>b</sup>	AM Peak		PM Peak	
		Delay <sup>c</sup>	LOS	Delay <sup>c</sup>	LOS
1. Elm Ave./Sir Francis Drake Blvd.	Signal	MDO <sup>d</sup>	MDO	MDO	MDO
2. College Ave./Sir Francis Drake Blvd.	Signal	29.8	C	22.4	C
3. Laurel Ave./Sir Francis Drake Blvd.	Signal	17.7	B	18.4	B
4. Wolfe Grade/Sir Francis Drake Blvd.	Signal	<b>&gt;80.0</b>	<b>F</b>	<b>&gt;80.0</b>	<b>F</b>
5. Bon Air Rd./Sir Francis Drake Blvd.	Signal	49.1	D	53.8	D
6. El Portal/Sir Francis Drake Blvd.	Signal	21.0	C	33.4	D
7. La Cuesta/Sir Francis Drake Blvd.	Signal	<b>78.3</b>	<b>E</b>	<b>&gt;80.0</b>	<b>F</b>
8. Eliseo Dr./Sir Francis Drake Blvd.	Signal	<b>66.3</b>	<b>E</b>	<b>58.7</b>	<b>E</b>
9. US101 SB Ramps/Sir Francis Drake Blvd.	Signal	10.7	B	10.4	B
10. US101 NB Ramps/Sir Francis Drake Blvd.	Signal	17.4	B	32.5	C
11. Larkspur Landing W./SFD Boulevard	Signal	MDO	MDO	MDO	MDO
12. Larkspur Landing E./SFD Boulevard	Signal	MDO	MDO	MDO	MDO
13. Stadium Way/College Ave.	Signal	MDO	MDO	MDO	MDO
14. Kent Ave.-Woodland Rd./College Ave.	AWSC	MDO	MDO	MDO	MDO
15. MGH North Driveway/Bon Air Rd.	Signal	10.4	B	20.4	C
16. MGH Mid-Driveway/Bon Air Rd.	SSSC	11.7	B	19.0	C
17. MGH South Driveway/Bon Air Rd.	SSSC	18.2	C	23.0	C
18. Eliseo Dr./Bon Air Rd.	Signal	31.7	C	32.6	C
19. Bon Air Rd./Magnolia Blvd.	Signal	13.5	B	14.9	B
20. Doherty Dr./Magnolia Ave.	Signal	22.2	C	21.8	C
21. Corte Madera Ave./Tamalpais Dr.	Signal	35.1	D	29.8	C
22. Madera Blvd./Tamalpais Dr.	Signal	32.1	C	44.2	D
23. US101 SB Off-ramp/Tamalpais Dr.	Signal	18.0	B	18.3	B
24. US101 NB Off-ramp/Tamalpais Dr.	Signal	18.5	B	19.1	B

<sup>a</sup> MGH = Marin General Hospital; SFD = Sir Francis Drake Boulevard; NB = Northbound; SB = Southbound.  
<sup>b</sup> Signal = Signalized; AWSC = All-Way Stop-Controlled; SSSC = Side-Street Stop-Controlled.  
<sup>c</sup> Whole intersection weighted average total delay for signalized and all-way stop-controlled intersections (expressed in seconds per vehicle). For two-way stop controlled intersections, delays for worst approach are shown.  
<sup>d</sup> MDO = mid-day only.

Unacceptable operations are indicated in **bold** type.

SOURCE: Omni-Means, 2012.

**TABLE 4.M-8  
EXISTING PLUS PROJECT CONDITIONS  
INTERSECTION LEVELS OF SERVICE (LOS) WEEKDAY MID-DAY PEAK HOUR**

Intersection <sup>a</sup>	Control Type <sup>b</sup>	MID Peak	
		Delay <sup>c</sup>	LOS
1. Elm Ave./Sir Francis Drake Blvd.	Signal	21.7	C
2. College Ave./Sir Francis Drake Blvd.	Signal	27.0	C
3. Laurel Ave./Sir Francis Drake Blvd.	Signal	20.3	C
4. Wolfe Grade/Sir Francis Drake Blvd.	Signal	33.0	C
5. Bon Air Rd./Sir Francis Drake Blvd.	Signal	38.6	D
6. El Portal/Sir Francis Drake Blvd.	Signal	26.4	C
7. La Cuesta/Sir Francis Drake Blvd.	Signal	<b>&gt;80.0</b>	<b>F</b>
8. Eliseo Dr./Sir Francis Drake Blvd.	Signal	<b>&gt;80.0</b>	<b>F</b>
9. US101 SB Ramps/Sir Francis Drake Blvd.	Signal	9.5	A
10. US101 NB Ramps/Sir Francis Drake Blvd.	Signal	17.1	B
11. Larkspur Landing W./SFD Boulevard	Signal	40.8	D
12. Larkspur Landing E./SFD Boulevard	Signal	17.1	B
13. Stadium Way/College Ave.	Signal	0.4	A
14. Kent Ave.-Woodland Rd./College Ave.	AWSC	17.7	C

<sup>a</sup> SFD = Sir Francis Drake Boulevard; NB = Northbound; SB = Southbound.

<sup>b</sup> Signal = Signalized; AWSC = All-Way Stop-Controlled

<sup>c</sup> Whole intersection weighted average total delay for signalized and all-way stop-controlled intersections (expressed in seconds per vehicle).

Unacceptable operations are indicated in **bold** type.

SOURCE: Omni-Means, 2012.

As discussed for Impact and Mitigation Measure GHG-2, these TDM strategies would reduce project trips (based on the quantified reasoning provided therein), and would subsequently lessen potential traffic impacts to the surrounding circulation system. However, the estimated project trip reduction associated with the implementation of the aforementioned TDM strategies are conservatively not assumed in this analysis. This is in part because the associated reduction in project vehicle trips would not reduce this impact to less than significant, and moreover because expansion of Sir Francis Drake Boulevard would be infeasible, thus the impact would remain significant and unavoidable.

**Mitigation:** There are no additional feasible measures to mitigate the project impact to a less-than-significant level.

**Significance after Consideration of Mitigation Measure:** Significant and Unavoidable

**Existing plus Project Conditions Freeway Segment Levels of Service**

As stated above, under existing conditions, the northbound segment of U.S. 101 between Tamalpais Drive and Sir Francis Drake Boulevard is currently operating at LOS F during the p.m. peak hour. All other segments are operating at LOS D or better during the p.m. peak hour.

As shown in **Table 4.M-9**, under Existing plus Project Conditions, the northbound segment of U.S. 101 between Tamalpais Drive and Sir Francis Drake Boulevard would continue to operate at LOS F during the p.m. peak hour. Project-generated traffic increases would add about 23 trips to this segment, which equates to an increase in v/c ratio of 0.004, much less than the County’s significance criteria for freeway segments (an increase in v/c ratio of 0.01 or more) to p.m. peak-hour volumes. Therefore, the proposed project impacts would be considered less than significant. All other segments are operating at LOS D or better during the p.m. peak hour. Freeway segment LOS calculation sheets are provided in the transportation impact analysis report (Appendix B to this Draft EIR).

**Mitigation:** None required

**TABLE 4.M-9  
EXISTING PLUS PROJECT CONDITIONS  
FREEWAY SEGMENT PM PEAK-HOUR LEVELS OF SERVICE (LOS)**

U.S. 101 Freeway Segment	Direction <sup>a</sup> / # of Lanes	Volume	Density <sup>b</sup>	LOS	LOS Standard
North of Sir Francis Drake Blvd	NB / 4	5,582	26.5	D	E
	SB / 3	4,504	28.5	D	E
Sir Francis Drake Blvd to Tamalpais Dr	<b>NB / 3</b>	<b>6,090</b>	<b>&gt;45</b>	<b>F</b>	<b>E</b>
	SB / 3	5,481	26.7	D	E
South of Tamalpais Drive	NB / 4	6,376	31.2	D	E
	SB / 4	5,095	24.8	C	E

<sup>a</sup> NB = Northbound; SB = Southbound

<sup>b</sup> Density calculated by maximum service flow rate (passenger cars per hour per travel lane [pc/h/ln]).

Unacceptable operations are indicated in **bold** type.

SOURCE: Omni-Means, 2012.

**Existing plus Project Conditions Vehicle Queuing - Bon Air Road/Sir Francis Drake Boulevard**

With existing plus project volumes, the westbound left-turn movement from Sir Francis Drake Boulevard to Bon Air Road would continue to exceed the existing storage length of 290 feet. During the a.m. peak hour (worst case), the westbound 95<sup>th</sup> percentile vehicle queue is projected at 356 feet. This would equate to two to three additional vehicles exceeding the storage lanes based on 25 feet per vehicle with proposed project traffic. Due to physical constraints of adjacent residential and/or commercial property along Sir Francis Drake Boulevard, the westbound left-turn



lanes cannot feasibly be lengthened without acquisition of additional right-of-way. For this reason, described impacts would be significant and unavoidable.

As described more-fully below (see Impact TRA-4), the existing Marin General Hospital TDM program includes the use of valet services and shuttle transit service. As mentioned above, the project will continue to implement the existing TDM program as well as additional TDM strategies specified in Mitigation Measure GHG-2. However, the estimated project trip reduction associated with the additional TDM strategies are conservatively not assumed in this analysis. The TDM strategies are not applied here because the associated reduction in project vehicle trips would not reduce this impact to less than significant and moreover because expansion of Sir Francis Drake Boulevard may be infeasible, thus the impact would remain significant and unavoidable.

It is noted that the proposed project's significant and unavoidable impact for the Sir Francis Drake Boulevard westbound left-turn lane at Bon Air Road (excess vehicle queuing) also would apply to near-term (year 2018) plus project, and cumulative (year 2035) plus project conditions.

**Mitigation:** There are no additional feasible measures to mitigate the project impact to a less-than-significant level.

**Significance after Consideration of Mitigation Measure:** Significant and Unavoidable

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**Impact TRA-2: The Project would substantially increase traffic safety hazards for vehicles, bicyclists, and pedestrians on public roadways due to roadway design features, incompatible uses, or Project-related vehicles trips. (Potentially Significant)**

The project site would be served by two full-access driveways and three limited access driveways, all located off Bon Air Road. As shown in the proposed project site plan (see Figure 3-5, Chapter 3, *Project Description*), vehicle access along Bon Air Road would be largely unchanged from existing conditions with respect to existing driveway access at the far north and south locations. Starting at the project site's main full-access northern driveway at Bon Air Road, intersection lane geometry would remain unchanged from existing conditions, except the northbound shared through/right-turn lane on Bon Air Road would be widened to provide for separate through and right-turn lanes, in order to reduce delays for northbound through traffic. In addition, the northern project driveway intersection on Bon Air Road would be signalized. With signalization, peak-hour intersection operations would be LOS C or better (see Table 4.M-7, above).

Continuing south of the main northern project driveway approximately 140 feet, a new westbound (for outbound traffic) driveway would provide access from a planned parking structure out onto Bon Air Road. This driveway would be right-turn only onto Bon Air Road and provide an additional vehicular exit from the parking structure that does not direct exiting vehicles back onto the project site. Approximately 40 feet south of this limited access driveway, a new inbound-only driveway would provide emergency access into the site for ambulances. A new median break (with

a turn pocket about 60 feet in length) would be installed on Bon Air Road as part of this driveway improvement to allow southbound ambulances to turn left (eastbound) into the campus. The final design for this modification to the median would be coordinated with emergency responders and the Marin County Parks and Open Space Department.

The outbound-only driveway from the planned parking garage would have limited vehicle sight distance (less than 150 feet) due to its location on the northern apex of the curvature on Bon Air Road. This limited sight distance could lead to vehicle conflicts between through-traffic on Bon Air Road and outbound project traffic from the planned parking garage and result in a potentially significant impact. Implementation of **Mitigation Measure TRA-2a** would reduce the impact to traffic safety to a less-than-significant level.

Another project driveway would be located approximately mid-block between the main northern and southern full-access driveways on Bon Air Road. About 250 feet north of the main southern full-access driveway, this project driveway would allow right turns (inbound/outbound) as well as inbound left turns; no outbound left turns would be permitted. Vehicle sight distance would be acceptable with the continued removal of two parking spaces on Bon Air Road (as with existing conditions). This stop-sign controlled driveway is projected to operate at LOS A during all three analyzed time periods.

The main full-access southern driveway would continue to operate at its present location, though an interim left-turn refuge lane would be installed on Bon Air Road for outbound driveway traffic. With this improvement, peak-hour intersection operations would be LOS C (see Table 4.M-7, above). There is very little vehicle storage capacity (less than 50 feet) for outbound left and right-turn movements from the project driveway onto Bon Air Road. This is due to the design of the internal north-south drive aisle where it intersects the project driveway. For this reason, it is likely that outbound vehicles at this project driveway could queue into the internal driveway aisle (northbound) direction and block vehicle parking located immediately northwest of the driveway fronting Bon Air Road. This queuing would be internal to the project site and would be considered potentially significant. Implementation of **Mitigation Measure TRA-2b** would reduce impacts to traffic safety to a less-than-significant level.

**Mitigation Measure TRA-2a:** To improve vehicle sight distance from the planned parking garage right-turn only westbound driveway onto Bon Air Road, no vehicle parking shall be allowed on the east side of Bon Air Road between the garage's outbound-only driveway and the planned inbound-only ambulance driveway located to the south (which would entail removal of two parking spaces, in addition to the two or three parking spaces removed to accommodate the new driveways). In addition, the landscaped area between the two driveways would consist of low-lying vegetation only to allow for improved vehicle sight distance.

These measures will result in reducing potential vehicle sight distance problems to a less-than-significant level.

**Significance after Implementation of Mitigation Measure:** Less than Significant

**Mitigation Measure TRA-2b:** To improve traffic flow and reduce potential queuing impacts at the main full-access southern driveway, it is recommended that a double yellow lane striping shall be installed from the driveway's raised median around the internal curb northbound into the drive aisle to prevent queued vehicles from potentially blocking inbound traffic to the site.

**Significance after Implementation of Mitigation Measure:** Less than Significant

As an option, pedestrian access and circulation within the project site would be enhanced by an elevated pedestrian walkway/bridge that would link the proposed Bon Air Road parking structure with all on-site medical facilities (see Figure 3-5, Chapter 3, *Project Description*), separating pedestrian flow from vehicle circulation below. From the planned parking structure, the bridge would extend east across the main internal drive aisle to link up with the new ambulatory services building. The raised walkway would then extend south providing access to the existing campus's west wing building before continuing on to the main hospital replacement building on the southeast portion of the campus. Pedestrian sidewalks extend from the main north and south driveways entrances into the project site and would link with internal building walkways within the campus. There would be a main pedestrian crosswalk linking the sidewalk along the Bon Air Road frontage to the hospital's main entrance pick-up/drop-off area just northwest of the main southern driveway. Another pedestrian sidewalk/path would connect the hospital's west wing with parking areas along the east side of the building.

It is noted that pedestrian crosswalks would be installed across each leg of both of the project's main north and south driveway entrances at Bon Air Road (with signalization). These crosswalks would provide pedestrian links across Bon Air Road that would allow access to adjacent pedestrian and bicycle facilities on the west side of the road.

Bicycle access to the project site would continue to be along Bon Air Road, as cyclists can use the dedicated Class I path on both sides of the street to access the project. In addition, the increase in traffic from the proposed project would not result in any increase in traffic hazards to transit facilities or service to and from the project site. Furthermore, the above-mentioned planned pedestrian bridge would enhance on-site accessibility and reduce potential conflicts between vehicles and pedestrians. Therefore, potential traffic safety impacts to cyclists, pedestrian, and transit service would be considered less than significant.

**Mitigation:** None required

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**Impact TRA-3: The Project could result in inadequate emergency access. (Potentially Significant)**

The proposed project would include a median cut to provide left-turn access from Bon Air Road to the existing ambulance access road, which would improve access and on-site circulation for emergency vehicles by creating a new central emergency response vehicle entrance in front of the West Wing (Emergency Department). In addition, the project would include a median cut to provide

left-turn access (currently an exit-only) from Bon Air Road for general traffic to access the emergency room drop-off, in the front of the West Wing building. Figure 3-5 in Chapter 3, *Project Description*, illustrates these improvements for emergency vehicle access.

The new access road would prohibit patient and visitor vehicles. The new access road would provide a direct connection to the on-site emergency vehicle lane, which permits access to the emergency room loading area in the West Wing. The loading area would also be restricted to emergency response vehicles, and general vehicles (e.g., employees, visitors) would be prohibited. Appropriate signage and markings would be provided to alert and notify non-emergency vehicles.

Although the proposed project would introduce alterations to the existing median along Bon Air Road to improve access for emergency vehicles, the outbound-only driveway from the planned parking garage would have limited vehicle sight distance. Implementation of **Mitigation Measure TRA-2a** would reduce impacts to emergency vehicles and reduce potential conflicts between general traffic and emergency vehicles to a less-than-significant level.

**Mitigation Measure TRA-3:** Implement Mitigation Measure TRA-2a (improve vehicle sight distance from the planned parking garage right-turn-only westbound driveway onto Bon Air Road).

**Significance after Implementation of Mitigation Measure:** Less than Significant.

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**Impact TRA-4: The Project would not be inconsistent with adopted policies, plans, and programs supporting alternative transportation. (Less than Significant)**

As noted previously, the proposed project would be considered to have a significant impact if it conflicted with adopted policies, plans or programs supporting alternative transportation facilities (e.g., bicycle paths or lanes, bus routes, sidewalks) or generate pedestrian, bicycle or transit travel demand that would not be accommodated by current pedestrian facilities, bicycle development plans or transit plans.

The project site is well-served by alternative modes of transportation, including transit, bicycle, and pedestrian facility services. As discussed in the *Setting*, transit service to the project site is provided by Golden Gate Transit Bus Route 29 and Marin Transit Bus Route 222. In addition, the hospital operates its own shuttle service between the main parking areas and off-site satellite parking lot (e.g., St. Sebastian's Church).

The proposed project proposes three new bus stops (one relocated from on-site) along Bon Air Road. One proposed north of the main southern driveway entrance on northbound Bon Air Road; one proposed south of the Bon Air Road/southern driveway entrance intersection, on southbound Bon Air Road; and one proposed south of the Bon Air Road/northern driveway entrance intersection, on southbound Bon Air Road. (See Figure 3-5, Proposed Site Plan, in Chapter 3, *Project Description*.) The existing bus stop at the northern driveway entrance would be relocated

about 100 feet toward Sir Francis Drake Boulevard to accommodate the work at the northern access driveway. New or improved sidewalks from the proposed bus stops would be ADA accessible and designed to allow access from the bus stops to the front door of the Hospital Replacement Building. The Marin Healthcare District would continue to coordinate with Marin Transit and Golden Gate Transit District to consider the appropriate and feasible locations for new and relocated facilities and potential adjustments to bus routes, as well as with the Marin County about right-of-way and safety considerations and requirements.

The County's Unincorporated Area *Bicycle and Pedestrian Master Plan* contains goals and policies aimed at improving bicycle and pedestrian safety, accessibility; reduce traffic congestion, promote exercise, increase the use of alternative transportation, and develop programs to enhance the overall quality of life for the County's population (Marin County Department of Public Works, 2008). Specific goals and objectives in the Plan that apply to proposed project include the following:

- **Objective B:** Complete a network of bikeways that are feasible, fundable, and that serve bicyclist's needs, especially for travel to employment centers, schools, commercial districts, transit stations and institutions;
- **Objective C:** Complete a network of walkways that serves pedestrian needs, especially for short trips to employment centers, schools, commercial districts, transit stations and institutions;
- **Objective E:** Provide short-term and long-term bicycle parking in employment and commercial areas, in multi-family housing, at schools, and at transit facilities;
- **Objective F:** Increase the number of bicycle-transit trips; and
- **Objective G:** Develop and implement education and encouragement plans aimed at youth, adult cyclists, pedestrians, and motorists. Increase public awareness of the benefits of bicycling and walking and of available resources and facilities.

Existing Marin General Hospital TDM strategies include valet parking and the provision of shuttle transit services. Furthermore, the hospital coordinates with *511 Rideshare*, a San Francisco Bay Area organization that provides assistance to employers relative to travel demand management. In this regard, *511 Rideshare* assisted hospital staff in conducting an employee commute survey in April 2011, and the 32 percent response ratio was determined to be a satisfactory sample by *511 Rideshare* (Garland, 2011). The employee survey revealed substantial information regarding commute patterns, commute problems and issues, and employee interest in alternative commute modes. The following points summarize the survey results:

- Marin General Hospital has a relatively high 89 percent "drive alone" ratio by employees. In contrast, Metropolitan Transportation Commission data indicates that overall, Marin County commuters had a drive alone mode of 75-80 percent, about 10-15 percentage points lower than Marin General Hospital employees (MTC, 2008);
- Marin General Hospital employee commute distances are relatively long, with an average commute length of 19.2 miles;

- The longer commute lengths (and comments from employees) suggest that carpools and vanpools would be attractive alternatives for employee commuting;
- About 40 percent of the respondents live within 10 miles of the hospital, and a number of employees expressed interest in biking to work if adequate facilities (showers and secure bike parking) were available;
- Transit use is very low, and employee comments suggest that the available transit schedules and routes are not well-suited for Marin General Hospital employee commuting.

Although the proposed project would not directly or indirectly eliminate alternative transportation corridors or facilities (e.g., bicycle lanes, crosswalks, etc.), nor would the project include changes in adopted policies, plans, or programs that support alternative transportation, it would be beneficial (manage travel demand, reduce traffic generation, and promote additional safety measures for staff, patients, and visitors). The Marin Healthcare District would continue and expand strategies to encourage the use of alternative transportation facilities near and at the project site. Furthermore, the Marin Healthcare District would continue to coordinate with appropriate agencies and organizations (e.g., TAM, *511 Rideshare*) to support additional TDM practices to reduce the drive-alone travel mode and improve non-motorized access to the project site, as specified in Mitigation Measure GHG-2 (in Section 4.F, *Greenhouse Gases and Climate Change*). As a result, the proposed project would not conflict with adopted policies, plans, and programs supporting alternative transportation, and the project impact would be less than significant

**Mitigation:** None required

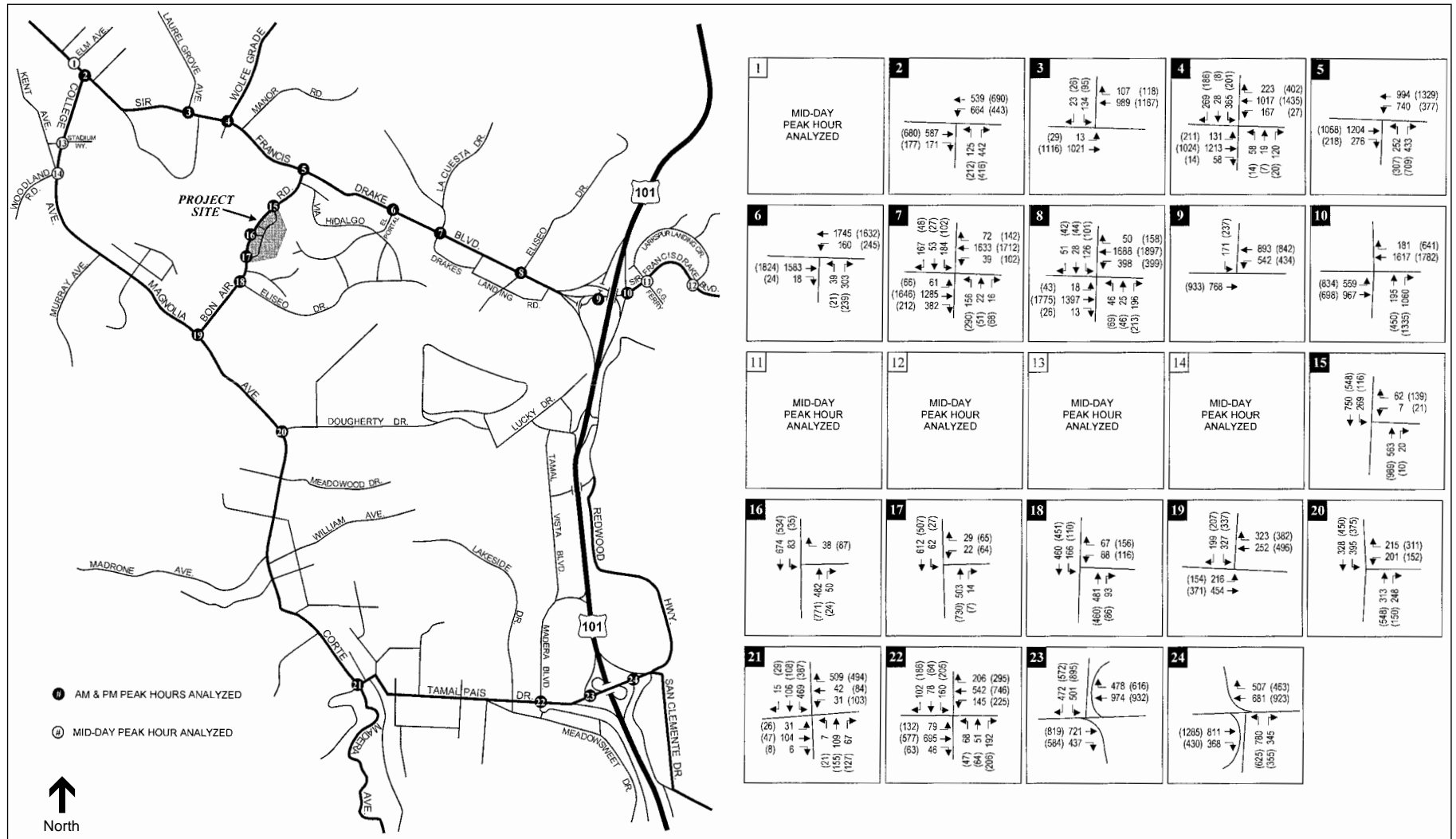
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**Impact TRA-5: The Near-Term Project would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Near-Term (Year 2018) plus Near-Term Project Conditions. (Significant)**

***Near-Term (Year 2018) plus Near-Term Project Conditions Intersection Levels of Service***

Under Near-Term (Year 2018) No Project Conditions, the signalized intersections on Sir Francis Drake Boulevard at Wolfe Grade (a.m. and p.m. peak hours), and La Cuesta Drive, and Eliseo Drive (a.m., p.m. and mid-day) would be operating at unacceptable conditions (LOS E-F). The remaining study intersections would continue to operate at acceptable levels of service (LOS D or better) during the a.m., mid-day, and p.m. peak hours evaluated. LOS calculation sheets are provided in the transportation impact analysis report (Appendix B to this Draft EIR).

Project trip generation, distribution and assignment are described on pages 4.M-26 to 4.M-26. Year 2018 plus Near-Term Project trips for the weekday a.m. and p.m. peak hour are shown in **Figure 4.M-8**; mid-day peak-hour trips are shown in **Figure 4.M-9**. As stated above, with proposed project uses, the existing northern and southern project driveways at Bon Air Road would be signalized.

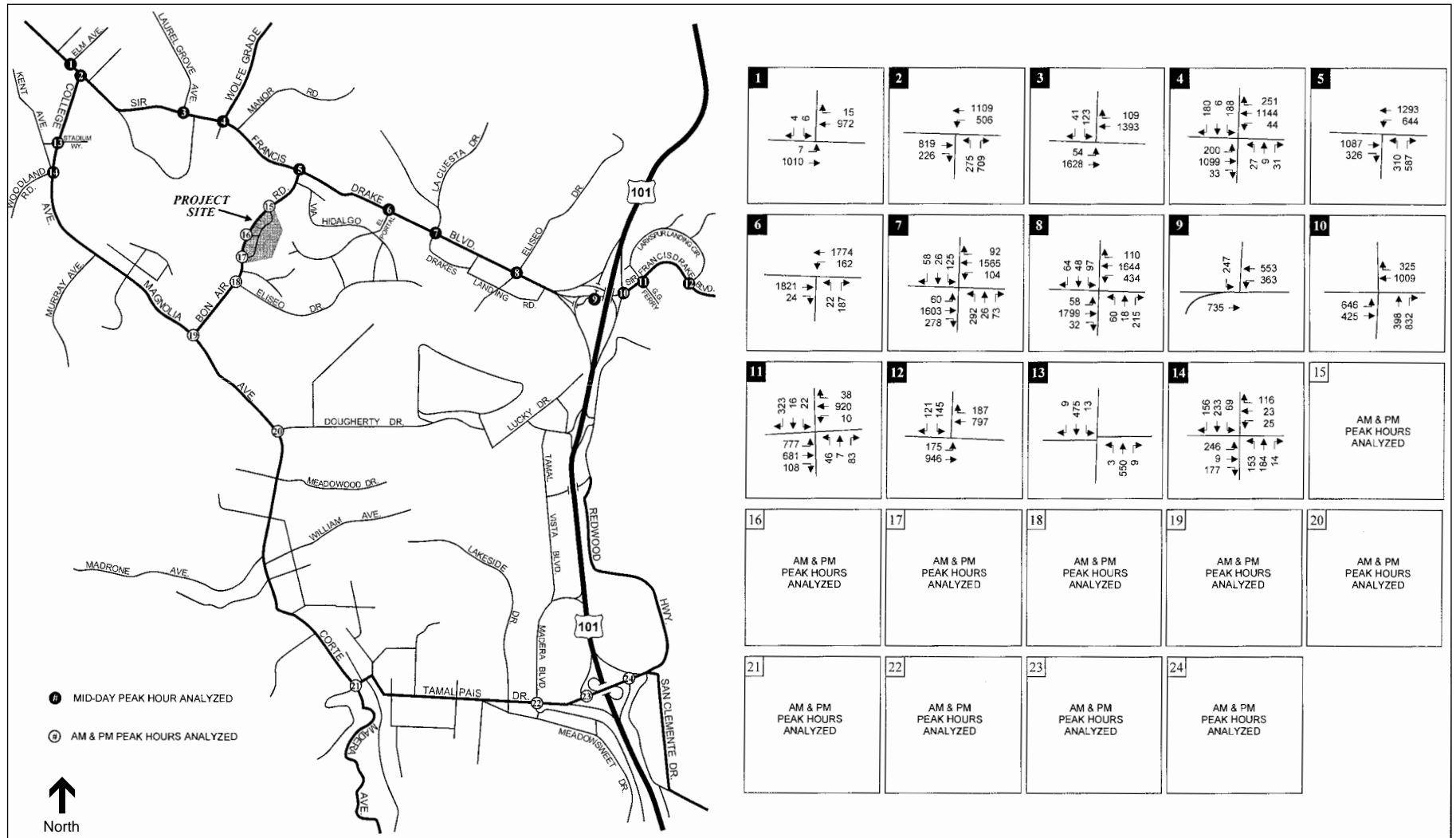


1 MID-DAY PEAK HOUR ANALYZED	2 539 (690) 664 (443)	3 23 (29) 134 (95) 107 (118) 989 (1167)	4 289 (186) 28 (6) 1017 (1435) 167 (27) 223 (402)	5 994 (1329) 740 (377)
6 1745 (1632) 760 (245) 1824 (1583) (24) 18 (31) 39 (239) 303	7 167 (48) 53 (27) 184 (102) 72 (142) 1633 (1712) 39 (102) (65) 61 (1646) 1285 (212) 382 (290) 156 (91) 22 (98) 16	8 42 (43) 28 (4) 126 (107) 50 (158) 1688 (1897) 398 (399) 51 28 1775 (1397) (28) 13 (63) 46 (46) 25 (213) 195	9 171 (237) 893 (842) 542 (434) 933 768	10 181 (641) 1617 (1782) 834 559 (688) 967 450 195 (1335) 1080
11 MID-DAY PEAK HOUR ANALYZED	12 MID-DAY PEAK HOUR ANALYZED	13 MID-DAY PEAK HOUR ANALYZED	14 MID-DAY PEAK HOUR ANALYZED	15 750 (546) 296 (116) 62 (139) 7 (21) 989 563 (10) 20
16 674 (534) 83 (35) 38 (87) 771 482 (24) 50	17 612 (507) 62 (27) 29 (65) 22 (54) 730 503 (7) 14	18 460 (451) 166 (110) 67 (156) 88 (116) 481 93 (86) 93	19 198 (207) 327 (337) 323 (382) 252 (495) 154 216 (371) 454	20 328 (450) 395 (375) 215 (311) 201 (152) 548 313 (130) 246
21 15 (29) 106 (106) 469 (387) 42 (84) 31 (103) 509 (454) (26) 31 (47) 104 (8) 0 (21) 7 (155) 109 (127) 67	22 102 (188) 78 (64) 160 (205) 206 (295) 542 (746) 145 (225) (132) 79 (577) 695 (83) 45 (47) 88 (64) 51 (206) 192	23 472 (672) 501 (885) 478 (616) 974 (932) (819) 721 (584) 437	24 507 (463) 681 (923) 1285 811 (430) 368 625 780 (355) 345	

SOURCE: Omni-Means

Marin General Hospital . 210606

**Figure 4.M-8**  
Year 2018 With Project AM and (PM) Peak Hour Volumes





As shown in **Table 4.M-10** and **Table 4.M-11**, under Near-Term (Year 2018) plus Near-Term Project Conditions, the signalized intersections on Sir Francis Drake Boulevard at Wolfe Grade, La Cuesta Drive, and Eliseo Drive would continue to operate at unacceptable service levels (LOS E or F) as under 2018 (no project) conditions. Based on the significance criteria (which stipulates that for intersections already operating at an unacceptable LOS without the project, any increase in delay is considered a significant impact), the project would have a significant impact at those three intersections under Near-Term (Year 2018) plus project conditions. The remaining study intersections would continue to operate at acceptable levels of service (LOS D or better) during the peak periods evaluated. LOS calculation sheets are provided in the transportation impact analysis report (Appendix B to this Draft EIR).

As described in Impact TRA-1, to improve the adverse traffic effects along Sir Francis Drake Boulevard at the intersections of Wolfe Grade, La Cuesta Drive, and Eliseo Drive would require roadway widening improvements. However, the widening improvements would be constrained by existing residential and commercial development, and therefore may be infeasible. As previously mentioned (see Impact TRA-1), the project will continue to implement Marin General Hospital's existing TDM program (as described in Impact TRA-4) as well as implement additional TDM strategies specified in Mitigation Measure GHG-2. However, the additional TDM strategies are not applied here because the associated reduction in project vehicle trips would not reduce this impact to less than significant, and moreover, because expansion of Sir Francis Drake Boulevard may be infeasible, and this impact would remain significant and unavoidable.

**Mitigation:** There are no additional feasible measures to mitigate the project impact to a less-than-significant level.

**Significance after Consideration of Mitigation Measure:** Significant and Unavoidable

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### ***Near-Term (Year 2018) plus Near-Term Project Conditions Freeway Segment Levels of Service***

Under Near-Term (Year 2018) No Project Conditions, the northbound segment of U.S. 101 between Tamalpais Drive and Sir Francis Drake Boulevard would continue to operate at LOS F during the p.m. peak hour. The remaining segments evaluated would operate under acceptable levels of service (LOS D or better). LOS calculation sheets are provided in the transportation impact analysis report (Appendix B to this Draft EIR).

As shown in **Table 4.M-12**, under Near-Term (Year 2018) plus Near-Term Project Conditions, the northbound segment of U.S. 101 between Tamalpais Drive and Sir Francis Drake Boulevard would continue to operate at LOS F during the p.m. peak hour.

