Kaiser Permanente Redwood City Medical Center Master Plan Draft Environmental Impact Report

State Clearinghouse No. 2002092050

City of Redwood City

March 4, 2003
# Table of Contents

<table>
<thead>
<tr>
<th>SUMMARY</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.1 Project Sponsor and Project Location ................................................. S-1</td>
</tr>
<tr>
<td>S.2 Project Objectives .................................................................................. S-1</td>
</tr>
<tr>
<td>S.3 Proposed Project Characteristics .......................................................... S-6</td>
</tr>
<tr>
<td>S.4 Impacts and Mitigation Measures ............................................................. S-20</td>
</tr>
<tr>
<td>S.5 Alternatives ......................................................................................... S-21</td>
</tr>
<tr>
<td>S.6 Areas of Controversy .............................................................................. S-24</td>
</tr>
<tr>
<td>S.7 Issues to be Resolved ........................................................................... S-24</td>
</tr>
</tbody>
</table>

## 1 INTRODUCTION

1.1 Purpose of this Environmental Impact Report ........................................ 1-1
1.2 EIR Process ................................................................................................. 1-2
1.3 Use of this Report ....................................................................................... 1-4
1.4 Report Organization ................................................................................... 1-5

## 2 PROJECT DESCRIPTION

2.1 Introduction and Background......................................................................... 2-1
2.2 Project Location ........................................................................................... 2-2
2.3 Project Objectives ......................................................................................... 2-2
2.4 Existing Medical Center Development and Setting ................................... 2-7
2.5 Proposed Project ......................................................................................... 2-12
2.6 Project Phasing, Construction Traffic, and Staging .................................. 2-38
2.7 Project Approvals ....................................................................................... 2-64

## 3 ENVIRONMENTAL ANALYSIS

3.1 Introduction to the Environmental Analysis .............................................. 3.1-1
3.2 Land Use, Plans, and Policies ................................................................. 3.2-1
3.3 Visual Quality ............................................................................................. 3.3-1
3.4 Transportation ............................................................................................ 3.4-1
3.5 Air Quality .................................................................................................. 3.5-1
3.6 Noise ........................................................................................................... 3.6-1
3.7 Hazardous Materials .................................................................................. 3.7-1
3.8 Population and Housing .............................................................................. 3.8-1
3.9 Public Services ............................................................................................ 3.9-1
3.10 Utilities and Service Systems ................................................................. 3.10-1
4 OTHER CEQA CONSIDERATIONS

4.1 Significant Unavoidable Environmental Effects .............................................. 4-1
4.2 Significant Irreversible Environmental Changes ............................................. 4-2
4.3 Growth-Inducing Impacts ............................................................................. 4-2
4.4 Cumulative Impacts ..................................................................................... 4-5
4.5 Effects Not Found to be Significant .............................................................. 4-11

5 PROJECT ALTERNATIVES

5.1 Introduction ................................................................................................. 5-1
5.2 Description of Alternatives .......................................................................... 5-1
5.3 Impact Assessment ...................................................................................... 5-7
5.4 Environmentally Superior Alternative ........................................................... 5-7
5.5 Alternatives Considered but Rejected as Infeasible ....................................... 5-8

6 REPORT PREPARERS

6.1 Lead Agency ............................................................................................... 6-1
6.2 EIR Consultants ......................................................................................... 6-1

APPENDICES

A. Notice of Preparation
B. Initial Study
C. Draft Kaiser Master Plan Urban Design Guidelines
D. James Brinkley Company Analysis
E. Master Plan Parking Supply and Demand by Phase
F. Kaiser TDM Measures
G. Approved Development and Projects List
H. Water Supply Assessment
LIST OF FIGURES

S-1 Project Location ........................................................................................................ S-2
S-2 Existing Site Plan ..................................................................................................... S-3
S-3 Proposed Site Plan ................................................................................................. S-11
S-4 Vehicular Circulation Plan .................................................................................... S-14
2-1 Project Location ..................................................................................................... 2-3
2-2 Existing Site Plan .................................................................................................. 2-5
2-3 Proposed Site Plan ................................................................................................ 2-17
2-4A Site Elevations .................................................................................................... 2-19
2-4B Site Sections ........................................................................................................ 2-21
2-4C Aerial Views of Site Plan .................................................................................... 2-23
2-5 Vehicular Circulation Plan .................................................................................... 2-33
2-6 Pedestrian Circulation Plan ................................................................................... 2-34
2-7A Phasing Summary ............................................................................................... 2-45
2-7B Phase I ................................................................................................................ 2-47
2-7C Phase IIA .............................................................................................................. 2-49
2-7D Phase IIB .............................................................................................................. 2-51
2-7E Phase IIC .............................................................................................................. 2-53
2-7F Phase IID .............................................................................................................. 2-55
2-7G Phase III .............................................................................................................. 2-57
2-7H Phase IV .............................................................................................................. 2-59
2-7I Phase V ................................................................................................................. 2-61
3.2-1 Nearby Land Uses .............................................................................................. 3.2-3
3.2-2 General Plan Designations ................................................................................ 3.2-4
3.2-3 Zoning ................................................................................................................. 3.2-6
3.3-1A Photos of Project Vicinity: North of Veterans Boulevard ................................ 3.3-4
3.3-1B Photos of Project Vicinity: East of Medical Center ......................................... 3.3-4
3.3-2A Photos of Project Vicinity: Southwest of Medical Center ............................... 3.3-5
3.3-2B Photos of Project Vicinity: Looking West on Veterans Boulevard .................. 3.3-5
3.3-3A Photos of Project Vicinity: Main Hospital Building ........................................ 3.3-8
3.3-3B Photos of Project Vicinity: Cypress Building .................................................. 3.3-8
3.3-4A Photos of Project Vicinity: Oak Building .......................................................... 3.3-10
3.3-4B Photos of Project Vicinity: 1400 Veterans Boulevard ....................................... 3.3-10
3.3-5A Veterans Boulevard at Main Street looking Southeast: Existing .................... 3.3-17
3.3-5B Veterans Boulevard at Main Street looking Southeast: Proposed Project .......... 3.3-19
3.4-1 Transportation Network in Project Vicinity ....................................................... 3.4-2
3.4-2 Study Intersections ............................................................................................. 3.4-6
3.4-3 Existing Lane Configurations ............................................................................ 3.4-7
3.4-4 Existing Peak-Hour Volumes ............................................................................ 3.4-8
3.4-5 Background Peak-Hour Volumes .................................................................... 3.4-19
3.4-6 Project Trip Distribution .................................................................................... 3.4-27
3.4-7 Project Trip Assignment .................................................................................... 3.4-28
3.4-8 Project Peak-Hour Volumes .............................................................................. 3.4-29
3.4-9 Cumulative With No Project Peak-Hour Volumes ........................................... 3.4-44
List of Figures (Continued)

3.4-10 Cumulative With Project Peak-Hour Volumes ..................................................... 3.4-48
3.6-1 Noise Measurement Locations ........................................................................ 3.6-5
5-1 Walnut Street Closure Alternative ....................................................................... 5-3
5-2 Redwood City Preferred Alternative ..................................................................... 5-4
5-3 Marshall Street Hospital Alternative .................................................................... 5-6
5-4A Veterans Boulevard at Main Street looking Southeast: Existing ....................... 5-11
5-4B Veterans Boulevard at Main Street looking Southeast: Proposed Project ............ 5-13
5-4C Veterans Boulevard at Main Street looking Southeast: Walnut Street Closure Alternative…… 5-15
5-4D Veterans Boulevard at Walnut Street looking South: Existing ....................... 5-17
5-4E Veterans Boulevard at Walnut Street looking South: Proposed Project ............... 5-19
5-4F Veterans Boulevard at Walnut Street looking South: Walnut Street Closure Alternative..... 5-21
5-5A Veterans Boulevard at Main Street looking Southeast: Existing ....................... 5-29
5-5B Veterans Boulevard at Main Street looking Southeast: Proposed Project with Sample Façade ............................................................................................. 5-31
5-5C Veterans Boulevard at Main Street looking Southeast: Redwood City Preferred Alternative ..................................................................................... 5-33

LIST OF TABLES

S-1 Proposed Project – Replacement/Consolidation/Development Program and Phasing …… S-8
S-2 Change in Patient Volumes at the Redwood City Kaiser Medical Center under the Master Plan ..................................................................................... S-15
S-3 Redwood City Kaiser Medical Center Current and Projected Providers, Staff, and Members................................................................. S-17
S-4 Summary of Total Change in Space Utilization ...................................................... S-18
S-5 Comparison of On-Campus Employment Under the Proposed Project and the Higher Occupancy Scenario, 2025 ......................................................... S-18
S-6 Summary of Impacts and Mitigation Measures ..................................................... S-26
2-1 Redwood City Kaiser Medical Center Existing Development Program and Building Summary .................................................................................... 2-9
2-2 Proposed Project – Replacement/Consolidation/Development Program and Phasing …… 2-14
2-3 Redwood City Kaiser Medical Center Current and Projected Providers, Staff, and Members................................................................. 2-27
2-4 Change in Utilization at the Redwood City Kaiser Medical Center under the Master Plan ..................................................................................... 2-28
2-5 Change in Employment at the Redwood City Kaiser Medical Center under the Master Plan ..................................................................................... 2-30
2-6 2025 Proposed Medical Office Buildings ............................................................. 2-32
2-7 Comparison of On-Campus Employment under the Proposed Project and the Higher Occupancy Scenario, 2025 ......................................................... 2-32
2-8 Redwood City Kaiser Medical Center Construction Phasing and Duration ............ 2-39
2-9 Proposed Project – Phasing Schedule .................................................................... 2-40
2-10 Proposed Project – Parking Supply and Demand by Phase .................................... 2-64
List of Tables (Continued)

3.2-1 City of Redwood City Zoning Ordinance Regulations Applicable to the Proposed Project .......................................................... 3.2-8
3.2-2 Consistency of Proposed Project with Applicable Policies in the Strategic General Plan ......................................................... 3.2-11
3.2-3 Consistency of Proposed Project with Applicable Policies in the Redevelopment Plan for Redevelopment Project #2 .................. 3.2-13
3.2-4 Consistency of Proposed Project with the Zoning Ordinance ......................................................................................... 3.2-14
3.3-1 Consistency of Proposed Project with Applicable Visual Quality/Urban Design Plans, Policies, and Guidelines .......................... 3.3-21
3.4-1 Signalized Intersection Level of Service Definitions ................................................................................................................ 3.4-9
3.4-2 Unsignalized Intersection Level of Service Definitions ........................................................................................................... 3.4-10
3.4-3 Intersection Level of Service Summary — Existing Conditions .................................................................................................. 3.4-10
3.4-4 Freeway Ramp Merging and Diverging Level of Service Definitions .................................................................................... 3.4-11
3.4-5 Freeway Ramp Merging/Diverging Level of Service Summary — Existing Conditions ............................................................... 3.4-12
3.4-6 US 101 Freeway Segment Level of Service Summary — Existing Conditions ................................................................. 3.4-12
3.4-7 Intersection Level of Service Summary — Background Conditions ............................................................................................ 3.4-18
3.4-8 US 101 Freeway Segment Capacity Analysis — Background Conditions ................................................................................... 3.4-21
3.4-9 US 101 Freeway Ramp Capacity Analysis — Background Conditions ......................................................................................... 3.4-22
3.4-10 Project Trip Generation Estimates ............................................................................................................................... 3.4-24
3.4-11 Intersection Level of Service Summary — Background and Project Conditions .............................................................. 3.4-30
3.4-12 AM Peak Hour US 101 Freeway Segment Capacity Analysis – Project Conditions ............................................................... 3.4-32
3.4-13 PM Peak Hour US 101 Freeway Segment Capacity Analysis – Project Conditions ............................................................... 3.4-32
3.4-14 US 101 Freeway Ramp Capacity Analysis — Project Conditions .................................................................................................. 3.4-33
3.4-15 Intersection Level of Service Summary — Cumulative No Project Conditions ........................................................................ 3.4-45
3.4-16 US 101 Freeway Segment Capacity Analysis — Cumulative No Project Conditions ................................................................. 3.4-46
3.4-17 US 101 Freeway Ramp Capacity Analysis — Cumulative No Project Conditions ................................................................. 3.4-47
3.4-18 Intersection Level of Service Summary — Cumulative No Project and Cumulative With Proposed Project Conditions ............ 3.4-49
3.4-19 AM Peak Hour US 101 Freeway Segment Capacity Analysis — Cumulative With Proposed Project Conditions ............................ 3.4-52
3.4-20 PM Peak Hour US 101 Freeway Segment Capacity Analysis — Cumulative With Proposed Project Conditions ............................ 3.4-52
3.4-21 US 101 Freeway Ramp Capacity Analysis — Cumulative With Proposed Project Conditions ............................................................ 3.4-53
3.4-22 Higher Occupancy Scenario Trip Generation Estimates .............................................................................................................. 3.4-54
3.4-23 Intersection Level of Service Summary — Cumulative No Project and Higher Occupancy Scenario Cumulative Conditions ........................................................................ 3.4-56
3.4-24 AM Peak Hour US 101 Freeway Segment Capacity Analysis — Higher Occupancy Scenario Cumulative Conditions ............................ 3.4-59
### List of Tables (Continued)

<table>
<thead>
<tr>
<th>Table Number</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.4-25</td>
<td>PM Peak Hour US 101 Freeway Segment Capacity Analysis — Higher Occupancy Scenario Cumulative Conditions</td>
<td>3.4-59</td>
</tr>
<tr>
<td>3.4-26</td>
<td>US 101 Freeway Ramp Capacity Analysis — Higher Occupancy Scenario Cumulative Conditions</td>
<td>3.4-61</td>
</tr>
<tr>
<td>3.5-1</td>
<td>Criteria Pollutant Emissions Inventory and Projections (Tons/Day - Annual Average)</td>
<td>3.5-3</td>
</tr>
<tr>
<td>3.5-2</td>
<td>Federal and State Air Quality Standards</td>
<td>3.5-5</td>
</tr>
<tr>
<td>3.5-3</td>
<td>Health Effects Summary of the Major Criteria Air Pollutants</td>
<td>3.5-6</td>
</tr>
<tr>
<td>3.5-4</td>
<td>Proposed Project Air Emissions (2004)</td>
<td>3.5-11</td>
</tr>
<tr>
<td>3.5-5</td>
<td>Localized 1-hour CO Concentrations at Selected Intersections</td>
<td>3.5-13</td>
</tr>
<tr>
<td>3.5-6</td>
<td>Localized 8-hour CO Concentrations at Selected Intersections</td>
<td>3.5-13</td>
</tr>
<tr>
<td>3.5-7</td>
<td>Proposed Project Plus Cumulative Air Emissions (2025)</td>
<td>3.5-15</td>
</tr>
<tr>
<td>3.6-1</td>
<td>Typical Sound Levels Measured in the Environment and Industry</td>
<td>3.6-2</td>
</tr>
<tr>
<td>3.6-2</td>
<td>Typical Outdoor Construction Equipment Noise Levels</td>
<td>3.6-8</td>
</tr>
<tr>
<td>3.6-3</td>
<td>Existing and Projected Traffic Noise Levels, CNEL (dBA) at 50 feet</td>
<td>3.6-13</td>
</tr>
<tr>
<td>3.7-1</td>
<td>Maximum Amounts of Hazardous Chemicals at Kaiser’s Redwood City Medical Center</td>
<td>3.7-3</td>
</tr>
<tr>
<td>3.7-2</td>
<td>Radioactive Materials at Kaiser’s Redwood City Medical Center</td>
<td>3.7-4</td>
</tr>
<tr>
<td>3.7-3</td>
<td>Hazardous Chemical Waste Generated at Kaiser’s Redwood City Medical Center</td>
<td>3.7-5</td>
</tr>
<tr>
<td>3.7-4</td>
<td>Exposure Pathways and Controls — Workers and Other Individuals on Site</td>
<td>3.7-15</td>
</tr>
<tr>
<td>3.7-5</td>
<td>Exposure Pathways and Controls — Community and Environment</td>
<td>3.7-16</td>
</tr>
<tr>
<td>3.8-1</td>
<td>Population of Redwood City, San Mateo County and Other Bay Area Counties, 2000 to 2025</td>
<td>3.8-2</td>
</tr>
<tr>
<td>3.8-2</td>
<td>Employment Trends in San Mateo County and Redwood City 2000-2025 (Number of Jobs)</td>
<td>3.8-3</td>
</tr>
<tr>
<td>3.8-3</td>
<td>Housing Trends in San Mateo County and Redwood City 2000-2025 (Occupied Dwelling Units)</td>
<td>3.8-4</td>
</tr>
<tr>
<td>3.8-4</td>
<td>Kaiser Redwood City Employee Residence Pattern</td>
<td>3.8-5</td>
</tr>
<tr>
<td>3.8-5</td>
<td>Kaiser Redwood City Housing Market Area Housing Trends, 2000-2025 (Occupied Households)</td>
<td>3.8-6</td>
</tr>
<tr>
<td>3.8-6</td>
<td>Housing Market Area Comparison of Household Growth with Housing Supply, 2000-2025</td>
<td>3.8-6</td>
</tr>
<tr>
<td>3.8-7</td>
<td>Jobs/Housing Ratio for San Mateo County and Redwood City, 2000-2025</td>
<td>3.8-7</td>
</tr>
<tr>
<td>3.8-8</td>
<td>Jobs/Employed Residents for San Mateo County and Redwood City with the Proposed Project, 2000-2025</td>
<td>3.8-10</td>
</tr>
<tr>
<td>3.10-1</td>
<td>Kaiser Medical Center Projected Water Demand at Buildout</td>
<td>3.10-6</td>
</tr>
<tr>
<td>3.10-2</td>
<td>Kaiser Medical Center Projected Wastewater Flows at Buildout</td>
<td>3.10-10</td>
</tr>
<tr>
<td>5-1</td>
<td>Intersection Level of Service Summary – Walnut Street Closure Analysis Project Conditions and 2020 With Project Conditions</td>
<td>5-10</td>
</tr>
</tbody>
</table>
S.1 PROJECT SPONSOR AND PROJECT LOCATION

This Environmental Impact Report (EIR) addresses the potential environmental effects of the Kaiser Permanente Redwood City Medical Center Master Plan. The Master Plan identifies the location and size of replacement inpatient and outpatient facilities and provides the project sponsors with flexibility to develop and modify the Medical Center to meet the changing needs of medical care and to comply with federal and State law. The project sponsor is Kaiser Foundation Hospitals, a California non-profit public benefit corporation.

The Medical Center is located within downtown Redwood City, approximately 30 miles south of San Francisco and approximately 25 miles north of San Jose (see Figure S-1). Regional access to the site is available from U.S. 101, which is located approximately ½ mile north of the site. The campus is approximately 15.3 acres in size and consists of five contiguous parcels. As shown in Figure S-2, the Medical Center is generally bound on the north by Veterans Boulevard, on the northwest by Redwood Creek, on the west by Main Street, on the south by Marshall Street, and on the east by Maple Street.

S.2 PROJECT OBJECTIVES

Project Sponsor Objectives

The project sponsor has identified the following objectives for its proposed Master Plan:

- To continue to provide high quality, affordable, accessible health care to Kaiser Permanente’s members and the Redwood City community.
- To provide a new, state-of-the-art inpatient facility for Kaiser Permanente members in the Redwood City area by replacing existing technology and equipment in a practical and cost effective manner.
- To consolidate most of Kaiser Permanente’s Redwood City treatment and support functions at a single Medical Center location.
- To provide facilities to meet changing health care demands and practices.
- To replace the inpatient facility at Redwood City Hospital in accordance with SB 1953 in order to create a new, seismically safe, inpatient medical facility for Kaiser Permanente members and the Redwood City community.
Slipsheet for Figure S-1
Insert Figure S-2 (11 X 17, Side 1), start on ODD page
Insert Figure S-2 (11 X 17, Side 2),
• To provide the functional and operational relationship and adjacencies paramount for delivery of quality care. These relationships and adjacencies are based on the need for collaboration and coordination of multiple teams of specialists, to provide the quality outcome necessary to patients in critical conditions and save their lives.

• To phase the construction of new facilities in a flexible manner to ensure uninterrupted operation of services at the Medical Center during construction.

• To maintain the Redwood City Hospital at its present regional location, where it serves an important role as a resource for Kaiser Permanente members and to the Redwood City community.

• To provide a campus which is compatible with Redwood City’s objectives and design guidelines for the downtown area.

• To provide a campus environment that is easy to negotiate for both pedestrians and vehicles, by creating open spaces and pedestrian walkways with clearly recognizable destination points, building entrances, landmarks, and street crossings to orient people to Medical Center programs.

• To provide a minimum hospital footprint of 140,000 square feet (this objective was added by the project sponsor in January of 2003 after the submittal of the amended application in May of 2002).

City Objectives

Given the location and size of the Medical Center at the entrance to Redwood City’s downtown, the City also has a number of objectives that relate to the project site. Redwood City’s objectives for the Kaiser campus, defined within the broader context of the draft Downtown Area Plan and more specifically from the draft Kaiser Master Plan Urban Design Guidelines, are summarized below:

Draft Downtown Area Plan Vision and Goals

• **Vision:** Downtown Redwood City will be a vibrant, vital and attractive place for people to live, work, shop and enjoy civic and cultural life within a setting that respects and capitalizes on the unique and historic character.

• **Goals:** Create a friendly environment for a diverse mix of people and uses in the downtown; respect historic character, architecture and cultural heritage of Redwood City; establish a central downtown public gathering space that serves as a focal point for the community; create and define an accessible, safe, attractive and convenient downtown; and create an economically viable downtown.
City’s Kaiser Master Plan Urban Design Guidelines

- **Economic Vitality:** Kaiser, particularly as it expands, is an important market for the downtown merchants and Kaiser employees and members could benefit from a closer interaction with the Downtown District.

- **Downtown Gateway Parcels:** Gateway buildings should receive the highest level of design attention, with attractive building entrance(s), facade(s) and materials.

- **Medical Building Location and Orientation:** It is the City’s objective to focus the location and orientation of new Kaiser Campus buildings towards the Downtown District; to ensure people-occupied building spaces (vs. parking lots/structures) frame downtown streets as public spaces; and to strengthen pedestrian connections from the Kaiser campus to the Downtown through thoughtful site planning.

- **Parking Structure Massing and Orientation:** To reduce the number, size and massing of parking structures, a portion of required parking should be under-grounded. Where feasible, parking structures should orient regional traffic onto Veterans Boulevard in order to reduce traffic volume on the narrower, pedestrian-oriented downtown streets (Main, Bradford, Marshall and Maple Streets).

The draft *Downtown Area Plan* was developed by a community-wide citizen task force and is proposed for adoption in 2003. The Plan was officially received by the City Council in December 2001 and forwarded to the Planning Commission for review and recommendation. Between January and April 2002, City and Kaiser staff, with the assistance of the City’s Urban Design Consultant, Terry Bottomley, worked together to develop the draft *Kaiser Master Plan Urban Design Guidelines* for the proposed Medical Center expansion. In May, Kaiser submitted a revised Master Plan application to the City. At two separate Joint Study Sessions, the Planning Commission and Architectural Review Committee (ARC) reviewed the Master Plan and provided general input to the Kaiser’s proposed Master Plan. The Planning Commission and ARC also provided input and general direction to staff in regard to the draft *Kaiser Master Plan Urban Design Guidelines*.

### S.3 PROPOSED PROJECT CHARACTERISTICS

#### Existing Medical Center

Existing on-campus medical facilities include:

- A full-service, 209-licensed bed, 203,955-gross-square-foot (GSF) Hospital (providing “inpatient” care);
- Six on-campus clinical/medical office buildings (MOBs) (providing “outpatient” care) in 96,393 GSF;
Eight support and administrative buildings (including the Central Utilities Plant) totaling 30,502 GSF; and

- Approximately 1,373 parking spaces dispersed between an eight-level parking garage (749 spaces) and surface parking lots throughout the campus (624 spaces). Refer to Figure S-2.

The total developed floor space of medical-related uses on the Kaiser campus is about 330,890 square feet. Existing staff on the Kaiser campus total 1,387 providers¹ and support staff.²

Existing off-campus medical facilities that will relocate to the Medical Center Campus include:

- Two clinical buildings — 910 Marshall Street (Birch building) and 1800 Broadway (Hearing Aid Center);
- Two administrative buildings — 900 Veterans (CSA Offices) and 805 Veterans; and
- One storage facility — 600 Galveston (Galveston Medical Records).