Project-generated traffic increases would add about 23 trips to this segment, which equates to an increase in v/c ratio of 0.004, much less than the County's significance criteria for freeway segments (an increase in v/c ratio of 0.01 or more) to p.m. peak-hour volumes. Therefore, the

**TABLE 4.M-10  
NEAR-TERM (YEAR 2018) PLUS NEAR-TERM PROJECT CONDITIONS  
INTERSECTION LEVELS OF SERVICE (LOS) WEEKDAY AM AND PM PEAK HOUR**

Intersection <sup>a</sup>	Control Type <sup>b</sup>	AM Peak		PM Peak	
		Delay <sup>c</sup>	LOS	Delay <sup>c</sup>	LOS
1. Elm Ave./Sir Francis Drake Blvd.	Signal	MDO <sup>d</sup>	MDO	MDO	MDO
2. College Ave./Sir Francis Drake Blvd.	Signal	31.5	C	23.2	C
3. Laurel Ave./Sir Francis Drake Blvd.	Signal	17.8	B	18.5	B
4. Wolfe Grade/Sir Francis Drake Blvd.	Signal	<b>&gt;80.01</b>	<b>F</b>	<b>&gt;80.0</b>	<b>F</b>
5. Bon Air Rd./Sir Francis Drake Blvd.	Signal	53.4	D	34.9	C
6. El Portal/Sir Francis Drake Blvd.	Signal	22.3	C	38.3	D
7. La Cuesta/Sir Francis Drake Blvd.	Signal	<b>&gt;80.0</b>	<b>F</b>	<b>&gt;80.0</b>	<b>F</b>
8. Eliseo Dr./Sir Francis Drake Blvd.	Signal	<b>75.6</b>	<b>E</b>	<b>65.7</b>	<b>E</b>
9. US101 SB Ramps/Sir Francis Drake Blvd.	Signal	11.6	B	10.9	B
10. US101 NB Ramps/Sir Francis Drake Blvd.	Signal	18.3	B	37.3	D
11. Larkspur Landing W./SFD Boulevard	Signal	MDO	MDO	MDO	MDO
12. Larkspur Landing E./SFD Boulevard	Signal	MDO	MDO	MDO	MDO
13. Stadium Way/College Ave.	Signal	MDO	MDO	MDO	MDO
14. Kent Ave.-Woodland Rd./College Ave.	AWSC	MDO	MDO	MDO	MDO
15. MGH North Driveway/Bon Air Rd.	Signal	10.2	B	16.4	B
16. MGH Mid-Driveway/Bon Air Rd.	SSSC	13.1	B	21.2	C
17. MGH South Driveway/Bon Air Rd.	SSSC	21.0	C	28.2	D
18. Eliseo Dr./Bon Air Rd.	Signal	33.6	C	34.6	C
19. Bon Air Rd./Magnolia Blvd.	Signal	13.7	B	15.0	B
20. Doherty Dr./Magnolia Ave.	Signal	22.5	C	22.4	C
21. Corte Madera Ave./Tamalpais Dr.	Signal	38.2	D	31.9	C
22. Madera Blvd./Tamalpais Dr.	Signal	33.4	C	47.6	D
23. US101 SB Off-ramp/Tamalpais Dr.	Signal	18.0	B	18.4	B
24. US101 NB Off-ramp/Tamalpais Dr.	Signal	18.4	B	19.6	B

<sup>a</sup> MGH = Marin General Hospital; SFD = Sir Francis Drake Boulevard; NB = Northbound; SB = Southbound.  
<sup>b</sup> Signal = Signalized; AWSC = All-Way Stop-Controlled; SSSC = Side-Street Stop-Controlled.  
<sup>c</sup> Whole intersection weighted average total delay for signalized and all-way stop-controlled intersections (expressed in seconds per vehicle). For two-way stop controlled intersections, delays for worst approach are shown.  
<sup>d</sup> MDO = mid-day only.

Unacceptable operations are indicated in **bold** type.

SOURCE: Omni-Means, 2012.

**TABLE 4.M-11  
NEAR-TERM (YEAR 2018) PLUS PROJECT CONDITIONS  
INTERSECTION LEVELS OF SERVICE (LOS) WEEKDAY MID-DAY PEAK HOUR**

Intersection <sup>a</sup>	Control Type <sup>b</sup>	MID Peak	
		Delay <sup>c</sup>	LOS
1. Elm Ave./Sir Francis Drake Blvd.	Signal	21.7	C
2. College Ave./Sir Francis Drake Blvd.	Signal	30.7	C
3. Laurel Ave./Sir Francis Drake Blvd.	Signal	20.7	C
4. Wolfe Grade/Sir Francis Drake Blvd.	Signal	35.4	D
5. Bon Air Rd./Sir Francis Drake Blvd.	Signal	45.2	D
6. El Portal/Sir Francis Drake Blvd.	Signal	30.7	C
7. La Cuesta/Sir Francis Drake Blvd.	Signal	<b>&gt;80.0</b>	<b>F</b>
8. Eliseo Dr./Sir Francis Drake Blvd.	Signal	<b>&gt;80.0</b>	<b>F</b>
9. US101 SB Ramps/Sir Francis Drake Blvd.	Signal	9.5	A
10. US101 NB Ramps/Sir Francis Drake Blvd.	Signal	17.7	B
11. Larkspur Landing W./SFD Boulevard	Signal	42.9	D
12. Larkspur Landing E./SFD Boulevard	Signal	17.7	B
13. Stadium Way/College Ave.	Signal	0.4	A
14. Kent Ave.-Woodland Rd./College Ave.	AWSC	19.9	C

<sup>a</sup> SFD = Sir Francis Drake Boulevard; NB = Northbound; SB = Southbound.

<sup>b</sup> Signal = Signalized; AWSC = All-Way Stop-Controlled

<sup>c</sup> Whole intersection weighted average total delay for signalized and all-way stop-controlled intersections (expressed in seconds per vehicle).

Unacceptable operations are indicated in **bold** type.

SOURCE: Omni-Means, 2012.

**TABLE 4.M-12  
NEAR-TERM (YEAR 2018) PLUS PROJECT CONDITIONS  
FREEWAY SEGMENT PM PEAK-HOUR LEVELS OF SERVICE (LOS)**

U.S. 101 Freeway Segment	Direction <sup>a</sup> / # of Lanes	Volume	Density <sup>b</sup>	LOS	LOS Standard
North of Sir Francis Drake Blvd	NB / 4	5,838	27.7	D	E
	SB / 3	4,720	30.0	D	E
Sir Francis Drake Blvd to Tamalpais Dr	<b>NB / 3</b>	<b>6,373</b>	<b>&gt;45</b>	<b>F</b>	<b>E</b>
	SB / 3	5,726	27.9	D	E
South of Tamalpais Drive	NB / 4	6,675	32.9	D	E
	SB / 4	5,331	25.9	C	E

<sup>a</sup> NB = Northbound; SB = Southbound

<sup>b</sup> Density calculated by maximum service flow rate (passenger cars per hour per travel lane [pc/h/ln]).

Unacceptable operations are indicated in **bold** type.

SOURCE: Omni-Means, 2012.

proposed project impacts would be considered less than significant. All other segments are operating at LOS D or better during the p.m. peak hour. Freeway segment LOS calculation sheets are provided in the transportation impact analysis report (Appendix B to this Draft EIR).

**Mitigation:** None required

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**Impact TRA-6: The Project would generate temporary increases in traffic volume and temporary effects on transportation conditions during construction activities. (Less than Significant)**

As shown in Table 3-3, *Construction Activities Schedule* (Section 3.7.1, Chapter 3, *Project Description*), construction of the proposed project would occur in phases, with each project component being constructed between Year 2012 and Year 2020. The most intense concentration of heavy truck traffic would occur during grading activities of each phase of development. During construction activities, worker vehicles and haul trucks would commute to and from the project site, and could result in temporary and intermittent transportation impacts from the increase in traffic. Furthermore, the construction-related traffic may temporarily reduce capacities on surrounding roadways because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles. Additionally, any increase in construction traffic that would occur during the peak commute hours (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) could result in temporary worse levels of service and higher delays at study intersections during the construction period.

**Construction-Related Traffic**

It is expected that the project would require a total of 133,000 cubic yards (CY) of excavation during the various construction phases (Peluso, 2011c). The total includes 15,000 CY during the Hillside parking garage construction, 17,000 CY during the Bon Air Road parking garage construction, and 101,000 CY during the hospital construction. The truck trip generation during the most intense hospital construction has been calculated as follows:

- 101,000 CY / 84 work days (4 months) = 1,202 CY per day
- 1,202 CY per day / 20 CY per truck x 2 one-way trips = 120 truck trips per day
- 120 truck trips per day / 8-9 hours = 14 truck trips/hour (7 in/7out)

Because the trucks represent a potential higher traffic impact (due to their greater length and slower acceleration characteristics), a Passenger Car Equivalent factor of 1.5 was applied to the truck trips, consistent with the HCM. The project's Passenger Car Equivalent trip generation increase over existing levels would therefore be about 20 trips (10 in/10 out) during both the a.m. and p.m. peak hours.

During the excavation process, trucks would be arriving empty (and filled trucks would exit) via the project access on Bon Air Road. It is expected that all of the trips would be to and from Sir

Francis Drake Boulevard, resulting in inbound left turns and outbound right turns at the Bon Air Road Access.

These truck trips were added to the Near-Term (Year 2018) traffic volumes at the Bon Air Road and north project access intersection. As shown in Table 4.M-10, the intersection would operate at acceptable levels of service (LOS B) without the project during both peak hours, and the above-described moderate increase in traffic during project construction would have a less-than-significant impact on LOS conditions.

The use of heavy trucks to transport equipment and material to and from the project site could affect road conditions by incrementally increasing the rate of road wear. The project's impact would be minimal on arterials (e.g., Sir Francis Drake Boulevard and Bon Air Road) and other designated truck routes that are designed to accommodate a mix of vehicle types, including heavy trucks. Further, the project would be subject to the same standard requirements or conditions to ensure that any substantial damage to existing roadways from construction traffic is repaired, such as pre- and post-construction documentation of roadway conditions. The above-described moderate increase in truck traffic during project construction would have a less-than-significant impact on the conditions of area roadways' pavement.

#### **Pedestrian and Bicycle Access during Construction**

Part 6 of the California MUTCD specifies that "The needs and control of all road users (motorists, bicycles and pedestrians with the highway, including persons with disabilities in accordance with the Americans with Disabilities Act of 1990 (ADA), Title II Paragraph 35.130) through a temporary traffic control (TTC) zone shall be an essential part of highway construction, utility work, maintenance operations, and the management of traffic incidents." Section 6C.01 of the California MUTCD requires provisions for effective continuity of accessible circulation paths for pedestrians should be incorporated into the TTC process.

In accordance with these requirements, information about alternative routes usable by pedestrians with disabilities, particularly those who have visual disabilities, will be provided if existing pedestrian routes are blocked or detoured during construction. Access to temporary bus stops, reasonably safe travel across intersections with accessible pedestrian signals (in accordance with Section 4E.06 of the California MUTCD), and other routing issues will be considered if any temporary pedestrian routes are channelized. Barriers and channelizing devices that are detectable by people with visual disabilities also will be provided.

As discussed in other sections of this Draft EIR (see *Construction Management Plan / Right of Way Activity* in Project Description, Chapter 3; and *Construction Logistics* in Section 4.N, *Utilities and Service Systems*) the project applicant will prepare a construction management plan that describes site logistics for each phase of construction. The plan will include pedestrian and bicycle detours and adequate advance warning signage to be placed to minimize doubling back for pedestrians and bicyclists. All signage type and locations within County right of way will be reviewed by the Department of Public Works prior to approval of a temporary traffic control plan. The installation and maintenance of advance warning signs that may occur outside the immediate

work area but in the County will also obtain an encroachment permit from the County of Marin. The above-described project measures to address potential effects on bicyclists and pedestrians during construction ensure that the project would have a less-than-significant impact.

**Mitigation:** None required

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## Cumulative Impacts

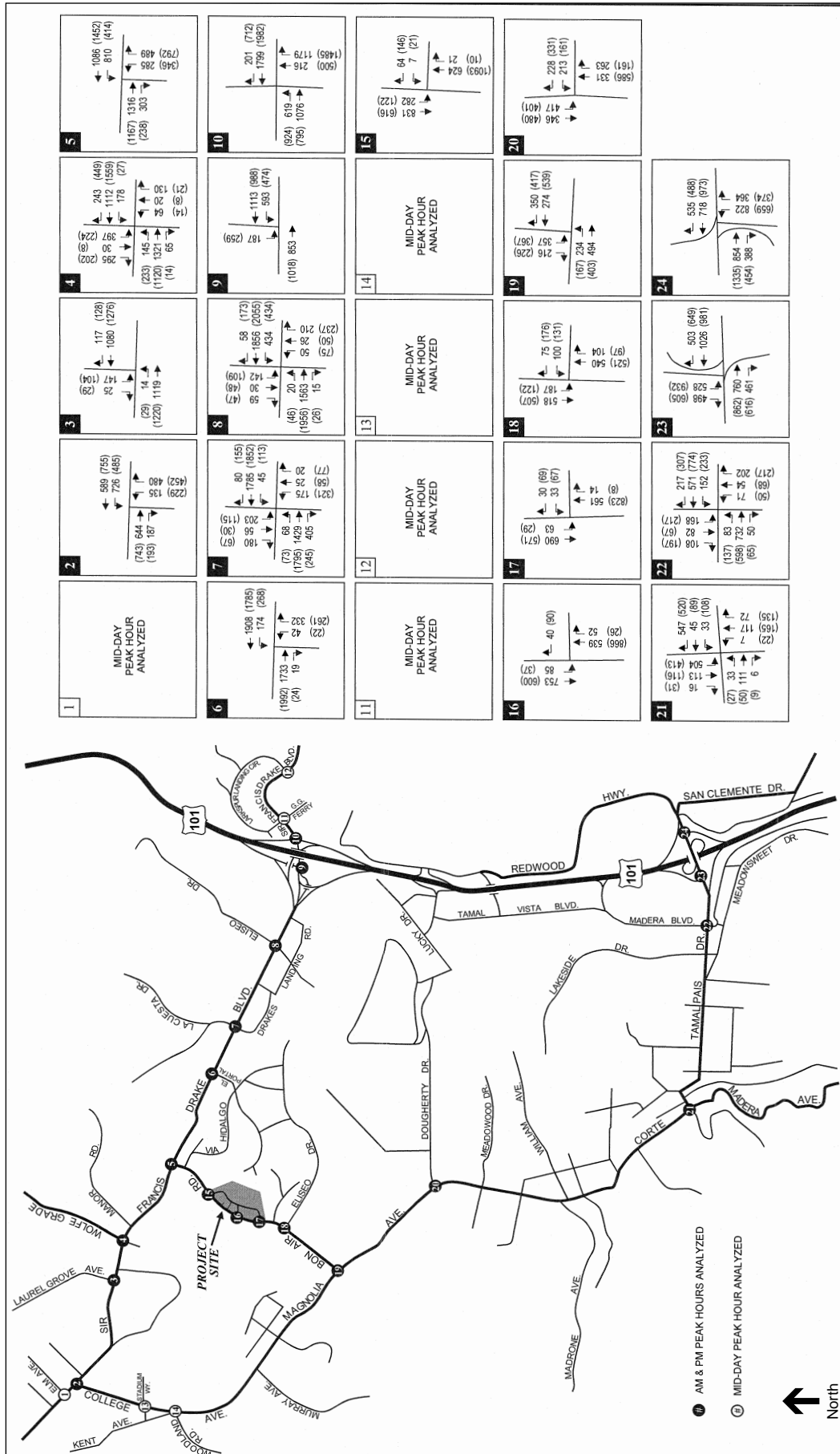
**Impact TRA-7: The Project, in conjunction with past, present and other reasonably foreseeable future development in the area, would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Cumulative plus Project conditions. (Significant)**

### ***Cumulative Year 2035 plus Project Conditions Intersection Levels of Service***

Under Cumulative Year 2035 (No Project) Conditions, the majority of study intersections would continue to operate at acceptable levels of service (LOS D or better) during the a.m., mid-day, and p.m. peak periods evaluated. The signalized intersections on Sir Francis Drake Boulevard at Wolfe Grade (a.m. and p.m. peak hours), and La Cuesta Drive, and Eliseo Drive (a.m., p.m. and mid-day) would be operating at unacceptable conditions (LOS E-F). LOS calculation sheets are provided in the transportation impact analysis report (Appendix B to this Draft EIR).

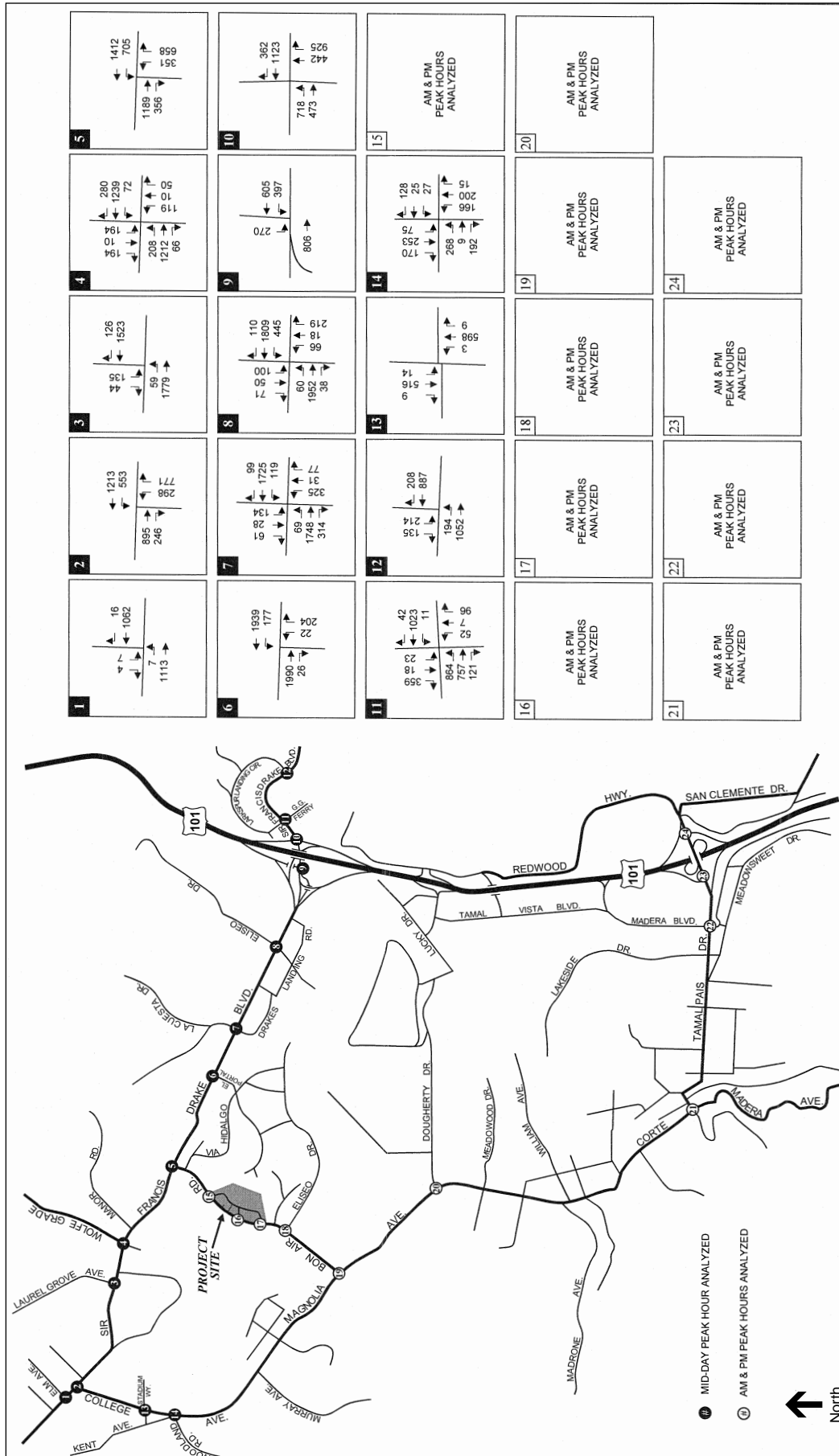
Project trip generation, distribution and assignment are described on pages 4.M-26 to 4.M-26. Year 2035 plus project buildout trips for the a.m. and p.m. peak hour are presented in **Figure 4.M-10**; mid-day peak-hour trips are presented in **Figure 4.M-11**. As stated above, with proposed project uses, the existing northern project driveways at Bon Air Road would be signalized. The southern project driveway would have the interim left-turn refuge lane removed on Bon Air Road, and a signal would be installed based on the weekday p.m. peak hour warrant satisfaction (estimated to occur under Cumulative Year 2023 “Plus-Project” Conditions).

As shown in **Table 4.M-13** and **Table 4.M-14**, under Cumulative Year 2035 plus Project Conditions, most of the study intersections would continue to operate at acceptable levels of service (LOS D or better) during the peak periods evaluated. However, the overall vehicle delay at the Sir Francis Drake Boulevard intersections at Wolfe Grade, La Cuesta Drive, and Eliseo Drive would be at LOS F conditions during the a.m. and p.m. peak hours. The U.S.101 northbound ramps at Sir Francis Drake Boulevard would be operating at LOS E during the p.m. peak hour. During the mid-day peak hour, the La Cuesta Drive and Eliseo Drive intersections at Sir Francis Drake Boulevard would be operating at LOS F. Based on the significance criteria, the changes to operating conditions described above for the four intersections would be considered a significant impact. LOS calculation sheets are provided in the transportation impact analysis report (Appendix B to this Draft EIR).



Marin General Hospital . 210606  
**Figure 4.N-10**  
 Year 2035 With Project AM and (PM) Peak Hour Volumes

SOURCE: Omni-Means





**TABLE 4.M-13  
CUMULATIVE YEAR 2035 PLUS PROJECT CONDITIONS  
INTERSECTION LEVELS OF SERVICE (LOS) WEEKDAY AM AND PM PEAK HOUR**

Intersection <sup>a</sup>	Control Type <sup>b</sup>	AM Peak		PM Peak	
		Delay <sup>c</sup>	LOS	Delay <sup>c</sup>	LOS
1. Elm Ave./Sir Francis Drake Blvd.	Signal	MDO <sup>d</sup>	MDO	MDO	MDO
2. College Ave./Sir Francis Drake Blvd.	Signal	37.1	D	26.0	C
3. Laurel Ave./Sir Francis Drake Blvd.	Signal	18.0	B	19.1	B
4. Wolfe Grade/Sir Francis Drake Blvd.	Signal	<b>&gt;80.0</b>	<b>F</b>	<b>&gt;80.09</b>	<b>F</b>
5. Bon Air Rd./Sir Francis Drake Blvd.	Signal	33.8	C	51.5	D
6. El Portal/Sir Francis Drake Blvd.	Signal	26.9	C	34.4	C
7. La Cuesta/Sir Francis Drake Blvd.	Signal	<b>&gt;80.0</b>	<b>F</b>	<b>&gt;80.0</b>	<b>F</b>
8. Eliseo Dr./Sir Francis Drake Blvd.	Signal	<b>&gt;80.0</b>	<b>F</b>	<b>&gt;80.0</b>	<b>F</b>
9. US101 SB Ramps/Sir Francis Drake Blvd.	Signal	15.4	B	12.0	B
10. US101 NB Ramps/Sir Francis Drake Blvd.	Signal	21.8	C	<b>59.6</b>	<b>E</b>
11. Larkspur Landing W./SFD Boulevard	Signal	MDO	MDO	MDO	MDO
12. Larkspur Landing E./SFD Boulevard	Signal	MDO	MDO	MDO	MDO
13. Stadium Way/College Ave.	Signal	MDO	MDO	MDO	MDO
14. Kent Ave.-Woodland Rd./College Ave.	AWSC	MDO	MDO	MDO	MDO
15. MGH North Driveway/Bon Air Rd.	Signal	26.9	D	28.4	D
16. MGH Mid-Driveway/Bon Air Rd.	SSSC	14.5	B	34.2	D
17. MGH South Driveway/Bon Air Rd.	Signal	41.8	E	66.8	F
18. Eliseo Dr./Bon Air Rd.	Signal	40.1	D	41.5	D
19. Bon Air Rd./Magnolia Blvd.	Signal	14.1	B	15.5	B
20. Doherty Dr./Magnolia Ave.	Signal	23.4	C	24.3	C
21. Corte Madera Ave./Tamalpais Dr.	Signal	48.3	D	38.8	D
22. Madera Blvd./Tamalpais Dr.	Signal	36.8	D	37.1	D
23. US101 SB Off-ramp/Tamalpais Dr.	Signal	18.1	B	18.8	B
24. US101 NB Off-ramp/Tamalpais Dr.	Signal	18.4	B	19.6	B

<sup>a</sup> MGH = Marin General Hospital; SFD = Sir Francis Drake Boulevard; NB = Northbound; SB = Southbound.  
<sup>e</sup> Signal = Signalized; AWSC = All-Way Stop-Controlled; SSSC = Side-Street Stop-Controlled.  
<sup>c</sup> Whole intersection weighted average total delay for signalized and all-way stop-controlled intersections (expressed in seconds per vehicle). For two-way stop controlled intersections, delays for worst approach are shown.  
<sup>d</sup> MDO = mid-day only.

Unacceptable operations are indicated in **bold** type.

SOURCE: Omni-Means, 2012.

**TABLE 4.M-14  
CUMULATIVE YEAR 2035 PLUS PROJECT CONDITIONS  
INTERSECTION LEVELS OF SERVICE (LOS) WEEKDAY MID-DAY PEAK HOUR**

Intersection <sup>a</sup>	Control Type <sup>b</sup>	MID Peak	
		Delay <sup>c</sup>	LOS
1. Elm Ave./Sir Francis Drake Blvd.	Signal	27.4	C
2. College Ave./Sir Francis Drake Blvd.	Signal	42.9	D
3. Laurel Ave./Sir Francis Drake Blvd.	Signal	22.4	C
4. Wolfe Grade/Sir Francis Drake Blvd.	Signal	46.7	D
5. Bon Air Rd./Sir Francis Drake Blvd.	Signal	37.8	D
6. El Portal/Sir Francis Drake Blvd.	Signal	48.7	D
7. La Cuesta/Sir Francis Drake Blvd.	Signal	<b>&gt;80.0</b>	<b>F</b>
8. Eliseo Dr./Sir Francis Drake Blvd.	Signal	<b>&gt;80.0</b>	<b>F</b>
9. US101 SB Ramps/Sir Francis Drake Blvd.	Signal	9.7	A
10. US101 NB Ramps/Sir Francis Drake Blvd.	Signal	19.7	B
11. Larkspur Landing W./SFD Boulevard	Signal	50.4	D
12. Larkspur Landing E./SFD Boulevard	Signal	22.3	C
13. Stadium Way/College Ave.	Signal	0.4	A
14. Kent Ave.-Woodland Rd./College Ave.	AWSC	23.0	C

<sup>a</sup> SFD = Sir Francis Drake Boulevard; NB = Northbound; SB = Southbound.

<sup>b</sup> Signal = Signalized; AWSC = All-Way Stop-Controlled

<sup>c</sup> Whole intersection weighted average total delay for signalized and all-way stop-controlled intersections (expressed in seconds per vehicle).

Unacceptable operations are indicated in **bold** type.

SOURCE: Omni-Means, 2012.

As described in Impacts TRA-1 and TRA-5, to improve the adverse traffic effects along Sir Francis Drake Boulevard at the intersections of Wolfe Grade, La Cuesta Drive, and Eliseo Drive would require roadway widening improvements. However, the widening improvements would be constrained by existing residential and commercial development, and therefore may be infeasible. Should the proposed Highway 101 Greenbrae/Twin Cities Corridor Improvement project circulation improvement for Sir Francis Drake Boulevard (eastbound through lane at Eliseo Drive), described on page 4.M-24, be deemed feasible, the proposed project would contribute a “fair share” contribution towards that improvement. Based on the assignment of the project’s p.m. peak-hour trips to this intersection, project trips would equate to 5.8% of the total cumulative year 2035 plus project volume at the Sir Francis Drake Boulevard / Eliseo Drive intersection.

The potential physical damage that the project’s construction truck traffic could have on existing roadways (Impact TRA-6), combined with that associated with past, present and reasonably foreseeable cumulative projects, would not result in a significant cumulative impact to transportation conditions. Cumulative development in the area of the project site (as listed in Table 4-1, Cumulative Projects and Projections Documents, in Chapter 4 to this Draft EIR) would

be subject to the same standard requirements or conditions to ensure that any substantial damage to existing roadways from construction traffic is repaired, such as pre- and post-construction documentation of roadway conditions. Moreover, very few cumulative development projects are located where the associated construction truck traffic would combine with that of the projects along area roadways, particularly for an extended duration, to cause substantial damage. Thus, no significant cumulative effect would occur. The impact would be less than significant.

As also previously mentioned (see Impacts TRA-1 and TRA-5), the project will continue to implement Marin General Hospital's existing TDM program (as described in Impact TRA-4) as well as implement additional TDM strategies specified in Mitigation Measure GHG-2. However, estimated project trip reduction associated with the additional TDM strategies are conservatively not assumed in this analysis. This is in part because the associated reduction in project vehicle trips would not reduce this impact to less than significant, and moreover because expansion of Sir Francis Drake Boulevard may be infeasible, and thus this impact would remain significant and unavoidable.

**Mitigation Measure TRA-7:** If the proposed Highway 101 Greenbrae/Twin Cities Corridor Improvement project circulation improvement for Sir Francis Drake Boulevard (eastbound through lane at Eliseo Drive) is deemed feasible, contribute a "fair share" contribution towards that improvement, based on the project's percent contribution to the total cumulative year 2035 plus project volume at the intersection.

There are no additional feasible measures to mitigate the project impact at the other identified intersections to a less-than-significant level.

**Significance after Consideration of Mitigation Measure:** Significant and Unavoidable

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### ***Cumulative Year 2035 plus Project Conditions Freeway Segment Levels of Service***

Under Cumulative Year 2035 No Project Conditions, the northbound segment of U.S. 101 between Tamalpais Drive and Sir Francis Drake Boulevard, the northbound segment of U.S. 101 south of Tamalpais Drive, and the southbound segment of U.S. 101 north Sir Francis Drake Boulevard would operate at LOS F during the p.m. peak hour. The remaining three segments evaluated would operate under acceptable levels of service (at LOS E). Freeway segment LOS calculation sheets are provided in the transportation impact analysis report (Appendix B to this Draft EIR).

As shown in **Table 4.M-15**, under Cumulative Year 2035 plus Project Conditions, the northbound segments of U.S. 101 south of Tamalpais Drive, and between Tamalpais Drive and Sir Francis Drake Boulevard, and the southbound segment north of Sir Francis Drake Boulevard, would continue to operate at LOS F during the p.m. peak hour. Project-generated traffic increases would add less than the County's significance criteria for freeway segments (an increase in v/c ratio of 0.01 or more) to the two northbound segments (a less-than-significant impact), but the addition of project trips would cause an increase of more than 0.01 in v/c ratio to the southbound segment of U.S. 101 north of Sir Francis Drake Boulevard. Therefore, the proposed project would have a

**TABLE 4.M-15  
CUMULATIVE YEAR 2035 PLUS PROJECT CONDITIONS  
FREEWAY SEGMENT PM PEAK-HOUR LEVELS OF SERVICE (LOS)**

U.S. 101 Freeway Segment	Direction <sup>a</sup> / # of Lanes	Volume	Density <sup>b</sup>	LOS	LOS Standard
North of Sir Francis Drake Blvd	NB / 4	7,324	36.9	E	E
	<b>SB / 3</b>	<b>6,902</b>	<b>&gt;45</b>	<b>F</b>	E
Sir Francis Drake Blvd to Tamalpais Dr	<b>NB / 3</b>	<b>7,955</b>	<b>&gt;45</b>	<b>F</b>	<b>E</b>
	SB / 3	8,012	44.8	E	E
South of Tamalpais Drive	<b>NB / 4</b>	<b>8,393</b>	<b>&gt;45</b>	<b>F</b>	E
	SB / 4	7,388	38.1	E	E

<sup>a</sup> NB = Northbound; SB = Southbound

<sup>b</sup> Density calculated by maximum service flow rate (passenger cars per hour per travel lane [pc/h/ln]).

Unacceptable operations are indicated in **bold** type.

SOURCE: Omni-Means, 2012.

significant impact on that southbound segment. LOS calculation sheets are provided in the transportation impact analysis report (Appendix B to this Draft EIR).

The southbound segment of U.S. 101 north of Sir Francis Drake Boulevard has three mixed-use travel lanes and one high-occupancy-vehicle lane. Widening of this segment is physically constrained, and therefore, mitigating the LOS F condition by adding another lane is not feasible under Cumulative Year 2035 plus Project Conditions. As discussed above, TAM is currently developing various circulation improvement studies for the U.S. 101 Greenbrae/Twin Cities Corridor, including multi-modal improvements that would improve the operations and safety in the corridor for all users and all modes of transportation. However, no improvements are programmed or funded at this time.

In addition, the project will continue to implement Marin General Hospital’s existing TDM program (described in Impact TRA-4, above) as well as implement additional TDM strategies specified in Mitigation Measure GHG-2. However, the estimated project trip reduction associated with the additional TDM strategies are conservatively not assumed in this analysis. This is in part because the associated reduction in project vehicle trips would not reduce this impact to less than significant, and moreover because widening the southbound segment of U.S. 101 north of Sir Francis Drake Boulevard is not feasible, and other improvements in the U.S. 101 Greenbrae/Twin Cities Corridor may be infeasible, and thus this impact would remain significant and unavoidable.

**Mitigation:** There are no additional feasible measures to mitigate the project impact to a less-than-significant level.

**Significance after Consideration of Mitigation Measure:** Significant and Unavoidable

## Other Planning-Related Non-CEQA Issues

### ***Parking Considerations***

The Court of Appeal has held that parking is not part of the permanent physical environment, that parking conditions change over time as people change their travel patterns, and that unmet parking demand created by a project need not be considered a significant environmental impact under CEQA unless it would cause significant secondary impacts.<sup>4</sup> Similarly, the December 2009 amendments to the State CEQA *Guidelines* (effective March 18, 2010) removed parking from the State's Environmental Checklist (Appendix G of the State CEQA *Guidelines*) as an environmental factor to be considered under CEQA. Parking supply/demand varies by time of day, day of week, and seasonally. As parking demand increases faster than the supply, parking prices rise to reach equilibrium between supply and demand. Decreased availability and increased costs result in changes to people's mode and pattern of travel. However, the County of Marin, in its review of the proposed project, wants to ensure that the project's provision of additional parking spaces along with measures to lessen parking demand (by encouraging the use of non-auto travel modes) would result in minimal adverse effects to project occupants and visitors, and that any secondary effects (such as on air quality or traffic due to drivers searching for parking spaces) would be minimized. As such, although not required by CEQA, parking conditions are evaluated in this document.

Parking deficits may be associated with secondary physical environmental impacts, such as air quality and noise effects or traffic, caused by congestion resulting from drivers circling as they look for a parking space. However, the absence of a ready supply of parking spaces, combined with available alternatives to auto travel (e.g., transit service, shuttles, taxis, bicycles or travel by foot), may induce drivers to shift to other modes of travel, or change their overall travel habits. Any such resulting shifts to transit service, in particular, would be in keeping with County policies for non drive-alone modes of travel.

Additionally, regarding potential secondary effects, cars circling and looking for a parking space in areas of limited parking supply is typically a temporary condition, often offset by a reduction in vehicle trips due to others who are aware of constrained parking conditions in a given area. Hence, any secondary environmental impacts that might result from a shortfall in parking in the vicinity of the proposed project are considered less than significant.

The following analysis evaluates if the project's estimated parking demand (both project-generated and project-displaced) would be met by the project's proposed parking supply or by the existing parking supply within a reasonable walking distance of the project site. Project-displaced parking results from the project's removal of standard on-street parking, County or Redevelopment Agency owned/controlled parking and/or legally required off-street parking (non-open-to-the-public parking which is legally required).

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<sup>4</sup> *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

### ***Project Parking Supply***

The proposed project would provide 1,079 total parking spaces for existing and proposed uses. The majority of these parking spaces would be provided in the planned parking structures located in the northwest portion of the site adjacent to Bon Air Road and on the hillside east of the main northerly project drive entrance. The main parking facility immediately adjacent to Bon Air Road would provide 507 parking spaces and would be primarily used by visitors, patients, and outpatients. Vehicle access to/from this structure would be gained by two full-access driveways both located off the hospital's main north-south internal drive aisle. The main northerly garage access driveway would have two inbound lanes and one outbound lane. The southerly garage access driveway would have one inbound lane and one outbound lane. If constructed, the elevated pedestrian bridge/walkway would extend from the garage structure's second level across the main north-south drive aisle to the ambulatory services building immediately north of this lower garage driveway.