These off-campus facilities encompass approximately 50,276 GSF. The Birch building, which is within a block of the Medical Center campus, includes 5 provider offices (POs) and 59 parking spaces.

**Proposed Medical Center Development**

The Master Plan is designed to provide additional and enhanced inpatient and outpatient treatment capacity and to consolidate Kaiser’s Redwood City operations by relocating services and staff from some of the off-campus leased spaces onto the Medical Center. At buildout, the amount of developed space on the site (excluding parking structures) would increase by approximately 628,450 GSF from its current 330,850 GSF. Flexibility within the Master Plan may be necessary due to changing health care needs, but the Plan will not exceed the planning envelope of 959,300 GSF of medical center uses and 1,032,100 GSF of parking structures. As currently proposed, the Plan will be implemented over a 22-year period in five phases between 2003 and 2025. The development by phase is presented in Table S-1, although it should be recognized that this program is conceptual and reflects Kaiser’s perceptions of health care needs in the future. The Master Plan will be approved with a Precise Plan adopted pursuant to Article 52 of the Redwood City Municipal Code.

The proposed project includes the replacement of the existing hospital in order to meet seismic safety standards mandated by the State of California under the Alfred E. Alquist Hospital Facilities Seismic

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¹ Providers or provider offices is a term used by Kaiser to describe individuals and facilities associated with outpatient healthcare needs. Although the term “offices” is used, it is not meant to convey solely space within an MOB. While most providers are doctors, the category also includes nurse practitioners, optometrists, licensed clinical social workers, and speech therapists, among others. Wherever these job descriptions are considered providers, they are included in Provider Office (PO) totals within this EIR.

² All staff count totals (exclusive of Providers) are Full Time Equivalent (FTE) figures. Therefore, total employment will be greater due to part-time employees.
| Proposed Project – Replacement/Consolidation/Development Program and Phasing |
|---|---|---|---|---|
| | Levels/ Stories | Area GSF | Beds/POs/Staff | Construction Phase (PH)³ |
| **Hospital and Related Structures** | | | | |
| New Hospital | 2- to 4-story base w/ 6-story tower for a total of 10 stories | 440,000 | 192 beds | PH-II (2009-2013) |
| CUP | 2 levels | 28,000 | | PH-II (2009-2013) |
| Subtotal | | 468,000 | 192 beds | |
| **Clinical Offices/Medical Office Buildings** | | | | |
| MOB 1 | 5 stories | 120,000 | 56 POs | PH-I (2003-2004) |
| MOB 2 | 4 stories | 95,200 | 38 POs | PH-III (2010-2015) |
| MOB 3 | 5 stories | 120,000⁴ | 28 POs | PH-IV (2010-2020) |
| MOB 4 | 4 stories | 100,000⁵ | 20 POs | PH-V (2011-2025) |
| Cancer Care Center (East of Main St.) | 2 stories | 20,000 | 6 POs | PH-II (2004-2013) |
| Subtotal | | 455,200 | 148 POs | |
| **Administrative and Other Buildings** | | | | |
| Administration (West of Main) | 2 stories | 20,000 | 0 POs | PH-III (2010-2015) |
| Active Use (Within Parking Structure C) | 1 story | 4,800 | 0 POs | PH-III (2010-2015) |
| Walnut (Administration) | 2 stories | 11,300 | 0 POs | Existing |
| Subtotal | | 36,100 | | |
| **Parking⁷** | | | | |
| Parking Structure A | 8 levels | 289,300 | 749 | Existing |
| Parking Structure B | 5 levels | 199,000 | 654 | PH-II (2009-2013) |
| Parking Structure C | 7 levels | 175,000 | 475 | PH-II (2009-2013) |
| Parking Structure D | 6 levels | 204,000 | 600 | PH-IV (2010-2020) |
| Parking Structure E | 4 levels | 164,800 | 498 | PH-V (2011-2025) |
| Parking Lot 3 (Walnut) | | | 30 | Existing |
| Subtotal | | 1,032,100 | 3,006 spaces | |
| **Plazas** | | | | |
| 37,500 & | PH-II (2009-2013) & |
| 30,200 | PH-IV (2010-2020) |
| **Total Medical-Related Program** | | | | |
| | 959,300⁸ | 148 POs | |
| | | 1,373 Staff | |
| | | 1,521 Total | |
| **Total Parking Program** | | | | |
| | 3,006 spaces | | |

**Source:** EIP Associates, July 2, 2002; Michael I. Kay, Kaiser Foundation Health Plan Inc., Revised Application Material for Kaiser Redwood City Master Plan (electronic files), June 24, 2002.

**Notes:**
1. Provider Offices.
2. All staff count totals (exclusive of Providers) are Full Time Equivalent (FTE) figures. For example, two people working 25% and one person working 50% equals three staff members. However, this is only one FTE (25% plus 25% plus 50% equals 100%). Therefore, total employment will be greater due to part-time employees.
3. PH = Phase
4. Total GSF of MOB 3 includes approximately 16,700 GSF of administrative uses.
5. Total GSF of MOB 4 includes approximately 8,700 GSF of administrative uses.
6. Total support staff is based on a ratio of 4.7 staff per provider and includes staff located in administrative buildings. Support staff totals do not include volunteer staff that averages 25 volunteers per day.
7. Parking structures typically include rooftop parking. Therefore, parking structures in this EIR are described by the number of levels rather than stories. For example, an eight-level parking structure is approximately the same height of a seven-story building.
8. Total excludes space at the plazas and in parking structures.
Safety Act of 1983 (SB 1953). SB 1953, as amended, requires the seismic upgrade or replacement of the seven-story hospital tower (“Hospital”), constructed in 1968, by January 2013. According to the project sponsor, structural retrofitting options for this fully-occupied, functioning hospital would not be practical or cost-effective, and therefore, a full replacement is proposed as part of the Master Plan.

The project would also allow the consolidation of the various Kaiser Permanente functions currently dispersed in leased facilities in several Redwood City locations.

Site Plan and Buildings

In general, the site plan (see Figure S-3) shows that existing clinical offices and surface parking lots would be redeveloped with new MOBs and parking structures with much larger floorplates than the existing buildings and a large plaza. The building materials that would be used, building facades, and other architectural treatment would be based on the Kaiser Master Plan Urban Design Guidelines developed by the City for the Master Plan. The design of the various structures and open spaces would comply with the guidelines for each building and project.

New Hospital and Central Utility Plant (CUP). A new Hospital that will include a building base varying from two- to four-stories upon which would be a 192-bed, six-story tower (for a total of 10 stories, 160 feet in height) would replace the existing seven-story Redwood City Hospital tower at 1150 Veterans Boulevard which was constructed in 1968. Acute care and emergency services would continue to be offered at this new facility. The new hospital would house 678 staff personnel.3

The new, 28,000-GSF, two-level, CUP proposed to serve the replacement Hospital would house the mechanical, electrical and telecommunications equipment.

Medical Office Buildings (MOBs) 1, 2, 3, and 4. MOB 1, a 120,000-GSF, five-story building, would be located at the southeast corner of Veterans Boulevard and Maple Street. The lower four floors of this building would house clinical facilities for medicine, allergy, and vision services, along with diagnostic and imaging services such as phlebotomy, radiology, mammography, pharmacy, member services, and health education. A fifth floor is proposed to be vacant upon completion and would be built out at a future date.

MOB 2, a 95,200-GSF, four-story building, would be located at the northwest corner of Marshall Street and Maple Street. MOB 3 would be a 120,000-GSF, five-story building, located at the southwest corner of Maple Street and Veterans Boulevard. MOB 4, a 100,000-GSF, four-story building, would be located at the northeast corner of Maple and Marshall Streets. The specific clinical facilities that would be housed in MOB 2, 3, and 4, have not been finalized at this stage of the Master Plan.

3 38 volunteers will also be housed in the new Hospital.
The four MOBs would frame a central entry plaza at Maple Street. The space between Parking Structure D and the hospital tower is currently illustrated as an open green space in Figure S-3. Although this space is proposed to be developed as a plaza, it would also be reserved for the potential relocation of some of the diagnostic and treatment areas currently proposed in future MOBs, whose space would then be reduced. Depending on medical practices in 10 to 20 years, if it is found that functionally and operationally it would be necessary to have the services as part of the new Hospital, this open space would be utilized for the relocation.

**Cancer Care Center.** A two-story, 20,000-GSF Cancer Care Center is proposed on the east side of the gateway parcel on Main Street between Redwood Creek and Bradford Street (Parcel III). The Cancer Care Center would house diagnostic, administrative, and wellness cancer treatment. The Cancer Care Center is proposed to be built by mid-2004. The building would house six POs and associated staff.

**Administration Buildings.** A two-story, 20,000-GSF building would be built on the west side of Main Street between Redwood Creek and Bradford Street for administrative uses. The clinical uses in 610 Walnut Street would be decommissioned once MOB 2 is built and the space would be used for administrative purposes.

**Parking Structures.** The existing eight-level Parking Structure A at 1250 Veterans Boulevard includes 749 parking spaces. Four new parking structures would be constructed for a total of five parking structures.

Parking Structure B would be built on the southwest corner of Walnut Street and Veterans Boulevard on the eastern Main Street gateway parcel. Parking Structure B would include 654 parking spaces on five levels. Access to Parking Structure B would be from Bradford Street and from Veterans Boulevard. A pedestrian bridge would connect Parking Structure B with the replacement Hospital. This parking structure would be intended to serve the new Hospital, the Cancer Care Center, and the administrative building on Main Street.

The seven-level Parking Structure C would include 475 parking spaces at the corner of Marshall Street and Marshall Court with access from Marshall Court. The street edge along Marshall Street would be lined with uses other than parking. Parking Structure C would serve both the new Hospital and MOB 2.

Parking Structure D would be located between MOB 3 and the new Hospital with access from Veterans Boulevard. Parking Structure D would include 600 spaces on six levels, and would primarily serve the patients and staff of MOB 3 and probably those going to the hospital.

The four-level Parking Structure E would include 498 spaces at the northeast corner of Maple and Marshall Streets between MOB 1 and MOB 4. This parking structure would primarily serve MOB 4.
Figure S-3: Site Plan (Side 1), must start on odd page

11 x 17 allow two pages

(same as Figure 2-3)
Figure S-3: Site Plan (Side 2), back of Figure

11 x 17 allow two pages

(same as Figure 2-3)
Circulation

The proposed circulation concept of the Master Plan is intended to provide for integrated movement of general vehicles, emergency vehicles, service vehicles, and pedestrians. The noticeable features in the proposed Vehicular Circulation Plan (see Figure S-4) are the proposed reconfiguration (narrowing) of Maple Street to accommodate the proposed entry plaza to the Medical Center, the reconfiguration of Walnut Street between Veterans Boulevard and Bradford Street to accommodate the hospital and for emergency hospital access, and the reconfiguration (resize of cul de sac) of Marshall Court to service the hospital CUP and service control yard. The proposed Vehicular Plan includes curbside parking and passenger loading zones on Maple Street. A network of pedestrian walkways would connect the proposed buildings and parking structures, the drop-off zones, and bus stop on the project site.

Parking

A total of 3,006 parking spaces in four new parking structures, one existing parking structure, and a surface parking lot at 610 Walnut Street would be provided as a part of the project (see Table S-1). The proposed project includes revisions to the parking standards to five spaces per 1,000 square feet for medical use and two spaces per bed for the Hospital. Under the revised standards, the Medical Center would be required to provide about 2,880 parking spaces as compared to the city-required 4,005 parking spaces.

Phasing

The project site is currently developed and Medical Center activities are in full operation. The proposed project would replace existing buildings with newer, larger structures on the project site. In order to continue to provide services currently offered at the Medical Center, construction and demolition activities must be phased so that the Medical Center functions are not obstructed and adequate construction staging areas and other services are available at all times during project implementation. The project would be implemented in five phases, between 2003 and 2025. Various buildings on- and off-campus would be decommissioned (and demolished) as new space is developed on the site.