The hillside parking structure would provide 412 parking spaces. Although not restricted, the parking structure would primarily be used by employees and County employees in their adjacent hillside office. Vehicle access to this structure would be gained from the main northerly driveway entrance extending east to the perimeter internal drive aisle. At this intersection, motorists would turn left (northbound) and access up a short drive aisle to the garage entrance. There would be one driveway entrance to the hillside garage with one inbound lane and one outbound lane.

The remaining 160 parking spaces would be provided in existing on-site surface lots. Surface parking areas located along the main north-south internal drive would include 96 perpendicular parking spaces that include six diagonal parking spaces in front of west wing's walk-in emergency drop-off area. Other surface parking lots would be located in the rear of the new hospital replacement building, the main existing central wing, and in the northern portion of the campus above the main driveway entrance. The existing valet service serving outpatients and visitors would continue.

### ***Parking Demand Analysis***

#### **Near-Term (Year 2018) Parking Analysis**

The year 2018 total campus parking demand would be made up of existing and proposed uses as well as departure of the Marin Clinic and these would include the following components:

- +1,126 FTE employees (existing);
- + 18,417 square feet Health/Human Services (existing);
- + 100,000 square feet of Ambulatory Services Building uses (proposed);
- - 8,000 square feet Marin Clinic (removed).

The planned 100,000 square-foot ambulatory services building would require an additional 286 FTE employees. However, because the County of Marin's parking code requirement for the proposed ambulatory services building uses (based on square footage) is being used as a

conservative measure for parking demand calculations, associated FTE's were not added to employee totals.

Based on the above uses, the proposed project's year 2018 parking demand was calculated as follows in **Table 4.M-16** using the same parking rates used to calculate existing parking demand:

**TABLE 4.M-16  
YEAR 2018 PARKING DEMAND**

<b>Planned Employees/Uses</b>	<b>Parking Rate</b>	<b>Parking Spaces</b>
1,126 FTE (Hospital)	0.55 spaces/employee	622
18,417sq.ft. Health/Human Services	4.15 spaces/1,000 sq.ft.	76
100,000sq.ft. of Ambulatory Service Building	4.0 spaces/1,000 sq.ft.	400
	<b>Total Peak Parking Demand</b>	<b>1,098 spaces</b>

Based on Year 2018 parking demand, the proposed project would have a calculated peak parking demand of 1,098 spaces. The proposed total supply of 1,079 spaces would result in a parking deficit of 19 spaces.

It is recommended that the Marin Healthcare District continue its present arrangement and enter into a long-term shared parking agreement with the St. Sebastian's Church located just northwest of the campus off Bon Air Road. A long-term agreement would secure an additional 90 parking spaces for employee use and provide a 71-space parking surplus. The church parking lot would continue to be served by hospital shuttle services. By obtaining a long-term parking agreement with St. Sebastian's Church, overall peak project parking demand would be accommodated by supply. Marin Healthcare District has had a relationship with St. Sebastian's Church since 1990, when the first parking lease was executed between it and Marin General Hospital. The hospital's current lease continues to 2013, and the District has an option to extend it one year to June 30, 2014.

#### **Cumulative Year 2035 Parking Analysis**

Under Cumulative Year 2035 plus Project conditions, the total campus parking demand would reflect an increase of 140 FTE hospital employees from year 2018 levels, above. These additional 140 FTE employees are not associated with Ambulatory Services Building uses. Consistent with year 2018 conditions, overall parking demand would be made up of existing and proposed uses including FTE employees, Ambulatory Services Building, Health and Human Services Building, and departure of the Marin Clinic. These would include the following components:

- +1,266 FTE employees (existing);
- + 18,417 square feet Health/Human Services (existing);
- + 100,000 square feet of ASB uses (proposed);
- - 8,000 square feet Marin Clinic (removed).

Based on the above uses, the proposed project’s year 2035 parking demand was calculated as follows in **Table 4.M-17** using the same parking rates used to calculate existing parking demand:

**TABLE 4.M-17  
YEAR 2035 PARKING DEMAND**

<b>Planned Employees/Uses</b>	<b>Parking Rate</b>	<b>Parking Spaces</b>
1,226 FTE (Hospital)	0.55 spaces/employee	696
18,417sq.ft. Health/Human Services	4.15 spaces/1,000 sq.ft.	76
100,000sq.ft. of Ambulatory Service Building	4.0 spaces/1,000 sq.ft.	400
	<b>Total Peak Parking Demand</b>	<b>1,172 spaces</b>

Under Cumulative Year 2035 plus Project Conditions, the proposed project would have a calculated peak parking demand of 1,172 spaces. The proposed total supply of 1,079 spaces would create a parking deficit of 93 spaces. As discussed under Year 2018 conditions, it is recommended that Marin Healthcare District continue its present arrangement and enter into a long-term shared parking agreement with the St. Sebastian’s Church to secure an additional 90 parking spaces for employee use and provide an essentially equal parking supply (only a three-space deficit). An agreement would provide ample parking supply to accommodate projected demand.

**Comparison with Existing Conditions**

The above analysis identifies on-site deficits of 19 parking spaces in 2018 (1,098-space demand versus 1,079-space supply), and 93 spaces in 2035 (1,172-space demand versus 1,079-space supply). While it is recommended to continue leasing 90 spaces from St. Sebastian’s Church, those additional spaces cannot be permanently guaranteed. In addition, Mitigation Measure TRA-2a recognizes that up to five on-street parking spaces along Bon Air Road might be eliminated to accommodate the new driveway. By comparison, there currently is an on-site parking deficit of 128 spaces (733-space demand versus 605-space supply). Thus, even without the St. Sebastian’s lot and the five on-street spaces, the project would represent a net improvement over current conditions, with fewer employees and visitors using off-site parking spaces in the neighborhood. In addition, the estimates of future demand do not take into consideration TDM measures (e.g., carpooling) that are expected to reduce single-occupancy vehicle trips and lower the parking deficit.

**Construction Parking**

Two new parking garages would be constructed to ensure adequate on-site parking during all construction activities. Development of the Hillside Parking Structure (Phase I) activities would remove 12 existing parking spaces from the supply; however, the departure of the Marin Community Clinic removes a parking demand of 35 spaces from the project site. The Hillside Parking Structure would add 401 spaces within one year (2013-2014). The construction of the new structure would be completed prior to the start of Phase II construction activities, and the



construction of the Bon Air Road Parking Structure. Therefore, the removal of 210 existing parking spaces required for Phase II activities would not result in a parking shortfall from existing conditions. As a result, there would be a net increase of 680 parking spaces on the project site by the end of Year 2014, which includes the completion of Phase II activities, and the completion of the planned Bon Air Parking Structure.

During all phases of construction, the contractor would utilize a 26-space parking lot on the hillside for construction parking. These 26 spaces would accommodate construction parking needs for Phase I activities. For the additional phases (Phases II, III, and IV), additional parking would be provided through the lease of an off-site parking lot and shuttle service for workers. The project anticipates continuing its existing parking lease with the St. Sebastian's Church located north of the project site, across Bon Air Road, for the duration of the construction. The parking supply provided on the hillside lot and St. Sebastian's Church would accommodate parking demand for Phases II, III and IV of construction. Furthermore, the provision of parking for construction workers would prevent conflict between parking for staff and the public during construction phasing, and would allow the contractor to manage parking for the construction workers.

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## 4.N Utilities and Service Systems

This section describes the potential impact of the Marin General Hospital Replacement Building Project on the provision of public utility infrastructure and services. Topics analyzed in this section include public water supply, energy supply, sanitary sewer, and solid waste services. An assessment of storm water drainage facilities and impacts is provided in Section 4.H, *Hydrology and Water Quality*.

### Setting

Several publicly-owned utilities extend through the project site as a result of an old street right-of-way for Bon Air Road which was relocated along the front of the hospital property in the 1980's. Although the right-of-way was relocated, the gravity sanitary sewer line and force main, domestic water main, and high pressure gas main remain in the original right-of-way (herein referred to as "old Bon Air Road right-of-way") within an existing public utility easement for access to these utilities. The following provides detailed information regarding existing service systems, the owners and operators of each utility system, and the existing operation of each utility system in and around the project site. Existing and proposed public and private utility service lines are illustrated in **Figure 4.N-1** and **Figure 4.N-2**, respectively. The information on these figures is intended to show, conceptually, the configuration of utility lines on the project site. They are not intended to be a detailed survey of specific utility lines by use; similar categories of utilities (e.g., domestic water and fire water) are grouped by color.

### Water Supply

The Marin Municipal Water District (MMWD) supplies potable water to the project site. The MMWD is a public agency that provides drinking water to 190,000 people in a 147-square-mile area of south and central Marin County. The MMWD provides potable water service and fire flow within its service district. While the MMWD collects the majority of its water from within the County, it also receives an allotment from the Sonoma County Water Agency. The Sonoma County Water Agency serves as the wholesale supplier of water for retail contractors in Sonoma and Marin counties. Water availability, domestic water lines, and fire flow as they pertain to the project are discussed below.

### Water Availability

The current MMWD's Urban Water Management Plan indicates that under normal year water supply conditions, MMWD would have sufficient supplies to meet projected future water demands through 2035, as adjusted for estimated future water conservation savings. Specifically, MMWD would have sufficient supplies to withstand a short-term (single year) and long-term (multi-year) drought scenario. In 2010, the MMWD water supply was 26,112 acre-feet<sup>1</sup> and usage was 25,981 acre-feet, resulting in a marginal surplus in water supply. Similar to conditions

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<sup>1</sup> One acre-foot of water is equal to 325,829 gallons of water. This measurement refers to the amount of water covering one acre to a depth of one foot.

recorded in 2010, the projected water supply is to increase to 29,268 acre-feet by 2035, with a projected demand of 28,381 acre-feet, resulting in a surplus in water supply to accommodate demand (MMWD, 2011).

### ***Existing Water Lines***

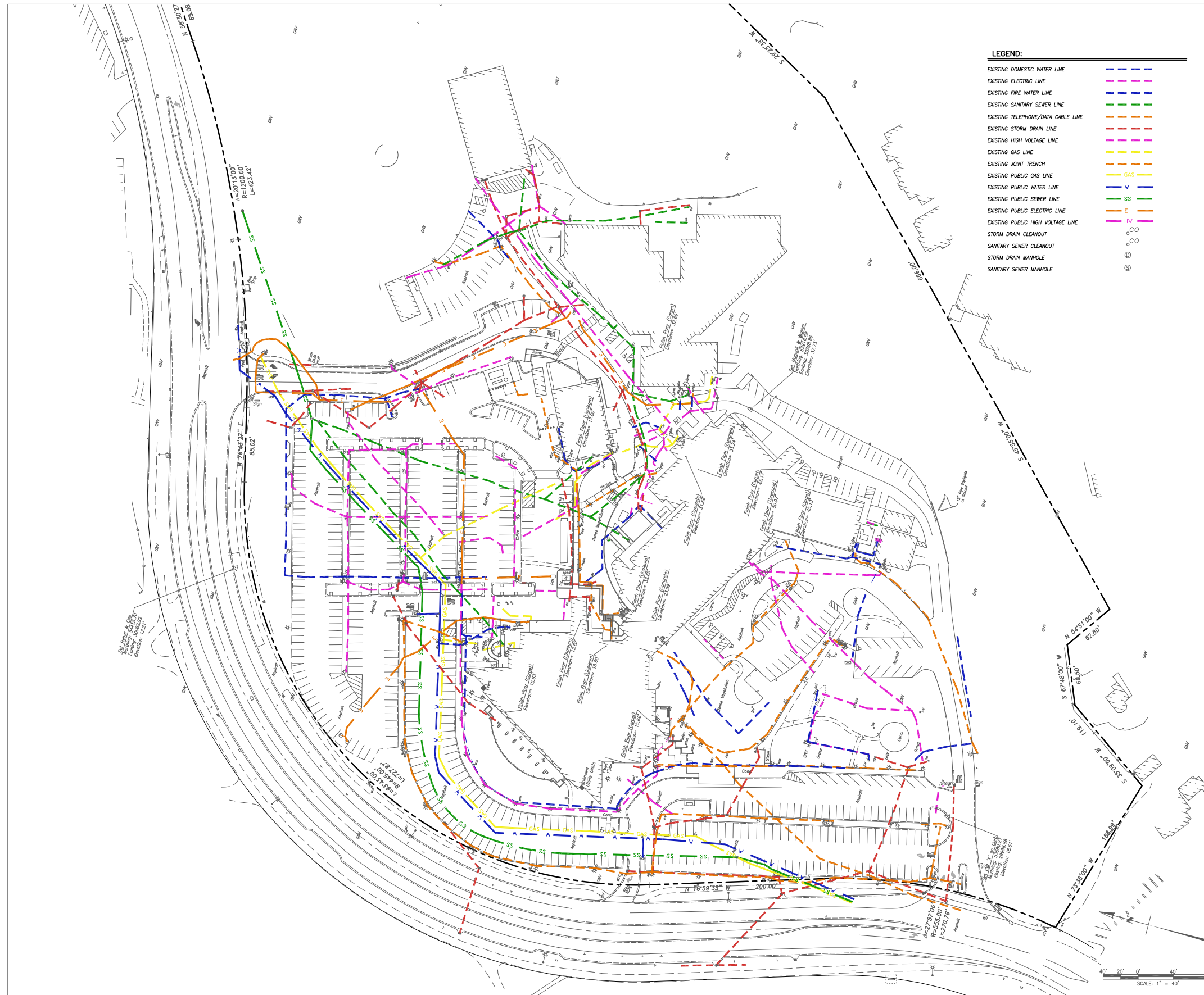
Potable water is provided to the project site from an existing eight-inch diameter high-pressure water main running within the old Bon Air Road right-of-way and through the existing hospital parking lot (KPFF, 2011a). The water main is owned and maintained by the MMWD. Additionally, the MMWD contains approximately 25 miles of recycled water pipelines and serves about 650 acre-feet of recycled water per year through more than 350 service connections. However, there are no existing recycled water mains in the project vicinity (MMWD, 2011). Other water facilities located within the project site include one- to four-inch lateral water lines and non-potable service lines that are owned and maintained by the Marin Healthcare District.

### **Wastewater Treatment Services**

The project vicinity is within the service area of the Ross Valley Sanitary District No. 1 (RVSD), which provides wastewater treatment for several communities, including Kentfield, Greenbrae, Ross, Fairfax, and Larkspur. The RVSD currently operates 20 pumping stations and the average dry-weather flow capacity is five million gallons per day (mgd). Wastewater treatment and recycling facilities are located at 1301 Andersen Drive in San Rafael. Wastewater from the RVSD is conveyed to the Central Marin Sanitation Agency (CMSA), which provides wastewater treatment for municipalities in the San Rafael and Ross Valley areas of central Marin County (MMWD, 2011). Currently, the CMSA treats an average of 11 mgd (CMSA, 2011) with an estimated peak flow of approximately 100 mgd, depending on the tidal conditions (Kennedy/Jenks, 2011). In addition, the CMSA has a capacity to accommodate approximately 125 mgd for primary treatment and up to 30 mgd for secondary treatment (Kennedy/Jenks, 2011). After treatment, the CMSA either discharges through a deepwater outfall to Central San Francisco Bay or to other limited on-site reclaimed use areas.

### ***Existing Sewer Lines***

In the project vicinity, RVSD owns and maintains an existing 12-inch sewer service line that transects through the center of the project site and an eight-inch force main that is a bypass line. RVSD Pumping Station #25, located within the old Bon Air Road right-of-way, near the southern access driveway (KPFF, 2011a). The force main is not regularly used but is under pressure and drains into an eight-inch gravity line that is also located in the right-of-way. RVSD Pumping Station #25 pumps an average of 0.70 mgd, and has a wastewater capacity of 1.41 mgd (RVSD, 2007). Four- to six-inch lateral sanitary sewer gravity lines are also located throughout the project site, and these lines are owned and maintained by the Marin Healthcare District.





**LEGEND:**

PROPOSED DOMESTIC WATER LINE	
PROPOSED ELECTRIC LINE	
PROPOSED FIRE WATER LINE	
PROPOSED SANITARY SEWER LINE	
PROPOSED TELEPHONE/DATA CABLE LINE	
PROPOSED STORM DRAIN LINE	
PROPOSED HIGH VOLTAGE LINE	
PROPOSED GAS LINE	
PROPOSED JOINT TRENCH	
PROPOSED PUBLIC GAS LINE	
PROPOSED PUBLIC WATER LINE	
PROPOSED PUBLIC SANITARY SEWER LINE	
PROPOSED PUBLIC ELECTRIC LINE	
PROPOSED PUBLIC HIGH VOLTAGE LINE	
STORM DRAIN CLEANOUT	
SANITARY SEWER CLEANOUT	
STORM DRAIN MANHOLE	
SANITARY SEWER MANHOLE	
PAVEMENT IMPERVIOUS	
SWALE/FLOW THROUGH PLANTER	

SCALE: 1" = 40'

## Energy Supply

California's major sources of energy are petroleum products (i.e., gasoline, diesel and oil), electricity, and natural gas. The California Energy Commission (CEC) indicates that as of 2011, California crude resources came from in-state (38.1 percent), foreign sources (47.7 percent), and Alaska (14.2 percent). Furthermore, natural gas resources in California came from the Southwest (46 percent), Canada (19 percent), in-state (13 percent), and the Rocky Mountains (22 percent). Sources of electricity production by resource type in California in 2011 included natural gas at 56.7 percent, coal at 1.8 percent, large hydroelectric plants at 12.2 percent, nuclear at 15.3 percent, and renewable at 13.9 percent. Imported electricity from the northwest and southwest added seven percent and 24 percent to the amount of electricity consumed in California, respectively (CEC, 2011).

### *Existing Lines and Pipelines*

Electricity and natural gas is owned, maintained, and distributed in Marin County by Pacific Gas and Electric Company (PG&E). Electricity and natural gas are transported into the County through high-powered electrical transmission lines and natural gas pipelines. Natural gas service in the project vicinity is obtained from a high pressure gas main located within the old Bon Air Road right-of-way, and there are existing gas lines that currently run through the project site. The PG&E transformer on site and all existing gas lines are owned and maintained by PG&E (KPPF, 2011a).

## Solid Waste Generation and Disposal

The Marin County Hazardous and Solid Waste Joint Powers Authority is administered by Marin County Public Works Solid Waste Division. The Marin Sanitary Service (MSS) collects waste and sends it to the Marin Resource Recovery Center, Transfer Station, and the Marin Recycling Center located at 535 Jacoby Street in San Rafael. Currently, the MSS processes approximately 200,000 tons of solid waste per year (Roscoe, 2011). The nearest landfill to the project site is the Redwood Sanitary Landfill in Novato. As of 2011, the Redwood Sanitary Landfill had a total estimated capacity of 26,264,000 tons, and approximately 30 percent of its total storage capacity has not been used, which equates to approximately 7,976,000 tons (McCutcheon, 2011). The permitted maximum disposal at the landfill is 2,300 tons per day (approximately 840,000 tons per year); however, recent data findings indicate that between March 2010 and April 2011, the average daily disposal at the landfill was approximately 860 tons per day (313,900 tons per year), approximately 37 percent of the permitted amount (CalRecycle, 2011; McCutcheon, 2011).

## Regulatory Setting

### Federal

No federal regulations relative to utilities and service systems would be applicable to the project.



## State

### ***Office of Statewide Health Planning and Development (OSHPD)***

The OSHPD is a department of the California Health and Human Services Agency. It serves as the building agency for hospitals and nursing homes in California, monitors the design and construction of inpatient facilities and assures code compliance in facility maintenance. OSHPD's primary goal in this regard is to ensure that patients in these facilities are safe in the event of an earthquake or other disaster, and that the facilities remain functional after such an event in order to meet the needs of the community affected by the disaster. OSHPD has no current regulations relative to sanitary sewer wastes. However starting in 2030, providing on-site supplies of domestic water and holding tanks for wastewater sufficient for 72 hours emergency operations will be required for medical facilities under its purview (OSHPD, 2011).

### **California Integrated Waste Management Act of 1989**

The California Integrated Waste Management Act of 1989 (Public Resources Code [PRC], Division 30), enacted through Assembly Bill (AB) 939 and modified by subsequent legislation, requires all California cities and counties to implement programs to reduce, recycle, and compost at least 50 percent of wastes by the year 2000 (PRC Section 41780). A jurisdiction's diversion rate is the percentage of its total waste that a jurisdiction diverts from disposal through reduction, reuse, and recycling programs. The State, acting through the Department of Resources Recycling and Recovery (CalRecycle)—formerly known as the California Integrated Waste Management Board—determines compliance with this mandate of a 50 percent reduction to the waste stream by January 1, 2000. The diversion rate for Marin County (under Marin Hazardous and Solid Waste Management Joint Powers Authority [JPA]) in 2006 was 72 percent (JPA, 2009).

In accordance with AB 939, the Source Reduction and Recycling Element of Marin County's Integrated Waste Management Plan outlines a course of action for meeting the State's mandate through source reduction, recycling, and composting. The JPA passed a Zero Waste resolution adopting the goal of 80 percent landfill diversion by 2012 and a Zero Waste Goal by 2025 (JPA, 2009).

According to the Marin Countywide Plan, waste diversion rates from Marin County-based landfills are among the highest in California. As of 2002, 71 percent of all waste was diverted to landfills, compared to 24 percent in 1993; resulting in a net increase of approximately 39,328 tons between 1993 and 2002 (a 9.6 percent increase). The Marin Countywide Plan has set a target of matching any increase in solid waste generation with increased recycling through 2020 and maintaining a diversion rate of 75 percent or higher. (MCCDA, 2007)

### ***Senate Bill (SB) 610/Senate Bill (SB) 221***

Senate Bill (SB) 610, codified as Sections 10910-10915 of the California Public Resources Code, requires local water providers to conduct a water supply assessment for projects proposing 500 housing units, 250,000 square feet of commercial office space (or more than 1,000 employees), a shopping center or business establishment with over 500,000 square feet (or more than

1,000 employees), or equivalent usage. A water supply assessment must include water supply and demand information scenarios during a 20-year projection, under normal water conditions, as well as single and multiple drought year conditions. No water supply assessment was required for the proposed project because the net increase in building area or employees did not exceed the applicable thresholds described above.

## **California Energy Commission (CEC)**

The CEC is the State's primary energy policy and planning agency. Created by the Legislature in 1974, the CEC has five major responsibilities: forecasting future energy needs and keeping historical energy data; licensing thermal power plants 50 megawatts or larger; promoting energy efficiency through appliance and building standards; developing energy technologies and supporting renewable energy; and planning for and directing state response to energy emergency.

### ***State of California Energy Action Plan***

Administered by the CEC, the California Energy Action Plan was initially created in 2003 and updated in 2005. The California Energy Action Plan established shared goals and specific actions to ensure that adequate, reliable, and reasonably-priced electrical power and natural gas supplies are achieved and provided through policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers. Also incorporated in the California Energy Action Plan are specific actions reflecting the importance of transportation fuels to California's economy and the need to mitigate the environmental impacts caused by their use, as well as the importance of taking actions in the near term to mitigate California's contributions to climate change from the electricity, natural gas, and transportation sectors.

### ***California's Energy Efficiency Standards for Residential and Nonresidential Buildings of 2005 (Title 24 Building Standards)***

Also administered by the CEC, Title 24 Building Standards were established in 1978 in response to a legislative mandate to reduce California's energy consumption. Last updated in 2008, the standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. Title 24 standards require that new construction include a variety of energy conservation measures including ceiling, wall, and concrete slab insulation; weather stripping on doors and windows; vapor barriers; insulated heating and cooling ducts; water heater insulation blankets; and certified energy-efficient appliances.

## **Local**

### ***Marin Countywide Plan***

The Marin Countywide Plan (MCCDA, 2007) is the County's long range guide for use of land and protection of natural resources. The Plan sets forth policies and programs to be used by the public, planning staff, and decision makers when reviewing and analyzing proposed developments. Goals and policies pertaining to utilities and service systems that are relevant to the project include the following:

### **Public Facilities and Services**

*PFS-2.1 Conserve Water and Utilize Sustainable Sources:* Promote conservation to increase the responsible use and reliability of water supplies. Reduce the waste of potable water through efficient technologies, design, and management practices, and through better matching of the source and quality of water to the user's needs.

*PFS-2.3 Manage Water Resources Sustainably:* Manage water resources to ensure equitable amount of clean water for all users, to support wildlife habitat, and to preserve natural resources within sustainable limits of water supplies.

*PFS-4.1 Reduce the Solid Waste Stream:* Promote the highest and best use of discarded materials through redesign, reuse, composting, and shared producer responsibility.

### **Energy and Green Building**

*EN-1.1 Adopt Energy Efficiency Standards:* Integrate energy efficiency and conservation requirements that exceed State standards into development review and building permit process.

*EN-2.2 Adopt Renewable Energy Building Standards:* Integrate technically and financially feasible renewable energy requirements into development and building standards.

### **Marin County Stormwater Pollution Prevention Program**

The Marin County Stormwater Pollution Prevention Program (MCSTOPPP) is a countywide agency administered by the Marin County Flood Control and Water Conservation District and funded by the 12 municipalities of Marin County. MCSTOPPP assists all municipalities in Marin County with stormwater compliance. Sections 24.04.627 and 23.18 of the Marin County Municipal Code outline the requirements for stormwater pollution prevention. (See the *Regulatory Setting* in Section 4.H, *Hydrology and Water Quality*, for further detail on MCSTOPPP.)

### **Construction and Demolition Waste Recovery Ordinance**

Marin County Ordinance 3389 requires all construction and demolition projects to reuse or recycle at least 50 percent of materials generated. The Marin County CDA may withhold issuance of the final occupancy permit for any covered project unless and until the CDA has approved the recycling/reuse documentation. The CDA shall only approve the recycling/reuse documentation if it indicates that at least 50 percent of all construction and demolition debris generated by the project has been diverted, or is deemed exempt in full by the agency director (Marin County Municipal Code, Title 19, Chapter 19.07).

### **Marin County Green Building Program**

Requirements for sustainable design and construction techniques (green building) have been developed by the Community Development Agency in collaboration with a task force of experts in the fields of construction, architecture, energy consultation, building performance, building inspection, planning, and real estate. The intent of this effort is to establish standardized green building regulations throughout the cities, towns, and unincorporated areas of Marin County. On February 9, 2010, the Marin County Board of Supervisors adopted an ordinance updating Marin

County's Green Building Requirements based on the recommendations of this collaborative effort (Marin County, 2010).

### **Marin County Ordinance 3389**

Section 19.07.010 of Marin County Ordinance 3389 states that a minimum of 50 percent of construction and demolition material from projects should be reused or recycled. This ordinance applies to all building and demolition permits.

## **Impacts and Mitigation Measures**

### **Significance Criteria**

Based on criteria from Appendix G of the State CEQA *Guidelines*, the project would have a significant impact on utilities and service systems if it would:

- a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- b) Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- c) 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;
- d) Require new or expanded entitlements to have sufficient water supplies available to serve the project from existing entitlements and resources;
- e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- f) Not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; and
- g) Comply with federal, State, and local statutes and regulations related to solid waste.

Based on Appendix N of the Marin County Environmental Review Guidelines, the project may also have a significant impact related to utilities and service systems if it would:

- Propose a significant increase in the consumption of potable water (consistent with CEQA Appendix G Criterion d);
- Require substantial expansion of water supply, treatment or distribution facilities (consistent with Appendix G Criterion b);
- Require expansion of wastewater treatment or distribution facilities (consistent with CEQA Appendix G Criterion e); and
- Is a landfill available with sufficient capacity to accommodate the project (consistent with CEQA Appendix G Criteria f and g).

Consistent with Appendix F of the State CEQA *Guidelines*, the section identifies the effects of the Project on local and regional energy resources, and compliance with energy conservation standards.

Based on Appendix N of the Marin County Environmental Review Guidelines, the project may also have a significant impact related to energy if the project would (consistent with CEQA Appendix F):

- Propose to utilize energy, oil, or natural gas in an inefficient manner;
- Encourage activities that would result in the use of large amounts of energy, oil, or natural gas;
- Result in the energy supplier not having the capacity to supply the Project's energy needs with existing or planned supplies; and
- Require the development of new energy resources.

### **Criteria Addressed in Other Sections of this Draft EIR**

The EIR will analyze the project's potential effect on most of the public utilities criteria, listed above. See Section 4.H, *Hydrology and Water Quality*, for a discussion of wastewater treatment requirements of the applicable Regional Water Quality Control Board (criterion "a"), and potential project impacts related to stormwater drainage facilities (criterion "c"). The handling, transport and disposal of medical waste are addressed in Section 4.G, *Hazards and Hazardous Materials*.

## **Impacts and Mitigation Measures**

### ***Water Service and Facilities***

**Impact UTIL-1: The Project would not require new or substantially expanded water facilities or new entitlements. (Less than Significant)**

#### **Service**

The project's demand for potable water supply was estimated based on average water use rates per square foot of new floor space. Operation of the proposed Ambulatory Services Building would generate a demand for approximately 15,000 gallons per day (gpd) of domestic water and the proposed Hospital Replacement Building would generate a demand for approximately 81,000 gpd (compared to the existing hospital demand of approximately 60,800 gpd), for a total estimated average daily domestic water demand of 96,000 gpd. In addition, the project would have an estimated demand of 5,000 gpd for non-potable landscape irrigation purposes. Total estimated peak flows (used to size plumbing systems) is approximately 480 gallons per minute (gpm): 200 gpm for the Ambulatory Services Building and 280 gpm for the Hospital Replacement Building.<sup>2</sup> These estimates do not include estimated water demand for sprinkler/fireflow services, which is discussed below (KPFF, 2011b). Also these estimates only

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<sup>2</sup> Water flows obtained from project mechanical engineer and existing flows determined from 12-month billing cycle obtained from the Marin Healthcare District. These estimates do not reflect subtracting out a portion of the existing hospital being replaced.

consider new uses proposed on the project site; existing water demand from uses that would be removed from the project site is not deducted, therefore, it is a conservative estimate for this analysis.

As stated above in the setting section, the MMWD currently has adequate supply to withstand a multi-year drought and is operating with a surplus. Future increases in demand and supply are projected to yield a greater surplus in water supply by 2035. Therefore, the MMWD has sufficient resources to supply the project.

Further, the project has incorporated several water conservation initiatives in order to reduce utility demands. The project's objectives include the stated goal for sustainable project design that achieves a rating equivalent to LEED® Silver and the LEED® for Healthcare Rating System modeled after the Green Guide for Health Care (GGHC). Consistent with this goal, the project proposes to incorporate the following components that promote water and energy conservation and waste generation associated with the project. Each of these project components summarized below are described in greater detail in Section 3.5.5, *Sustainability Elements*, in Chapter 3, Project Description, of this Draft EIR:

- *Water Efficient Landscaping* to reduce potable water consumption for irrigation by 50 percent from a calculated midsummer baseline case;
- *Building Systems Set to Operate at Optimal Efficiency* to achieve increasing levels of energy performance beyond the prerequisite standards;

Also, the project would comply with the MMWD's Water Conservation Ordinance 414, which requires the project applicant to prepare and submit for review and approval a landscape plan, irrigation plan and grading plans for projects on sites with grades over 10 percent.

### **Infrastructure**

As shown in Table 3-3, Required Utility Infrastructure by Project Building (see Chapter 3, Project Description), water service and infrastructure, including for irrigation, is required for each of the proposed major project buildings and parking structures. MMWD has indicated that it would serve the project upon installation, realignment, and modification of approved infrastructure (Eischens, 2010). MMWD would provide water from the existing high-pressure water main running within the old Bon Air Road right-of-way and through the existing hospital parking lot. To avoid conflict with the proposed Bon Air Road Parking Structure, a portion of the existing public water main would be relocated from the old Bon Air Road right-of-way to the project site for approximately 580 linear feet, where the line would connect back into the Bon Air Road right of way mains located in front of the existing West Wing Building (as discussed further in Impact UTIL-5, below).

The relocated high-pressure main would be upgraded from an eight-inch line to a proposed 12-inch line by the MMWD. The proposed connection to the planned Hospital Replacement Building domestic service would include a six-inch water lateral from the existing main that would travel through the hospital parking lot. The service systems located within the old Bon Air Road right-of-way and the existing Bon Air Road right-of-way are owned and maintained by MMWD; therefore relocation of a portion of the water main from these right-of-ways would be

permitted through a public utility easement approved and granted to the MMWD prior to any relocation activities. For activities within the project site, no easements would be required, as existing and future lines would be owned and maintained by the Marin Healthcare District. A new water line easement granted to MMWD would be required from the connection point on the project site to the current Bon Air Road right-of-way.

The existing Marin Community Mental Health Building and the West Wing of the existing hospital would use existing water utility service connections. It may be necessary to relocate or reroute these utilities around proposed development and reconnect to the service connection points. The proposed Hospital Replacement Building would include an eight-inch fire water service pipe designed to provide fire flows of approximately 2,125 gpm at a minimum pressure of 20 pounds per square inch (psi). The remaining on-site water distribution system would include a combined service eight-inch main designed to provide both domestic and fire water to the remaining proposed development. This water line would be designed to provide approximately 4,000 gpm flow at a minimum pressure of 20 psi for fire requirements. The fire flow demand for the Hospital Replacement Building, Hillside Parking Structure, Bon Air Road Parking Structure, and the Ambulatory Services Building would total up to 9,250 gpm (for four hours) and the fire sprinkler demand for these facilities would total up to 1,823 gpm (for four hours).

Consistent with standard development practices, all modifications and improvements to the existing water supply system infrastructure required to accommodate the project would be determined in consultation with MMWD upon application for water service. As such, fire flow, fire sprinkler, irrigation, and domestic water demands would be provided to MMWD to ensure appropriate sizing of the realigned water main. To ensure adequate and mandated fire flow infrastructure, the project would also provide two required aboveground backflow preventers in parallel for each fire water service, fire department connections located within 30 feet of fire hydrants, and flows to ensure minimum 150-foot coverage radius for all fire hydrants.

### **Summary**

Overall, the required expansion and construction of new water distribution facilities are considered a part of the project, and the potential construction-related environmental impacts associated with these activities are assessed and mitigated as warranted throughout the impact analysis in Chapter 4 of this Draft EIR. Potential construction period impacts to water utilities and service systems are discussed in Impact UTIL-5, below.

In summary, the project would not require the construction of new or expanded water supply facilities or new entitlements due to increased demand that would result in a significant impact. Because the project would be required to comply with all regulations and easements approved, and granted by the MMWD and applicable public service departments, the project would result in a less-than-significant impact to water service and facilities.

**Mitigation:** None required

## **Wastewater Service and Facilities**

### **Impact UTIL-2: The Project would not require expanded wastewater treatment services. (Less than Significant)**

#### **Service**

As discussed in the setting section above, the RVSD Pumping Station #25 currently has a wastewater flow capacity of 1.41 mgd. Based on the estimated 2,035 new fixture units associated with the Hospital Replacement Building and Ambulatory Services Building, the project would generate up to approximately 73,000 gpd of wastewater flow. This estimated generation would not disrupt the pump station's ability to transport wastewater from the project site to CMSA for treatment. With an average daily flow of 11.0 mgd and a capacity to treat 30.0 mgd, CMSA currently has excess capacity to provide primary and secondary wastewater treatment. Additionally, the proposed wastewater conveyance system is designed to accommodate the estimated volumes.

The hospital is the majority generator of wastewater flow on the project site. The current quantity of wastewater flow generated by the existing hospital is 56,000 gpd compared to the 73,000 gpd estimated for the Hospital Replacement Building and Ambulatory Services Building.<sup>3</sup>

As discussed above in Impact UTIL-1, the project would incorporate the several components consistent with the project's stated goal for sustainable project design that achieves a rating equivalent to LEED® Silver and the LEED® for Healthcare Rating System modeled after GGHC. Relevant to wastewater demand, the project would implement the following (described in greater detail in Section 3.5.5, *Sustainability Elements*, in Chapter 3, Project Description, of this Draft EIR):

- *Building Systems Set to Operate at Optimal Efficiency* to achieve increasing levels of energy performance beyond the prerequisite standards;

#### **Infrastructure**

As shown in Table 3-3, Required Utility Infrastructure by Project Building (see Chapter 3, Project Description), sanitary sewer is required for the Hospital Replacement Building and the Ambulatory Services Building only. The project would require the relocation of about 580 linear feet of the existing 12-inch sanitary sewer line into the Bon Air Road right of way, which will require a RVSD-granted public utility easement (as discussed in more detail in Impact UTIL-5, below) since the line is owned and maintained by the RVSD. The extension of the line into the right-of-way is intended to avoid disruption to the driveway if future work on the line is required. The applicant would be required to file an Application of Capacity with RVSD to connect to RVSD's sewer collection system and treatment plant. RVSD regulations do not allow a building to be built over a sanitary line. RVSD also owns and maintains the sanitary sewer line through the project site, therefore a new easement would be required from the point of connection at the existing line, near the existing Community Mental Health Building, to the public right of way (as

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<sup>3</sup> Wastewater flows obtained from project mechanical engineer and existing flows determined from 12-month billing cycle obtained from the Marin Healthcare District.



further described in Impact UTIL-5). The timing for work within the old Bon Air Road right-of-way would be dependent on overall project permit approvals with all the jurisdictional agencies and final project phasing. Sanitary sewer service would be operational and unobstructed during the relocation process. Upon completion and approval of the realigned sanitary sewer facilities, the existing sewer line would be decommissioned and removed per RVSD standards. The existing force main would be altered but not realigned.

### **Summary**

Overall, the required expansion and construction of new wastewater distribution facilities are considered a part of the project and the potential construction-related environmental impacts associated with these activities are assessed and mitigated as warranted throughout the impact analysis in Chapter 4 of this Draft EIR. Potential construction period impacts of the project to sanitary sewer utilities and service systems are discussed in Impact UTIL-5, below.

Based on current capacity levels and wastewater treatment rates by the RVSD (system-wide and at Pumping Station #25) and CMSA, it is anticipated that these service providers would have sufficient capacity to convey and treat the wastewater generated by the project. Thus, the project's effect on wastewater treatment or distribution facilities and demand for wastewater treatment services would be less than significant.

**Mitigation:** None required

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### ***Solid Waste***

#### **Impact UTIL-3: The Project would not be served by a landfill with insufficient permitted capacity or conflict with solid waste regulations. (Less than Significant)**

Marin General Hospital, as recorded in 2009, generated an average total of approximately 880 tons of solid waste (approximately 2.4 tons of solid waste per day), and recycled approximately 30 percent (about 264 tons) of its waste. Marin General Hospital was a recipient of the 2010 Waste Reduction Awards. Past performance measures included the purchase of recycled-content paper, its continued sustainable and ethical practices, and recycling approximately 30 percent of its total solid and medical waste. The project would continue to uphold its commitment to recycling activities and efficient environmental practices to reduce overall solid waste generation. It is anticipated that the Hospital Replacement Building would generate and recycle consistent with current existing conditions.

As previously discussed, the project would incorporate the several components consistent with the project's stated goal for sustainable project design that achieves a rating equivalent to LEED® Silver and the LEED® for Healthcare Rating System modeled after GGHC. Relevant to solid waste generation, the project would include the following (as mentioned in Section 3.5.5, *Sustainability Elements*, in Chapter 3, Project Description, of this Draft EIR):

- *Construction Waste Management Plan* to divert construction and demolition debris from disposal in landfills and incineration facilities. Specifically, redirect recyclable recovered resources back to the manufacturing process and reusable materials to appropriate sites. Recycle and/or salvage nonhazardous construction and demolition debris. At a minimum the plan will identify the materials to be diverted from disposal and whether the materials will be sorted onsite or comingled. The project would comply with County of Marin Ordinance No. 3389 regarding Construction and Demolition Waste Recovery.

Currently, MSS processes approximately 200,000 tons of solid waste per year (Roscoe, 2011) and the Redwood Sanitary Landfill is permitted to process approximately 840,000 tons per year (CalRecycle, 2011). The estimated amount of solid waste associated with the proposed Hospital Replacement Building would be similar to the current amount of waste being produced by the existing hospital; the annual solid waste generation of the hospital campus with the project would continue to produce approximately 800 to 900 tons per year, including a continuation of the hospital's 30 percent recycling of its total solid and medical waste. Some reduction in solid waste generate is anticipated given the project's sustainability goals discussed above.

The proposed Ambulatory Services Building would be the primary source of new solid waste associated with the project site. Change in solid waste generation considering portions of the existing hospital to be removed or renovated, the removal of relatively small existing buildings on the campus, as well as the addition of new parking structures, would not be substantial. Using the most conservative estimate from a range of solid waste generation rates data compiled by land uses statewide, the Ambulatory Services Building could conserve as much solid waste per year as the Hospital Replacement Building (CIWMB, 2012).

The increased generation from the project site would represent less than one percent (0.45 percent) of current processing 0.11 percent of the landfill's existing capacity. Conservatively adding the continued 800 to 900 tons per year estimated from the Hospital Replacement Building for a total of approximately 1,800 tons per year, the total solid waste generation would still represent less than one percent (0.90 percent) of current production levels and approximately 0.21 percent of the landfill's existing capacity.

Based on the expected solid waste generation and Marin General Hospital's ongoing commitment to award-winning, sustainable practices, it is expected that MSS and the Redwood Sanitary Landfill would have sufficient permitted capacity to accommodate the project's solid waste disposal needs. The impact would be less than significant.

**Mitigation:** None required

## **Energy**

### **Impact UTIL-4: The Project would not be served by energy suppliers with inadequate capacity and would not conflict with energy conservation standards. (Less than Significant)**

#### **Service**

The project would result in an incremental increase in energy consumption, specifically the demand for electrical power and gas, given the net increase in development with the Ambulatory Services Building and the new parking structures.

The existing campus (which includes facilities not affected by the project) consumes approximately 8,500,000 kilowatt hours (kW-h) per year and approximately 438,000 therms of natural gas per year (PG&E, 2012). The amount of energy usage associated with the proposed Hospital Replacement Building is estimated to be similar to existing demand, particularly factoring in increased energy efficiencies that are anticipated, as discussed below.

The proposed Ambulatory Services Building and new parking structures would be primary sources of increased energy use associated with the project. Based on data compiled regarding average energy consumption by land use, an outpatient health facility (medical office buildings) consumes slightly less than half of that used for an inpatient health facility (hospital) (USDOE, 2012). Both the Ambulatory Services Building and parking structures are typical functions associated with modern hospital facilities and are not land uses that would substantially increase energy use on the project site to the degree that would exceed the PG&E's capacity, conflict with energy conservation standards, or result in the large or inefficient use of energy, oil, or natural gas. Change in energy use resulting from portions of the existing hospital being removed or renovated, and the removal of relatively small existing buildings on the campus, would not be substantial.

Overall, the level of public energy required of the project would not be expected to violate applicable statutes and regulations relating to energy standards, exceed PG&E's service capacity, or require new or expanded facilities. The project would be required to comply with all standards established by Title 24 of the California Code of Regulations and, where applicable, OSHPD regulations for hospital buildings and related uses. The design and operation of all structures on the campus would be aimed at the incorporation of energy-conserving design and construction.

As previously discussed, the project would incorporate the several components consistent with the project's stated goal for sustainable project design that achieves a rating equivalent to LEED® Silver and the LEED® for Healthcare Rating System modeled after GGHC. Relevant to energy consumption, the project would include the following (described in greater detail in Section 3.5.5, *Sustainability Elements*, in Chapter 3, Project Description, of this Draft EIR):

- *Building Systems Set to Operate at Optimal Efficiency* to achieve increasing levels of energy performance beyond the prerequisite standards to reduce environmental and economic impacts associated with excessive energy use;

- *Evening Only Use of Emergency Lighting* to reduce energy usage.<sup>4</sup>

### **Infrastructure**

As shown in Table 3-3, Required Utility Infrastructure by Project Building (see Chapter 3, Project Description), electrical and gas is required for the Hospital Replacement Building and the Ambulatory Services Building; Electrical service only is required for the parking structures.

A portion of the existing PG&E natural gas lines would be relocated from the old Bon Air Road right-of-way and then onto the project site for approximately 580 linear feet, where the lines would connect back into the Bon Air Road right-of-way high pressure main located in front of the West Wing Building. The gas service lines located within the old Bon Air Road right-of-way, the existing Bon Air Road right-of-way, and within the project site are owned and maintained by PG&E. Therefore, relocation of existing lines within the right-of-ways and construction of new lines within the project site would be permitted through a public utility easement approved and granted to PG&E prior to any relocation and construction activities. In addition, during these activities, the existing public utility easements that run with the PG&E gas lines would need to be quit-claimed and new easements created based on the final realignment of these utilities.

### **Summary**

In summary, the project would not exceed the energy provider's capacity to supply the project's energy need, conflict with energy conservation standards, or result in the large or inefficient use of energy, oil, or natural gas. The project's impact related to the provision of energy services would be less than significant.

**Mitigation:** None required

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### ***Construction Period Demand and Facilities***

**Impact UTIL-5: Construction of the Project would not use or encourage large or inefficient use of energy, exceed the energy supplier's existing capacity, or conflict with energy conservation standards. (Less than Significant)**

### **Service**

Temporary construction activities would use power and water from existing facilities. Construction activities for the project would involve the typical use of heavy machinery, equipment and haul trucks for the transport of materials. The contractor(s) for the project would use energy efficient lighting for their temporary and security lighting and water use would be minimized to critical activities (dust control, etc.). Furthermore, the applicant's contractor(s) would use the minimum amount of water and energy required to safely perform the construction

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<sup>4</sup> Access to the rooftop of the parking structures will be restricted, thereby reducing the lighting needs; however code requirements for minimum lighting levels will be provided.

activities. For example, excavation activities would require a water truck once a day to clean up the site. Estimates of the volume of water used during dust control would be provided in the detailed construction management plan to be submitted during Design Review, as discussed below.

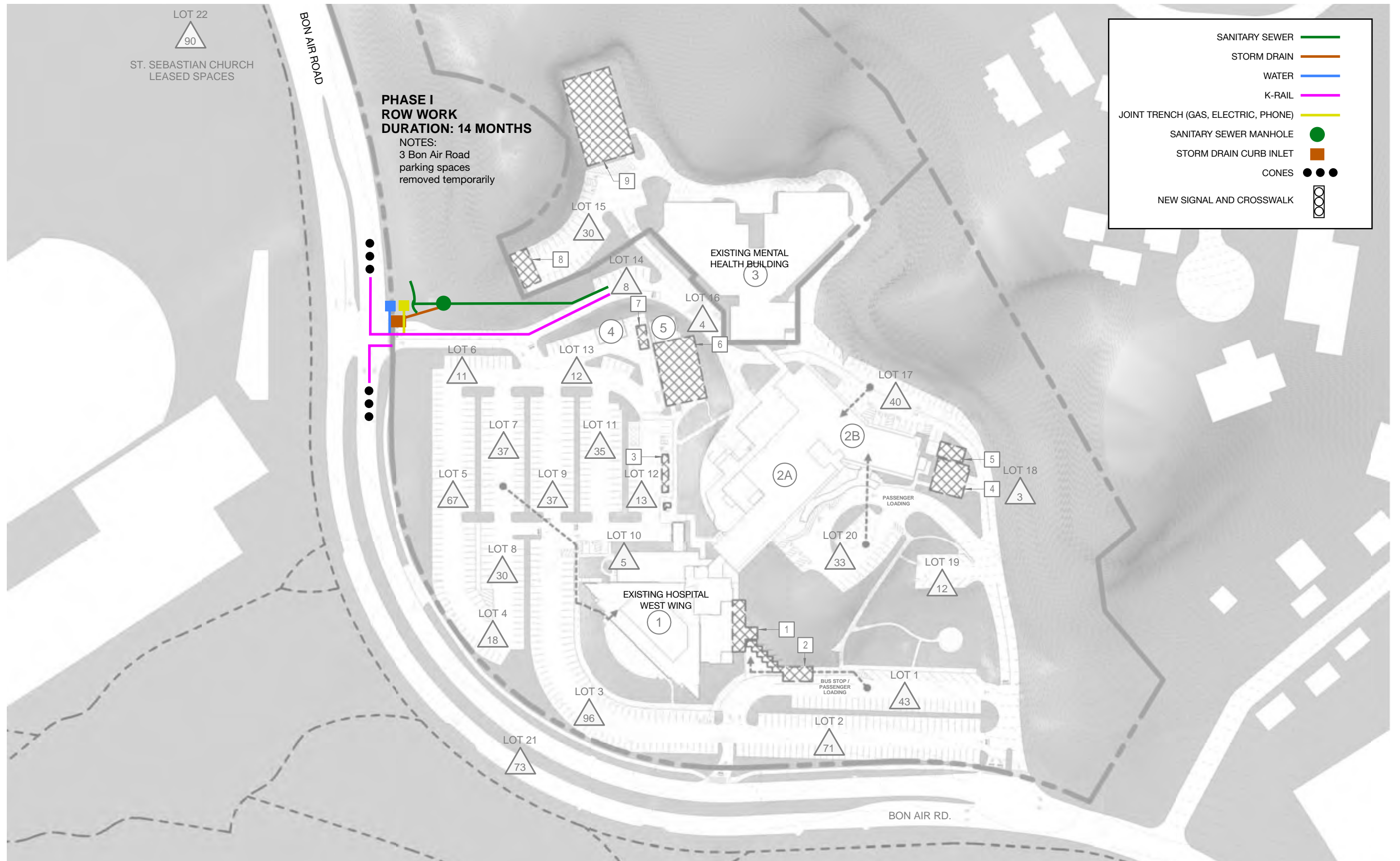
The project would comply with County Ordinance 3389 divert at least fifty percent of all construction and demolition debris associated with the project. Further, consistent with the project's stated goal for sustainable project design that achieves a rating equivalent to LEED® Silver and the LEED® for Healthcare Rating System modeled after GGHC, the project would send excess soils, asphalt, and concrete to appropriate disposal sites, designated dumpsters for waste would be available on site during construction. The detailed construction management plan to be provided at the Design Review would include the location of the construction dumpsters and anticipated schedule for dumpster pick-up. During construction the project would have typically three dumpsters for waste: one each for metal, drywall and general debris. Waste management companies provide a service that sorts the general debris dumpster and provides a report indicating the amount of recycled material. The project would also comply with LEED®'s requirement that coordination between contractor(s) and local waste management companies occurs regarding any reuse of construction material.

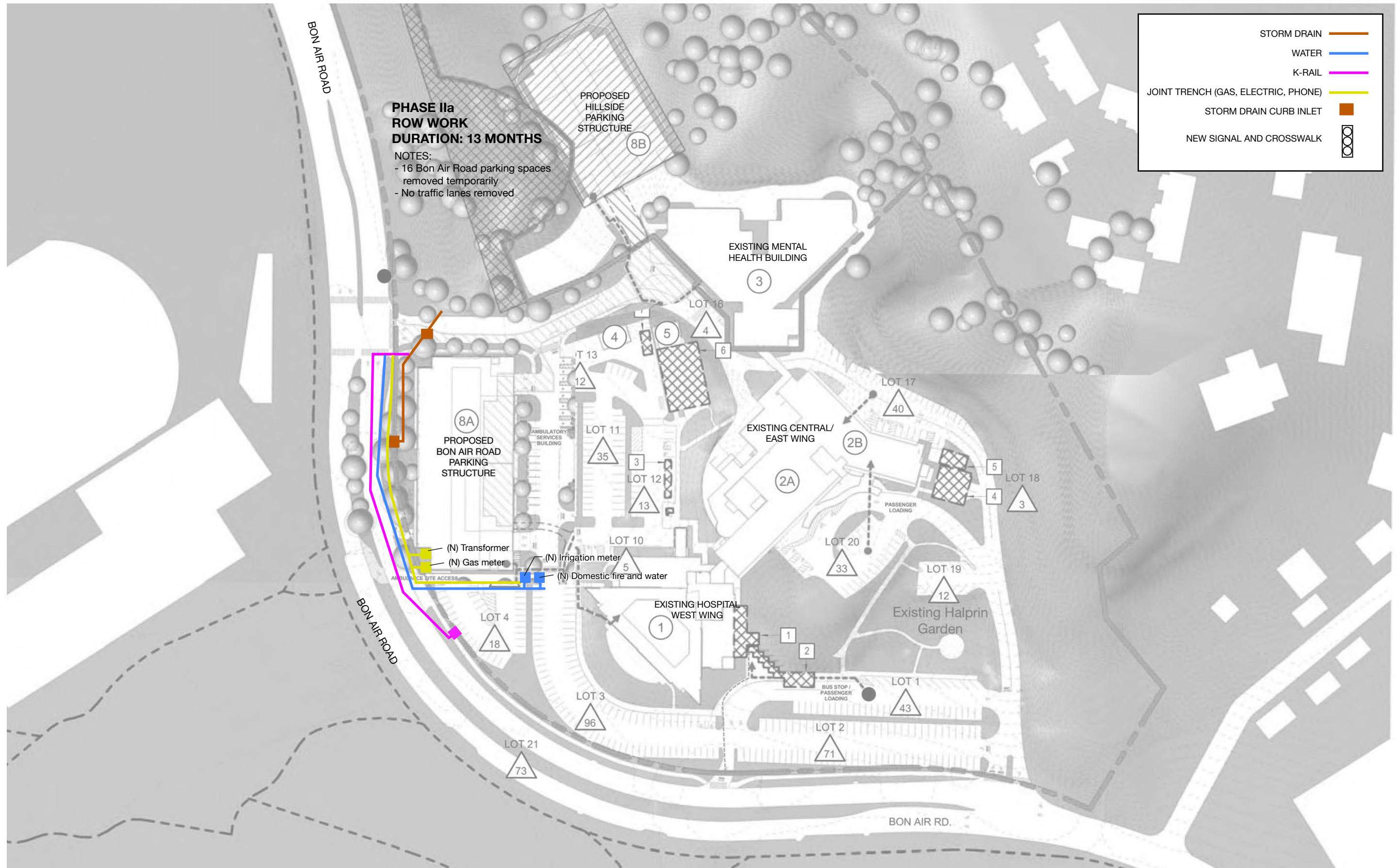
## Construction Logistics

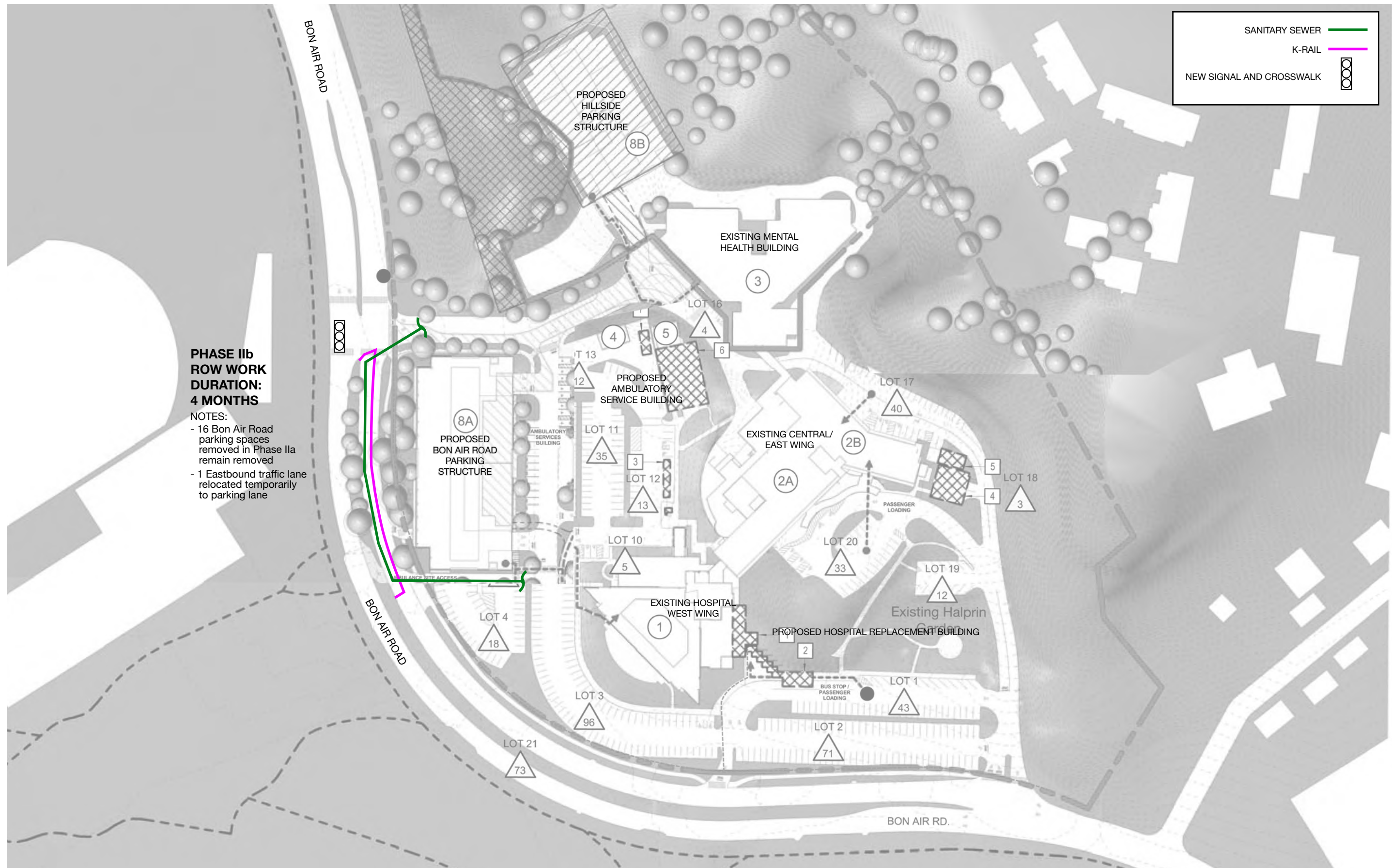
As discussed in Section 3.7.1, *Construction Schedule and Activities* (see Chapter 3, Project Description), the project would be developed in phases, and the detailed construction management plan would address all aspects of construction activity for each phase of construction. These aspects include but are not limited to emergency vehicle access routes, accessible pedestrian paths of travel, construction boundaries, construction worker parking areas, construction material lay-down and storage areas, as well as the aforementioned estimated volume of debris leaving the site, water use estimates for dust control, and construction dumpster logistics. The detailed construction management plan would also include a construction schedule, erosion and sediment control measures, and public right-of-way traffic control plans consistent with Marin County standards.

The following presents some of the information that will be presented in detail in the construction management plan to be submitted at Design Review, specifically a right of way work logistics plan for each phase of construction.

The phasing plan for the relocation and/or installation of utility infrastructure involving public right-of-ways is described below and depicted conceptually in **Figure 4.N-3, Phase I Right of Way Utilities Work; Figure 4.N-4, Phase IIa Right of Way Utilities Work; Figure 4.N-5, Phase IIb Right of Way Utilities Work; and Figure 4.N-6, Phase V or VI Right of Way Utilities Work.**














K-RAIL 

JOINT TRENCH (GAS, ELECTRIC, PHONE) 

NEW SIGNAL AND CROSSWALK 

**PHASE IVb**  
**ROW WORK DURATION:**  
**6 MONTHS**

NOTE:  
 Conduits for electrical feed  
 only

**PHASE V OR VI**  
**ROW WORK**  
**DURATION:**  
**4 MONTHS**

NOTE:  
 Signal and crosswalk  
 only

- **Phase I** (Figure 4.N-3) illustrates conceptually the right of way work that would occur during site preparation and construction of the Hillside Parking Structure and that will occur over a period of approximately 14 months. Specifically:
  - K-Rails, which are temporary concrete traffic barriers, placed in part of the Bon Air Road right-of-way and the length of the access road would separate the construction area from the street traffic. Traffic on the upper segment of the access road to the Community Mental Health Building would be restricted to one lane, and two lanes would be maintained on the lower segment - from Bon Air Road to the internal driveway.
  - A new sanitary sewer line would extend from the Hillside Parking Structure, down the north access road, where it would cross the sidewalk about halfway down the roadway and enter the hillside and tie into the existing manhole in the landscaped area east of the north access road intersection with Bon Air Road. A future sanitary sewer line would then extend from the manhole into Bon Air Road. The sanitary sewer line is the only utility that will encroach into the public right of way in this phase.
  - With K-Rails and cones, eastbound traffic on Bon Air Road toward Sir Francis Drake Boulevard would be restricted to one lane for approximately 90 feet in front of the north access road entrance. The existing bus stop at Bon Air Road and the north access road would be moved west about 100 feet and would temporarily remove three of the on-street parking spaces on Bon Air Road.
  - A proposed traffic signal and crosswalk at Bon Air Road and the north access road intersection would be constructed during this phase. Traffic controls would be set to restrict vehicle traffic to one lane during the crosswalk installation.
  - Overall site preparation for this phase would involve temporary fencing set up around the perimeter of the construction area for the Hillside Parking Structure, and “orange netting” that would restrict access to the existing landscaped area along the north access roadway. The existing sidewalk or a temporary sidewalk on the north side of the existing access roadway would be maintained from Bon Air Road uphill to the existing Marin Community Mental Health Building. The construction management trailer will be situated in the existing hillside parking lot. These conditions will be in place for the duration of the Hillside Parking Structure construction.
- **Phase IIa** (Figure 4.N-4) illustrates conceptually the right of way work that will be in place for up to 14 months during construction of the Bon Air Road Parking Structure. This phase primarily relocates public utilities that are buried beneath the proposed footprint of the Bon Air Road Parking Structure. Specifically:
  - K-Rails would be located in Bon Air Road and temporarily remove 16 parking spaces along Bon Air Road; no traffic lanes would be removed. This phase of construction would impact the sidewalk along the hospital side of Bon Air Road. Pedestrian traffic would be directed to cross the street at the crosswalk proposed in Phase I and the existing crosswalk at Bon Air Road and South Eliseo Drive to the south.
  - The water line would have an individual trench running 400 feet from the north access road entrance to the proposed emergency vehicle road entrance (immediately west of the Bon Air Road Parking Structure), where it would continue onto the project site and reconnect to the existing water line.

- Stormwater drainage would run 125 feet from the north access road entrance to an existing storm drain inlet at the curb of Bon Air Road.
- Gas, electric, and phone would be located in a joint trench that runs 400 feet from the north access road entrance to the proposed emergency vehicle road entrance (immediately west of the Bon Air Road Parking Structure). At that point, gas would continue onto the project site and reconnect to the existing gas service; phone would continue to the project site and terminate at the existing “main point of entry”; electric would terminate at a proposed new transformer at the emergency vehicle road entrance.
- Sanitary sewer would not be affected in this phase.
- **Phase IIb** (Figure 4.N-5) illustrates changes to Bon Air Road traffic lanes that would be in place for approximately four months in front of the Bon Air Road Parking Structure, and the sanitary sewer line relocation that would occur in this phase. Specifically:
  - K-Rails would be moved further into Bon Air Road and run down the middle of the travel lane for approximately 450 feet. The 16 on-street parking spaces removed in Phase IIa would continue to be removed from service, and traffic would move through this parking area.
  - The sanitary sewer line would run 400 feet along the length of Bon Air Road, close to the center median, from the north access road to the emergency vehicle road entrance. At that point it would turn back onto the project site and reconnect to the existing sanitary sewer line.
- **Phase IVb** (Figure 4.N-6) illustrates right of way work that would be in place in Bon Air Road for approximately six months. Specifically:
  - Three islands formed of K-Rails would be created to install electrical conduits under the roadway.
  - Removal of one street light standard.
- **Phase V or VI** (Figure 4.N-6) illustrates the right of way work that would be in place in Bon Air Road for approximately four months. Specifically:
  - A proposed traffic signal and crosswalk at Bon Air Road and the south access road intersection would be constructed during either Phase V or VI.

### **Service Coordination and Continuity**

The contractor(s) for the project would enter into an agreement with each utility provider for each existing service line that would be affected by the project. Performance of construction activities and schedule for any work associated with the reconfiguration of the existing systems would be coordinated with the construction phasing with appropriate lead time given for review and approval from each utility provider.

Existing service volume, pressure, electricity, and telecommunications would be maintained during construction activities such that no interruption to service would occur until the planned

realigned utilities and all appurtenances have been inspected and approved. At such time the new service system (water, sewer, gas, and electricity) would be brought online and the old system cut. Typically the switch over occurs during non- peak times and would require minimal down time as required by appropriate agencies (i.e., MMWD, RVSD, PG&E, Kentfield Fire District, and Marin County Fire Department). To ensure continuity of utility services to the project site during construction, and avoid the inadvertent damage to or conflict with existing infrastructure, the project applicant would prepare and submit a Preconstruction Plan and Advanced Construction and Emergency Plan to the County for review and approval prior to the start of construction activities. Elements of the plan would include, but not be limited to confirmed utility line locations; notification requirements to utility service providers and the public; specifications for work to be conducted; as well as a plan for emergency response and notification in the event of leaks or ruptures.

### **Summary**

In summary, the impact of the project regarding its temporary use and disposal of water, consumption of energy, and generation and disposal of solid waste resources during construction activities would be less than significant.

**Mitigation:** None required

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## **Cumulative Impacts**

**Impact UTIL-6: The Project, in combination with other past, present, and reasonably foreseeable development, would not result in cumulative impacts on utilities and service systems. (Less than Significant)**

### ***Geographic Context***

The cumulative context for utilities and service systems and energy consists of the project site in addition to all areas of the broader surrounding area since utilities services are provided countywide as well as regionally.

### ***Impacts***

#### **Water Supply and Facilities**

The project, combined with past, present, and reasonably foreseeable projects in the area, could result in a cumulative increase in demand for water service. However, as discussed in the above analysis, the project would not exceed water supplies available to serve the project, and MMWD, which considers cumulative needs throughout its service area, has indicated that it has an adequate supply to withstand a multi-year drought and is operating with a surplus; future increases in demand and supply are projected to yield a greater surplus in water supply by 2035. Additionally, the increases in demand attributable to cumulative development would be addressed on a site-by-site basis by the MMWD prior to approval of new development. All cumulative projects will be

required to comply with applicable ordinances and policies regarding water supply, as well as water conservation measures. Wherever feasible, all cumulative projects would participate in water recycling programs established by the MMWD. Development of the project and other future projects may involve improvements to existing water utility lines and may result in construction impacts. Overall, the effect of the project, in combination with other past, present, and reasonably foreseeable projects would be less than significant.

### **Wastewater Facilities**

The project, combined with past, present, and reasonably foreseeable projects in the area, could result in a cumulative increase in wastewater generation, resulting in significant effects to the wastewater treatment facility serving the project site. However, based on the above-mentioned findings, it is not anticipated that the wastewater demands of the project combined with other cumulative development in the vicinity of the project would exceed RVSD and CMSA's capacity to serve the project's projected demand in addition to their existing commitments within their service area. As with past and present projects, including the proposed project, foreseeable projects will be required to comply with county and other local programs and ordinances intended to ensure the adequate function and capacity of the sanitary sewer system. Overall, the cumulative effect of the project on the need for new or expanded wastewater conveyance and treatment facilities, in combination with other past, present, and reasonably foreseeable projects, would be less than significant.

### **Solid Waste**

The project, combined with past, present, and reasonably foreseeable projects in the area, could result in a cumulative increase in solid waste and debris generated by the project. However, comprehensive implementation of waste reduction and diversion requirements and programs by the project, as well as by other cumulative development where feasible, would continue to reduce the combined volume of solid waste and debris that would reduce the capacities of existing landfills. Given that MSS currently processes approximately one quarter of the annual solid waste capacity of the Redwood Sanitary Landfill, it is reasonable to determine that the project, in combination with other past, present, and reasonably foreseeable projects, would not result in the need for new or expanded landfill facilities or impede the County's ability to meet mandated waste diversion requirements. As such, the impact would be less than significant.

### **Energy**

Despite annual statewide increases in energy consumption, energy use by the proposed project, combined with past, present, and reasonably foreseeable projects in the area, would be minimal relative to the regional service area and not require expanded or new power facilities. Cumulative development has and will continue to occur primarily in areas already served by gas and electricity infrastructure, and the net increase in energy demand from this development will be required to comply with all standards of Title 24 of the California Code of Regulations; the project would adhere to OSHPD standards. Overall, the effect of the proposed project on energy consumption levels, in combination with past, present, and reasonably foreseeable projects, would be less than significant.

**Mitigation:** None required

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<http://buildingsdatabook.eren.doe.gov/ChapterIntro3.aspx?3#1>, accessed May 31, 2012.

# CHAPTER 5

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## Alternatives

The chapter describes and evaluates alternatives to the Marin General Hospital Replacement Building Project, pursuant to CEQA *Guidelines* Section 15126.6.

### 5.1 CEQA Requirements

CEQA requires an evaluation of the comparative effects of a reasonable range of alternatives to a project. The alternatives considered should feasibly attain most of the basic objectives of the project and avoid or substantially lessen one or more of the significant effects of the project. The discussion of alternatives in the EIR is to focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if such alternatives would impede, to some degree, the attainment of the project objectives, or would be more costly (CEQA *Guidelines* Sections 15126.6[a] and 15126.6[b]).

### 5.2 Factors Considered in Selection of Alternatives

This chapter (1) presents a meaningful comparative analysis of the project and the alternatives, (2) discusses any alternatives that were considered by the Lead Agency but that it rejected as infeasible for detailed analysis in this EIR, and (3) provides a comparative evaluation of the project to a “no project” alternative (CEQA *Guidelines* Sections 15126.6[c], 15126.6[d] and 15126.6[e]).<sup>1</sup>

The CEQA *Guidelines* recommend that an EIR briefly describe the rationale for selecting the alternatives to be discussed (CEQA *Guidelines* Section 15126.6[c]). The nature and scope of the reasonable range of alternatives to be discussed is governed by the “rule of reason.” The goal of the alternatives analysis considers the following factors:

- The extent to which the alternative would accomplish most of the basic goals and objectives of the project;
- The extent to which the alternative would avoid or lessen the identified significant and unavoidable environmental effect of the project;

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<sup>1</sup> Given the nature of the Marin General Hospital Replacement Building Project, more than one “no project” alternative is considered, as discussed in Section 5.2.3.



- The feasibility of the alternative, taking into account site suitability, availability of infrastructure, general plan consistency, and consistency with other applicable plans and regulatory limitations;
- The extent to which an alternative contributes to a “reasonable range” of alternatives necessary to permit a reasoned choice; and
- The requirement of the CEQA *Guidelines* to consider a “no project” alternative and to identify an “environmentally superior” alternative in addition to the no-project alternative.

### 5.2.1 Basic Goals and Objectives of the Project

As stated in the first factor bulleted above, the selection of alternatives shall consider the basic goals and objectives of the project. The basic objectives of the Marin General Hospital Replacement Building Project are listed below, as initially presented in Section 3.4, *Objectives of Proposed Project*, in Chapter 3, Project Description. The basic objectives that address or relate to the environmental effects of the project are particularly considered.

The objectives of the proposed project are:

1. To provide an OSHPD SB 1953 seismically compliant acute care hospital facility for the citizens of Marin County for the foreseeable future.
2. To develop the new Hospital Replacement Building, Ambulatory Services Building, Parking Structures, and internal circulation system, including on-site pedestrian circulation to meet the contemporary energy and design objectives and to adhere to the project’s goal for sustainable design that achieves a rating equivalent to the United States Green Building Council Leadership in Energy and Environmental Design’s (LEED®) Silver and the LEED® for Healthcare Rating System modeled after the Green Guide for Health Care (GGHC).
3. To promote health, safety and well-being for all future patients, doctors, nurses and employees on the Marin General Hospital campus.
4. To ensure that the Marin General Hospital meets the standards and requirements of the Hospital Facilities Seismic Safety Act (SB 1953). The hospital is proceeding under additional regulations SB 1661, and SB 499, SB 90, and AB 523, pursuing compliance at the earliest practicable date and within mandated State deadlines.
5. To allow for uninterrupted operation of medical services currently provided at Marin General Hospital and maintain continuity of care during and after a major earthquake.
6. To improve a medical campus at 250 Bon Air Road that is accessible to all patients, doctors, nurses, employees, and visitors at buildout of the project.
7. To phase construction of the project so as to allow uninterrupted hospital operations.