Membership, Patient Visits, and Employment

Membership and Patient Visits

Based on demographic and population factors, the project sponsor has projected the membership at its Redwood City facility to 2014. For the purposes of this EIR, the project sponsor has assumed that the rate of growth forecast through 2014 would continue unchanged into the future. The proposed changes at the Medical Center are intended to serve a projected increase in membership from 100,123 existing to 108,250 when the new Hospital opens in 2009, and to 121,513 by 2025.
Insert for Figure S-4 (8.5 X 11)
This increase in membership would correspond to projected growth in the number of patient visits (see Table S-2). The total number of patients that visited the Kaiser Hospital was approximately 9,000 in 2001. Annual hospital use for 2025 is projected at 11,000 patients. Emergency Department visits for 2001, which are accounted for differently than other hospital visits, totaled approximately 24,000 and are projected to grow to 43,000 by the year 2025. MOB outpatient visits totaled approximately 752,200 in 2001 and are forecast to grow to about 856,300 in 2025.

<table>
<thead>
<tr>
<th></th>
<th>2001 Existing</th>
<th>2025 Proposed</th>
<th># Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Annual Admissions</td>
<td>8,700</td>
<td>11,000</td>
<td>2,300</td>
<td>26%</td>
</tr>
<tr>
<td>Hospital Annual Patient Days</td>
<td>33,900</td>
<td>46,700</td>
<td>12,800</td>
<td>38%</td>
</tr>
<tr>
<td>Medical Office Annual Patient Visits</td>
<td>752,200</td>
<td>856,300</td>
<td>104,100</td>
<td>14%</td>
</tr>
<tr>
<td>Emergency Room Visits</td>
<td>23,900</td>
<td>43,000</td>
<td>19,100</td>
<td>80%</td>
</tr>
<tr>
<td>Total</td>
<td>818,700</td>
<td>957,000</td>
<td>138,300</td>
<td>17%</td>
</tr>
</tbody>
</table>


Note: Figures have been rounded to the nearest 100.

**Employment**

Although the proposed project would result in additional developed space, the project sponsor is not expecting a significant change in the number of employees at the Medical Center. As noted earlier, the space in the inpatient and outpatient facilities (on a per patient or per staff basis) is greater than currently designed to account for new industry standards and equipment requirement. This trend of increasing amounts of space per patient while the number of providers and staff remain relatively unchanged is known in the health care industry as “decompression,” and is a common phenomenon at other hospitals undergoing modernization.4

In addition, Kaiser’s business planning model calls for the opening of “satellite” MOBs within the Kaiser Redwood City service area as future membership needs warrant. The satellite offices are intended to offer a range of medical services to Kaiser members who would otherwise travel to the Redwood City Medical Center. In addition to making health care delivery more convenient for more distant Kaiser Redwood City members, the concept of satellite offices avoids the need to expand facilities and services within Redwood City. Kaiser has not yet determined the location of these new satellite facilities, however.

4 Other examples of environmental documents that have acknowledged this trend include the EIR for the Alta Bates Medical Center for the City of Berkeley in 2001 and the EIR for the Stanford University Medical Center for Cancer Treatment and Prevention/Ambulatory Care Pavilion and Parking Structure IV for the City of Palo Alto in March 2000.
According to the project sponsor, the combination of decompression and the opening of “satellite” facilities outside Redwood City would result in minimal changes to Kaiser’s current number of employees at the Medical Center. The number of employees is projected to increase from the current figure of 1,387 to 1,521 at project buildout in 2025, an increase of approximately 134 employees. Currently, there are 125 providers and 1,262 staff at the on-campus hospital and clinics. At buildout, employment is projected to increase to 148 providers and 1,373 staff at the Medical Center campus (see Table S-3). For purposes of this EIR, staff has been divided into two groups: those primarily associated with providing outpatient care (called “clinical” staff) and those primarily associated with providing inpatient care (called “hospital” staff). As noted earlier, the Kaiser Medical Center Master Plan proposes a substantial increase in floor space and relatively modest changes in employment. Table S-4 shows that floor space would climb 189 percent, whereas the number of providers would increase by about 50 percent. Table S-4 also shows how intensely the space would be utilized: the GSF per bed in the Hospital would more than double in the future, and the GSF per provider would triple by 2025.

**Higher Occupancy Scenario**

In response to concerns regarding the square footage of the proposed project, Redwood City retained James Brinkley Company to perform an independent analysis of Kaiser’s projected membership, employment, and patient visits. The numbers from the Higher Occupancy Scenario are being used to assess the impacts of higher utilization of the MOBs and to recommend mitigations as appropriate. The analysis examined Kaiser’s population and facility space planning assumptions from a health planning perspective to confirm that the facilities proposed at the Medical Center could be reasonably supported by comparative data from the health care industry. Based on this review, the Kaiser membership, patient visits, Hospital employment, and rationale for decompression appear reasonable. On the other hand, the GSF of space available per provider in the MOBs appeared generally greater than the industry benchmarks that were used for comparison. At the more “typical” utilization rates identified by James Brinkley Company, the proposed MOB space proposed on the Kaiser campus has capacity for 3 to 82 more providers than projected by Kaiser at buildout of the Master Plan. Therefore, in addition to the proposed project as defined by Kaiser, this EIR also evaluates the environmental impacts associated with the “Higher Occupancy Scenario” which considers higher utilization of the MOBs by providers and associated staff and reflects utilization levels experienced at other MOBs. The Higher Occupancy Scenario assumes conservatively an additional 82 POs plus 410 additional non-hospital support staff (based on a ratio of 5.0 staff per provider) in addition to what is project by Kaiser. Table S-5 contains a summary of the employment figures for the Kaiser proposed project and the Higher Occupancy Scenario.

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5 1.9 FTE per bed is based on Kaiser Permanente’s nursing (hospital) staff ratios (which exceed the minimums established by state law). The FTEs represent the average number of FTEs per bed over an entire year; the actual number of occupied beds – and thus the number of nursing personnel actually present – varies greatly depending on the day of the week, the work shift and the season of the year.
<table>
<thead>
<tr>
<th></th>
<th>POs</th>
<th>Staff</th>
<th>Total POs and Staff</th>
<th>Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXISTING (2002)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Campus Clinical</td>
<td>100</td>
<td>490</td>
<td>590</td>
<td></td>
</tr>
<tr>
<td>On-Campus Hospital</td>
<td>25</td>
<td>772</td>
<td>797</td>
<td></td>
</tr>
<tr>
<td><strong>Total On-Campus</strong></td>
<td>125</td>
<td>1,262</td>
<td>1,387</td>
<td>100,123</td>
</tr>
<tr>
<td><strong>PHASE I: After MOB 1 Opens (2004)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Campus Clinical</td>
<td>123</td>
<td>603</td>
<td>726</td>
<td></td>
</tr>
<tr>
<td>On-Campus Hospital</td>
<td>25</td>
<td>772</td>
<td>797</td>
<td></td>
</tr>
<tr>
<td><strong>Total On-Campus</strong></td>
<td>148</td>
<td>1,375</td>
<td>1,523</td>
<td>102,350</td>
</tr>
<tr>
<td><strong>PHASE II: After Hospital Opens (assume 2009)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Campus Clinical</td>
<td>123</td>
<td>603</td>
<td>726</td>
<td></td>
</tr>
<tr>
<td>On-Campus Hospital</td>
<td>0</td>
<td>650</td>
<td>650</td>
<td></td>
</tr>
<tr>
<td><strong>Total On-Campus</strong></td>
<td>123</td>
<td>1,253</td>
<td>1,376</td>
<td>108,250</td>
</tr>
<tr>
<td><strong>PHASE III: After MOB 2 opens (assume 2010)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Campus Clinical</td>
<td>135</td>
<td>648</td>
<td>783</td>
<td></td>
</tr>
<tr>
<td>On-Campus Hospital</td>
<td>0</td>
<td>650</td>
<td>650</td>
<td></td>
</tr>
<tr>
<td><strong>Total On-Campus</strong></td>
<td>135</td>
<td>1,298</td>
<td>1,433</td>
<td>109,470</td>
</tr>
<tr>
<td><strong>PHASE IV: After MOB 3 opens (assume 2016)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Campus Clinical</td>
<td>128</td>
<td>663</td>
<td>791</td>
<td></td>
</tr>
<tr>
<td>On-Campus Hospital</td>
<td>0</td>
<td>678</td>
<td>678</td>
<td></td>
</tr>
<tr>
<td><strong>Total On-Campus</strong></td>
<td>128</td>
<td>1,341</td>
<td>1,469</td>
<td>114,119</td>
</tr>
<tr>
<td><strong>PHASE V: Ultimate Buildout After MOB 4 opens (assume 2025)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Campus Clinical</td>
<td>148</td>
<td>695</td>
<td>843</td>
<td></td>
</tr>
<tr>
<td>On-Campus Hospital</td>
<td>0</td>
<td>678</td>
<td>678</td>
<td></td>
</tr>
<tr>
<td><strong>Total On-Campus</strong></td>
<td>148</td>
<td>1,373</td>
<td>1,521</td>
<td>121,513</td>
</tr>
</tbody>
</table>


Notes:
1. POs = Provider Offices.
2. Employment figures are number of staff present during shift.
3. Day, evening and night hours vary by department.
4. "Today" based on staffing 1/02; projections are extrapolated based on a current ratio of 4.7 staff to providers.
5. Count of total employees is greater than FTEs shown above due to part-time employees and does not include 38 projected volunteer staff from the current 25 volunteers.
6. On campus staff decreases after opening of hospital due to relocation of POs to off-campus MOBs.
7. Membership projections are based upon forecasted demographic and population changes through 2014. Changes after 2014 are assumed to be at the same rate of change as in 2014.
8. Actual number of providers and staff will vary depending upon exact date of completion of various buildings. Dates shown here are based on Kaiser’s projected Master Plan growth assumptions.
### Table S-4
Summary of Total Change in Space Utilization

<table>
<thead>
<tr>
<th></th>
<th>Existing 2001</th>
<th>Proposed 2025</th>
<th># Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Beds</td>
<td>209</td>
<td>192</td>
<td>-17</td>
<td>-8%</td>
</tr>
<tr>
<td>Hospital &amp; Support Buildings GSF</td>
<td>209,812</td>
<td>468,000</td>
<td>258,188</td>
<td>123%</td>
</tr>
<tr>
<td>GSF/Bed</td>
<td>1,004</td>
<td>2,438</td>
<td>1,434</td>
<td>143%</td>
</tr>
<tr>
<td>Providers in MOBs</td>
<td>100^1</td>
<td>148</td>
<td>48</td>
<td>48%</td>
</tr>
<tr>
<td>MOB GSF</td>
<td>96,360</td>
<td>429,800^2</td>
<td>333,440</td>
<td>346%</td>
</tr>
<tr>
<td>GSF/Provider</td>
<td>963</td>
<td>2,904</td>
<td>1,941</td>
<td>201%</td>
</tr>
<tr>
<td>Administrative GSF</td>
<td>24,645</td>
<td>61,500</td>
<td>36,855</td>
<td>149%</td>
</tr>
<tr>
<td>Total Building GSF</td>
<td>330,817</td>
<td>959,300</td>
<td>628,483</td>
<td>189%</td>
</tr>
<tr>
<td>Total On-Campus Providers</td>
<td>125^1</td>
<td>148</td>
<td>23</td>
<td>18%</td>
</tr>
<tr>
<td>Hospital and Support Staff</td>
<td>1,262</td>
<td>1,373</td>
<td>111</td>
<td>9%</td>
</tr>
</tbody>
</table>


*Notes:*
1. Does not include 25 providers in existing hospital.
2. GSF has been rounded for consistency with project description.
3. Includes 25 providers in existing hospital and 100 in existing MOBs.

---

### Table S-5
Comparison of On-Campus Employment Under the Proposed Project and the Higher Occupancy Scenario, 2025

<table>
<thead>
<tr>
<th></th>
<th>Proposed Project</th>
<th>Higher Occupancy Scenario</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>POs</td>
<td>148</td>
<td>230</td>
<td>82</td>
</tr>
<tr>
<td>Clinical Support Staff</td>
<td>695</td>
<td>1,105</td>
<td>410</td>
</tr>
<tr>
<td>Hospital Staff</td>
<td>678</td>
<td>678</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>1,521</td>
<td>2,013</td>
<td>492</td>
</tr>
</tbody>
</table>

Project Approvals

Redwood City

As the public agency with the principal responsibility for approving the project, Redwood City will serve as the lead agency for the purposes of the California Environmental Quality Act (CEQA). The proposed project is expected to be subject to the following discretionary approvals from Redwood City:

1. Adoption of a Precise Plan and a Planned Community District (P District). The Precise Plan will, among other things, implement the following:
   - Increase the allowable height limit (currently 75 feet) to 160 feet for the proposed hospital (including mechanical penthouse);
   - Establish parking standards for the medical use at 5 spaces per 1,000 square feet, based upon industrial standards, the experience of Kaiser Permanente at other locations, and the practices of neighboring cities from 4,005 spaces that would be required under current City parking standards; and
   - Establish parking standards for the hospital at 2 spaces per bed.