8. To provide integrated delivery of high quality health care services from the existing Marin General Hospital campus and to provide private patient rooms where possible.<sup>2</sup>
9. To manage development of the proposed project in a responsible manner sensitive to the surrounding area.
10. To minimize existing on-site parking shortfalls for patients, visitors and staff at Marin General Hospital and reduce parking-related problems in the surrounding neighborhood by providing substantial additional on-site parking located near the hospital entrance and future outpatient Ambulatory Services Building; and to locate, design and phase new parking structures onsite to minimize parking shortfalls during and after construction while avoiding any adverse effects to the aesthetic setting of the project site and surroundings.

## 5.2.2 Significant and Unavoidable Impacts Identified with the Project

As stated in the second factor considered in the selection of alternatives (see Section 5.2), the selection of alternatives shall consider the ability for each alternative to avoid or lessen the significant environmental impacts identified with the project. The significant impacts identified with the project (i.e., those for which no feasible mitigation measure was available to reduce the significant impact to a less-than-significant level, thus considered “significant and unavoidable”), as identified throughout Chapter 4, are listed below:

- **Impact CUL-1:** The Project will have an impact on a historical resource as defined by PRC Section 5024.1.
- **Impact NOI-2:** Construction of the Project would substantially and temporarily increase noise levels in areas of sensitive receptors and exceed the ambient noise environment.
- **Impact TRA-1:** The Project would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Existing plus Project Conditions. (SU for intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd.)
- **Impact TRA-5:** The Near-Term Project would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Near-Term (Year 2018) plus Near-Term Project Conditions.
- **Impact TRA-7:** The Project, in conjunction with past, present and other reasonably foreseeable future development in the area, would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Cumulative plus Project conditions. (SU for intersection LOS and freeway segment LOS)

All of the impacts identified with the project are identified in Table 5-2 in Section 5.8, *Summary of Impacts Identified with the Project and the Alternatives*, at the end of this chapter.

<sup>2</sup> Use of private rooms (i.e., hospital rooms with a single patient) is a well-established and growing national trend in new hospital construction to address patient health and safety and operational efficiency.

### 5.2.3 State Law Compliance / No Project Scenarios

A key consideration for the selection of alternatives to the Marin General Hospital Building Replacement Project is the project's compliance with the Hospital Facilities Seismic Safety Act (Seismic Safety Act) (Senate Bills [SBs] 1953 and SB 1661, SB 499, SB90, and Assembly Bill [AB] 523). These regulations require that California acute care hospitals be designed and constructed to withstand a major earthquake and remain operational immediately after the earthquake, providing uninterrupted operation of medical services currently provided and maintaining continuity of care. The proposed project meets the Marin Healthcare District's abilities to comply with the mandated SB 1953 regulations prior to the initially extended deadline of January 1, 2015 granted Marin General Hospital, which was subsequently extended to January 1, 2020, with the enactment of SB90 (see Section 1.2, *State-Mandated Compliance with Senate Bill 1953*, in Chapter 1, Introduction).

A consequence of not meeting the SB 1953 regulations is closure of licensed acute care facilities, which substantially guides the formulation of a reasonable "no project" alternative to the project under CEQA. The purpose of the CEQA "no project" alternative is to allow a comparison of the environmental impacts that would result if the project were not approved with those that would occur if the project is approved. However, if the Marin General Hospital Building Replacement Project is not approved, the existing Marin General Hospital – a licensed acute care facility – could not continue use of its Central and East Wings in their current structural condition after December 31, 2014. The Central and East Wings of the existing hospital contain a majority of the acute care beds and related support services.

Given the mandated compliance with SB 1953 regulations, potential "no project" scenarios include closure of Marin General Hospital after December 14, 2014, or backfilling the existing non-seismically compliant building areas with non-acute care functions that would be SB 1953-compliant after December 14, 2014. Both of these "no project" scenarios are discussed in terms of feasibility and comparative environmental effects in the analysis in Section 5.4.

There is no "no project" scenario in which all existing operations and structures on the Marin General Hospital Campus remain in their existing condition.

## 5.3 Alternatives Selected for Consideration

With consideration given to the factors for alternatives selection discussed in Section 5.2, the Marin Healthcare District identified the following reasonable range of project alternatives to be addressed in this EIR:

- **No Project 1.1:** Close Marin General Hospital, No Relocation Offsite
- **No Project 1.2:** Medical Office Backfill in All Non-Seismically Compliant Space
- **Alternative 2:** Seismic Retrofit of Existing Marin General Hospital / Historical Resource Avoidance

- **Alternative 3:** No Ambulatory Services Building or Hillside Parking Structure / No Land Swap
- **Alternative 4:** Reduced Ambulatory Services Building and Reduced Bon Air Road Parking Structure

A set of non-CEQA design alternatives are also addressed in this chapter. These alternatives address site layout scenarios that the Marin Healthcare District considered during planning of the Bon Air Road Parking Structure. The description and any substantially different environmental effects associated with these alternatives compared to the project are presented below in Section 5.7, *Non-CEQA Design Alternatives*.

- **Non-CEQA Design Alternative B<sup>3</sup>:** Extended Bon Air Road Parking Structure
- **Non-CEQA Design Alternative C:** Rotated Bon Air Road Parking Structure and Ambulatory Service Building

The development program and key site characteristics for the project and each alternative are presented below in **Table 5-1, Summary of Alternatives to the Project**. Each alternative is described in greater detail in the comparative analysis that follows in Section 5.4. The environmentally superior alternative that CEQA requires the EIR identify is discussed in Section 5.5.

## 5.4 Comparative Analysis of CEQA Alternatives

Throughout this section a description of each alternative is followed by a discussion of impacts and how those impacts compare to those of the project. As permitted by CEQA, the effects of the alternatives are discussed in less detail than those in Chapter 4 for the project (CEQA Guidelines Section 15126.6[d]).

However, the analysis is conducted at a sufficient level of detail to provide the public, other public agencies, and project decision-makers adequate information to fully evaluate the alternatives and approve any of the alternatives without further environmental review.

Impacts are stated as levels of significance *after* implementation of mitigation measures identified in Chapter 4, except where discussion of pre-mitigation effects is relevant to the comparison.

In most cases, the comparisons are qualitative and discussed in terms of whether the alternative would avoid a project's impact or result in a new impact not identified with the project. If the impact *determination* is the same (i.e., less-than-significant, less-than-significant after mitigation, or significant and unavoidable) for the project and an alternative, the comparison addresses the relative *degree* of the impact; "similar" indicates the determination is the same, but the effect may be "more/greater/increased" or "less than/reduced" than that identified with the project.

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<sup>3</sup> Non-CEQA Design Alternative "A" was selected as the site design layout of the proposed project.

**TABLE 5-1  
SUMMARY OF ALTERNATIVES TO THE PROJECT**

	Project	No Project Alternatives		Project Alternatives			Non-CEQA Design Alternatives <sup>a,b</sup>	
		1.1 Close MGH, No Relocation Offsite	1.2 Medical Office Backfill in All Non- Seismically Compliant Space <sup>c</sup>	2 Seismic Retrofit Existing MGH / Historical Resource Avoidance	3 No ASB or Hillside Parking Structure / No Land Swap	4 Reduced ASB and Reduced Bon Air Road Parking Structure	B Extended Bon Air Road Parking Structure	C Rotated Bon Air Road Parking Structure and ASB
Hospital Replacement Building (sf)	300,000	-	-	145,000 <sup>d</sup>	300,000	300,000	300,000	300,000
Ambulatory Services Building (sf)	100,000	-	-	100,000	-	84,000 <sup>e</sup>	100,000	100,000
Medical Office Backfill in Converted Acute Care Space in Ex. Hospital	-	-	145,000 <sup>f</sup>	-	-	-	-	-
<b>Hillside Parking Structure</b>								
Stories <sup>g</sup>	5	-	-	5	-	5	-	-
Spaces	412	-	-	412	-	412	-	-
<b>Bon Air Road Parking Structure</b>								
Stories <sup>g</sup>	4	-	-	4	4	4	4	6
Spaces	507	-	-	507	507	336	897	897
Site Location / Bon Air Road Street Frontage length	North / 283'	-	-	North / 283'	-	North / 283'	North and Hillside / 353'	North / 127'
Halprin Gardens Altered	Yes	No	No	No	Yes	Yes	Yes	Yes
Demolition (sf of building area)	15,500	0	0	145,000 <sup>d</sup>	15,500	15,500	15,500	15,500
Grading Volume (cubic yards)	133,000	0	0	0	Less	133,000	More	133,000
Tree Removal (approx. total #)	230	0	0	0	136	166	166+	166

<sup>a</sup> Non-CEQA Design Alternative "A" was selected as the site design layout of the proposed project.

<sup>b</sup> All aspects of the Hospital Replacement Building and Ambulatory Services Building are assumed the same as the project, allowing the Non-CEQA Design Alternatives to focus on site layout.

<sup>c</sup> The West Wing of the existing hospital is seismically compliant space under SB 1953 and includes 79 beds. <sup>d</sup> 145,000 sf of existing Central and East Wings to be demolished/deconstructed and rebuilt.

<sup>e</sup> The Ambulatory Services Building is four stories in Alternative 4, compared to five stories with the project and the other CEQA alternatives.

<sup>f</sup> Floor area of existing acute care uses at the hospital that would be converted to non-acute care uses. Existing acute-care uses in seismically compliant space would close without the supporting acute-care hospital.

<sup>g</sup> Number of stories is one less than the number of parking deck levels.

The impacts associated with the project and each alternative are reported for Year 2035 buildout conditions, and Year 2018 impacts are discussed where applicable (i.e., No Project Alternatives, which would be in place as of January 1, 2015; and Near-Term 2018 impacts).

### **Project Phasing**

As described in detail in Chapter 3, Project Description (see Section 3.5.3, Project Activities by Phase), the proposed project would be developed in six phases, with all major construction completed by 2020 and full buildout completed by 2035. It is not anticipated that Marin General Hospital would alter the sequence of the proposed project phasing given these constraints. Also, reasonable consideration was applied to the estimated duration of each development phase as well as each component of work within a phase (as shown in Table 3-3, Construction Activities Schedule, in Chapter 3, Project Description), factoring in typical assumptions for unforeseen delays typical to the construction process in northern California. Thus, it is not anticipated that a particular phase would be substantially longer (or shorter) than estimated.

To the extent that there are adjustments to the proposed sequence or duration of project phases, the effects are addressed in the alternatives analyzed in this chapter and would not result in new or substantially greater environmental effects than those identified for the proposed project throughout Chapter 4 of this Draft EIR. Each alternative, except Alternative 2, would likely involve shorter construction time compared to the project since less of the proposed project would be developed. Alternative 2 is assumed to require longer construction time to complete the seismically-retrofitted hospital facility compared to the proposed project's construction of a new Hospital Replacement Building.

### **Potential Project Elements**

The potential elevated pedestrian bridge and the potential trellises with a photovoltaic (PV) system on the top levels of the parking structures, which Marin Healthcare District may implement if adequate funding is secured, are assumed to occur with each alternative that would support these elements. Therefore, the elevated pedestrian bridge is only assumed in Alternative 2 and Alternative 4 since they would develop the project buildings served by the bridge: the Bon Air Road Parking Structure, Ambulatory Services Building, and new Hospital Replacement Building or retrofitted existing hospital. The potential trellis/PV systems could occur with each of the development Alternatives 2, 3, and 4; the No Project Alternatives would not develop parking structures.

## **5.4.1 No Project Alternative 1.1: Close Marin General Hospital, No Relocation Offsite**

### **Description**

The Marin Healthcare District has indicated that it is not feasible for it to continue operating any hospital services on the project site if the acute care services that currently exist in non-seismically compliant building areas are discontinued. As indicated in Section 5.2.3, the Central and East Wings of the existing hospital will be non-seismically compliant as of January 1, 2015

and contain a majority of the acute care beds and related support services.<sup>4</sup> While the seismically compliant West Wing (which provides 79 inpatient beds) could theoretically continue to operate after December 14, 2014, the Marin Healthcare District indicates that the hospital could not viably function onsite without a full inpatient facility; moreover, the West Wing's 79 beds would no longer have the necessary supporting hospital functions. Accordingly, No Project Alternative 1.1 assumes *all* operations within Marin General Hospital would be discontinued as of January 1, 2015 if the proposed project were not developed.

The exceptions assumed with No Project Alternative 1.1 are the existing Community Mental Health Building and the existing Marin Community Clinic and associated offices. The existing Community Mental Health Building, which is jointly owned by the County of Marin (51 percent ownership) and the Marin Healthcare District (49 percent ownership), which would not be altered under the proposed project, would continue to operate the services currently offered at the project site, since that structure is exempt from the SB 1953 regulations. Also, the Marin Community Clinic could remain and continue to operate in the existing one-story temporary trailers located north of the Community Mental Health Building. However, as previously discussed in this Draft EIR, the clinic has indicated that its existing facilities no longer meets its needs. Both uses are existing conditions; therefore their ongoing operation on the site under this Alternative would not result in changes to existing conditions, potentially causing new environmental effects.

No Project Alternative 1.1 does not assume that the Marin Healthcare District would relocate Marin General Hospital operations to an off-site location, which would require construction of a new hospital and would presumably involve similar environmental impacts to those identified with the proposed Hospital Replacement Building. No new construction would occur and no buildings would be demolished. The existing hospital and other existing buildings and other improvements on the project site would remain in their existing condition, including the Mental Health Building and the Marin Community Clinic, as discussed above. (Also see Section 5.6.1, *Off-Site Alternative*, with regard to *Alternatives Considered but Not Analyzed Further in the EIR*.)

This analysis recognizes that it would be financially infeasible for Marin Healthcare District to keep the hospital and related ancillary buildings on the project site unused. The existing Public Facility (PF) land use designation and zoning district that apply to the project site would limit new uses to similar medical-related functions as currently exist and proposed by the project. A reasonable assumption in No Project Alternative 1.1 is that the facilities could be transferred or sold to another medical provider that could continue to use the non-seismically compliant building areas by filling the vacated space with other non-acute care medical uses. While No Project Alternative 1.1 assumes no new uses on the project site, reuse by another medical provider in a "no project" scenario would result in the same comparative impacts discussed for No Project Alternative 1.2, below. (Also see Section 5.6.2, *Reuse of Marin General Hospital by Another Medical Provider*, with regard to *Alternatives Considered but Not Analyzed Further in the EIR*.)

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<sup>4</sup> The approximately 100,000 square-foot West Wing of the existing hospital is seismically compliant space and includes 79 beds. The Mental Health Building is exempt from the seismic upgrade requirement and includes 17 inpatient psych beds.

## Comparison of No Project Alternative 1.1 Impacts to those Identified with the Proposed Project

### ***All Topics (Except Land Use, Plans, and Policies)***

*No Project Alternative 1.1 would avoid all impacts identified with the project for all environmental topics, except it would comply with land use, plans, and policies to a lesser extent than would the project.* As described above, all existing operations within Marin General Hospital would be discontinued if the proposed project was not developed, and no other aspects of the proposed project would occur. The existing Mental Health Building and the Marin Community Clinic would continue their current operations. Therefore, no changes would occur to the existing physical environment as a result of development on the project site, with the proposed project or otherwise.

As previously mentioned, if the Marin Healthcare District consequently constructed a new hospital at an off-site location, the impacts likely would be similar to those identified with the proposed project. The exception could be that the impact to historical resources that would occur with the project (Impact CUL-1) would not occur unless historical resources existed on the off-site location. As also mentioned above, possible reuse of the Marin General Hospital facilities by another medical provider would result in the same comparative impacts discussed for No Project Alternative 1.2, below. Also, for air quality and GHG emissions in particular, this analysis does not assume that the eliminated emissions associated with No Project Alternative 1.1 would be offset by potential changes to another facility that was not evaluated within the scope of this analysis (i.e., off-site facilities expanded to accommodate capacity or services no longer offered at the Marin General Hospital Campus).

### ***Land Use, Plans and Policies***

*No Project Alternative 1.1 would result in similar less-than-significant impacts identified for land use, plans, and policies, but would not fully align with applicable adopted land use policies (Impact LU-2).*

The Kentfield/Greenbrae Community Plan specifies the following Conservation and Development Standard that applies to modifications to Marin General Hospital: *(a) The hospital facility should continue to provide comprehensive medical service for Marin County.* Under No Project Alternative 1.1, in which the hospital would not remain in operation, the discontinuation of acute care hospital services at Marin General Hospital Campus would not be fully consistent with this guideline (see Impact LU-2), whereas the project would be fully consistent. However, the impact is considered in this analysis to remain less than significant since, while part of an adopted plan, the statement is a “standard” that prescribes further “guidelines”; the statement is not a goal or policy adopted for the purpose of avoiding or mitigating an environmental effect, as specified by the CEQA significance criteria. Overall, the impact to land use, plans and policies would remain less than significant as with the project.



## 5.4.2 No Project Alternative 1.2: Medical Office Backfill in All Non-Seismically Compliant Space

### Description

With No Project Alternative 1.2, the Marin Healthcare District would continue to use the non-seismically compliant building areas by replacing the existing acute care medical uses with 145,000 square feet of medical offices, which are not considered acute care uses. This floor area comprises the space currently housing acute care uses that will become non-seismically compliant after December 31, 2014, and is approximately 58 percent of the existing hospital space (255,000 square feet).

No part of the proposed project would be implemented, and no existing buildings would be demolished or site improvements implemented. However, No Project Alternative 1.2 would require substantial interior remodeling of the backfilled portions of the existing buildings to accommodate medical office uses in space previously designed and equipped for specific acute-care functions.

As described for No Project Alternative 1.1, the existing seismically compliant West Wing with 79 beds could not continue without the acute care hospital under No Project Alternative 1.2. Therefore, those uses in the West Wing would cease as well. For purposes of use-related effects, compared to the proposed project, the No Project Alternative 1.2 excludes the 300,000 square-foot new Hospital Replacement Building (or 87 new beds) and introduces 45,000 square feet more medical office-type use than proposed. The Marin Community Mental Health Building with 17 inpatient beds could continue onsite since it is exempt from the SB 1953 regulations. The existing Marin Community Clinic also could remain onsite and relocate from the existing one-story temporary trailers that no longer meet the clinic's needs, and move into the backfilled space rather than relocate offsite as planned. As previously discussed, both of these functions are existing conditions; therefore their ongoing operation on the site with this Alternative 1.2 would not result in changes to existing conditions that could potentially cause new environmental effects. No Project Alternative 1.2 would be in place by January 1, 2015.

### Comparison of No Project Alternative 1.2 Impacts to those Identified with the Proposed Project

#### ***Aesthetics***

***No Project Alternative 1.2 would avoid the less-than-significant impacts to aesthetics identified with the project (given there would be no physical changes on the project site that would be visible to the public).***

Under this alternative, any new construction would likely involve interior improvements only; no existing buildings would be demolished and no new buildings would be constructed. Because new construction would be limited to interior improvements, it is not likely to increase light and glare or adversely affect nighttime views. This alternative would not have adverse effects on scenic resources and would not introduce new shadows on public areas. Overall, compared to the

proposed project, No Project Alternative 1.2 would avoid impacts to aesthetics resources and have no impact.

### ***Air Quality***

***No Project Alternative 1.2 would result in similar less-than-significant air quality impacts as those identified with the project and would specifically have substantially less construction period emissions (given there would be less construction activity) and slightly more operational emissions (given there would be more daily vehicle trips associated with the alternative) than with the project.***

**Construction.** No Project Alternative 1.2 would result in much lower construction period emissions since no aspect of the proposed project would be developed; development would involve the backfilling of existing space with medical office uses. As described above, the construction activity required to accommodate the backfill uses would likely involve interior improvements only. The construction impacts would remain less than significant, as identified with the project. Mitigation Measures AIR-2 and AIR-3 to address construction emissions and fugitive dust and require best management practices, as recommended in the BAAQMD CEQA Air Quality Guidelines, would continue to apply with No Project Alternative 1.2, and the less-than-significant impacts would have a slightly reduced degree of adverse effect (represented by a “down arrow” symbol in Table 5-2). All other less-than-significant construction period impacts (i.e., criteria air pollutant emissions and community [excess cancer] risk impacts) would occur under this alternative.

**Operations.** No Project Alternative 1.2 would have slightly higher operational air quality impacts than the proposed project since it would have higher *daily* traffic with the increased medical office use, which has a higher trip generation rate than the hospital use (see Appendix G to this EIR). However, the impacts would remain less than significant, with slightly greater degree of adverse effect (represented by an “up arrow” symbol in Table 5-2).

As indicated in No Project Alternative 1.1, this analysis does not assume that the reduced emissions (specifically from construction activities) associated with No Project Alternative 1.2 would be offset by potential changes to another facility that was not evaluated within the scope of this analysis (i.e., off-site facilities are expanded to accommodate capacity or services no longer offered at the Marin General Hospital Campus).

### ***Biological Resources***

***No Project Alternative 1.2 would result in less-than-significant biological resources impacts associated with tree removal, grading, or other site work, without mitigation (given that construction activities would involve only interior construction), avoiding the need for mitigation measures identified with the project; and would result in similar other biological resources impacts identified with the project (given decreased construction activity and new development).***

As described above, the construction activity required to accommodate the backfill uses in the Central and East Wings would likely involve interior improvements only. Therefore, No Project

Alternative 1.2 would likely not involve construction activity involving tree removal, grading or other site work. Therefore, mitigation measures identified for impacts resulting with these activities (i.e., Mitigation Measures BIO-1 through BIO-4, and Impact BIO-6) would not be required. Overall, compared to the proposed project, No Project Alternative 1.2 would have similar less-than-significant biological resources impacts.

### ***Cultural and Paleontological Resources***

***No Project Alternative 1.2 would avoid the significant and unavoidable impact to historical resources identified with the project (Impact CUL-1), and result in similar less-than-significant impacts for other cultural resources topics, without mitigation (given that construction activities will involve only interior construction), avoiding the need for the mitigation measures identified with the project.***

As described above, the construction activity required to accommodate the backfill uses in the Central and East Wings would likely involve interior improvements only. New construction that would displace or otherwise impair the Halprin Gardens, including the Bar-B-Q Terrace and Ambulatory Terrace gardens, which are historical resources for the purposes of CEQA, would not occur (Impact CUL-1). Therefore, the significant and unavoidable impact identified with the project would not occur with No Project Alternative 1.2, and the associated Mitigation Measure CUL-1 would not be required.

Also, No Project Alternative 1.2 would likely not involve construction activity affecting tree removal, grading or other site work. Therefore, mitigation measures identified to address the project's impacts resulting with these activities (i.e., Mitigation Measures CUL-2 through CUL-4) would not be required for this alternative. Therefore, compared to the proposed project, No Project Alternative 1.2 would have similar less-than-significant cultural resources impacts and avoid the need for mitigation measures required for the project.

### ***Geology, Soils, and Seismicity***

***No Project Alternative 1.2 would result in similar less-than-significant geology, soils, and seismicity impacts as identified with the project.***

As described above, the construction activity required to accommodate the backfill uses in the non-seismically compliant Central and East Wings of the existing hospital under No Project Alternative 1.2 would likely involve interior improvements only. Although no earthwork would likely be involved, the backfill uses would be subject to the same geologic, soils, and seismic characteristics as the proposed project. No Project Alternative 1.2 would have the same less-than-significant impacts as the project.

## **Greenhouse Gases and Climate Change**

***No Project Alternative 1.2 would result in similar less-than-significant GHG emissions impacts as identified with the project (despite the increased number of daily vehicle trips with the alternative, given the increased effectiveness of mitigation with the alternative).***

No Project Alternative 1.2 would generate GHG emissions at levels similar to the proposed project. As with the project, with implementation of Mitigation Measure GHG-2 (or similar, tailored for the backfill uses) would reduce the impact to a less-than-significant level. While the overall effect from the alternative's GHG emissions may occur at a slightly greater degree given the greater increase in daily traffic associated with the alternative, the effectiveness of transportation demand measures (TDM) (which are fundamental to Mitigation Measure GHG-2) may be greater than with the proposed project since the backfill uses (medical offices) would involve more traditional work shift hours and thus increased ability for employees to utilize TDM strategies involving ride sharing and/or transit. Thus, the mitigated effect of Alternative 1.2 could reasonably be less than with the project (represented by a "down arrow" symbol in Table 5-2).

## **Hazards and Hazardous Materials**

***No Project Alternative 1.2 would result in similar less-than-significant hazards and hazardous materials impacts as identified with the project.***

As described above, the construction activity required to accommodate the backfill uses in the non-seismically compliant Central and East Wings of the existing hospital under Alternative 1.2 would likely involve interior improvements only. Although there may be no earthwork, construction activities can encounter hazardous building materials. Also, the backfill medical office uses could routinely involve potentially hazardous materials, as does the project. Overall, No Project Alternative 1.2 would have similar less-than-significant hazards and hazardous materials impacts as the project, with a slightly reduced degree of adverse effects (represented by a "down arrow" symbol in Table 5-2).

## **Hydrology and Water Quality**

***No Project Alternative 1.2 would result in similar less-than-significant hydrology and water quality impacts identified with the project.***

No Project Alternative 1.2 would involve primarily interior construction activity to accommodate the backfill uses in the non-seismically compliant Central and East Wings of the existing hospital. Thus, construction activities involving earthwork are not anticipated. Therefore, there is a much lower potential for Alternative 1.2 to degrade water quality, and would avoid affects to groundwater or drainage patterns. However, development on the project site would be subject to the same flood and hazardous hydrological conditions that the project would encounter. Overall, No Project Alternative 1.2 would have similar less-than-significant hydrology and water quality impacts regarding water quality as the project, but with a substantially reduced degree of adverse effect (represented by a "down arrow" symbol in Table 5-2); it would avoid the project's less-

than-significant impacts associated earthwork or groundwater, but would have the same less-than-significant impacts associated with risk or hazardous hydrological conditions.

### ***Land Use, Plans, and Policies***

***No Project Alternative 1.2 would result in similar less-than-significant land use, plans, and policies impacts identified with the project.***

No Project Alternative 1.2 would maintain medical services on the project site, although Marin General Hospital would no longer exist to provide acute care hospital services. Overall, the medical service-related land use would be the same as with the project, thus No Project Alternative 1.2 would not result in land use conflicts with adjacent uses; the less-than-significant impact identified with the project would also apply under this alternative. As discussed for No Project Alternative 1.1, the discontinuation of acute care hospital services at Marin General Hospital Campus would not be fully consistent with the Kentfield/Greenbrae Community Plan Conservation and Development Standard that applies to modifications to Marin General Hospital: *(a) The hospital facility should continue to provide comprehensive medical service for Marin County.*

However, as determined for No Project Alternative 1.1, this analysis considers the impact to remain less than significant since, while part of an adopted plan, the statement is a “standard” that prescribes further “guidelines”; the statement is not a goal or policy adopted for the purpose of avoiding or mitigating an environmental effect, as specified by the CEQA significance criteria. Overall, with No Project Alternative 1.2, the impact to land use, plans and policies would remain less than significant as with the project.

### ***Noise and Vibration***

***No Project Alternative 1.2 would avoid the significant and unavoidable construction noise and vibration impact identified with the project (Impact NOI-2) (given there would be less construction activity); would reduce the operational noise impacts from stationary sources identified with the project to a less-than-significant level, without mitigation measures (given less new noise-generating activities onsite); and would result in similar other less-than-significant operational noise impacts identified with the project, including roadway noise (given less peak hour traffic).***

**Construction.** With No Project Alternative 1.2, the construction activity required to accommodate the backfill uses in the non-compliant Central and East Wings would likely involve interior improvements only. As a result, the total noise levels and duration of time associated with the construction activities would be substantially less than with the project. Therefore, the potential for No Project Alternative 1.2 to expose adjacent receivers to construction noise in excess of the significance thresholds and existing conditions would be substantially less. The significant and unavoidable impact identified with the project (Impact NOI-2) would be avoided, however the associated mitigation measures would still apply, reducing any potential impacts to less-than-significant levels.

**Operations.** No Project Alternative 1.2 would have lower operational noise levels than with the project since the potentially noise-generating project components, such as, new rooftop mechanical equipment, new service loading areas, new emergency generator, and two new parking structures, would not be developed. As a result, it would result in a much lower operational noise effect than the project, avoiding the need for mitigation measures.

As with operational air quality, roadway noise levels would also be reduced compared to the project since there would not be an increase in peak hour traffic. While No Project Alternative 1.2 would have more daily traffic than the proposed project (given the higher trip generation rate for medical office compared to hospital use), the impact is based on peak hour conditions, thus the impact would remain less than significant, although with slightly reduced degree of adverse effect (represented by a “down arrow” symbol in Table 5-2).

### ***Population, Housing and Employment***

***No Project Alternative 1.2 would result in similar less-than-significant impacts to population, housing, and employment as identified with the project.***

With No Project Alternative 1.2, the non-seismically compliant building areas would be replaced with 145,000 square feet of medical office use. No other part of the proposed project would be implemented, therefore No Project Alternative 1.2 would result in fewer employees compared to the project. As a result, No Project Alternative 1.2 would induce less population growth and would not conflict with population and housing projections and policies. No Project Alternative 1.2 would result in similar less-than-significant impacts for population, housing, and employment as those identified with the project, with slightly less degree of adverse effect (represented by a “down arrow” symbol in Table 5-2).

### ***Public Services and Recreation***

***No Project Alternative 1.2 would result in similar less-than-significant impacts to public services and recreation as identified with the project.***

With No Project Alternative 1.2, the non-seismically compliant building areas would be replaced with medical office use. No other part of the proposed project would be implemented. As discussed in *Population, Housing, and Employment*, No Project Alternative 1.2 would result in fewer employees and smaller on-site population (including visitors and patients). As a result, No Project Alternative 1.2 would have similar less-than-significant impacts as identified with the project, with slightly reduced degree of adverse effects (represented by a “down arrow” symbol in Table 5-2).

## **Transportation and Circulation**

***No Project Alternative 1.2 would have similar significant and unavoidable intersection level of service (LOS) and queuing impacts identified with the project (Impacts TRA-1, TRA-5, and TRA-7), as well as similar significant and unavoidable freeway LOS impact at buildout (Impact TRA-7) identified with the project.***

No Project Alternative 1.2 would generate 301 AM peak hour trips, 325 mid-day peak hour trips, and 353 PM peak hour trips (see Appendix G to this EIR). These represent approximately 2.9, 5.5, and 5.6 percent less than Year 2018 project totals, and approximately 11.9, 13.8, and 13.9 percent less than project buildout totals (for the AM, mid-day, and PM peak hour time periods, respectively).

However, consistent with the County's standards of significance<sup>5</sup> and methodology applied in this EIR, while peak hour trips with No Project Alternative 1.2 would be less than those generated by the project, the alternative would have similar significant and unavoidable LOS and queuing impacts identified with the project (Impacts TRA-1, TRA-5, and TRA-7). The impacts are significant and unavoidable because they are due to existing adverse conditions that would be exacerbated under any scenario that generates *any* new trips compared to existing conditions (as Alternative 3 would). The degree of the impact with No Project Alternative 1.2 would be less than with the project (represented by a "down arrow" symbol in Table 5-2) since the alternative would generate fewer peak hour trips. Greater daily traffic would occur with No Project Alternative 1.2 given the higher trip generation rate associated with the backfilled medical office uses (compared to hospital use), however this would not result in increased *theoretical* intersection or roadway segment impacts compared to the project.

***No Project Alternative 1.2 would have similar less-than-significant impacts for all other topics (i.e., safety hazards and emergency access) as identified with the project, avoiding the need for mitigation measures.***

Since none of the new buildings or roadway and site access improvements proposed with the project would occur with No Project Alternative 1.2, Mitigation Measures TRA-2a and TRA-3 (which is the same as TRA-2a) to address safety hazards and emergency access would not be required.

**Parking.** Although not addressed as an impact under CEQA, the calculated parking demand for No Project Alternative 1.2 would be 1,133 spaces (compared to 1,079 for the project) (see Appendix G to this EIR); although there would be fewer employees on the site with No Project Alternative 1.2, the parking rate for medical office (of which there would be an additional 45,000 square feet compared to with the project) is higher than that applied to employees. Since no new parking structures would be constructed, the existing parking supply of 605 on-site parking spaces (or 768 spaces including existing satellite lots and adjacent on-street parking) would be available to serve this "no project" scenario. Therefore, there would be a 528 space

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<sup>5</sup> For intersections that already have an unacceptable LOS, any increase in delay at the intersection is considered a significant impact.

parking deficit (or 365 including satellite lots and adjacent on-street parking) at 2018 (compared to the 19-space deficit with the project).

### **Utilities and Service Systems**

*No Project Alternative 1.2 would result in similar less-than-significant impacts to utilities and service systems than would occur with the project.*

With No Project Alternative 1.2, the non-seismically compliant building areas would be replaced with medical office use. No other part of the proposed project would be implemented. Overall development with No Project Alternative 1.2 would be substantially less than with the project, and as discussed in *Population, Housing, and Employment*, there would be fewer employees and total on-site population (including visitors and patients). As a result, No Project Alternative 1.2 would have less increased demand for utilities and service systems than would occur with the project, and therefore would result in similar less-than-significant utilities and service systems impacts as identified with the project, with a slightly reduced degree of adverse effects (represented by a “down arrow” symbol in Table 5-2).

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## **5.4.3 Alternative 2: Seismic Retrofit of Existing Marin General Hospital / Historical Resource Avoidance**

### **Description**

The Marin Healthcare District has determined that it is infeasible to bring the existing Marin General Hospital facilities on the project site into compliance with the mandated SB 1953 regulations. The hospital facilities, while currently functional to provide quality health care delivery, are outdated and limit the practice of modern hospital patient care consistent with the objectives of the project. Theoretically, because seismic retrofitting of the existing hospital to comply with SB 1953 is not feasible without new construction, it could be considered a “no project” scenario. However, this analysis discusses this scenario as a project alternative.

Alternative 2 would develop all aspects of the proposed project, except that it would seismically retrofit the existing hospital instead of constructing the new Hospital Replacement Building and renovating portions of the existing Central and East Wings for non-acute care outpatient services. The seismically retrofitted hospital is, however, assumed to incorporate the additional 28 hospital beds that the project proposed would be operational after Year 2018 (even though the seismic retrofit of the existing hospital would be completed by January 1, 2015, pursuant to SB 1953 regulations).

Alternative 2 is the only alternative considered in this analysis that develops a similar development program (including the Ambulatory Services Building and both parking structures) but that avoids historical resources, as described below.



For Alternative 2 to accommodate the proposed Marin General Hospital Program in the existing hospital, the non-seismically compliant Central and East Wings of the existing hospital would have to be “gutted” and reconstructed, including all mechanical, electrical, and plumbing systems and infrastructure. Overall, approximately 145,000 square feet (or 58 percent) of the hospital (255,000 square feet) would be demolished/deconstructed and rebuilt. This is 129,500 square feet more floor area to be demolished than would occur with the proposed project.

The rebuild is assumed to occur generally within the footprint area of the existing Central and East Wings and would not incorporate the expanded area to the south proposed with the project. Thus, Alternative 2 would not have new development that would displace or otherwise impair the Halprin Gardens, including the Bar-B-Q Terrace and Ambulatory Terrace gardens, which are historical resources for the purposes of CEQA.

Much less of the 74,986 square feet of the Central and East Wings would be renovated to accommodate enlarged departments and other functions currently housed in on-site trailers. However, this change would not substantially change existing hospital operations, which is primarily driven by the number of beds. Like the project, Alternative 2 would not change the existing number of beds currently on the project site. The overall vehicular circulation throughout the project site would be similar to that with the project; the main entrance and drop-off area to the hospital, which would not change from existing conditions with Alternative 2, would continue to occur in the western area of the project site and the lower parking lot, as with the proposed project.

Like the proposed project, construction would be phased to allow uninterrupted hospital operations. However, since existing uses, including inpatient beds, would have to be relocated internally and temporarily to allow for in-place reconstruction, the duration of construction (as well as costs) would be nearly twice that of the proposed Hospital Replacement Building. The sequence of phasing, however, would remain the same as proposed with the project; Phase IV would involve the work to retrofit the existing hospital instead of construction of the new Hospital Replacement Building.

## **Comparison of Alternative 2 Impacts to those Identified with the Proposed Project**

### ***Aesthetics***

***Alternative 2 would result in similar less-than-significant aesthetics impacts as those identified with the project.***

Alternative 2 would result in substantially less new massing on the project site without construction of the new Hospital Replacement Building, however, all other aspects of the proposed project would be constructed in generally the same configuration and scale/height as with the project. The Central and East wings of the existing hospital would be seismically upgraded and the footprint of the retrofitted hospital would remain as it is currently. Overall, compared to the proposed project, Alternative 2 would have the same less-than-significant aesthetic impacts, although to a slightly lesser degree of adverse effect (represented by a “down arrow” symbol in Table 5-2). All mitigation measures identified for the project would apply for this alternative as well.

Reduced effects would result since the new Hospital Replacement Building would not be constructed close to the Bon Air Road frontage, which would result in a substantial change to the scenic vista (viewed from the Corte Madera Creek pathway across Bon Air Road) toward the site that currently contains mature landscaping that screens much of the existing campus buildings. Not constructing the new Hospital Replacement Building also would reduce the less-than-significant effect of new lighting and shadows compared to the project.

### **Air Quality**

***Alternative 2 would result in similar less-than-significant air quality impacts identified with the project, with slightly greater construction period emissions (given increased demolition activity and overall construction duration).***

**Construction.** Alternative 2 would result in slightly greater construction period emissions than the project, given the greater amount of overall demolition involved and the substantially longer duration of overall construction required to conduct demolition and reconstruction activities while maintaining uninterrupted hospital operations. However, the construction impacts would remain less than significant, as identified with the project. Mitigation Measures AIR-2 and AIR-3 to address construction emissions and fugitive dust and require best management practices, as recommended in the BAAQMD CEQA Air Quality Guidelines, would continue to apply to Alternative 2. Construction activity with Alternative 2 would be within 15 percent of (and projected to slightly exceed) that required for the proposed project. Therefore, daily construction emissions are estimated to exceed the significance threshold for community risk (e.g., excess cancer risk) impacts. Therefore, like the project, the impact would be significant with Alternative 2, and have a slightly increased degree of adverse effect (as represented by an “up arrow” symbol in Table 5-2), and Mitigation Measure AIR-5 (which is the same as AIR-2) would be required to reduce the community risk impacts during construction to less than significant, as with the project (see Appendix G to this EIR).

**Operations.** Unlike for construction, Alternative 2 would have the same less-than-significant operational air quality impacts as the proposed project, since it would generate the same number of peak hour and daily trips as would occur with the project. The only project component that would differ in Alternative 2 is that the existing hospital would be seismically retrofitted (instead of a new Hospital Replacement Building being constructed), which would not result in a change to the number of licensed beds in the hospital (which drives trip generation for the hospital use) or onsite population.

### **Biological Resources**

***Alternative 2 would result in similar less-than-significant biological resources impacts as those identified with the project.***

Alternative 2 would involve essentially the same type of construction activities as the proposed project, although Alternative 2 would involve slightly less tree removal (estimated 40 fewer trees, as depicted in Figure 4.C-2 in Section 4.C, *Biological Resources*) and grading since the new

Hospital Replacement Building would not be constructed, and the area to the southwest of the existing hospital that has particularly steep slopes and mature tree cover would not be altered. Overall, compared to the proposed project, Alternative 2 would have similar less-than-significant biological resources impacts.

### ***Cultural and Paleontological Resources***

***Alternative 2 would avoid the significant and unavoidable impact to historical resources identified with the project (Impact CUL-1), and result in similar other less-than-significant cultural resources impacts identified with the project.***

With Alternative 2, new construction would not displace or otherwise impair the Halprin Gardens, including the Bar-B-Q Terrace and Ambulatory Terrace gardens, which are historical resources for the purposes of CEQA. Therefore, the significant and unavoidable Impact CUL-1 identified with the project would not occur with Alternative 2, but Mitigation Measure CUL-1 would still apply to Alternative 2 since the seismic retrofitting of the Central and East Wings would involve reconstruction in proximity to the historic Halprin gardens. Alternative 2 would involve similar level of construction activity for the seismic retrofit and all other new buildings proposed with the project. Alternative 2 would have less-than-significant cultural resources impacts.

Alternative 2 is the only *development* alternative in this analysis that avoids the significant and unavoidable impact resulting from removal of the Bar-B-Q Terrace and Ambulatory Terrace gardens, which are historical resources for the purposes of CEQA. Given the limited developable area available on the project site, an alternative that avoids the terraces at the south end of the project site would require that (1) other project buildings (including portions of the existing hospital) be eliminated or consolidated, or (2) development occur further into and up the steep hillside areas of the site. Neither aligns with the project objectives. (Also see Section 5.6.3, *Relocated Hospital Replacement Building* – a scenario considered but that was not selected for further consideration in this EIR as it was considered by Marin Healthcare District to be infeasible.)

### ***Geology, Soils, and Seismicity***

***Alternative 2 would result in similar less-than-significant geology, soils, and seismicity impacts as identified with the project.***

The construction activity required to seismically retrofit the non-seismically compliant Central and East Wings of the existing hospital will involve demolition/deconstruction and reconstruction. Grading and excavation activities would be required, as with the project, thus similar geologic and soils conditions would be encountered. Further, the development would be subject to similar seismic characteristics as the proposed project. Alternative 2 would have similar less-than-significant impacts as the project.

## **Greenhouse Gases and Climate Change**

*Alternative 2 would result in similar less-than-significant GHG emissions impacts as identified with the project, despite somewhat greater construction period emissions.*

Alternative 2 would generate GHG emissions at levels similar to the proposed project and would generate the same number of daily trips as the project (since the number of licensed beds in the hospital would not change, and all other aspects of the project would be developed). However, compared to the proposed project, Alternative 2 would generate greater construction period emissions than the proposed project, thus a greater degree of adverse effect (represented by an “up arrow” symbol in Table 5-2) because of the increased time for demolition/deconstruction, and reconstruction activities.

## **Hazards and Hazardous Materials**

*Alternative 2 would result in similar less-than-significant hazards and hazardous materials impacts as identified with the project.*

The construction activity required to seismically retrofit the non-seismically compliant Central and East Wings of the existing hospital would be similar to those required for the project and include activities that could encounter hazardous materials in both the ground and existing building materials. Overall, Alternative 2 would have similar less-than-significant hazards and hazardous materials impacts as the project.

## **Hydrology and Water Quality**

*Alternative 2 would result in similar less-than-significant hydrology and water quality impacts identified with the project.*

The construction activity required to seismically retrofit the non-seismically compliant Central and East Wings of the existing hospital will involve demolition/deconstruction and reconstruction. Grading and excavation activities would be required, as with the project, thus there is the same potential to result in degradation to water quality, groundwater supplies, or drainage patterns. However, because development would not occur on the hillside, the degree of adverse effect is slightly reduced with this alternative (represented by a “down arrow” symbol in Table 5-2). Development on the project site also would be subject to the same flood and hazardous hydrological conditions that the project would encounter. Overall, Alternative 2 would have the same less-than-significant hydrology and water quality impacts as the project.

## **Land Use, Plans, and Policies**

*Alternative 2 would result in the similar less-than-significant land use, plans, and policies impacts identified with the project.*

Alternative 2 would result in the same development and land uses, including the acute care hospital, on the project site as proposed by the project. Therefore, similar to the proposed project,

development with Alternative 2 would not result in conflicts or inconsistencies with existing nearby land uses, communities, or open space. Alternative 2 would result in the same less-than-significant land use, plans, and policies impacts as identified with the project.

### **Noise and Vibration**

*Alternative 2 would result in a similar significant and unavoidable construction noise and vibration impact identified with the project (Impact NOI-2), with increased effects (given the longer duration of construction activity compared to what would occur with the project); and would result in the same less-than-significant operational noise impacts identified with the project.*

**Construction.** Alternative 2 would result in slightly greater construction noise and vibration impacts given the greater amount of overall demolition/deconstruction involved and the substantially longer duration of overall construction required to conduct demolition and reconstruction activities while maintaining uninterrupted hospital operations (see *Description*, above). Therefore, Alternative 2 would continue to have the significant and unavoidable impact identified with the project (Impact NOI-2), likely with increased severity. Mitigation Measures AIR-2 and AIR-3 to address construction emissions and fugitive dust and require best management practices, as recommended in the BAAQMD CEQA Air Quality Guidelines, would also apply to Alternative 2.

**Operations.** Alternative 2 would generate the same number of peak hour vehicle trips as would occur with the project. Also, the same noise-generating operations that would be introduced with the project would occur with Alternative 2: new and rooftop mechanical equipment, new service loading areas, new emergency generator, and two new parking structures. Therefore, Alternative 2 would have the same less-than-significant operational noise and vibration impacts as identified with the proposed project.

### **Population, Housing and Employment**

*Alternative 2 would result in similar less-than-significant impacts to population, housing, and employment as identified with the project.*

Alternative 2 would result in similar development on the project site as the proposed project, but with seismically retrofitting the existing hospital, it would not renovate portions of the existing Central and East Wings for non-acute care outpatient services as proposed with the project. As discussed for the project, those renovated non-acute care services could generate additional employees on the project site, but the number would be speculative as well as too few to affect the impacts identified for the project (see Section 3.5.2, *Major Project Components, Renovation of Existing Hospital Wings*). Thus, Alternative 2 would result in generally the same employees on the project site compared to the project, inducing generally the same population growth, and would not conflict with population and housing projections and policies. Alternative 2 would result in similar less-than-significant impacts for population, housing, and employment as those identified with the project.

## **Public Services and Recreation**

***Alternative 2 would result in the same less-than-significant impacts to public services and recreation as identified with the project.***

Alternative 2 would result in the same development on the project site as the proposed project, but with seismically retrofitting the existing hospital it would not renovate portions of the existing Central and East Wings for non-acute care outpatient services as proposed with the project; those renovated non-acute care services would have generated additional employees on the project site. As discussed in *Population, Housing, and Employment*, Alternative 2 would result in slightly fewer employees on the project site compared to the project. As a result, Alternative 2 would have less demand for public services and recreation than would occur with the project, and therefore would result in similar less-than-significant impacts as identified with the project.

## **Transportation and Circulation**

***Alternative 2 would result in similar significant and unavoidable intersection level of service (LOS) and queuing impacts identified with the project (Impacts TRA-1, TRA-5, and TRA-7), as well as similar significant and unavoidable freeway LOS impact at buildout (Impact TRA-7) identified with the project.***

Alternative 2 would generate the same number of peak hour trips as would occur with the project, since the only project component that would differ in Alternative 2 is that the existing hospital would be seismically retrofitted (instead of a new Hospital Replacement Building being constructed). As a result, the alternative would not result in a change to the number of licensed beds (which drives trip generation for the hospital use) or employees on the project site. Therefore, Alternative 2 would result in similar significant and unavoidable LOS impacts (Impacts TRA-1, TRA-5 and TRA-7) as would occur with the proposed project.

***Alternative 2 would have similar less-than-significant impacts for all other topics (i.e., safety hazards and emergency access) as identified with the project.***

Alternative 2 would result in changes to onsite circulation and roadway and site access improvements similar to that proposed with the project, thus the impacts would be similar to those identified with the project. All mitigation measures regarding safety hazards and emergency access identified with the project would apply.

**Parking.** Although not addressed as an impact under CEQA, Alternative 2 would have a 57-space parking surplus (compared to a 19-space deficit with the project) and a 17-space parking deficit (compared to a 93-space deficit with the project) at 2018 and 2035, respectively. Like the project, with Alternative 2 Marin Healthcare District would continue its present arrangement and enter into a long-term shared parking agreement securing an additional 90 parking spaces for employee use, which would eliminate the 17-space deficit in 2035 and create a 73-space surplus (compared to a 3-space deficit with the project). The church parking lot would continue to be served by Marin General Hospital Campus shuttle services.

### **Utilities and Service Systems**

*Alternative 2 would result in the same less-than-significant impacts to utilities and service systems than would occur with the project.*

With Alternative 2, development on the project site would be essentially the same as with proposed project, but with seismically retrofitting the existing hospital it would not renovate portions of the existing Central and East Wings for non-acute care outpatient services as proposed with the project. However, this would not result in a substantial difference in the demand for utilities and service systems on the project site. The on-site population would be essentially the same as with the project. As a result, Alternative 2 would have essentially the same demand for utilities and service systems as would occur with the project, and therefore would result in the same less-than-significant utilities and service systems impacts as identified with the project.

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## **5.4.4 Alternative 3: No Ambulatory Services Building or Hillside Parking Structure / No Land Swap**

### **Description**

With Alternative 3, development of the proposed project would occur, except that the 100,000 square-foot Ambulatory Services Building and the 412-space Hillside Parking Structure would not be developed.

As discussed in Section 3.1.3, *Existing Ownership*, in the Chapter 3, Project Description, development of the Hillside Parking Structure would require a land swap or lease agreement of approximately 0.82 acres of land co-owned by Marin County and the Marin Healthcare District (see Figure 3-3 in Chapter 3). This exchange requires discretionary approval by Marin County. As raised in public comments provided during the EIR Scoping for this EIR (see Appendix A to this Draft EIR), Alternative 3 addresses a project alternative that would not require the land swap or lease agreement to occur.

The potential elevated pedestrian walkway that would connect the Bon Air Road Parking Structure to the Hospital Replacement Building and the Ambulatory Services Building (pending Marin Healthcare District securing adequate public funding for this element) would continue to be an option with Alternative 3 as with the project, but without the link to the Ambulatory Services Building (see Figure 3-6 in Chapter 3, Project Description). The overall vehicular site circulation in Alternative 3 would be similar to that proposed with the project, except that the access driveways to where the Hillside Parking Structure would have been developed would not be needed.

Under Alternative 3, the construction duration would be less, and the number of phases would be fewer than with the project; with the Hillside Parking Structure (Phase I) and Ambulatory Services Building (Phase III) not occurring, construction of the Bon Air Road Parking Structure (and related north access road improvements) would advance to Phase I (from Phase II), and the Hospital Replacement Building would advance to Phase II (from Phase IV).

### **No Land Swap / Full Project**

It is worth noting here that a scenario that would develop all elements of the proposed project but avoid the required land swap or lease agreement for the existing parcel of land co-owned by Marin County and the Marin Healthcare District would likely require a consolidation of structures and uses. For example, given a priority goal of maintaining the proposed parking supply onsite, the parking spaces in the two proposed parking structures could be accommodated in a single structure, or a substantial number of parking spaces (at a minimum the 412 spaces from the Hillside Parking Structure) could be developed under the Ambulatory Services Building. As assessed during the District's planning for the Bon Air Road Parking Structure, site conditions limit the practicality of underground parking. Therefore, although a "stacked" scenario could avoid the need for a land swap or lease agreement, assuming it would be constructed above grade only, it would result in substantially taller structures, potentially up to 10 stories (if the Ambulatory Service Building and parking from the Hillside Parking Structure were stacked, for example).

An alternative scenario would involve development beyond the existing limits of the core campus, building further into and up the steep hillside areas to the east. This would likely be required if one of the proposed parking structures was reduced to two smaller garages.

Neither of the above two scenarios (i.e., stacked structures or developing undeveloped hillsides) aligns with the project objectives; either would have greater environmental effects than identified with the proposed project. While these scenarios would not likely result in new significant impacts not identified with the project, the substantially taller buildings would have relatively greater aesthetics effects (e.g., scenic vistas, visual character, shadows); developing in the remaining available portion of the site in the steep north and east hillsides would involve substantially more excavation and grading activities, increasing the effects to geology/soils, hydrology and water quality, and biological resources (including tree removal).

## **Comparison of Alternative 3 Impacts to those Identified with the Proposed Project**

### ***Aesthetics***

***Alternative 3 would result in similar less-than-significant aesthetics impacts as those identified with the project.***

Alternative 3 would result in less new massing on the project site without construction of the Hillside Parking Structure and the Ambulatory Services Building. The Hillside Parking Structure did not contribute to any adverse aesthetic effects, primarily because the building pad is already developed and the site's bowl topography, natural terrain, and intervening buildings would largely screen the structure from most viewpoints.

Mitigations were identified with the proposed project to address the substantial change that the Hospital Replacement Building would have on the scenic vista looking toward the site from the Corte Madera Creek pathway across Bon Air Road (Impact AES-1), and to address the substantial degree of visible change to the natural topography that would occur with new



retaining walls proposed along the south access driveway (Impact AES-2). Both of these mitigation measures would still apply under Alternative 3 since the Hospital Replacement Building would still be developed in its proposed location.

Overall, compared to the proposed project, Alternative 3 would have the same less-than-significant aesthetic impacts, although to a slightly lesser degree of adverse effect (represented by a “down arrow” symbol in Table 5-2). All mitigation measures identified for the project would apply for this alternative as well.

### ***Air Quality***

***Alternative 3 would result in a less-than-significant air quality impact regarding community risk (e.g., excess cancer risk) without mitigation (given the reduced construction activity), avoiding the need for the mitigation measure identified with the project (Impact AIR-5); and would result in similar other construction and operational air quality impacts identified with the project (given decreased construction activity and new development).***

**Construction.** Alternative 3 would result in lower construction period emissions since the Ambulatory Services Building and the Hillside Parking Structure would not be developed. Thus, the construction impacts would remain less than significant, as identified with the project, but the effect would be to lesser a degree (as represented by a “down arrow” symbol in Table 5-2). Mitigation Measures AIR-2 and AIR-3 to address construction emissions and fugitive dust and require best management practices, as recommended in the BAAQMD CEQA Air Quality Guidelines, would continue to apply to Alternative 3. Construction activity with Alternative 3 would be at least 15 percent less than the proposed project, so daily construction emissions are estimated to be below the significance threshold for community risk (e.g., excess cancer risk) impacts. However, while not required to address this impact, the prescribed Mitigation Measure AIR-5 is the same as AIR-2 that would still be required to address construction emissions and fugitive dust, as previously indicated.).

**Operations.** Alternative 3 would have slightly lower operational air quality impacts than the proposed project since the Ambulatory Services Building would not be developed. The impacts would remain less than significant, but to a lesser degree (as represented by a “down arrow” symbol in Table 5-2).

### ***Biological Resources***

***Alternative 3 would result in similar less-than-significant biological resources impacts as those identified with the project.***

Alternative 3 would involve less tree removal (estimated 34 fewer trees, as depicted in Figure 4.C-2 in Section 4.C, *Biological Resources*) and grading since the Ambulatory Services Building and the Hillside Parking Structure would not be constructed. Overall, compared to the proposed project, Alternative 3 would have similar less-than-significant biological resources impacts, but to a lesser degree (as represented by a “down arrow” symbol in Table 5-2).

### **Cultural and Paleontological Resources**

*Alternative 3 would result in the significant and unavoidable impact to historical resources identified with the project (Impact CUL-1) and result in similar other less-than-significant cultural resources impacts identified with the project.*

With Alternative 3, like the proposed project, the Hospital Replacement Building would impair the Halprin Gardens, including the Bar-B-Q Terrace and Ambulatory Terrace gardens, which are historical resources for the purposes of CEQA. Therefore, the significant and unavoidable impact identified with the project would also occur with Alternative 3 (Impact CUL-1). Subsurface construction activities would occur with the remaining development that would be constructed. The potential less-than-significant impacts also would still occur as a result, but to a lesser degree (as represented by a “down arrow” symbol in Table 5-2) given the reduced development area. Overall, compared to the proposed project, Alternative 3 would have similar cultural resources impacts.

### **Geology, Soils, and Seismicity**

*Alternative 3 would result in similar less-than-significant geology, soils, and seismicity impacts as identified with the project.*

Alternative 3 would involve the same type of construction activity as the project, except that fewer buildings would be constructed. The buildings that would still be developed (the Bon Air Road Parking Structure and the Hospital Replacement Building) would encounter the same geologic and soils conditions as the proposed project. Further, the development would be subject to the same geologic, soils, and seismic characteristics and risks as the proposed project. Alternative 3 would have similar less-than-significant geology, soils, and seismicity impacts as the project.

### **Greenhouse Gases and Climate Change**

*Alternative 3 would have similar less-than-significant GHG emissions impacts as identified with the project, although substantially lower emissions (given the reduced amount of development with this alternative).*

Alternative 3 would generate less GHG emissions than the proposed project since the Ambulatory Services Building would not be developed, however, not to a less-than-significant level without mitigation. Mitigation Measure GHG-2 would apply to reduce the impact to less than significant, as would occur with the project, and the overall emissions effect would be slightly reduced in degree, (represented by a “down arrow” symbol in Table 5-2) given the reduction in emissions with this alternative.

### **Hazards and Hazardous Materials**

*Alternative 3 would result in similar less-than-significant hazards and hazardous materials impacts as identified with the project.*

Alternative 3 would involve the same type of construction activity as the project, except that fewer buildings would be constructed with Alternative 3. Thus, the potential to encounter hazardous materials in both the ground and existing building materials similar to the proposed project would exist. Overall, Alternative 3 would have similar less-than-significant hazards and hazardous materials impacts as the project.

### **Hydrology and Water Quality**

*Alternative 3 would result in similar less-than-significant hydrology and water quality impacts identified with the project.*

Alternative 3 would involve the same type of construction activity as the project, except that fewer buildings would be developed. Even so, overall grading and excavation activity would occur, creating the potential to change drainage patterns or result in degraded water quality and groundwater supplies. Development on the project site would be subject to the same flood and hazardous hydrological conditions that the project would encounter. Overall, Alternative 3 would have similar less-than-significant hydrology and water quality impacts as the project, but to a slightly lesser degree (represented by a “down arrow” symbol in Table 5-2) given the smaller area of earthwork required.

### **Land Use, Plans, and Policies**

*Alternative 3 would result in the same less-than-significant land use, plans, and policies impacts identified with the project.*

Alternative 3 would result in the same land uses and slightly less development compared to the proposed project; the Ambulatory Services Building and the Hillside Parking Structure would not be constructed. Regardless, development with Alternative 3 would not result in conflicts or inconsistencies with existing nearby land uses, communities, or open space. Overall, Alternative 3 would result in the same less-than-significant land use, plans, and policies impacts as identified with the project.

### **Noise and Vibration**

*Alternative 3 would result in a similar significant and unavoidable construction noise and vibration impact identified with the project (Impact NOI-2), and similar less-than-significant operational noise impacts as identified with the project.*

**Construction.** Alternative 3 would result in lesser construction noise and vibration impacts than would occur with the project since the Ambulatory Services Building and the Hillside Parking Structure would not be developed. However, this analysis conservatively considers that the

substantial duration of time required to construct the remaining project components would reasonably still be considered significant and unavoidable, although to a lesser degree (represented by a “down arrow” symbol in Table 5-2); the activities would likely expose adjacent receivers to construction noise in excess of the significance thresholds and existing conditions. Therefore, Alternative 3 would also have the significant and unavoidable impact identified with the project (Impact NOI-2).

**Operations.** Alternative 3 would generate substantially fewer peak hour vehicle trips than would occur with the project. Also, fewer noise-generating operations that would be introduced with the project would occur with Alternative 3; the rooftop mechanical equipment associated with the Ambulatory Services Building would not occur, and the Hillside Parking Structure would not be constructed. Alternative 3 would have similar less-than-significant operational noise and vibration impacts as identified with the proposed project, but to a lesser degree (represented by a “down arrow” symbol in Table 5-2), given the slightly reduced development and resulting peak-hour vehicle trips.

### ***Population, Housing and Employment***

*Alternative 3 would result in similar less-than-significant impacts to population, housing, and employment as identified with the project.*

By not developing the Ambulatory Services Building, Alternative 3 would result in substantially fewer employees on the project site compared to those that would occur with the project. As a result, Alternative 3 would induce less population growth and would not conflict with population and housing projections and policies. Alternative 3 would result in similar less-than-significant impacts for population, housing, and employment as those identified with the project, but to a lesser degree (represented by a “down arrow” symbol in Table 5-2).

### ***Public Services and Recreation***

*Alternative 3 would result in similar less-than-significant impacts to public services and recreation as identified with the project.*

By not developing the Ambulatory Services Building, Alternative 3 would result in substantially fewer employees and visitors on the project site, compared to those that would occur with the project. As a result, Alternative 3 would have less demand for public services and recreation than would occur with the project. Therefore, Alternative 3 would result in similar less-than-significant impacts as identified with the project, but to a lesser degree (represented by a “down arrow” symbol in Table 5-2).

## **Transportation and Circulation**

***Alternative 3 would have similar significant and unavoidable intersection level of service (LOS) and queuing impacts identified with the project (Impacts TRA-1, TRA-5, and TRA-7), as well as similar significant and unavoidable freeway LOS impact at buildout (Impact TRA-7) identified with the project.***

Alternative 3 would generate 112 AM peak hour trips, 118 mid-day peak hour trips, and 128 PM peak hour trips (see Appendix G to this EIR). These represent approximately 63.8, 65.6 and 65.7 percent less than Year 2018 project totals for the AM, mid-day, and PM peak hour time periods, respectively; similarly, the peak hour trip generation would be approximately 66.9, 68.7 and 68.7 percent less, respectively, than the project's Year 2035 project totals.

With these substantial reductions, the overall traffic resulting with Alternative 3 would be substantially less than those identified with the project for both Year 2018 plus project and Year 2035 plus project. However, consistent with the County's standards of significance<sup>6</sup> and methodology applied in this EIR, while peak hour trips with Alternative 3 would be less than those generated by the project, the alternative would result in similar significant and unavoidable LOS and queuing impacts identified with the project (Impacts TRA-1, TRA-5, and TRA-7). The impacts are significant and unavoidable because they are due to existing adverse conditions that would be exacerbated under any scenario that generates *any* new trips compared to existing conditions (as Alternative 3 would). The degree of the impact with Alternative 3 would be less than with the project (represented by a "down arrow" symbol in Table 5-2) since the alternative would generate fewer peak hour trips.

***Alternative 3 would have similar impacts for all other topics (i.e., safety hazards and emergency access) as identified with the project.*** Alternative 3 would not result in substantial changes to onsite circulation and roadway and site access improvements compared to the proposed project, therefore the impacts would be similar to those identified with the project. All mitigation measures regarding safety hazards and emergency access identified with the project would apply.

**Parking.** Although not addressed as an impact under CEQA, the calculated parking demand for Alternative 3 would be 698 spaces (compared to 1,098 for the project) in Year 2018, and 772 spaces (compared to 1,172 for the project) in Year 2035 (see Appendix G to this EIR).

In both years, with the 507-space Bon Air Parking Structure and existing on-site surface lots, this Alternative would have a 667-space parking supply (compared to 1,079 with the project). Therefore, Alternative 3 would experience a 31-space parking deficit in Year 2018 (compared to a 19-space deficit with the project), and a 105-space parking deficit in Year 2035 (compared to a 93-space deficit with the project). As with the project, Marin Healthcare District would continue its present arrangement and enter into a long-term shared parking agreement securing an additional 90 parking spaces for employee use, which would result in a 15-space deficit at

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<sup>6</sup> For intersections that already have an unacceptable LOS, any increase in delay at the intersection is considered a significant impact.

buildout (compared to a 3-space deficit with the project). The church parking lot would continue to be served by Marin General Hospital Campus shuttle services.

### **Utilities and Service Systems**

*Alternative 3 would result in similar impacts to utilities and service systems than would occur with the project.*

By not developing the Ambulatory Services Building and the Hillside Parking Structure on the project site, Alternative 3 would result in substantially less development and on-site population compared to what would occur with the project. As a result, Alternative 3 would have less demand for utilities and service systems than would occur with the project, and therefore would result in similar less-than-significant utilities and service systems impacts as identified with the project, but to a lesser degree (represented by a “down arrow” symbol in Table 5-2).

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## **5.4.5 Alternative 4: Reduced Ambulatory Services Building and Bon Air Road Parking Structure**

### **Description**

With Alternative 4, development of the proposed project would occur, except that the Ambulatory Services Building would be reduced to 84,000 square feet (16,000 square feet less than the proposed project) and reduced to four stories (one story less than the proposed project). The reduced Ambulatory Services Building would require 336 spaces in the Bon Air Road Parking Structure (171 fewer than the proposed project), which allows that parking structure to be reduced to four stories (compared to five with the proposed project). The 412-space Hillside Parking Structure would continue to be developed as proposed.

The overall volume of site grading, and amount of building demolition and tree removal would be about the same as with the proposed project, since all project components would still be developed with Alternative 4; the same footprints are assumed, but with lower building heights. However, smaller footprints that maintain the same building heights proposed by the project could also be assumed, although the degree of footprint reduction would not be so substantial as to alter the potential environmental effects as identified with the project for the same-foot print scenario assumed here for Alternative 4. The potential elevated pedestrian walkway that would connect the Bon Air Road Parking Structure to the Hospital Replacement Building and the Ambulatory Services Building (pending Marin Healthcare District securing adequate public funding for this element), would continue to be an option with Alternative 4. The overall vehicular site circulation in Alternative 4 would be the same as proposed with the project since the only difference is the size of the Ambulatory Services Building and the Bon Air Road Parking Structure.

The sequence and duration of project phasing would be essentially the same as with the proposed project, although Phase II (Ambulatory Services Building) and Phase III (Bon Air Road Parking

Structure) may be slightly shorter duration given the smaller size of these two structures with Alternative 4.

## **Comparison of Alternative 4 Impacts to those Identified with the Proposed Project**

### ***Aesthetics***

*Alternative 4 would result in similar aesthetics impacts as those identified with the project.*

Alternative 4 would result in lower building heights on the project site than with the proposed project because the Bon Air Road Parking Structure and the Ambulatory Services Building would both have four stories rather than the proposed five stories under the project. The Hillside Parking Structure and the Hospital Replacement Building would be constructed as under the project.

The views of the project site from the surrounding public viewpoints would not change noticeably from that depicted for the project, because all of the components of the proposed project would be constructed and would occupy the same footprint. The difference of one less story for the Ambulatory Services Building and the Bon Air Road parking structure under this alternative would not alter the views of the project site significantly, because the prominent structure for all views is the Hospital Replacement Building which would be constructed as under the project. Similar to the project, Mitigation Measures AES-1 and AES-2 would apply to this alternative.

Overall, compared to the proposed project, Alternative 4 would have the same less-than-significant aesthetics impacts, though to a slightly lesser extent (represented by a “down arrow” symbol in Table 5-2) because of the lower heights of the Ambulatory Services Building and the Bon Air Road Parking Structure.

### ***Air Quality***

*Alternative 4 would result in similar construction and operational air quality impacts as those identified with the project (given decreased construction activity and new development).*

Alternative 4 would result in slightly lower construction period emissions since the Ambulatory Services Building and the Bon Air Road Parking Structure buildings would be slightly smaller than with the project. The construction impacts would remain less than significant, as identified with the project, but to less a degree (as represented by a “down arrow” symbol in Table 5-2). Mitigation Measures AIR-2 and AIR-3 to address construction emissions and fugitive dust and require best management practices, as recommended in the BAAQMD CEQA Air Quality Guidelines, would continue to apply to Alternative 4. Construction activity with Alternative 4 could be within 15 percent of that required for the proposed project, so daily construction emissions are estimated to exceed the significance threshold for community risk (e.g., excess cancer risk) impacts. Therefore Mitigation Measure AIR-5 (which is the same as AIR-2) would continue to address community risk impacts during construction.

**Operations.** Alternative 4 would have slightly lower operational air quality impacts than the proposed project, and the impacts would remain less than significant since it would generate fewer daily vehicle trips than would occur with the project.

### ***Biological Resources***

*Alternative 4 would result in the same biological resources impacts identified with the project.*

Alternative 4 would involve essentially the same type of construction activities as the proposed project, since the same new buildings would be constructed, requiring similar extents of grading, tree removal, and other site alterations even though the Ambulatory Services Building and the Bon Air Road Parking Structure would be smaller than with the project. Overall, compared to the proposed project, Alternative 4 would have the same less-than-significant biological resources impacts.

### ***Cultural and Paleontological Resources***

*Alternative 4 would result in the same cultural resources impacts identified with the project, including the significant and unavoidable historical resources impact identified with the project (Impact CUL-1).*

With Alternative 4, all components of the proposed project would be developed, including the new Hospital Replacement Building that would displace the Halprin Gardens, including the Bar-B-Q Terrace and Ambulatory Terrace gardens, which are historical resources for the purposes of CEQA. Thus, Alternative 4 would have the significant and unavoidable historical resources impact identified with the project (Impact CUL-1). Although the Ambulatory Services Building and the Bon Air Road Parking Structure would be developed at a smaller scale, construction will involve subsurface construction activities. Therefore, overall, compared to the proposed project, Alternative 4 would have the same less-than-significant cultural resources impacts.

### ***Geology, Soils, and Seismicity***

*Alternative 4 would result in similar less-than-significant geology, soils, and seismicity impacts as identified with the project.*

Alternative 4 would involve the same type of construction activity as the project, except that the Ambulatory Services Building and the Bon Air Road Parking Structure would be smaller with Alternative 4 and thus may have a smaller population compared to the proposed project. The same grading and excavation activities that would occur with the project would occur with Alternative 4, thus the same geologic and soils conditions would be encountered. The development would be subject to similar seismic characteristics as the proposed project. Overall, Alternative 4 would have similar less-than-significant geology, soils, and seismic impacts as the project.



### **Greenhouse Gases and Climate Change**

*Alternative 4 would result in similar less-than-significant GHG emissions impacts as identified with the project, although slightly fewer emissions (given the reduced amount of development with this alternative).*

Alternative 4 would generate GHG emissions that are less-than what would occur with the proposed project since a smaller Ambulatory Services Building would be developed (and its floor area drives vehicle trip generation). But while reduced, the Alternative 4 emissions are not estimated to be at a less-than-significant level without mitigation. Mitigation Measure AIR-2 would apply to Alternative 4 and reduce the impacts to less than significant, as would occur with the project. Further, the effect with Alternative 4 would be at a lesser degree than with the project (represented by an “up arrow” symbol in Table 5-2), given the reduction in emissions with the alternative.

### **Hazards and Hazardous Materials**

*Alternative 4 would result in similar less-than-significant hazards and hazardous materials impacts as identified with the project.*

Alternative 4 would involve the same type of construction activity as the project, except that the Ambulatory Services Building and the Bon Air Road Parking Structure would be smaller with Alternative 4. Thus, the potential to encounter hazardous materials in both the ground and existing building materials similar to the proposed project would exist. Overall, Alternative 4 would have similar less-than-significant hazards and hazardous materials impacts as the project.

### **Hydrology and Water Quality**

*Alternative 4 would have the same less-than-significant hydrology and water quality impacts identified with the project.*

Alternative 4 would involve the same type of construction activity as the project, except that the Ambulatory Services Building and the Bon Air Road Parking Structure would be smaller with Alternative 4. Thus, the same potential to affect drainage patterns, water quality, and groundwater supplies exists. Also, development on the project site would be subject to the same flood and hazardous hydrological conditions that the project would encounter. Overall, Alternative 4 would have the same less-than-significant hydrology and water quality impacts as the project.

### **Land Use, Plans, and Policies**

*Alternative 4 would result in the same less-than-significant land use, plans, and policies impacts identified with the project.*

Alternative 4 would result in the same development proposed by the project, although the Ambulatory Services Building and the Bon Air Road Parking Structure would be smaller in size. Development with Alternative 4 would not result in conflicts or inconsistencies with existing

nearby land uses, communities, or open space. Alternative 4 would result in the same less-than-significant land use, plans and policies impacts as identified with the project.