2. General Plan amendment consistent with the Precise Plan.

3. Tentative Maps(s) and/or street closures and/or street abandonments to implement the following:
   - Reconfigure parcels as appropriate;
   - Realign and/or close the Marshall Court right-of-way to facilitate the project hospital;
   - Reconfigure Maple Street between Veterans Boulevard and Marshall Street to allow curbside parking and passenger loading zones; and
   - Reconfigure Walnut Street between Bradford Street and Veterans Boulevard to provide a consistent street width between Veterans Boulevard and Marshall Street and to accommodate the New Hospital.

4. Planned Community (PC) Permits for the development phases of the site, building, landscaping, and signage improvements as required by the Precise Plan.

5. Cultural resources management plan approval recommendation from the historic resources advisory committee to the planning commission.

6. Building Permits for the structures.

7. Tree Removal Permit(s), as required, from the City of Redwood City Parks and Recreation Director.

8. Any other discretionary approval to implement the Precise Plan.
State of California

The new Hospital and those portions of the proposed Medical Center that connect to the hospital (e.g., any pedestrian bridge connections) would require a review application and issuance of a permit from the California State Office of Statewide Health and Planning and Development. Project plans would also need to be reviewed for compliance with fire safety codes by the State Fire Marshall.

The tallest building on the site would be a 10-story structure, not more than 160 feet in height. The buildings on the project site are just outside the “Outside Airport Protection Zone” for the San Carlos Airport. Therefore, the project would not be subject to the jurisdiction of the Federal Aviation Administration (FAA). However, because the project site is just outside the Outside Airport Protection Zone, the project sponsor should consider informing FAA to avoid potential future risks. This informal consultation was recommended by the City/County Association of Governments of San Mateo County, Airport Land Use Committee, in response to Redwood City’s Notice of Preparation. One possible means of accomplishing this would be to complete FAA’s Form 7460-1, Notice of Proposed Construction and Operation.

The City/County Associations of Governments also function as the County’s Congestion Management agency, responsible for reviewing traffic studies for projects that would contribute at least 100 peak-hour trips on roadways of regional significance. Since the proposed Kaiser Master Plan would generate vehicular trips in excess of this threshold, this regional agency would review the proposed project and would require preparation of a Transportation Demand Management Plan.

Finally, because the project site encompasses over 5 acres, the Regional Water Quality Control Board would need to issue a National Pollutant Discharge Elimination System permit for construction activities. The proposed project may also require a Wastewater Discharge Permit from the South Bayside System Authority, the regional wastewater treatment plant.

S.4 IMPACTS AND MITIGATION MEASURES

Table S-6, located at the end of this section, presents a summary of the impacts of the Kaiser Permanente Redwood City Medical Center Master Plan projects, proposed mitigation measures, and each impact’s level of significance after mitigation. The environmental impacts are identified and classified as “Significant,” “Potentially Significant,” or “Less Than Significant.” According to CEQA Guidelines Section 15382, a significant impact is “. . . a substantial or potentially substantial adverse change in any of the physical conditions within the area affected by the project . . .” For each category of physical conditions evaluated in the EIR, criteria for significance have been developed.

CEQA Guidelines Section 15126.4 states that an EIR “. . . shall describe feasible mitigation measures which could minimize significant adverse impacts. . .” In this EIR, mitigation measures are identified for all of the impacts labeled “Significant” or “Potentially Significant” for both the proposed project and the Higher Occupancy Scenario. Each identified impact is numbered; mitigation measures identified for that impact are numbered correspondingly. Mitigation measures presented in Table S-6
also include those measures recommended in the Initial Study, prepared at the outset of the EIR process and attached as Appendix B to this EIR. The inclusion of these measures in Table S-6 provides a comprehensive listing in one place of all the mitigation measures recommended for the Kaiser Permanente Redwood City Medical Center Master Plan.

The significant effects of the proposed Master Plan and the Higher Occupancy Scenario are identified in both Section 3 of this EIR and the Initial Study (Appendix B). The proposed project and the Higher Occupancy Scenario would have potentially significant or significant impacts that would be reduced to less than significant with mitigation measures in the areas of:

- Visual Quality;
- Project-related Transportation;
- Air Quality;
- Hazards and Hazardous Materials; and
- Utilities and Service Systems.

Impacts that would remain significant with both the proposed project and the Higher Occupancy Scenario after mitigation are:

- Noise (during project construction);
- Cumulative Transportation; and
- Water Supply/Demand.

**Statements of Overriding Consideration.** When a public agency approves a project that allows the occurrence of significant effects that are identified in the Final EIR but are not at least substantially mitigated, the agency shall state in writing the specific reasons to support its action based on the Final EIR and/or other information in the record. This is known as a “Statement of Overriding Consideration.” CEQA requires the decision-maker to balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve the project. If the benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered acceptable.

**S.5 ALTERNATIVES**

CEQA requires that an EIR “describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives” (CEQA Guidelines Section 15126.6(a)). If a project alternative would substantially lessen the significant environmental effects of a proposed project, the decision maker should not approve the proposed project unless it determines that specific technological, economic,
social, or other considerations make the project alternative infeasible (CEQA Guidelines Section 15091(a)(3)). The EIR must also identify alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and should briefly explain the reasons underlying the lead agency's determination (CEQA Guidelines Section 15126.6(c)). One of the alternatives analyzed must be the “no project” alternative. The “no project” analysis must discuss the existing conditions, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved and development continued to occur in accordance with existing plans and consistent with available infrastructure and community services (CEQA Guidelines, Section 15126.6(e)(3)(C)). Of the alternatives assessed, the EIR must identify an environmentally superior alternative other than the no project alternative.

Description of Alternatives

This EIR analyses four alternatives: the required No Project Alternative, the Walnut Street Closure Alternative, the Redwood City Preferred Alternative, and the Marshall Street Hospital Alternative.

No Project Alternative. Under the No Project Alternative, no new development would occur at the project site. The existing outdated inpatient and outpatient facilities would continue to operate at the Medical Center campus. The consolidation of existing medical offices from elsewhere in Redwood City to the Medical Center would not take place and Kaiser would be unable to provide additional inpatient and outpatient services at the campus. Per SB 1953, the hospital would be forced to close in 2013 if the required seismic upgrades were not completed.

Walnut Street Closure Alternative. Under the Walnut Street Closure Alternative, the Hospital would be located further west on Veterans Boulevard, and Walnut Street would be closed between Veterans Boulevard and Bradford Street. The height of the replacement Hospital would be reduced from ten stories under the proposed project to six stories under this alternative. According to the project sponsor, this alternative would allow for greater placement of related departments within the Hospital on single, rather than adjacent floors, thereby providing greater flexibility and ease of circulation within the Hospital. According to the City, this Alternative would reduce access for the larger Redwood City community to the Downtown district. Thus, an adequate finding could not be made to justify the Walnut Street Closure Alternative.

Redwood City Preferred Alternative. The general layout of the Medical Center campus under the Redwood City Preferred Alternative is similar to that of the proposed project. However, the campus buildings would be sited and designed to more closely adhere to the goals of the draft Downtown Area Plan. Major differences between this alternative and the proposed project include the size of the campus plaza area, the location of Parking Structure B, and the use of the site currently proposed for Parking Structure B. Under this alternative, Parking Structure B would be located to the west of the replacement Hospital where the proposed project would include an expanded plaza area along Veterans Boulevard. This plaza is also an area for potential future expansion of the replacement Hospital with the proposed project. The Redwood City Preferred Alternative proposes a mixed-use building at the Main Street gateway site. The mixed-use building would be designed to create a sense of entry into the...
downtown and would complement similar retail/office-type buildings located along downtown Main Street. Under the Redwood City Preferred Alternative, buildings proposed for Main Street would be designed to reinforce Main Street’s designation as a downtown gateway. While the proposed project places a 30,700+ sq.ft. plaza space adjacent to the six-lane Veterans thoroughfare, which has views of a commercial strip center across Veterans Boulevard, this Alternative would provide an enclosed plaza area central to buildings at the Medical Center campus.

The replacement Hospital and medical office buildings would contain the same amount of floor space under this alternative as under the proposed project. The Redwood City Preferred Alternative would not have exact footprint or building width requirements for any buildings at the campus. However, parking structures would not be constructed taller than the adjacent MOB or Hospital and could require partial undergrounding. Active building space would occupy prominent corner parcels and parking structures would be located mid-block behind active building space.

**Marshall Street Hospital Alternative.** This alternative was developed over a years time frame jointly by Kaiser and the City of Redwood City earlier in the planning process. This alternative differs in the location of on-campus buildings and plazas, the size and massing of campus structures, and the phasing of the project. Rather than constructing the replacement Hospital on Veterans Boulevard, the Hospital would be constructed on the northwest corner of Marshall Street and Maple Street. The replacement Hospital would be seven stories, rather than ten under the proposed project.

**Alternatives Analysis**

The four alternatives would have the same environmental effects as the proposed project on the following environmental issues: land use, visual quality, air quality, noise, hazards and hazardous materials, population and housing, public services, and utilities. The Redwood City Preferred Alternative has the potential for fewer impacts to land use and visual quality than the proposed project because it more fully supports the draft **Downtown Area Plan** and the draft **Kaiser Master Plan Urban Design Guidelines**. Although these documents are not yet approved policy documents, the draft **Downtown Area Plan** will be adopted in 2003 and the draft **Kaiser Master Plan Urban Design Guidelines** will be adopted in part or whole at the time of the Master Plan project approval. The Walnut Street Closure Alternative would result in significant visual impacts and cumulative traffic impacts to both the Maple Street/Marshall Street and Main Street/Bradford Street intersections.

**Environmentally Superior Alternative**

The significant unavoidable effects of the proposed project are related to cumulative traffic, construction noise, and water consumption. Implementation of any of the project alternatives would result in the same use of the project site. In addition, staffing levels and patient visits for the build alternatives would be similar to the proposed project. Therefore, all of the project build alternatives would result in similar significant unavoidable effects.
S.6 AREAS OF CONTROVERSY

The key areas of controversy raised by the Planning Commission and the public during the Scoping Meeting for the proposed project, as well as those that have surfaced during the course of preparing the environmental document, include:

- Even accepting the trends towards decompression, questions remain whether the size and scale of the project are justifiable.

- The project envisions long-term development over a 22-year time frame. There is concern over what happens if subsequent phases are deferred or suspended indefinitely. Failure to complete the Master Plan development program may mean that some of the City’s desires to achieve a high-quality streetscape and gateway entrance to the City’s downtown will not be realized.

- Failure to complete the Master Plan development program may mean that there will be long periods when the campus looks unfinished. The visual and functional effects could hinder the City’s desires to improve linkages within the Redevelopment Project area and create pedestrian friendly connections to the downtown.

S.7 ISSUES TO BE RESOLVED

The key unresolved environmental issues at this point in the process are as follows:

- The long-term nature of the Master Plan makes it difficult to predict how much infrastructure capacity will be available when various buildings or components are proposed for construction. At this point, the Water Supply Assessment indicates that the City is already oversubscribed on its water use and how Kaiser can be accommodated needs to be addressed. With respect to wastewater treatment capacity, there is sufficient capacity now to handle demands from Kaiser but the remaining reserves may not be sufficient depending on how much other development occurs in the City and, again, when various components of the Master Plan are scheduled for occupancy.