### **Noise and Vibration**

*Alternative 4 would result in a similar significant and unavoidable construction noise and vibration impact identified with the project (Impact NOI-2) and similar less-than-significant operational impacts identified with the project.*

**Construction.** Alternative 4 would result in slightly lower construction noise and vibration impacts since the Ambulatory Services Building and the Bon Air Road Parking Structure would be smaller than they would be with the project. However, the time required to construct these smaller structures still would be extensive in duration; the activities would expose adjacent receivers to construction noise in excess of the significance thresholds and existing conditions. Therefore, Alternative 4 would also have the significant and unavoidable impact identified with the project (Impact NOI-2).

**Operations.** Alternative 4 would generate slightly fewer peak hour vehicle trips than would occur with the project. However, the same noise-generating operations that would be introduced with the project would occur with Alternative 4: new and rooftop mechanical equipment, new service loading areas, new emergency generator, and two parking. Therefore, Alternative 4 would have similar less-than-significant operational noise and vibration impacts as identified with the proposed project, but to a lesser degree (represented by a “down arrow” symbol in Table 5-2), given the slightly reduced development and resulting peak-hour vehicle trips.

### **Population, Housing and Employment**

*Alternative 4 would result in similar less-than-significant impacts to population, housing, and employment as identified with the project.*

By developing a smaller Ambulatory Services Building, Alternative 4 would result in slightly fewer employees on the project site compared to those that would occur with the project. As a result, Alternative 4 would induce less population growth and would not conflict with population and housing projections and policies. Alternative 4 would result in similar less-than-significant impacts for population, housing, and employment as those identified with the project, but to a lesser degree (represented by a “down arrow” symbol in Table 5-2).

### **Public Services and Recreation**

*Alternative 4 would result in similar less-than-significant impacts to public services and recreation as identified with the project.*

By developing a smaller Ambulatory Services Building on the project site, Alternative 4 would result in slightly fewer employees and visitors on the project site compared to those that would occur with the project. As a result, Alternative 4 would have slightly less demand for public

services and recreation than would occur with the project. Therefore, Alternative 4 would result in similar less-than-significant impacts as identified with the project, but to a lesser degree (represented by a “down arrow” symbol in Table 5-2).

### **Transportation and Circulation**

***Alternative 4 would result in similar significant and unavoidable intersection level of service (LOS) and queuing impacts identified with the project (Impacts TRA-1, TRA-5, and TRA-7), as well as similar significant and unavoidable freeway LOS impact at buildout (Impact TRA-7) identified with the project.***

Alternative 4 would generate 305 AM peak hour trips, 341 mid-day peak hour trips, and 370 PM peak hour trips (see Appendix G to this EIR). As indicated in Appendix G, these trips are lower than Year 2018 with the project. Specifically, with respect to peak hour trip generation, Alternative 4's 2035 trips would be approximately 1.6, 0.87, and 1.0 percent less than Year 2018 project totals for the AM, mid-day, and PM peak hour time periods, respectively; similarly, the peak hour trip generation with Alternative 4 in 2035 would be approximately 10.8, 9.5 and 9.7 percent less, respectively, than the project's Year 2035 peak hour trips.

With these reductions, the overall traffic resulting with Alternative 4 would be slightly less than those identified with the project for Year 2018 plus project and in Year 2035 plus project. Further, *theoretically*, the peak hour trip generation reductions in Year 2035 with Alternative 4, compared to the project (average reductions of approximately 10 percent for AM peak, mid-day, and PM peak), are not expected to substantially reduce or avoid impacts identified with the project in 2035. However, consistent with the County's standards of significance<sup>7</sup> and methodology applied in this EIR, while peak hour trips with Alternative 4 would be less than those generated by the project, the alternative would result in similar significant and unavoidable LOS and queuing impacts identified with the project (Impacts TRA-1, TRA-5, and TRA-7). The impacts are significant and unavoidable because they are due to existing adverse conditions that would be exacerbated under any scenario that generates *any* new trips compared to existing conditions (as Alternative 3 would). The degree of the impact with Alternative 4 would be less than with the project (represented by a “down arrow” symbol in Table 5-2) since the alternative would generate fewer peak hour trips.

***Alternative 4 would have similar impacts for all other topics (i.e., safety hazards and emergency access) as identified with the project.*** All mitigation measures regarding safety hazards and emergency access identified with the project would apply.

Although not addressed as an impact under CEQA, the calculated parking demand for Alternative 4 would be 1,108 spaces (see Appendix G to this EIR) (compared to 1,172 for the project) for Year 2035. The 412-space Hillside Parking Structure and a reduced 392-space Bon Air Road Parking Structure would be developed with Alternative 4. Given the remaining parking supply of

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<sup>7</sup> For intersections that already have an unacceptable LOS, any increase in delay at the intersection is considered a significant impact.

160 on-site parking spaces (that would not be displaced by the proposed development with Alternative 3), there would be a 964 space parking supply. This parking supply would result in a 144-space parking deficit (compared to the 93-space deficit with the project). As with the project, with Alternative 4 Marin Healthcare District would continue its present arrangement and enter into a long-term shared parking agreement securing an additional 90 parking spaces for employee use, which would reduce the deficit to 54 spaces (compared to a 3-space deficit with the project). The church parking lot would continue to be served by Marin General Hospital Campus shuttle services.

### **Utilities and Service Systems**

*Alternative 4 would result in similar less-than-significant impacts to utilities and service systems than would occur with the project.*

By developing a smaller Ambulatory Services Building and Bon Air Road Parking Structure on the project site, Alternative 4 would result in somewhat less development and on-site population compared to what would occur with the project. As a result, Alternative 4 would have less demand for utilities and service systems than would occur with the project, and therefore would result in similar less-than-significant utilities and service systems impacts as identified with the project, but to a lesser degree (represented by a “down arrow” symbol in Table 5-2).

## **5.5 Environmentally Superior Alternative**

CEQA requires that the EIR identify an environmentally superior alternative (CEQA Guidelines, Section 15126.6), which is the CEQA alternative that avoids or substantially reduces to the greatest extent the significant environmental impacts identified for the project. The evaluation below considers the extent to which each of the CEQA alternatives reduces or avoids the significant and unavoidable impacts identified for the proposed project. The extent to which an alternative reduces or avoids the project’s less-than-significant impacts is also considered, balanced by the relative degree to which the impact affects the physical environment. Table 5-2 at the end of this chapter presents the relative significant and less-than-significant impacts of the project and each of the alternatives.

### **5.5.1 No Project Alternatives**

As discussed in Section 5.4.1, No Project Alternative 1.1 would avoid all impacts identified with the project for all environmental topics, including all significant and unavoidable impacts identified in Section 5.2.2. However, No Project Alternative 1.1 would not comply with applicable, adopted land use, plans, and policies as fully as the proposed project would (Impacts LU-1 and LU-3). No Project Alternative 1.1 would not fully align with the Kentfield/Greenbrae Community Plan Conservation and Development Standard concerning modifications to Marin General Hospital and that supports that Marin General Hospital should continue to provide comprehensive medical service for Marin County. Moreover, it would fail to achieve any of the basic goals and objectives of the project (listed in Section 5.2.1).

Similarly, as discussed in Section 5.4.2, No Project Alternative 1.2 would result in substantially reduced impacts compared to the proposed project, since it would not develop any portions of the project. Therefore, No Project Alternative 1.2 would avoid the significant and unavoidable impacts to historical resources (Impact CUL-1), construction noise (NOI-1), as well as intersection and freeway level of service and queuing in 2018 and 2035 (Impacts TRA-1, TRA-5, and TRA-7). However, like No Project Alternative 1.1, No Project Alternative 1.2 would fail to achieve most of the basic goals and objectives of the project (listed in Section 5.2.1).

While each of the No Project Alternatives discussed above would substantially reduce or avoid the significant impacts identified with the project, in cases where the “no project” is the environmentally superior alternative (particularly in which no construction activity occurs, which is not feasible for the proposed project given mandated compliance with SB 1953 regulations (see Section 5.2.3), CEQA requires that the second most environmentally superior alternative be identified.

## 5.5.2 Environmentally Superior Alternative 2: Seismic Retrofit of the Existing Marin General Hospital / Historical Resource Avoidance

Alternative 2 is the environmentally superior alternative because it would avoid a significant and unavoidable project impact that would continue to occur with each of the other alternatives (except the No Project Alternatives, as discussed below). (The relative impacts for the project compared to all of the alternatives are provided in Table 5-2 at the end of this chapter.)

**Relative Significant and Unavoidable Impacts.** The proposed project would construct the new Hospital Replacement Building in an area of the project site that would require removal of historical resources: the Ambulatory Terrace and Bar-B-Q Terrace of the Halprin Gardens. Alternative 2 would avoid demolition of these historical resources by not constructing the Hospital Replacement Building and instead seismically retrofitting portions of the existing hospital to accommodate acute care uses, pursuant to SB 1953. Each of the other major project elements - the Hillside Parking Structure, Bon Air Road Parking Structure, and the Ambulatory Services Building would be constructed with Alternative 2, but they, individually or collectively, would not have a direct or indirect adverse affect on the Halprin Gardens. None of the other CEQA alternatives would avoid this significant and unavoidable impact to historical resources (Impact CUL-1) that would occur with the project.

The project’s other significant and unavoidable impacts from construction noise (Impact NOI-1), and traffic (Impacts TRA-1, TRA-5, and TRA-7) would continue to occur with Alternative 2, as they would under each of the other CEQA alternatives.

**Relative Less-than-Significant Impacts.** Although CEQA’s consideration of an environmentally superior alternative focuses on the ability for an alternative to avoid or substantially reduce significant impacts identified with the project, a comparison of less-than-significant impacts is summarized here for context (and also depicted in Table 5-2).

Each of the CEQA alternatives would reduce the *degree* of most of the project's less-than-significant impacts (as depicted by "down arrow" symbols in Table 5-2). Alternative 3 would actually reduce the project's "less-than-significant *after mitigation*" impact regarding construction-related health risk impacts (Impact AIR-5) to "less-than-significant, *no mitigation required*."

Alternative 2 would actually increase the *degree* of some less-than-significant impacts identified with the project, although the impact *determination* would remain less-than-significant. The longer duration of construction activity required to retrofit the existing hospital without interrupting existing service with Alternative 2 would increase the degree of several of the project's construction-related effects (as depicted by "up arrow" symbols in Table 5-2): short-term generation of fugitive dust (Impact AIR-3), construction-related health risk impacts (Impact AIR-5), and construction-related GHG emissions (Impact GHG-1).

**Summary.** In summary, Alternative 2 is the only alternative that avoids demolition of a historic resource (Impact CUL-1) and is able to maintain a less-than-significant level for all other impacts identified with the proposed project, with and without mitigation. Therefore, Alternative 2 is identified as the environmentally superior alternative.

## 5.6 Alternatives Considered but Not Analyzed Further in the EIR

### 5.6.1 Off-Site Alternative

CEQA does not require that the EIR consider an off-site alternative if a plan or policy change or legislative approval (e.g., General Plan amendment, rezoning) is not requested. However, as discussed for No Project Alternative 1.1, *Close Marin General Hospital, No Relocation Offsite*, all existing operations within Marin General Hospital would be discontinued, and a scenario in which the Marin Healthcare District would develop a new hospital at an off-site location is not considered in this analysis. While theoretically possible, it is highly unlikely that the Marin Healthcare District would leave existing viable facilities at Marin General Hospital Campus to construct new facilities if the proposed project is not approved. No potential off-site locations controlled by Marin Healthcare District where it could develop a new hospital were considered. Regardless, the impacts of developing a new licensed acute care hospital with the same program, size, and bed count as the existing Marin General Hospital on another property in Marin County would likely result in impacts similar to those identified with the proposed project. The exception could be that the impact to historical resources (Impact CUL-1) would not occur unless the historical resources existed on the off-site location.

### 5.6.2 Reuse of Marin General Hospital by Another Medical Provider

With the closure of Marin General Hospital assumed with No Project Alternative 1.1, it is theoretically possible for the Marin Healthcare District to transfer the facilities at the campus to another medical provider that could continue using the non-seismically compliant building areas.

However, reuse of the buildings would require compliance with the mandated SB 1953 regulations. The relative environmental effects of such a scenario essentially would be the same as those discussed for No Project Alternative 1.2, *Medical Office Backfill in All Non-Seismically Compliant Space* or potentially Alternative 2, *Seismic Retrofit Existing Marin General Hospital / Historic Resource Avoidance*. Thus, no alternative that assumed reuse of Marin General Hospital by another medical provider was considered further in this EIR.

### 5.6.3 Relocated Hospital Replacement Building

The Marin Healthcare District explored constructing the Hospital Replacement Building to the northeast area of the project site during its assessment of various site design layouts early in the design process (as discussed in Section 5.7, *Non-CEQA Design Alternatives*). The potential site layout locating the Hospital Replacement Building immediately northeast of the West Wing is depicted in Figure 5-1, *Non-CEQA Design Alternative D*, presented in Section 5.7, below.

Constructing the Hospital Replacement Building immediately northeast of the West Wing (generally in the area where the project proposes the Bon Air Road Parking Structure and the Ambulatory Services Building) offer several potential benefits not achieved with the proposed project. This layout would:

- Avoid displacement or other impairment to the Halprin Gardens, which are historical resources for the purposes of CEQA;
- Orient a shorter more active building use (the approximately 100-foot depth of the Hospital Replacement Building) along the frontage of Bon Air Road's northern segment, compared to more static building use (the approximately 300-foot length of the Bon Air Road Parking Structure); and
- Require less tree removal as there are fewer existing trees in the proposed area, which is currently primarily surface parking.

However, this potential Alternative was determined to not be a feasible alternative for in-depth consideration in this EIR (or to be necessary to ensure that reasonable range of alternatives is considered in this EIR) for the following reason that were determined to outweigh the potential benefits listed above. This layout would:

- Require substantially more extensive and costly excavation and foundation engineering for a pile or caisson foundation system required to develop an acute care hospital facility on an area where bedrock is at greater depths than the area proposed by the project and that meets the stringent seismic regulations pursuant to OSHPD and SB 1953;
- Compromise site circulation through the northern area of the project site;
- Restrict design flexibility for any potential future changes to hospital facilities by prohibiting use of site area close to core medical functions; and
- Severely compromise practical siting of the 100,000 square-foot Ambulatory Services Building without displacement of portions of the existing hospital.

### 5.6.4 Bon Air Road Parking Structure / Ambulatory Services Building Swap

No scenario was considered that assumed locating the Bon Air Road Parking Structure where the Ambulatory Services Building is proposed or anywhere closer to the Hospital Replacement Building - in an effort to move it back from the Bon Air Road frontage. This proximity would place potentially adverse sources of auto and construction-related noise, vibration, dust, and emissions from the parking structure near patient rooms and other sensitive use spaces in the hospital. The resulting effects for these issues would be greater than with the proposed project and would be contrary to the objectives of the project. Therefore, the District has located the Bon Air Road Parking Structure on the perimeter of the project site.

### 5.6.5 Reduced Bed Count in the Hospital Replacement Building

No scenario that assumed a reduction in the existing number of licensed hospital beds in Marin General Hospital was considered as it would present a scenario in which the Marin Healthcare District would provide reduced health services, which is directly contrary to the objectives of the project.

## 5.7 Non-CEQA Design Alternatives

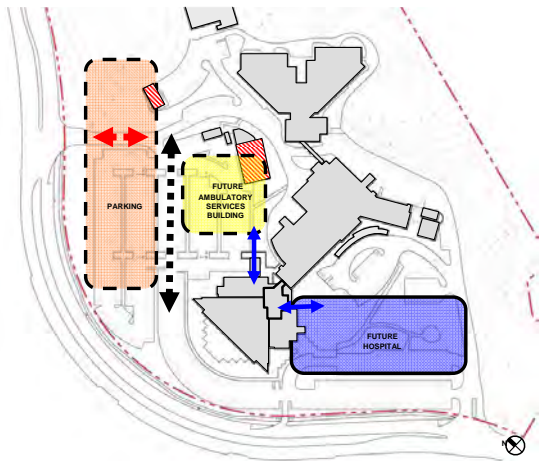
This section addresses the three non-CEQA design alternatives are site layouts that Marin Healthcare District prepared and evaluated during project planning, primarily to explore the most viable location and orientation for the Bon Air Road Parking Structure within the project site. Each of the options is depicted in **Figure 5-1, Non-CEQA Design Alternatives**. Unlike the CEQA alternatives analyzed in Section 5.4, the non-CEQA design alternatives are not intended to avoid or lessen any of the significant environmental effects identified for the project. To the extent that any of the options do so, they are discussed here for the benefit of the public, other public agencies, and City decision-makers who will ultimately consider the merits of the project, including matters of policy and design. Any reduced impacts compared to the project are addressed by one or more of the CEQA alternatives.

Prior to submitting its application for the proposed project to Marin County, the Marin Healthcare District evaluated these site layouts in light of several factors, including site constraints, objectives and requirements for functionality and overall safety, environmental considerations, as well as cost effectiveness. The District also received community feedback on the site layout.<sup>8</sup>

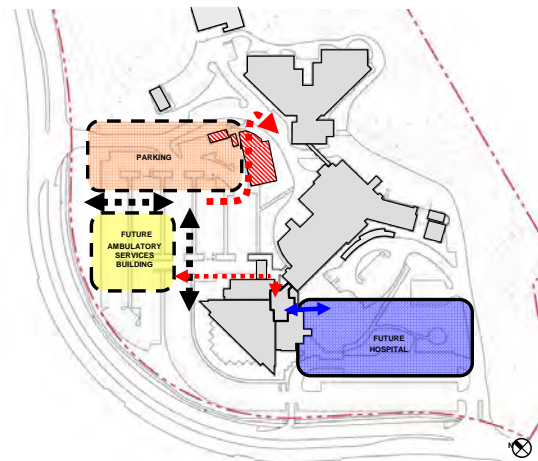
These site layouts were not selected as CEQA alternatives for this Draft EIR because none would result in substantially different environmental effects than identified with the project (in Chapter 4), primarily because the overall development program is generally the same as the proposed project.

<sup>8</sup> The Marin Healthcare District presented and received feedback on these site layout schemes at the October 27, 2010, Kentfield Planning Advisory Board meeting.

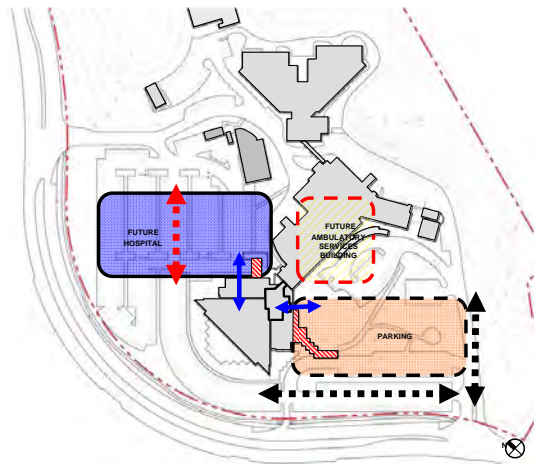




**Alternative B**  
 Extended Bon Air Rd  
 Parking Structure



**Alternative C**  
 Rotated Bon Air Rd  
 Parking Structure/  
 Ambulatory Services Building



**Alternative D**  
 North Hospital Replacement Building/  
 South Bon Air Road Parking Structure

Note:  
 For consistency with designations assigned to the Bon Air road Parking Structure Scenarios that the Marin Healthcare District introduced and discussed with the Public in 2010 and thereafter the non-CEQA design alternatives are designated "B" through "D"; Scenario "A" was comparable to CEQA Alternative B in this EIR.

The only substantive variations from the proposed project are the configuration of the Bon Air Road Parking Structure, with one of the options (Option D, previously addressed in Section 5.6.3 in the discussion of *Alternatives Considered but Not Analyzed Further in the EIR*) considering a change to the location of the Hospital Replacement Building and the Ambulatory Services Building.

Also, at the time Marin Healthcare District formulated these Options, the Bon Air Road Parking Structure was programmed with 897 spaces in seven levels; this was prior to incorporation of the Hillside Parking Structure into the project, which allowed the Bon Air Road Parking Structure to be reduced to the 507 spaces and five levels now proposed. Given that the project proposes a smaller Bon Air Road Parking Structure, the discussion of these non-CEQA design alternatives continues to focus solely on the configuration of the site layout and any substantially different environmental effects that might occur from that characteristic.

Note that the Option A considered by the Marin Healthcare District was the option selected as the proposed project for this EIR, therefore it is not repeated here. The original option designations (“B” through “D”) are retained in this EIR for continuity with previous community discussions of these Options.

### 5.7.1 Non-CEQA Design Alternative B: Extended Bon Air Road Parking Structure

Non-CEQA Design Alternative B considers a layout that extends the Bon Air Road Parking Structure into the northeast hillside, allowing the structure to be reduced from the originally proposed six stories (seven parking levels) to four stories (five parking levels), as with the proposed project (see Figure 5-1). The length of the structure is extended by approximately 70 feet along the Bon Air Road frontage, for a total length of 353 feet (compared to 283 feet with the project). Relevant to environmental effects considered under CEQA, compared to the proposed project this layout would involve substantially more grading, excavation, and tree removal from the hillside, contributing to the effects of water quality and biological resources. Although this layout has the north access road to/from Bon Air Road to pass under the garage, the overall circulation of the site would remain as with the project. While the provision of parking is not a CEQA impact, if this layout were applied to the proposed project (in which the Bon Air Road Parking Structure is four stories [five parking levels] with 507 parking spaces), the structure could be reduced to three stories (or four parking levels).

This layout would be considered to have a greater degree of adverse effect regarding scenic vistas and natural terrain, as identified with the project (Impacts AES-1 and AES-2) (and as depicted by “up arrow” symbols in Table 5-2). The effect of extending the parking structure into the hillside would be similar to the removal of mature natural areas on the site and visible from public areas as would occur with development of the Hospital Replacement Building and retaining walls with the project. Overall, Non-CEQA Design Alternative B would have similar environmental impacts from those identified with the project.

## 5.7.2 Non-CEQA Design Alternative C: Rotated Bon Air Road Parking Structure / Relocated Ambulatory Service Building

Non-CEQA Design Alternative C considers a layout that rotates the Bon Air Road Parking Structure 90 degrees and moves it northwest toward the hillside. To accommodate this orientation of the parking structure, the Ambulatory Services Building is moved closer to Bon Air Road (see Figure 5-1). This rotated orientation allows the shorter façade of the parking structure to face Bon Air Road (approximately 127 feet, compared to 283 feet with the project). This layout increases visibility of the Ambulatory Services Building along Bon Air Road compared to the proposed project's layout (since it would be closer to the roadway). It also places the Ambulatory Services Building further from the hospital, reducing the desired proximity of these two buildings to support their shared functions (see *Ambulatory Services Building* in Section 3.5.2, *Major Project Components*, in Chapter 3, Project Description).

Relevant to environmental effects considered under CEQA, compared to the proposed project this layout would involve slightly more grading, excavation, and tree removal from the northwest hillside, contributing to the effects of water quality and biological resources. It would also alter the north site access as the parking structure would block the existing north access road to/from Bon Air Road, and complicate interior site circulation. The views of the project site would not change significantly because even though the shorter façade of the Bon Air Road Parking Structure would face Bon Air Road under this layout, the Ambulatory Services Building would be relocated to occupy the area previously occupied by the longer façade of the parking structure (closer to Bon Air Road, which does not support the site principle of locating hospital related functions in directly proximity to each other). The mass and bulk of new construction under this alternative would remain similar to the project. Overall, Non-CEQA Design Alternative C would have similar environmental impacts from those identified with the project.

## 5.8 Summary of Impacts Identified with the Project and the Alternatives

**Table 5-2**, *Summary of Impacts Identified with the Project and the Alternatives*, starting on the following page summarizes the impacts of the project and each of the alternatives analyzed. The table specifically highlights (in **bold** font) cases where an alternative avoids or otherwise results in a different impact *determination* (i.e., less-than-significant, less-than-significant after mitigation, or significant and unavoidable) than that identified with the proposed project. Notable differences in relative degree (e.g., more/greater than/increased” or “less than/reduced”) of environmental effect are also noted where relevant.

**TABLE 5-2  
SUMMARY OF IMPACTS IDENTIFIED WITH THE PROJECT AND THE ALTERNATIVES**

	Project	No Project Alternatives		Project Alternatives			Non-CEQA Design Alternatives <sup>a</sup>	
		1.1 Close MGH, No Relocation Offsite	1.2 Medical Office Backfill in All Non- Seismically Compliant Space	2 Seismic Retrofit Existing MGH / Historical Resource Avoidance	3 No ASB or Hillside Parking Structure / No Land Swap	4 Reduced ASB and Reduced Bon Air Parking Structure	B Extended Bon Air Road Parking Structure	C Rotated Bon Air Road Parking Structure / ASB
<b>A. Aesthetics</b>								
Impact AES-1: The Project would have a substantial adverse effect on one scenic vista as seen from the Corte Madera Creek pathway.	LSM	N	N	LSM↓	LSM↓	LSM↓	LSM↑	LSM
Impact AES-2: The Project would not substantially damage scenic resources or natural viewsheds, but could result in substantial changes to the natural terrain visible from public viewpoints.	LSM	N	N	LSM↓	LSM↓	LSM↓	LSM↑	LSM
Impact AES-3: The Project would not substantially degrade the existing visual character of the project site or its surroundings, would not change the visual quality of the region, or eliminate significant visual resources.	LS	N	N	<u>LS</u> ↓	LS↓	LS↓	LS	LS
Impact AES-4: The Project would not create a significant increase in light and glare that would adversely affect nighttime views in the area.	LS	N	N	<u>LS</u> ↓	LS↓	LS↓	LS	LS
Impact AES-5: The Project would not significantly reduce sunlight or introduce shadows in areas used extensively by the public.	LS	N	<u>N</u>	<u>LS</u> ↓	LS↓	LS↓	LS	LS
Impact AES-6: The Project would not conflict with the County goals and policies related to visual quality, or other applicable aesthetic or visual policies or standards.	LS	N	<u>N</u>	<u>LS</u>	LS	LS	LS	LS
Impact AES-7: The Project, combined with past, present and other reasonably foreseeable future development in the area would not cause cumulative aesthetics impact.	LS	N	N	<u>LS</u>	LS	LS	LS	LS

<sup>a</sup> Non-CEQA Design Alternative "A" was selected as the site design layout of the proposed project.

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SU Significant and Unavoidable after mitigation

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**Bold** indicates change from impact identified with the project

**TABLE 5-2 (Continued)**  
**SUMMARY OF IMPACTS IDENTIFIED WITH THE PROJECT AND THE ALTERNATIVES**

	Project	No Project Alternatives		Project Alternatives			Non-CEQA Design Alternatives <sup>a</sup>	
		1.1 Close MGH, No Relocation Offsite	1.2 Medical Office Backfill in All Non- Seismically Compliant Space	2 Seismic Retrofit Existing MGH / Historical Resource Avoidance	3 No ASB or Hillside Parking Structure / No Land Swap	4 Reduced ASB and Reduced Bon Air Parking Structure	B Extended Bon Air Road Parking Structure	C Rotated Bon Air Road Parking Structure / ASB
<b>B. Air Quality</b>								
Impact AIR-1: The Project could conflict with or obstruct implementation of the applicable air quality plan.	LS	N	LS	LS	LS	LS	LS	LS
Impact AIR-2: Construction of the Project would result in short-term construction equipment exhaust emissions that could contribute to existing or projected air quality standard violations.	LSM	N	LSM↓	LSM↑	<b>LS</b>	LSM↓	LSM	LSM
Impact AIR-3: Construction of the Project would result in short-term generation of fugitive dust that could contribute to existing or projected air quality standard violations.	LSM	N	LSM↓	LSM↑	LSM↓	LSM↓	LSM	LSM
Impact AIR-4: The Project would result in long-term operational emissions of criteria pollutants that could contribute to existing or projected air quality standard violations.	LS	N	LS↑	LS	LS↓	LS↓	LS	LS
Impact AIR-5: The Project would contribute to community health risk impacts.	LSM	N	LSM	LSM↑ (construction); LSM	<b>LS</b> (construction); LSM↓	LSM↓	LSM	LSM
Impact AIR-6: Sensitive receptors at Marin General Hospital would not be exposed to health risk impacts.	LS	N	LS	LS	LS	LS	LS	LS
Impact AIR-7: The Project would not generate localized odors.	LS	N	LS	LS	LS	LS	LS	LS
Impact AIR-8: The Project would contribute to cumulative air quality degradation and to regional air quality cumulative impacts.	LSM	N	LSM	LSM	LSM↓	LSM↓	LSM	LSM

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**TABLE 5-2 (Continued)**  
**SUMMARY OF IMPACTS IDENTIFIED WITH THE PROJECT AND THE ALTERNATIVES**

	Project	No Project Alternatives		Project Alternatives			Non-CEQA Design Alternatives <sup>a</sup>	
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<b>C. Biological Resources</b>								
Impact BIO-1: Construction of the Project could adversely impact special-status bat species through removal of potential roosting habitat and through increases in noise levels during construction.	LSM	N	LS	LSM	LSM↓	LSM↓	LSM	LSM
Impact BIO-2: The Project would not have a substantial adverse effect on migratory and breeding birds through building collisions and increases in night lighting.	LS	N	LS	LS	LS↓	LS↓	LS	LS
Impact BIO-3: The Project could affect breeding raptors and other special-status birds through vegetation removal associated with construction.	LSM	N	LS	LSM	LSM↓	LSM↓	LS	LS
Impact BIO-4: The Project could affect migratory and breeding birds indirectly through increases in ambient noise due to construction.	LSM	N	LS	LSM	LSM↓	LSM↓	LSM	LSM
Impact BIO-5: The Project would not have a substantial effect on Waters of the United States, Waters of the State, or critical habitat for endangered steelhead and coho salmon.	LS	N	LS	LS	LS	LS	LS	LS
Impact BIO-6: The Project would involve the removal of native trees protected under the Marin County Native Tree Protection and Preservation Ordinance. Tree work on the project site has the potential to spread sudden oak death syndrome.	LSM	N	LS	LS	LSM↓	LSM↓	LSM	LSM
Impact BIO-7: The Project combined with other past, present, and reasonably foreseeable development in the vicinity of the Project site would not result in cumulative impacts on special-status species, wetlands and other waters of the U.S. and State, and protected trees.	LS	N	LS	LSM	LS↓	LS↓	LS	LS

<sup>a</sup> Non-CEQA Design Alternative "A" was selected as the site design layout of the proposed project.

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**TABLE 5-2 (Continued)**  
**SUMMARY OF IMPACTS IDENTIFIED WITH THE PROJECT AND THE ALTERNATIVES**

	Project	No Project Alternatives		Project Alternatives			Non-CEQA Design Alternatives <sup>a</sup>	
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<b>D. Cultural and Paleontological Resources</b>								
Impact CUL-1: The Project would have an impact on a historical resource as defined by PRC Section 5024.1.	SU	N	N	LSM	SU	SU	SU	SU
Impact CUL-2: The Project would have an impact on archaeological resources as defined by PRC Section 21083.2(g).	LSM	N	LS	LSM	LSM	LSM	LSM	LSM
Impact CUL-3: The Project could have an impact on a paleontological resource.	LSM	N	LS	LSM	LSM	LSM	LSM	LSM
Impact CUL-4: The Project could have an impact on human remains.	LSM	N	LS	LSM	LSM	LSM	LSM	LSM
Impact CUL-5: The Project, combined with other past, present and reasonably foreseeable development would not have a cumulative impact on cultural resources.	LS	N	LS	LS	LS	LS	LS	LS
<b>E. Geology, Soils, and Seismicity</b>								
Impact GEO-1: The Project would not expose people or structures to potential substantial adverse effects involving strong seismic ground-shaking and associated secondary effects due to landslides and/or weak or liquefiable soils.	LS	N	LS	LS	LS	LS	LS	LS
Impact GEO-2: The Project would not expose people or structures to potential substantial adverse effects involving soils that have shrink-swell characteristics or other properties (e.g., corrosivity, settlement, or collapse) that could damage foundations, underground utilities, and other sub-grade structures.	LS	N	LS	LS	LS	LS	LS	LS

<sup>a</sup> Non-CEQA Design Alternative "A" was selected as the site design layout of the proposed project.

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<b>E. Geology, Soils, and Seismicity (cont.)</b>								
Impact GEO-3: The Project would not have a substantial adverse effect due to it being located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, resulting in a landslide, earthflow or other earth movement, or be subject to soil erosion or loss of topsoil.	LS	N	LS	LS	LS	LS	LS	LS
Impact GEO-4: The Project, combined with other existing, planned, proposed, or reasonably foreseeable development in the region, would not result in cumulative geologic and soil hazards.	LS	N	LS	LS	LS	LS	LS	LS
<b>F. Greenhouse Gases and Climate Change</b>								
Impact GHG-1: Construction of the Project would result in increased GHG emissions, but would incorporate best management practices.	LS	N	LS	LS↑	LS↓	LS↓	LS	LS
Impact GHG-2: Operations of the Project would result in increased GHG emissions.	LSM	N	LSM↓	LSM	LSM↓	LSM↓	LSM	LSM
Impact GHG-3: The Project would not conflict with an applicable plan, policy, or regulation adopted to reduce GHGs.	LS	N	LS	LS	LS	LS	LS	LS
Impact GHG-4: The incremental GHG impact of the Project would be cumulatively considerable.	LSM	N	LSM	LSM	LSM↓	LSM↓	LSM	LSM

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<b>H. Hazards and Hazardous Materials</b>								
Impact HAZ-1: The Project would not cause a significant hazard due to the transport, use and storage of hazardous chemicals, radioactive materials, and biohazardous materials.	LS	N	LS↓	LS	LS	LS	LS	LS
Impact HAZ-2: The Project's demolition or renovation of existing structures that contain hazardous building materials would not cause a significant hazard by exposing workers, the public, or the environment to them or by generating hazardous waste.	LS	N	LS↓	LS	LS	LS	LS	LS
Impact HAZ-3: The Project would not cause a significant hazard by emitting hazardous materials or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	LS	N	LS↓	LS	LS	LS	LS	LS
Impact HAZ-4: The Project would occur on a site listed in Government Code Section 65962.5 and could disturb soil and groundwater impacted by historic hazardous material use, but would not cause a significant hazard by exposing construction workers, the public, or the environment to adverse conditions related to hazardous materials handling.	LS	N	LS↓	LS	LS	LS	LS	LS
Impact HAZ-5: The Project would not cause a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	LS	N	LS↓	LS	LS	LS	LS	LS

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<b>I. Hydrology and Water Quality</b>								
Impact HYD-1: The Project would not involve activities that would violate water quality standards or waste discharge requirements; result in substantial erosion or siltation; create or constitute substantial polluted runoff; or otherwise substantially degrade water quality.	LS	N	LS↓	LS	LS↓	LS↓	LS	LS
Impact HYD-2: The Project would not result in impacts due to the depletion of groundwater supplies or substantially interference with groundwater recharge.	LS	N	N	LS	LS	LS	LS	LS
Impact HYD-3: The Project would not alter existing drainage patterns, which could result in increased pollutant loading in stormwater runoff, leading to violation of water quality standards of receiving waters or increase the volume of stormwater runoff, leading to flooding in downstream areas.	LS	N	N	LS	LS↓	LS	LS	LS
Impact HYD-4: The Project would not result in significant impacts by placing structures within a 100-year flood hazard zone.	LS	N	LS	LS	LS	LS	LS	LS
Impact HYD-5: The Project would not expose people or structures to a significant risk of loss, injury or death resulting from flooding caused by failure of a levee or dam.	LS	N	LS	LS	LS	LS	LS	LS
Impact HYD-6: The Project would not expose people or structures to a significant risk of loss, injury or death resulting from flooding caused by seiche, tsunami or mudflow.	LS	N	LS	LS	LS	LS	LS	LS
Impact HYD-7: The Project, in conjunction with past, present and other reasonably foreseeable development in the area, would not cause cumulative impacts with respect to hydrology and water quality.	LS	N	LS	LS	LS	LS	LS	LS

<sup>a</sup> Non-CEQA Design Alternative "A" was selected as the site design layout of the proposed project.