- Many of the impacts projected for the proposed project are tied to the expected population/employment at the Medical Center. The estimate of staff, Hospital visits, emergency visits, patients per specialty, mix of specialty, etc. are all educated guesses based on current trends in health care delivery and medical technology and the demographics of the Redwood City Kaiser Permanente membership. The Higher Occupancy Scenario suggests that at buildout, Kaiser could accommodate a greater number of providers and staff in its proposed floor area. Accordingly, in order to monitor the population growth at Kaiser and to ensure that unexpected impacts do not arise, a monitoring program is recommended.
The key unresolved planning issues at this point in the process are as follows:

- The Precise Plan will be based on the *Kaiser Master Plan Urban Design Guidelines* (Appendix C), developed jointly by City staff with the assistance of Terry Bottomly, Urban Design consultant and Kaiser staff over the past year. The Precise Plan, which will enable the City to approve the Master Plan, is still under development but will be presented to the Planning Commission and City Council at the time of EIR certification or shortly thereafter. The reconciliation of any differences between the enabling Precise Plan and the proposed Master Plan will need to be resolved.

- At this stage, the Master Plan is a conceptual framework for future development of its campus. The project sponsor has requested approval of a campus-wide building envelope and site plan without being able to explain how all of the space will be used. The City will need to decide whether the proposed building uses are acceptable in terms of its planning and design visions for this area of the City and in terms of the impacts that have been identified in this EIR.

- The actual size, configuration, and design of buildings will evolve over time, so that it is difficult at this juncture to anticipate how well individual buildings or development areas on the campus will conform to the *Downtown Area Plan*. However, the Precise Plan will contain language to set out this process.

- The development of the Main Street downtown gateway site with a parking structure and Cancer Care Center will influence the extent to which the City’s goal to enhance the public accessibility and enjoyment of Redwood Creek and desire for a signature downtown gateway mixed-use building are met. As Kaiser’s plans for this area of its campus mature, close coordination with the City will be required to achieve the area’s potential.

- Kaiser has proposed a revision of the parking standards that currently are stipulated in the City’s zoning ordinance. The City must review that proposal in light of the parking analysis in this EIR. The parking analysis considers actual demand based on surveys at a comparable Kaiser garage.
Insert Impact and Mitigation Measure Summary Table (TABLE S-6)
Section 1
Introduction

1.1 PURPOSE OF THIS ENVIRONMENTAL IMPACT REPORT

This Environmental Impact Report (EIR) addresses the potential environmental effects of Kaiser Permanente’s Redwood City Medical Center application for a Master Plan that would guide future development of the 15.3-acre downtown gateway Medical Center and provide flexibility in developing and modifying the facilities to meet the changing needs of medical care and comply with federal and state law. The proposed project includes replacement, enhancement, and construction of inpatient and outpatient medical facilities on the existing Medical Center (within the development parameters discussed in this EIR) in approximately five phases over 22 years between 2003 and 2025. As further detailed in Section 2, Project Description, the proposed Master Plan, which will be implemented in response to the health care delivery requirements of Kaiser, includes 959,300 gross-square-foot (GSF) of medical center uses (hospital, clinical offices, administrative, and support services) and 1,032,100 GSF of parking structures. The Master Plan, which sets out the maximum GSF of buildings and structures proposed for the project site, is as follows:

- A replacement hospital that will include a building base varying from two to four stories upon which would be a 192-bed, six-story tower (for a total of 10 stories, 160 feet in height) totaling 440,000 GSF;
- Four new four- to five-story Medical Office Buildings (MOBs) and a new two-story, Cancer Care Center together totaling 455,200 GSF; \(^1\)
- Four new four- to seven-level parking structures providing 2,227 new spaces;
- A new two-level, 28,000-GSF Central Utility Plant (CUP);
- A new two-story, 20,000-GSF Administrative building;
- A 37,500-GSF Main Central Plaza and an additional 30,200-GSF Plaza (for use as a site for potential future expansion of the replacement Hospital); and
- A one-story, 4,800-GSF active commercial use fronting Marshall Street on the ground floor of the parking structure to be located along Marshall Street.

This EIR has been prepared for the City of Redwood City, which is the lead agency for the project. This comprehensive EIR assesses potentially significant impacts including, but not limited to, those concerning land use issues, visual quality, transportation, air quality, noise, hazardous materials, population and housing, public services, and utilities and service systems. As defined in the California Environmental Quality Act (CEQA) Guidelines Section 15382, a “significant effect on the environment” is:

\(^1\) Total GSF includes approximately 25,400 GSF of administrative uses within two of the proposed MOBs.
... a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

This EIR conforms to CEQA, as amended, and the State CEQA Guidelines. As stated in the State CEQA Guidelines, an EIR is an “informational document” with the intended purpose to inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. Although the EIR does not control the ultimate decision on the project, the City must consider the information in the EIR and respond to each significant effect identified in the EIR. The City of Redwood City will use the certified EIR, along with other information and public processes, to determine whether to approve, modify, or disapprove the proposed project, and to specify any applicable environmental conditions as part of project approvals.

### 1.2 EIR PROCESS

#### Draft EIR

Kaiser Foundation Hospitals is preparing the Master Plan to identify the long-range use and development program for the 15.3-acre Kaiser Redwood City Medical Center. The City distributed a Notice of Preparation on September 24, 2002, announcing its intent to prepare and distribute an EIR on Kaiser’s proposed Master Plan. Appendix A contains a copy of the Notice of Preparation.

This Draft EIR assesses the potential significant effects of the overall campus development program. If such effects are identified, the Draft EIR recommends mitigation measures to reduce or eliminate the potentially significant effects. This environmental document is considered a draft under CEQA since it must be reviewed and commented upon by public agencies, organizations, and individuals.

#### Public Review

This Draft EIR is being distributed for a 45-day public review and comment period. Readers are invited to submit written comments on the adequacy of the document; i.e., does this Draft EIR identify and analyze the possible environmental impacts and recommend mitigation measures? Comments are most helpful when they suggest specific alternatives or measures that would better mitigate the significant environmental effects.
Written comments should be submitted to: Maureen Riordan, Senior Planner
City of Redwood City
1017 Middlefield Road
P.O. Box 391
Redwood City, CA 94064-0391
Fax: (650) 780-0128
e-mail: mriordan@redwoodcity.org

Also, a public hearing will be held before the Redwood City Planning Commission to obtain additional comments from the community. The hearing will be announced in local newspapers and hearing notices will be mailed to responsible agencies and property owners (as said owners are shown on the latest equalized assessment role on which City taxes are collected) located within 300 feet of the Medical Center.

**Final EIR**

Following the close of the public review and comment period, responses will be prepared that address all substantive written and oral comments on the Draft EIR. The Final EIR will consist of the Draft EIR, the responses to comments received during the public review period, and any revisions to the Draft EIR as a result of public agency and public comments.

**Project Review and Approval**

The Redwood City Council 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, before any decision can be made regarding the Master Plan advanced by Kaiser Foundation Hospitals. Pursuant to Section 15091 of the State CEQA Guidelines, no public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant effects of the project unless the public agency makes one or more of the following findings:

a. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

b. 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 other agency.

c. Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

**Statement of Overriding Consideration**

When a public agency approves a project that allows the occurrence of significant effects that are identified in the Final EIR but are not at least substantially mitigated, the agency shall state in writing
the specific reasons to support its action based on the Final EIR and/or other information in the record. This is known as a “Statement of Overriding Consideration.” CEQA requires the decision-maker to balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve the project. If the benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered acceptable. If an agency makes a Statement of Overriding Considerations, the statement must be included in the record of the project approval. If the Master Plan is approved, conditions of approval would include a mitigation monitoring program as required by CEQA. The City would use the mitigation monitoring program as a mechanism to control project impacts during and after construction.

### 1.3 USE OF THIS REPORT

An EIR is an informational document, whose purpose is to make the public and decision-makers aware of the environmental consequences of a project. As noted earlier, the City of Redwood City is the “lead agency” for the EIR. The lead agency is the public agency that has the principal responsibility for carrying out or approving the project. Thus, the City Council and/or the Planning Commission will review this report and weigh its contents against other economic, social, and neighborhood considerations to determine whether the Kaiser Redwood City Medical Center Master Plan should be approved as proposed, approved but modified, or rejected. If the Master Plan is approved in some form, approval will include adoption of a Precise Plan and Planned Community District (P District) will be established in accordance with Article 52 of the Redwood City Municipal Code.

Various City departments will review this EIR to understand the project’s service demands, permit requirements, and mitigation obligations. For example, the City’s Community Development Services Department will consider the project’s land use, visual, and population and housing implications. The City’s Engineering and Public Works Services Department will review the project’s traffic and utility effects. The surrounding residents and businesses and any other interested individual may review the EIR to evaluate the project’s effects on baseline conditions, especially traffic, parking and noise, and the proposed mitigation measures to reduce potential environmental consequences.

Finally, there are other public agencies besides the lead agency that have discretionary approval over the project. These agencies, known as “responsible agencies,” will also review the Draft EIR and may comment during the public review period. They include:

- the State Office of Statewide Health and Planning Department, because it is the single regulatory office responsible for reviewing and approving plans and specifications for construction, alteration, or additions to hospital buildings;

- the San Francisco Bay Region Regional Water Quality Control Board (RWQCB), because it is charged with, among other things, regulating potential impacts to water quality and the issuance of National Pollutant Discharge Elimination System (NPDES) permits for construction projects;
• the San Mateo City/County Association of Governments, because it is concerned with projects that would generate more than 100 peak-hour trips and the effect of those trips on the County’s routes of regional significance;

• the City/County Association of Governments, Airport Land Use Committee, because it is concerned with projects in the vicinity of the San Carlos Airport and the Kaiser Medical Center is about 9,500 feet from the airport runway;

• the Bay Area Air Quality Management District (BAAQMD), because it will issue operating permits for utility air pollutant sources, i.e., equipment in the CUP, and operating permits, as required; and

• South Bayside System Authority, because the proposed project may require a Wastewater Discharge Permit from the South Bayside System Authority, which is the regional wastewater treatment plant.

### 1.4 REPORT ORGANIZATION

This section provides an overview to the EIR. Section 2, Project Description, provides the historical context of the proposed project, the Medical Center’s objectives in pursuing this project, and details of the project’s land use, development, and design features. Section 3, Environmental Analysis, describes the existing conditions in the project vicinity and explains changes to these baseline conditions if the project were approved. The existing conditions focus on physical, environmental topics, such as land use, visual quality, traffic, air quality, noise, hazardous materials, population and housing, public services, utilities and service systems. Each of these topics in Section 3 contains two parts:

- **The Existing Conditions** section provides a general overview of the conditions on and adjacent to the project site. Local, State, and federal regulations are also identified and discussed, when relevant.

- **The Impacts and Mitigation Measures** section provides a brief description of criteria used to evaluate whether an impact is considered significant. These “significance criteria” are based on standards identified in CEQA, State CEQA Guidelines, agency policy or regulations, and/or professional judgment. Significant impacts are enumerated, summarized, and discussed. Mitigation measures that would reduce significant impacts are identified. The significance of the impact after mitigation is also indicated. For impacts found to be less than significant, mitigation measures are not required but may be proposed to further reduce environmental effects.

Section 4, Other CEQA Topics, discusses other topical issues required by CEQA, such as unavoidable adverse effects, growth-inducing effects, and cumulative impacts. Section 5, Project Alternatives, contains a description and assessment of alternatives to the proposed project, including, among others, a No Project Alternative and a Redwood City Preferred Alternative, and discusses the environmentally superior alternative.
2.1 INTRODUCTION AND BACKGROUND

The project sponsor, Kaiser Foundation Hospitals (a California non-profit public benefit corporation), proposes a Master Plan to guide replacement of its inpatient (hospital) and outpatient Medical Office Buildings (MOBs) and administrative medical facilities at the existing Kaiser Permanente\(^1\) Redwood City Medical Center campus (Medical Center). The Master Plan is designed to provide additional and enhanced inpatient and outpatient treatment capacity and to consolidate Kaiser’s Redwood City operations by relocating services and staff from some of the off-campus leased spaces onto the Medical Center. At buildout, the amount of developed space on the site (excluding parking structures) would increase by approximately 628,450 gross square feet (GSF) from its current 330,850 GSF. Flexibility within the Master Plan may be necessary due to changing health care needs, but the Plan will not exceed the planning envelope of 959,300 GSF of medical center uses and 1,032,100 GSF of parking structures. As currently proposed, the Master Plan will be implemented over a 22-year period in five major phases between 2003 and 2025. The Master Plan will be approved with a Precise Plan adopted pursuant to Article 52 of the Redwood City Municipal Code.