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<b>J. Land Use, Plans, and Policies</b>								
Impact LU-1: The Project would not conflict with uses at the periphery of the project area, divide an existing community, convert open space, or result in incompatible land uses.	LS	N	LS	LS	LS	LS	LS	LS
Impact LU-2: The Project would not conflict with any applicable land use plan, goal, policy, or regulation, including zoning, adopted for the purpose of avoiding or mitigating an environmental effect.	LS	LS↑	LS↑	LS	LS	LS	LS	LS
Impact LU-3: The Project, combined with past, present, and reasonably foreseeable projects in the area, would not result in a cumulative land use impact regarding land use, plans and policies	LS	N	LS	LS	LS	LS	LS	LS
<b>K. Noise</b>								
Impact NOI-1: The Project would not develop land uses that would be incompatible with the noise environment at and nearby the project site.	LS	N	LS	LS	LS↓	LS↓	LS	LS
Impact NOI-2: Construction of the Project would substantially and temporarily increase noise levels in areas of sensitive receptors and exceed the ambient noise environment.	SU	N	<b>LSM</b>	SU↑	SU↓	SU	SU	SU
Impact NOI-3: Construction of the Project could expose persons to groundborne vibration.	LSM	N	LSM	LSM↑	LSM↓	LSM↓	LSM	LSM

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<b>K. Noise (cont.)</b>								
Impact NOI-4: The Project could generate operational noise levels that exceed standards established in the Marin Countywide Plan.	LSM	<b>N</b>	LSM	LSM	LSM↓	LSM↓	LSM	LSM
Impact NOI-5: The Project would not result in increased traffic volumes that would substantially increase noise levels at sensitive receivers in the project vicinity.	LS	<b>N</b>	LS↓	LS	LS↓	LS↓	LS	LS
Impact NOI-6: The Project, combined with past, present, and reasonably foreseeable projects, would not substantially increase traffic noise levels along area roadways or result in cumulatively significant temporary or operational noise or vibration effects	LS	<b>N</b>	LS	LS	LS	LS	LS	LS
<b>L. Population, Housing, and Employment</b>								
Impact POP-1: The Project would not induce substantial population growth or concentration of population in the area, either directly or indirectly.	LS	<b>N</b>	LS↓	LS	LS↓	LS↓	LS	LS
Impact POP-2: The Project could conflict with housing and population projections and policies as set forth in the Countywide Plan.	LS	<b>N</b>	LS↓	LS	LS↓	LS↓	LS	LS
Impact POP-3: The Project, in conjunction with past, present and reasonably foreseeable projects, would not contribute to a cumulatively considerable effect related to population, housing and/or employment.	LS	<b>N</b>	LS	LS	LS	LS	LS	LS

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<b>M. Public Services and Recreation</b>								
Impact PSR-1: The Project would not cause a substantial adverse physical impact due to increased demand for fire protection services and emergency medical assistance.	LS	<b>N</b>	LS↓	LS	LS↓	LS↓	LS	LS
Impact PSR-2: The Project would not cause a substantial adverse physical impact due to increased demand for police protection services.	LS	<b>N</b>	LS↓	LS	LS↓	LS↓	LS	LS
Impact PSR-3: The Project would not cause a substantial adverse physical impact due to the need for additional school capacity or facilities.	LS	<b>N</b>	LS↓	LS	LS↓	LS↓	LS	LS
Impact PSR-4: The Project would not result in increased use of parks at levels that would require the designation of additional parkland to remain in conformance with locally adopted park standards.	LS	<b>N</b>	LS↓	LS	LS↓	LS↓	LS	LS
Impact PSR-5: The Project would not result in increased use of recreational facilities that would result in substantial and/or accelerated physical deterioration of facilities.	LS	<b>N</b>	LS↓	LS	LS↓	LS↓	LS	LS
Impact PSR-6: The Project, combined with past, present, and other reasonably foreseeable development in the area, would not contribute to cumulative impacts with respect to public services and recreation.	LS	<b>N</b>	LS	LS	LS	LS	LS	LS

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		1.1 Close MGH, No Relocation Offsite	1.2 Medical Office Backfill in All Non- Seismically Compliant Space	2 Seismic Retrofit Existing MGH / Historical Resource Avoidance	3 No ASB or Hillside Parking Structure / No Land Swap	4 Reduced ASB and Reduced Bon Air Parking Structure	B Extended Bon Air Road Parking Structure	C Rotated Bon Air Road Parking Structure / ASB
<b>N. Transportation and Circulation</b>								
Impact TRA-1: The Project would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Existing plus Project Conditions.	SU <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  LS <i>(freeway segment LOS)</i>	<b>N</b>	SU↓ <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  LS↓ <i>(freeway segment LOS)</i>	SU <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  LS <i>(freeway segment LOS)</i>	SU↓ <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  LS↓ <i>(freeway segment LOS)</i>	SU↓ <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  LS↓ <i>(freeway segment LOS)</i>	SU <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  LS <i>(freeway segment LOS)</i>	SU <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  LS <i>(freeway segment LOS)</i>
Impact TRA-2: Implementation of the Project would substantially increase traffic safety hazards for vehicles, bicyclists, and pedestrians on public roadways due to roadway design features, incompatible uses, or Project-related vehicles trips.	LSM	<b>N</b>	<b>LS</b>	LSM	LSM	LSM	LSM	LSM
Impact TRA-3: The Project could result in inadequate emergency access.	LSM	<b>N</b>	<b>LS</b>	LSM	LSM	LSM	LSM	LSM
Impact TRA-4: The Project would not be inconsistent with adopted polices, plans, and programs supporting alternative transportation.	LS	<b>N</b>	LS	LS	LS	LS	LS	LS

<sup>a</sup> Non-CEQA Design Alternative "A" was selected as the site design layout of the proposed project.  
**N** No Impact  
**LS** Less than significant; no mitigation required  
**LSM** Less than significant impact after mitigation  
**SU** Significant and Unavoidable after mitigation  
 ↑↓ Impact is more severe or less severe than project impact, after mitigation, but with no change in impact determination  
**Bold** indicates change from impact identified with the project

**TABLE 5-2 (Continued)  
SUMMARY OF IMPACTS IDENTIFIED WITH THE PROJECT AND THE ALTERNATIVES**

	Project	No Project Alternatives		Project Alternatives			Non-CEQA Design Alternatives <sup>a</sup>	
		1.1 Close MGH, No Relocation Offsite	1.2 Medical Office Backfill in All Non-Seismically Compliant Space	2 Seismic Retrofit Existing MGH / Historical Resource Avoidance	3 No ASB or Hillside Parking Structure / No Land Swap	4 Reduced ASB and Reduced Bon Air Parking Structure	B Extended Bon Air Road Parking Structure	C Rotated Bon Air Road Parking Structure / ASB
<b>N. Transportation and Circulation (cont.)</b>								
Impact TRA-5: The Near-Term Project would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Near-Term (Year 2018) plus Near-Term Project Conditions.	SU <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  LS <i>(freeway segment LOS)</i>	<b>N</b>	SU↓ <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  LS↓ <i>(freeway segment LOS)</i>	SU <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  LS <i>(freeway segment LOS)</i>	SU↓ <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  LS↓ <i>(freeway segment LOS)</i>	SU↓ <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  LS↓ <i>(freeway segment LOS)</i>	SU <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  LS <i>(freeway segment LOS)</i>	SU <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  LS <i>(freeway segment LOS)</i>
Impact TRA-6: The Project would generate temporary increases in traffic volume and temporary effects on transportation conditions during construction activities.	LS	<b>N</b>	LS	LS	LS	LS	LS	LS
Impact TRA-7: The Project, in conjunction with past, present and other reasonably foreseeable future development in the area, would increase traffic volumes on area roadways and affect levels of service at the local and CMP study and freeways intersections under Cumulative plus Project conditions.	SU <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  SU <i>(freeway segment LOS)</i>	<b>N</b>	SU↓ <i>intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  SU↓ <i>(freeway segment LOS)</i>	SU <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  SU <i>(freeway segment LOS)</i>	SU↓ <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  SU↓ <i>(freeway segment LOS)</i>	SU↓ <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  SU↓ <i>(freeway segment LOS)</i>	SU <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  SU <i>(freeway segment LOS)</i>	SU <i>(intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd)</i>  SU <i>(freeway segment LOS)</i>

<sup>a</sup> Non-CEQA Design Alternative "A" was selected as the site design layout of the proposed project.  
 N No Impact  
 LS Less than significant; no mitigation required  
 LSM Less than significant impact after mitigation  
 SU Significant and Unavoidable after mitigation  
 ↑↓ Impact is more severe or less severe than project impact, after mitigation, but with no change in impact determination  
**Bold** indicates change from impact identified with the project

**TABLE 5-2 (Continued)**  
**SUMMARY OF IMPACTS IDENTIFIED WITH THE PROJECT AND THE ALTERNATIVES**

	Project	No Project Alternatives		Project Alternatives			Non-CEQA Design Alternatives <sup>a</sup>	
		1.1 Close MGH, No Relocation Offsite	1.2 Medical Office Backfill in All Non- Seismically Compliant Space	2 Seismic Retrofit Existing MGH / Historical Resource Avoidance	3 No ASB or Hillside Parking Structure / No Land Swap	4 Reduced ASB and Reduced Bon Air Parking Structure	B Extended Bon Air Road Parking Structure	C Rotated Bon Air Road Parking Structure / ASB
<b>O. Utilities and Service Systems</b>		LS						
Impact UTIL-1: The Project would not require new or substantially expanded water facilities or new entitlements.	LS	<b>N</b>	LS↓	LS	LS↓	LS↓	LS	LS
Impact UTIL-2: The Project would not require expanded wastewater treatment services.	LS	<b>N</b>	LS↓	LS	LS↓	LS↓	LS	LS
Impact UTIL-3: The Project would not be served by a landfill with insufficient permitted capacity or conflict with solid waste regulations.	LS	<b>N</b>	LS↓	LS	LS↓	LS↓	LS	LS
Impact UTIL-4: The Project would not be served by energy suppliers with inadequate capacity and would not conflict with energy conservation standards.	LS	<b>N</b>	LS↓	LS	LS↓	LS↓	LS	LS
Impact UTIL-5: Construction of the Project would not use or encourage large or inefficient use of energy, exceed the energy supplier's existing capacity, or conflict with energy conservation standards.	LS	<b>N</b>	LS↓	LS	LS↓	LS↓	LS	LS
Impact UTIL-6: The Project, in combination with other past, present, and reasonably foreseeable development, would not result in cumulative impacts on utilities and service systems.	LS	<b>N</b>	LS	LS	LS	LS	LS	LS

<sup>a</sup> Non-CEQA Design Alternative "A" was selected as the site design layout of the proposed project.

**N** No Impact

**LS** Less than significant; no mitigation required

**LSM** Less than significant impact after mitigation

**SU** Significant and Unavoidable after mitigation

↑↓ Impact is more severe or less severe than project impact, after mitigation, but with no change in impact determination

**Bold** indicates change from impact identified with the project



# CHAPTER 6

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## Impact Overview and Growth Inducement

Pursuant to State CEQA *Guidelines*, this section summarizes the significant and unavoidable and cumulative effects identified in the EIR, the potential for growth inducement from the project, potential economic and social effects, significant irreversible environmental effects, as well as effects found not to be significant.

### 6.1 Significant and Unavoidable Impacts

Pursuant to CEQA *Guidelines* Section 15126.2(b), this EIR has identified significant environmental effects which cannot be avoided if the proposed project is implemented (see “Significant and Unavoidable (SU)” in Section 4.4, *Impact Classifications*, in Chapter 4 of this Draft EIR). The following significant and unavoidable impacts are identified for the project:

- **Impact CUL-1:** The Project will have an impact on a historical resource as defined by PRC Section 5024.1.
- **Impact NOI-2:** Construction of the Project would substantially and temporarily increase noise levels in areas of sensitive receptors and exceed the ambient noise environment.
- **Impact TRA-1:** The Project would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Existing plus Project Conditions. (SU for intersection LOS and queuing on Bon Air Road/Sir Francis Drake Blvd.)
- **Impact TRA-5:** The Near-Term Project would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Near-Term (Year 2018) plus Near-Term Project Conditions.
- **Impact TRA-7:** The Project, in conjunction with past, present and other reasonably foreseeable future development in the area, would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Cumulative plus Project conditions. (SU for intersection LOS and freeway segment LOS)

All significant and avoidable impacts for the project are identified in the respective environmental topic sections throughout Chapter 4 and are included in Table 2-1, Summary of Impacts, Mitigation Measures, and Residual Impacts, in Chapter 2, Summary.

## 6.2 Cumulative Impact

Pursuant to CEQA *Guidelines* Section 15130, this EIR has identified significant cumulative impacts of a project when the project's incremental effects are cumulatively considerable (as defined in CEQA *Guidelines* Section 15026[a][3]). The approach to the cumulative analysis, and the list of cumulative development considered throughout this Draft EIR for the cumulative analyses, are discussed under *Cumulative Analysis*, in Chapter 4 of this Draft EIR.

The following cumulative impact is identified for the project (e.g., the project's contribution is cumulatively considerable) (and is also identified above as a significant and unavoidable).

- **Impact TRA-7:** The Project, in conjunction with past, present and other reasonably foreseeable future development in the area, would increase traffic volumes on area roadways and affect levels of service at the local and CMP study intersections and freeways under Cumulative plus Project conditions. (SU for intersection LOS and freeway segment LOS)

## 6.3 Growth Inducement

CEQA *Guidelines* Section 15126.2(d) requires that an EIR evaluate the growth inducing impacts of a proposed project. Specifically, the EIR should:

*Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.*

This section addresses the implications of the project for growth in Marin County, including unincorporated county areas, cities, and the Bay Area region. The discussion is organized into the following three topics:

1. Net addition of employment: the extent to which project improvements and expansion would result in growth of medical services employment that would not otherwise occur in Marin County or the Bay Area region.
2. The growth-inducing relationship between increases in medical services employment and associated increases in population and the demand for housing.
3. The multiplier effects whereby project increases in medical services employment would support growth in other economic sectors.

The section summarizes topics and impacts addressed in Section 4.K *Population, Housing, and Employment*, in Chapter 4, which provides the context for evaluating growth-inducing impacts.

## 6.3.1 Net Addition of Project Employment

### Local Area Perspective

To summarize from Chapter 3, Project Description (see Table 3-1), the project would replace the existing hospital with the proposed Hospital Replacement Building; renovate and convert about 74,986 square feet of the existing hospital wings from acute care hospital uses to non-acute-care outpatient services; and add outpatient care and associated services at the new 100,000 square-foot Ambulatory Services Building. There would be no change in the number of licensed patient beds currently on the project site.<sup>1</sup> Overall the workforce on the project site would increase by about 426 employees.

The growth of medical services and associated employment resulting from the proposed project is growth that would occur in the county without the project. The need for medical services and facilities would grow as a function of the needs of the population: Marin's aging population, more than its projected population growth, is anticipated to increase demands for health care services in coming years (The Lewin Group, 2006). Given Marin General Hospital's central role in providing medical services to county residents and its central location within the county, without the proposed project it is likely that another project or projects providing related services would be located in the project vicinity to meet increased demands for acute care and ambulatory medical services. Therefore, in terms of induced growth, the project would affect medical services growth within the county, but not the total amount of growth in medical services that is reasonably expected in the area served by Marin General Hospital over time.<sup>2</sup>

### Regional Perspective

From the broader perspective of growth inducement in the nine-county Bay Area region, project growth would not represent a net addition of economic activity and employment to the region. This is because the project growth would be growth that otherwise would be expected to occur elsewhere in Marin County or potentially in adjacent counties without the project. Therefore, the project would not affect the amount of regional growth that is projected to occur, although, as noted above, it would affect the location of a limited portion of that projected regional growth.

## 6.3.2 Employment Growth and Population

The project would add about 426 new jobs at the project site. This number of jobs represents 1.6 percent of the 27,200 jobs in Ross Valley cities and 0.3 percent of the total 143,780 jobs in Marin County (see Table 4.K-3 in Section 4.K, *Population, Employment, and Housing*). The addition of this many new jobs in the project area would not result in a substantial amount of growth or growth beyond that projected to occur in the county. As discussed under Impact POP-1 in Section 4.K, *Population, Employment, and Housing*, the conservative estimate of population growth of the 1,036 persons that would result from all 426 new project employees moving to the

<sup>1</sup> Although the number of licensed beds would not change, the number of beds in use can increase or decrease depending on demand.

<sup>2</sup> Essentially all of the county south of Novato (The Lewin Group, 2006).

area would not be substantial in that it would not result in induced population growth beyond that assumed in Association of Bay Area Governments (ABAG) projections and the Marin Countywide Plan. It is very possible that some of the new workers already reside in Marin County or that some might relocate from distant places to nearby counties other than Marin. This conservative potential contribution of 1,036 new persons to the existing Bay Area population (7,341,700) would not be substantial or induce undue growth beyond that assumed in ABAG projections for the region over the next 25 years (1,732,000) – less than 0.01 percent in both cases.

## Housing Demand

The Marin County Local Agency Formation Commission (LAFCO) expects that due to the limited availability of land to develop, new housing will be distributed within existing urban areas and will occur as infill development (Marin County LAFCO, 2007).

Housing vacancy rates provide a measure of how readily demand for housing might be met, although by no means the complete picture. A degree of housing vacancy is considered desirable to allow for normal housing turnover and mobility on the part of renters and home buyers. According to ABAG, a five percent vacancy rate is considered necessary to permit ordinary mobility in rental housing, and a two percent vacancy rate is considered necessary to permit ordinary mobility in for-sale housing. Vacancy rates below these levels indicate a constrained housing market in which residents will have difficulty finding appropriate units and competition for units will drive up housing prices (ABAG, ND.) The U.S. Census Bureau classifies units that are temporarily occupied entirely by persons with primary residences elsewhere as vacant (U.S. Census Bureau, 2011a). Such units, which include second homes and timeshares, would therefore be included in total vacancy rates but would not be included in homeowner or rental vacancy rates since they are not available on the for-sale or rental markets. **Table 6.2-1** shows the number of housing units, total vacancy rate, and homeowner and rental vacancy rates for the nine Bay Area counties in 2010.

**TABLE 6.2-1  
BAY AREA VACANCY RATES (2010)**

County	Total Housing Units	Total Vacancy Rate	Homeowner Vacancy Rate	Rental Vacancy Rate
Alameda	582,549	6.4	1.8	6.4
Contra Costa	400,263	6.2	2.1	6.8
Marin	111,214	7.2	1.3	5.2
Napa	54,759	10.7	2.4	7.1
San Francisco	376,942	8.3	2.3	5.4
San Mateo	271,031	4.9	1.3	4.6
Santa Clara	631,920	4.4	1.4	4.3
Solano	152,698	4.2	2.5	7.7
Sonoma	204,572	9.2	1.9	5.1

SOURCE: Census Bureau, 2011b.

As the Table 6.2-1 shows, the vacancy rate for ownership housing in Marin County is below that considered optimal, and the vacancy rate for rental housing is slightly greater than the five percent rate considered optimal. However, vacancy rate information alone does not provide information on the affordability of the vacant housing.

## Project Demand for Affordable Housing

As previously noted, the new jobs will generate demand for housing to accommodate the new workers. Conley Consulting Group conducted an analysis of housing need, which provides the basis for the estimates assumed in this analysis (Conley Consulting Group, 2011). Conley's methodology and conclusions are summarized below and differs from that presented in the analysis in Section 4.K, *Population, Housing and Employment*, in Chapter 4 of this Draft EIR in that it assumes all 426 new workers would be new to the area (i.e., none currently reside in Marin County).

The estimate of housing demand generated by the project recognizes that each of the 426 new workers does not represent a new household. The number of households needed by the 426 new workers to the area was estimated based on data from the Metropolitan Transportation Commission (MTC) that indicates that there is an average of 1.65 workers per working household in Marin County (MTC, 1998). Applying this factor to the 426 new workers yields 257 new households represented by the project jobs/new workers (Conley Consulting Group, 2011). Applying MTC's workers-per-working household rate assumes that some workers may come from the same household. To assess the housing needs of the new workers in terms of housing affordability, Conley first estimated the number of employees who would be in two-worker households (i.e., with combined incomes to draw on for housing costs), factored in the income levels by occupation of the new workers to identify the income distribution of the new employee households, and adjusted for household size (assuming an average household size of three persons based on the county average).

Based on these calculations the project would generate a need for housing at different affordability levels as shown in **Table 6.2-2**. In addition to the conservative assumption that all new employees would be new to the area, this assessment conservatively assumes that workers relocating to Marin County would only live in the Greenbrae/Larkspur communities, where, in fact, workers may live throughout Marin County in other cities.

Affordability of housing in Marin is a factor that drives worker commuting patterns. Currently many county workers cannot afford housing in Marin and therefore commute from residences in other counties. As such, existing commuter patterns are not assumed to reflect choices county workers would necessarily make if affordable housing were available closer to their work places. In the absence of adequate housing within the county to accommodate the new project workers, a portion of the project staff (especially those with moderate or below-moderate income levels) would have few options but to seek housing in areas with lower housing costs and commute to Marin for the new project jobs. This would contribute to adverse environmental impacts already common in the area, including traffic congestion and air pollution.

The level of housing demand generated by the project, shown in Table 6.2-2, is less than the county's current regional housing need allocation (RHNA) for the cities near the project site

**TABLE 6.2-2  
HOUSING NEEDS GENERATED BY PROJECT**

	Very Low (0-50% of AMI)	Low (51-80% of AMI)	Moderate (81-120% of AMI)	Above Moderate (over 120% of AMI)	Total
Housing Needs of Project Employees <sup>a</sup>	45	64	45	103	257
RHNA Allocation for Lower Ross Valley Cities (Larkspur and Corte Madera) <sup>b</sup>	158	93	121	254	626
RHNA Allocation for Unincorporated County	183	137	169	284	773

NOTE: AMI = area median income

<sup>a</sup> Conservatively assumes all new employees would be new to Marin County.

<sup>b</sup> Conservatively assumes all new households would be established in the Lower Ross Valley area.

SOURCES: Marin County Community Development Agency, 2007 (Table 3-55).  
ABAG, 2008, Marin County 2009

(summarized in Table 6.2-2, above, and presented in greater detail in Table 4.K-6 in Section 4.K, *Population, Housing, and Employment*, in Chapter 4) and less than the regional housing need allocation for unincorporated areas of the county overall.<sup>3</sup> Although the County's 2009 Draft Housing Element – which identifies appropriate sites that would accommodate the allocations – has not been finalized, the comparison of the regional housing need allocation for unincorporated Marin County and cities in the Lower Ross Valley Planning Area with project-generated demand indicates that the housing needs of new project employees are well within levels of new housing expected to be accommodated in the county.

It is noted that the county's RHNA allocation shown in Table 6.2-2 is for the entire unincorporated county; sites identified to meet the allocation are therefore assumed both to be distributed in different areas of the county and to meet demands generated in unincorporated areas throughout the county for the allocation period. The provision of affordable housing to house local workers has been a challenge in Marin County, which is reflected in goals and policies of its Countywide Plan, its existing and Draft Housing Elements, and its housing regulations.

The project would have demand for 154 units affordable to very low, low, and moderate-income workers, and 103 units affordable to above moderate income workers. Given that, as discussed above and shown in Table 6.2-2, the entire demand for affordable units generated by the project is

<sup>3</sup> The RHNA is a state-mandated process for determining how many housing units, including affordable units, each community (or county for unincorporated areas) must plan to accommodate. Allocations are based on factors that consider existing employment, employment growth, household growth, and the availability of transit; need is determined for households in all income categories from very-low to above-moderate (ABAG, 2008b).

As described in Section 4.L, *Population, Housing, and Employment*, the County's 2009 Draft Housing Element identifies sites with the potential to be developed to meet the county's RHNA goals for the 2007-2014 period. However, although the Draft Housing Element was submitted in 2009 to the California Department of Housing and Community Development (HCD) for review and approval, HCD has expressed concerns about the feasibility of some of the identified sites and the Draft element has not been approved. The County is continuing to work on identifying sufficient housing sites to address HCD concerns and meet current RHNA goals.

well within the County's RHNA allocation; the 257 residual units demanded would be accommodated by the RHNA allocation. As a result, the project's growth inducing effects related housing demand, and more specifically its demand for affordable housing, would be less than significant.

## Current Regional Planning Initiatives Addressing Growth

Bay Area regional agencies and local jurisdictions have undertaken regional planning efforts to address, accommodate, and mitigate the adverse effects of growth projected for the region. Three key initiatives are described below.

### ***Focus Initiative***

FOCUS is a regional planning initiative led by ABAG and MTC in coordination with the Bay Area Air Quality Management District (BAAQMD) and the San Francisco Bay Conservation and Development Commission (BCDC). It links land use and transportation planning and promotes a connected and more compact land use pattern. Under the initiative, future growth in the region would be focused in locally-identified Priority Development Areas (PDAs), which are areas located near transit that have infill development opportunities (ABAG et al., 2008). The FOCUS initiative does not regulate future development but instead provides guidance and assistance to foster housing and mixed use, infill development in the locally-identified PDAs. Marin County is participating in the initiative and PDAs have been designated near Highway 101 from Marinwood (north of San Rafael) to the southern border of the county (collectively called the Marin County Urbanized 101 Corridor PDA); the city of San Rafael has also identified a PDA in conjunction with the initiative. The population within the Urbanized 101 Corridor PDA is projected to grow by about 5,300 between 2010 and 2035, the number of households is projected to increase by 2,200 and the number of jobs is projected to increase by about 1,400 (ABAG 2009).<sup>4</sup>

### ***Senate Bill (SB) 375 and One Bay Area***

As described in Section 4.K, *Population, Housing and Employment*, in Chapter 4, in 2008 the State legislature adopted into law SB 375, which links regional transportation and housing planning with State GHG reduction goals.<sup>5</sup> The law requires the regional transportation plan (RTP) for each region in the state to include a "Sustainable Communities Strategy" (SCS) to achieve its GHG reduction target. The SCS must identify the general location of uses, residential densities, and building intensities in the region for the next eight and 25 years. The SCS also must identify areas within the region that will house all economic segments of the region's population, taking into account migration into the region and population growth over the next eight and 25

<sup>4</sup> These forecasts were included in ABAG's 2009 projections series (ABAG, 2009) and are assumed to be preliminary. Ongoing planning efforts described under One Bay Area in this section may well result some changes to these projected growth levels.

<sup>5</sup> SB 375 amended California Government Code Sections 65080, 654000, 65583, 65584.01, 65584.02, 65584.04, 65587, and 65588; added Government Code Sections 14522.1, 14522.2, and 65080.01; amended Public Resources Code (PRC) Section 21063; and added PRC Section 21159.28 and Chapter 4.2 (commencing with Section 21155) to Division 13 of the PRC relating to environmental quality.

years. Plan Bay Area: Initial Vision Scenario for Public Discussion, described below, is the preliminary draft of the SCS for the Bay Area.

### **One Bay Area**

Led by ABAG, MTC, BAAQMD, and BCDC, One Bay Area is an initiative launched in 2010 to coordinate efforts among the region's nine counties and 101 towns and cities to "create a more sustainable future" (ABAG and MTC, 2011). A major effort of the agencies, in partnership with the region's nine counties and 101 cities and towns, is the development of "Plan Bay Area" as the region's long-range plan for sustainable land use, transportation, and housing. Plan Bay Area is intended to respond to requirements of SB 375, which requires regional transportation plans to contain a "sustainable communities strategy" that integrates land use planning and transportation planning and identifies where the region's population will be housed. In March 2011 a preliminary version of the plan, Plan Bay Area: Initial Vision Scenario for Public Discussion, was released as a basis for discussion with local governments, the general public, and other stakeholders, about how the Bay Area can accommodate its population growth over the next 25 years. Places for growth included in the Initial Vision Scenario, which were identified by local jurisdictions, were mostly the PDAs already identified through the FOCUS program (described above), although additional "Growth Opportunity Areas" also were identified. Over two years following the plan's release, the regional agencies will engage local agencies and the public to help identify and assess several detailed scenarios leading to the identification of a preferred scenario (by early 2012) and adoption of a complete Plan Bay Area that includes a Sustainable Communities Strategy by April 2013 (ABAG and MTC, 2011).

### **6.3.3 Multiplier Effects**

Multiplier effects describe those economic interrelationships through which businesses support other businesses by purchasing goods and services; business activity supports household spending by providing jobs and wage and salary income; and household spending generates sales and revenue for consumer-oriented businesses. Increased patient visits and employment at the Marin General Hospital site would have multiplier effects in terms of incrementally supporting growth in other economic sectors and increased business activity elsewhere in Greenbrae, Kentfield, and nearby Ross Valley cities. (See related Section 6.4, *Economic Effects*, below.)

### **6.3.4 Conclusion**

The project is an urban infill project that would intensify activity and development at the existing Marin General Hospital Campus, in an area that is already a locus for medical services and well-served by existing transportation systems and other infrastructure and utilities.<sup>6</sup> Similarly, the housing to accommodate the projected-related population growth (resulting from project workers moving to the area, a conservative assumption) would occur as infill development in existing

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<sup>6</sup> In general the County's public transportation options are limited, as discussed further in Section 4.N. Transportation and Circulation; due to the site's proximity to Highway 101 and Sir Francis Drake Boulevard a number of bus lines provide service to the site vicinity and the site is well served by public transportation and the nearby highway system relative to many other places in the County.



communities served by existing infrastructure and utilities. Although such growth would incrementally increase demand for community services in the communities to which the new employees might move, the level of development would be consistent with anticipated levels of growth and would not require the extension of new roads and other infrastructure and utilities into previously undeveloped areas. Therefore the project would not result in significant growth inducing effects.

## 6.4 Economic Effects

CEQA *Guidelines* Section 15131 indicates that the EIR may include economic or social information in whatever form the Lead Agency desires. As Lead Agency, the Marin Healthcare District has included the following discussion in response to public comment received during the public scoping for this EIR regarding the economic impacts of vacating existing medical buildings on South Eliseo (see Appendix A to this Draft EIR). This information is not presented as a potential significant effect on the environment for CEQA purposes, but for information purposes for the public.

According to the Lead Agency, a dozen or so existing medical buildings along South Eliseo Drive south of the project site, and on Bon Air Road and Sir Francis Drake, contain approximately 238,000 square feet of space, of which approximately 45,000 square feet are occupied by hospital-affiliated uses that could potentially relocate to the 100,000-square-foot Ambulatory Services Building proposed by the project. However, the existing tenants and uses in these medical buildings are not under the jurisdiction of the Marin Healthcare District, thus any potential relocation is not part of the proposed project. The remaining 55,000 square feet of the new Ambulatory Services Building would be occupied by new outpatient services that would be new to the hospital campus.

It stands to reason that the economic health of a medical office building depends directly on its adjacency to a financially healthy hospital. The proposed project will improve and expand the services, facilities and operations at Marin General Hospital to provide an increasingly integrated delivery of high quality health care services from the existing campus. Thus, the economic effects of the proposed project could potential bolster the economic viability of the nearby medical buildings, whether occupied by existing tenants or new tenants that would backfill existing tenants relocated to the new Ambulatory Services Building. Only 19 percent of the space in those nearby buildings (45,000 out of 238,000) would qualify for relocation, as the Ambulatory Services Building will be limited to uses closely affiliated with hospital services (see Section 3.5.2, *Major Project Components*, regarding intended uses of the Ambulatory Services Building). According to the Lead Agency the existing medical buildings along the South Eliseo-Bon Air Road corridor are mostly fully occupied and apparently are considered desirable. There is nothing to suggest that moving some of their tenants to the Ambulatory Services Building would endanger their economic viability.

As discussed above in Section 6.3.1, *Net Addition of Project Employment*, and consistent with widely documented national trends, increase demands for health care services in coming years

exist in Marin County due to its aging population. Also, according to a National Medical Office Research Report (Marcus & Millichap, 2010a), while the national and local office market is suffering from the effects of factors involving the economy, the medical office market is outperforming the ordinary office market, although it still has its challenges given the overall national economic downturn. Specific to the project setting, however, the medical office building located nearby the project site benefit uniquely from their physical proximity to the hospital, as discussed above. Also, Marcus & Millichap note that the passage of healthcare legislation in 2010 would translate into increased demand for medical office space, stimulating absorption in existing properties and fueling medical office and hospital construction over the extended outlook ((Marcus & Millichap, 2010b).

Considering collective (1) the local increasing demand for health care, (2) the locational advantage of the Larkspur medical office to the Marin General Hospital Campus, (3) national legislation expected to strengthen medical office space demand, and (4) the assumed continued maintenance and suitability of the existing nearby medical office uses to attract new medical tenants, it is a reasonable determination that the occupancy of the existing medical office building would remain viable in the future. Moreover, the factors that contribute to the future economic health and occupancy are numerous and the relationships of those factors complex; it would be speculative to presume that the existing nearby medical office buildings in Larkspur would experience adverse secondary effects resulting solely or largely due to existing tenants of those facilities choosing to relocate to the new Ambulatory Services Building on the hospital campus. The project would not have direct or secondary economic or physical impacts on existing medical buildings in the City of Larkspur.

## 6.5 Effects Found Not To Be Significant

Pursuant to CEQA *Guidelines* Section 15128, Table 2-1, Summary of Impacts, Mitigation Measures, and Residual Impacts, provided at the end of Chapter 2 of this EIR, identifies all effects found not to be significant with the proposed project.

### 6.5.1 CEQA Environmental Factors of No Impact

*Agricultural and Forestry* and *Mineral Resources* are environmental factors from the CEQA Environmental Checklist (Appendix G to the CEQA *Guidelines*) that were determined during the scoping for this EIR not to be affected by the project. These two topics are determined to have No Impact (see “No Impact (N)” described under *Impact Classifications*, in Chapter 4 of this Draft EIR). Therefore, these factors are not addressed in the analysis in Chapter 4, except as noted in Section 4.E, *Geology, Soils, and Seismicity*, as *Issues Not Further Evaluated*. As determined there, the project site is not located within a Mineral Resource Zone identified by the California Department of Mines and Geology or within an area designated as important Farmland identified by the Soil Conservation Service, as described further below.

Regarding *Agricultural and Forestry* more specifically, the site is designated by the California Department of Conservation’s Farmland Mapping and Monitoring Program as *Urban and Built-*

*Up Land* (Department of Conservation, 2011). Therefore, the project could not convert Prime Farmland, Unique Farmland, or Farmland of Statewide or Local Importance to non-agricultural use; could not conflict with existing zoning for agricultural use or a Williamson Act contract; and could not involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use. The project would have no impact on Agricultural Resources.

Regarding *Mineral Resources* more specifically, the California Geological Survey (CGS) has classified lands within the San Francisco Bay Region into Mineral Resource Zones (MRZs) based on guidelines adopted by the California State Mining and Geology Board, as mandated by the Surface Mining and Reclamation Act (SMARA) of 1974. The intent of designating significant deposits is to identify areas where mineral extraction could occur prior to development. The project site is not in a mineral resource zone and is classified as an urbanized area as mapped by the California Department of Mines and Geology (CDMG) (Stinson, et al., 1987). The project would not have an impact on Mineral Resources.

## 6.5.2 Effects Less than Significant

Within each environmental factor The project would result in less-than-significant impacts that do not require mitigation measures (see “Less than Significant (LS)” explained under *Impact Classifications*, in Chapter 4 of this Draft EIR). Each less-than-significant impact is **identified** throughout Chapter 4 and summarized in Table 2-1, Summary of Impacts, Mitigation Measures, and Residual Impacts, in Chapter 2, Summary.

## 6.6 Organizations and Persons Consulted

Pursuant to CEQA Guidelines Section 15129, all organizations, persons and all references consulted in the preparation of this EIR are listed as References at the end of each chapter of this document, where applicable. Preparers of this EIR are identified in Chapter 7, Report Preparers.

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# **CHAPTER 7**

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## **Report Preparers**

### **7.1 Lead Agency**

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## 7.3 Technical Analysis Consultants

The following consultants to the Lead Agency prepared technical reports that are included directly in this EIR for purposes of assessing the environmental effects of the project:

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