The proposed project includes the replacement of the existing hospital in order to meet seismic safety standards mandated by the State of California under the Alfred E. Alquist Hospital Facilities Seismic Safety Act of 1983 (SB 1953). SB 1953, as amended, requires the seismic upgrade or replacement of the seven-story hospital tower (“Hospital”), constructed in 1968, by January 2013. According to the project sponsor, structural retrofitting options for this fully-occupied, functioning hospital would not be practical or cost-effective, and therefore, a full replacement is proposed as part of the Master Plan.

The project would also allow the consolidation of the various Kaiser Permanente functions currently dispersed in leased facilities in several Redwood City locations. Consolidation of the various facilities is intended to improve access for Kaiser Permanente members and facilitate the more efficient provision of treatment from a centralized Redwood City location. According to the project sponsor, additional inpatient (hospital) and outpatient (MOB) space is required at the Medical Center to relieve overcrowding, meet changing health care needs, and to accommodate current health care practices. Health care in the twenty-first century is extremely dependent upon high-tech equipment and new technologies. Because of the size of this equipment, the average size of diagnostic, treatment, surgical, and storage rooms has grown since the Medical Center was originally constructed in 1968.

\(^1\) Kaiser Foundation Health Plan (a federally-regulated health maintenance organization), Kaiser Foundation Hospitals, and the Permanente Medical Group together comprise Kaiser Permanente.
2.2 Project Location

The Medical Center is located within downtown Redwood City approximately 30 miles south of San Francisco and approximately 25 miles north of San Jose (see Figure 2-1). Regional access to the site is available from U.S. 101, which is located approximately ½ mile north of the site. The Redwood City Caltrain Station is located approximately ½ mile southwest of the site.

As shown in Figure 2-2, the 15.3-acre Medical Center is generally bounded by Veterans Boulevard to the north, two Main Street downtown gateway parcels\(^2\) to the northwest (the western Main Street parcel contains a portion of Redwood Creek), Maple Street to the east, and Marshall Street to the south. The project site is composed of five contiguous parcels:

- Parcel I (Assessor Parcel #053-202-140) is bounded on the north by Veterans Boulevard, on the east by Maple Street, on the south by Marshall Street, and on the west by Walnut Street, except for the southwest corner, which is occupied by 1001 and 901 Marshall Street and a parking structure that are unrelated to the Medical Center.
- Parcel II (Assessor Parcel #053-204-050) occupies the east side of Maple Street between Veterans Boulevard and Marshall Street.
- Parcel III (Assessor Parcel #052-376-030) occupies the block bounded by Main Street and Redwood Creek on the west, Veterans Boulevard on the north, Walnut Street on the east, and Bradford Street on the south.
- Parcel IV (Assessor Parcel #052-372-230) lies at the northwest corner of Main and Bradford Streets.
- Parcel V (Assessor Parcel #052-377-100) occupies the southwest corner of Bradford and Walnut Streets.

2.3 Project Objectives

Project Sponsor Objectives

The project sponsor has identified the following objectives for its proposed Master Plan:

- To continue to provide high quality, affordable, accessible health care to Kaiser Permanente’s members and the Redwood City community.

\(^2\) The Draft Downtown Area Plan identifies a number of primary and secondary gateways to Downtown Redwood City. For more information on the Downtown Area Plan, refer to Section 3.2, Land Use.
Slipsheet for Figure 2-1.

(8 ½ x 11)
• To provide a new, state-of-the-art inpatient facility for Kaiser Permanente members in the
Redwood City area by replacing existing technology and equipment in a practical and cost
effective manner.

• To consolidate most of Kaiser Permanente’s Redwood City treatment and support functions at a
single Medical Center location.

• To provide facilities to meet changing health care demands and practices.

• To replace the inpatient facility at the Redwood City Hospital in accordance with SB 1953 in
order to create a new, seismically safe, inpatient medical facility for Kaiser Permanente
members and the Redwood City community.

• To provide the functional and operational relationship and adjacencies paramount for delivery
of quality care. These relationships and adjacencies are based on the need for collaboration
and coordination of multiple teams of specialists, to provide the quality outcome necessary to
patients in critical conditions and save their lives.

• To phase the construction of new facilities in a flexible manner to ensure uninterrupted
operation of services at the Medical Center during construction.

• To maintain the Redwood City Hospital at its present regional location, where it serves an
important role as a resource for Kaiser Permanente members and to the Redwood City
community.

• To provide a campus which is compatible with Redwood City’s objectives and design
guidelines for the downtown area.

• To provide a campus environment that is easy to negotiate for both pedestrians and vehicles, by
creating open spaces and pedestrian walkways with clearly recognizable destination points,
building entrances, landmarks, and street crossings to orient people to Medical Center
programs.

• To provide a minimum project footprint of 140,000 square feet (this objective was added by the
project sponsor in January of 2003 after the submittal of the amended application in May of
2002).

City Objectives

The 15.3-acre Medical Center can play an important role in the revitalization and enhancement of
Redwood City’s Downtown District due to its proximity to the downtown retail core and its location at
a gateway entrance into the downtown at Main Street and Veterans Boulevard. Given the size and
location of the Medical Center at the entrance/gateway to Redwood City’s downtown, the City also has
a number of objectives that relate to the project site. Redwood City’s objectives for the Kaiser campus,
defined within the broader context of the draft Downtown Area Plan and more specifically within the
draft Kaiser Master Plan Urban Design Guidelines, are summarized below:
Slipsheet for Figure 2-2, (side 1)

(11 X 17, needs to pages, start on odd page number)
Slipsheet for Figure 2-2, (side 2), (11 X 17)
Draft Downtown Area Plan Vision and Goals

The draft Downtown Area Plan was developed by a community-wide citizen task force and is proposed for adoption in 2003. The Plan was officially received by the City Council in December 2001 and forwarded to the Planning Commission for review and recommendation. The Plan has been widely circulated (at multiple community meetings, a housing symposium, and other community gatherings) and has been positively received by the community.

Vision. Downtown Redwood City will be a vibrant, vital, and attractive place for people to live, work, shop, and enjoy civic and cultural life within a setting that respects and capitalizes on the unique and historic character.

Goals. The following goals are from the draft Downtown Area Plan and establish the vision for Redwood City’s Downtown District:

- Create a friendly environment for a diverse mix of people and uses in the downtown;
- Respect historic character, architecture and cultural heritage of Redwood City;
- Establish a central downtown public gathering space that serves as a focal point for the community;
- Create and define an accessible, safe, attractive and convenient downtown; and
- Create an economically viable downtown.

Redwood City’s Recommended Kaiser Master Plan Draft Urban Design Guidelines

Between January and April 2002, City and Kaiser staff, with the assistance of the City’s Urban Design Consultant, Terry Bottomley, worked together to develop the draft Kaiser Master Plan Urban Design Guidelines for the proposed Medical Center expansion (Appendix C). In May, Kaiser submitted a revised Master Plan application to the City. At two separate Joint Study Sessions, the Planning Commission and Architectural Review Committee (ARC) reviewed the Master Plan and provided general input to the Kaiser proposed Master Plan. The Planning Commission and ARC also provided input and general direction to staff in regard to the draft Kaiser Master Plan Urban Design Guidelines.

While Kaiser staff generally agreed with many of the concepts contained in the proposed Urban Design Guidelines, they did not agree to all of the guideline recommendations and so decided to move forward with this Environmental Impact Report (EIR) application with an understanding of these differences.

Kaiser is proposing a buildout of the campus over a 22-year period. The City has recently adopted language permitting the creation of Precise Plans to govern the development of certain areas within the City. City staff proposes to develop a Precise Plan for the Kaiser site to govern its development over the next 22 years. The City will propose the incorporation of the previously referenced draft Kaiser Master Plan Urban Design Guidelines into the Precise Plan that will ultimately be adopted in whole or
in part by the City Council. The following City objectives for the Kaiser Medical Center are from the draft *Urban Design Guidelines*:

- **Economic Vitality**: Kaiser, particularly as it expands, is an important market for the downtown merchants and Kaiser employees and members could benefit from a closer interaction with the Downtown District.

- **Downtown Gateway Parcels**: Gateway buildings should receive the highest level of design attention, with attractive building entrance(s), facade(s) and materials.

- **Medical Building Location and Orientation**: It is the City’s objective to focus the location and orientation of new Kaiser Campus buildings towards the Downtown District; to ensure people-occupied building spaces (vs. parking lots/structures) frame downtown streets as public spaces; and to strengthen pedestrian connections from the Kaiser campus to the Downtown through thoughtful site planning.

- **Parking Structure Massing and Orientation**: To reduce the number, size and massing of parking structures, a portion of required parking should be under-grounded. Where feasible, parking structures should orient regional traffic onto Veterans Boulevard in order to reduce traffic volume on the narrower, pedestrian-oriented downtown streets (Main, Bradford, Marshall and Maple Streets).

### 2.4 EXISTING MEDICAL CENTER DEVELOPMENT AND SETTING

**Medical Center Campus**

As presented above, the Medical Center covers five contiguous parcels, Parcels I to V. Parcels I to IV are currently zoned for Central Administrative (CA) uses.\(^3\) Parcel V is zoned for Central Business (CB) uses.\(^4\) Medical facilities are permitted uses in both of these zones. The City’s zoning requirements for the CA and CB zoning districts allow development with 60 percent lot coverage and building height limits of 75 feet for Parcels I to IV and 100 feet for Parcel V. The Medical Center buildings currently use up to 20 to 30 percent of the permitted lot coverage. Except for the Hospital building and Parking Structure A (which are each seven stories high), all the buildings on campus are either one- or two-story buildings. Table 2-1 identifies all existing on-campus medical facilities.

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\(^3\) The following uses are permitted in the CA District per Article 12CA of the Redwood City Zoning Ordinance: administrative or professional offices; medical or dental offices, clinics, and laboratories; business offices; schools; art studios; family day care homes within residential structures; and highly specialized residential uses.

\(^4\) The following uses are permitted in the CB District per Article 14CB of the Redwood City Zoning Ordinance: retail stores and shops; financial services; professional, medical or administrative offices; theaters; restaurants and cafes; family day care homes within residential structures; and residential uses, either condominiums or rental units.
### Table 2-1
Redwood City Kaiser Medical Center Existing Development Program and Building Summary

<table>
<thead>
<tr>
<th>Building</th>
<th>Address</th>
<th>Parcel</th>
<th>Area in GSF</th>
<th>Beds/POs1/Staff2/Parking Spaces³</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXISTING ON-CAMPUS MEDICAL CENTER FACILITIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td>1150 Veterans Boulevard</td>
<td>I</td>
<td>203,955</td>
<td>209 beds</td>
</tr>
<tr>
<td>Service Building/Central Utility Plant (CUP)</td>
<td>1150 Veterans Boulevard</td>
<td>I</td>
<td>5,857</td>
<td>0</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td>209,812</td>
<td>209 beds</td>
</tr>
<tr>
<td><strong>Clinical Offices/Medical Office Buildings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspen</td>
<td>670 Marshall Court</td>
<td>I</td>
<td>12,000</td>
<td>13 POs</td>
</tr>
<tr>
<td>Cypress</td>
<td>1150 Veterans Boulevard</td>
<td>I</td>
<td>45,213</td>
<td>46 POs</td>
</tr>
<tr>
<td>Oak</td>
<td>1150 Veterans Boulevard</td>
<td>I</td>
<td>10,198</td>
<td>13 POs</td>
</tr>
<tr>
<td>Maple</td>
<td>910 Maple Street</td>
<td>II</td>
<td>13,968</td>
<td>20 POs</td>
</tr>
<tr>
<td>MRI</td>
<td>1150 Veterans Boulevard</td>
<td>I</td>
<td>3,714</td>
<td>0 POs</td>
</tr>
<tr>
<td>Walnut</td>
<td>610 Walnut Street</td>
<td>V</td>
<td>11,300</td>
<td>8 POs</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td>96,393</td>
<td>100 POs</td>
</tr>
<tr>
<td><strong>Administrative Buildings²</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controllers</td>
<td>980 Maple Street</td>
<td>II</td>
<td>1,440</td>
<td></td>
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<tr>
<td>QA/UR (Quality Assurance/Utilization Review)</td>
<td>980 Maple Street</td>
<td>II</td>
<td>1,440</td>
<td></td>
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<tr>
<td>Willow</td>
<td>1291 Marshall Street</td>
<td>II</td>
<td>5,423</td>
<td></td>
</tr>
<tr>
<td>Laurel</td>
<td>655 Marshall Court</td>
<td>I</td>
<td>6,065</td>
<td></td>
</tr>
<tr>
<td>Poplar</td>
<td>1125 Marshall Street</td>
<td>I</td>
<td>5,349</td>
<td></td>
</tr>
<tr>
<td>Magnolia</td>
<td>1175 Marshall Street</td>
<td>I</td>
<td>4,928</td>
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<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td>24,645</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>330,850</td>
<td>125 POs</td>
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<tr>
<td><strong>Parking</strong></td>
<td></td>
<td></td>
<td></td>
<td>1,262 Staff</td>
</tr>
<tr>
<td>Parking Structure A</td>
<td>1250 Veterans Boulevard</td>
<td>II</td>
<td>289,300</td>
<td>749</td>
</tr>
<tr>
<td>Parking Lot 1</td>
<td>IV</td>
<td></td>
<td></td>
<td>45</td>
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<tr>
<td>Parking Lot 2</td>
<td>III</td>
<td></td>
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<tr>
<td>Parking Lot 3</td>
<td>V</td>
<td></td>
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<td>30</td>
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<tr>
<td>Parking Lot 4</td>
<td>I</td>
<td></td>
<td></td>
<td>102</td>
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<tr>
<td>Parking Lot 6</td>
<td>I</td>
<td></td>
<td></td>
<td>130</td>
</tr>
<tr>
<td>Parking Lot 7</td>
<td>II</td>
<td></td>
<td></td>
<td>105</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>1,373 spaces</td>
<td></td>
</tr>
</tbody>
</table>

1 Beds/POs Staff
2 Parking Spaces
3 Total

Kaiser Permanente Redwood City Medical Center Master Plan Draft EIR — Project Description
Table 2-1 (Continued)
Redwood City Kaiser Medical Center Existing Development Program and Building Summary

<table>
<thead>
<tr>
<th>Building</th>
<th>Address</th>
<th>Parcel</th>
<th>Area in GSF</th>
<th>Beds/POs¹/Staff²</th>
<th>Parking Spaces³</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXISTING OFF-CAMPUS LEASED BUILDINGS TO BE RELOCATED ON-CAMPUS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Offices/Medical Office Buildings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birch</td>
<td>910 Marshall Street</td>
<td>14,172</td>
<td>5 POs</td>
<td>N/A Staff</td>
<td>59 spaces</td>
</tr>
<tr>
<td>Broadway (Hearing Aid Center)</td>
<td>1800 Broadway</td>
<td>2,500</td>
<td>0 POs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td>16,672</td>
<td>5 POs</td>
<td>N/A Staff</td>
<td>59 spaces</td>
</tr>
<tr>
<td><strong>Administration Buildings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSA Offices</td>
<td>900 Veterans Boulevard</td>
<td>10,429</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veterans Administrative Office</td>
<td>805 Veterans Boulevard</td>
<td>6,900</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td>17,329</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Galveston Medical Records</td>
<td>600 Galveston Boulevard</td>
<td>16,275</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>50,276</td>
<td>5 POs</td>
<td>N/A Staff</td>
</tr>
<tr>
<td><strong>Grand Total (existing on-campus buildings &amp; existing off-campus buildings to be relocated on-campus)</strong></td>
<td></td>
<td></td>
<td>381,126</td>
<td>130 POs</td>
<td>1,262 Staff</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,432 spaces¹</td>
</tr>
</tbody>
</table>


Notes:
1. Provider Offices. Providers is a term used by Kaiser to describe individuals and facilities associated with outpatient healthcare needs. Although the term “Offices” is used, it is not meant to convey solely space within an MOB. While most providers are doctors, the category also includes nurse practitioners, optometrists, licensed clinical social workers, and speech therapists, among others. Wherever these job descriptions are considered providers, they are included in Provider Office (PO) totals within this EIR.
2. All staff count totals (exclusive of Providers) are Full Time Equivalent (FTE) figures. Therefore, total employment will be greater due to part-time employees. Total support staff is based on a ratio of approximately 4.7 staff per provider and includes staff located in administrative buildings. Thus, staff associated with administrative buildings are included with the staff counts for the clinical offices. Support staff totals do not include volunteer staff that averages 25 volunteers per day.
3. An additional 280 on-street parking spaces are available at the following locations (refer to Figure 2.2):
   - Veterans Boulevard – Main to Maple Streets.
   - Walnut Street – Veterans Boulevard to Bradford Streets.
   - Bradford Street – Main Street to Walnut Street.
   - Marshall Street – Marshall Court to Beech Street.
   - Maple Street – Veterans Boulevard to Marshall Street.
Existing on-campus medical facilities include:

- A full-service, 209-licensed bed, 203,955-gross-square-foot (GSF) Hospital (providing “inpatient” care);
- Six on-campus clinical/medical office buildings (MOBs) (providing “outpatient” care) in 96,393 GSF;
- Eight support and administrative buildings (including the CUP) totaling 30,502 GSF; and
- Approximately 1,373 parking spaces dispersed between an eight-level parking garage (749 spaces) and surface parking lots throughout the campus (624 spaces).

The total developed floor space of medical-related uses on the Kaiser campus is about 330,850 square feet. Existing staff on the Kaiser campus total 1,387 providers and support staff.5

Table 2-1 presents the GSF of the various buildings, their addresses, and the number of beds/provider offices or parking spaces included in each of them. Table 2-1 also includes information regarding existing off-campus buildings that would be relocated on campus during various phases of the proposed project.

Off-campus Buildings

Various Kaiser Permanente offices are located in nine leased facilities within Redwood City off the Medical Center site (see Table 2-1 and Figure 2-2). Five of these off-campus facilities totaling 50,276 GSF, are proposed to be relocated on to the Medical Center campus. These include:

- Two clinical buildings — 910 Marshall Street (Birch building) and 1800 Broadway (Hearing Aid Center);
- Two administrative buildings — 900 Veterans Boulevard (CSA Offices) and 805 Veterans Boulevard; and
- One storage facility — 600 Galveston Boulevard (Galveston Medical Records).

The following four leased facilities within Redwood City will remain off-site and are not included in the proposed project. They are listed here for informational purposes only:

- One clinical building — 1400 Veterans Boulevard (Veterans Medical Office);
- One administrative building — 333 Twin Dolphin Drive (Twin Dolphin Building); and
- Two storage facilities — 1288 Oddstand Drive (Radiology File Storage) and 693 Bair Island Road (Plant Operations).

5 All staff count totals (exclusive of Providers) are Full Time Equivalent (FTE) figures. Therefore, total employment will be greater due to part-time employees.
2.5 PROPOSED PROJECT

Replacement/Consolidation/Development Program

Developed Floor Area

The proposed project includes the replacement of the existing seven-story Hospital with a new hospital building in which acute care and emergency services would continue to be offered to Kaiser Permanente’s members and to the Redwood City community. The Master Plan also includes the replacement of all existing ancillary administrative and outpatient clinical facilities located at the Medical Center, and would allow the consolidation of the various Kaiser Permanente functions currently dispersed in leased facilities in several Redwood City locations. The following facilities are currently proposed for construction at the Medical Center:

- A replacement hospital that will include a building base varying from two to four stories upon which would be a 192-bed, six-story tower (for a total of 10 stories, 160 feet in height) totaling 440,000 GSF;
- Four new four- to five-story Medical Office Buildings (MOBs) and a new two-story, Cancer Care Center together totaling 455,200 GSF;\(^6\)
- Four new four- to seven-level parking structures providing 2,227 new spaces;
- A new two-level, 28,000-GSF Central Utility Plant (CUP);
- A new two-story, 20,000-GSF Administrative building;
- A 37,500-GSF Main Central Plaza and an additional 30,200-GSF Plaza (for use as a site for potential future expansion of the replacement Hospital); and
- A one-story, 4,800-GSF active commercial use fronting Marshall Street on the ground floor of the parking structure to be located along Marshall Street.

The only existing medical building that would be retained at the Medical Center as part of the Master Plan is the clinical space at 610 Walnut Street, which is proposed for administrative uses. In addition, the existing 8-level, 749-stall parking garage on Veterans Boulevard would remain.

At buildout, the proposed Master Plan project would encompass 959,300 GSF of developed medical-related floor area (excluding the parking garages), 192 beds, and 3,006 parking spaces at the Medical Center (excluding on-street parking).

Table 2-2 presents the GSF of the proposed buildings, their number of stories or levels, location, and number of beds/provider offices or parking spaces. The net increase in square footage at the Medical

\(^6\) Total GSF includes approximately 25,400 GSF of administrative uses within two of the proposed MOBs.
Center, exclusive of the parking garages, would be 628,450 GSF, based on 959,300 GSF of new construction and 330,850 of demolition. Of the net new GSF, 258,188 GSF are related to the replacement Hospital and CUP, 358,807 GSF are associated with the clinical uses in the MOBs and Cancer Care Center, and 11,455 GSF would be allocated for administrative space. The breakdown of net new space by building and phase is presented later in this section in Table 2-9.7

**Explanation of Space Requirements**

Kaiser is proposing to increase the developed space at its Redwood City campus by approximately 628,450 GSF. Some of the increased floor space is needed to accommodate the off-campus uses that would be consolidated at the Medical Center campus. However, the majority of the new space is needed to reflect new standards and practices in health care delivery. The Master Plan replacement Hospital would provide more than double the square footage allotted for each hospital bed compared to the existing facility. The proposed MOBs would also provide an average of more than two and a half times the amount of floor area per provider, from approximately 960 GSF per provider in the existing on-campus clinical buildings to an average of 2,300 GSF per provider among the four new MOBs (the actual square footage per provider would range from a low of approximately 1,710 GSF per provider in MOB 1 to a high of approximately 3,650 GSF per provider in MOB 4). The following discussion provides an overview to changes in space requirements for hospitals, administrative functions, medical offices, physicians, and technology.

**Hospital Space.** The existing Kaiser Redwood City Hospital has an average of 1,000 GSF per bed. Required square footage has doubled compared to standards of 30 to 40 years ago. Kaiser is currently designing and constructing hospitals in the Bay Area with an average of 2,100 to 2,200 GSF per bed. The proposed Redwood City replacement Hospital would have an average of 2,440 GSF per bed. Non-Kaiser facilities are also experiencing an increase in the required square footage. For example, Sutter’s Modesto Memorial Hospital has an area of 2,000 GSF per bed.8

**Administrative Functions.** According to projections for the Master Plan, future administrative facilities on the Medical Center would increase by 36,855 GSF over existing developed space, from 24,645 GSF currently to 61,500 GSF. In the past, administration was limited to a few departments, including accounting. Today, administration has multiple departments: Chief Operating Officer and staff; Medical Director and staff; and Financial Director and staff. Departments now include Medical Economics, Statistics (separate from accounting), Nursing Administration, Support Services Administration, Environmental, Safety, Security, Employee Health Services, Public Relations, Human Resource and Recruitment, Physician Training and Internships Department, Research, and Quality

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7 Existing Kaiser Permanente facilities in leased facilities outside the Medical Center campus that are not included as part of the Kaiser Master Plan but would be retained include the clinical space provided at 1400 Veterans Boulevard; the administrative building at 333 Twin Dolphin Drive; and the storage facilities at 1288 Oddstand Drive and 639 Bair Island Road.

<table>
<thead>
<tr>
<th>Proposed Project – Replacement/Consolidation/Development Program and Phasing</th>
<th>Levels/Stories</th>
<th>Area GSF</th>
<th>Beds/POs(^2)/Staff(^2)</th>
<th>Construction Phase (PH)(^3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hospital and Related Structures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Hospital</td>
<td>2- to 4-story base w/ 6-story tower for a total of 10 stories</td>
<td>440,000</td>
<td>192 beds 0 POs 678 Staff</td>
<td>I PH-II (2009-2013)</td>
</tr>
<tr>
<td>CUP</td>
<td>2 levels 28,000</td>
<td>468,000</td>
<td>192 beds</td>
<td>I PH-II (2009-2013)</td>
</tr>
<tr>
<td><strong>Clinical Offices/Medical Office Buildings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOB 1</td>
<td>5 stories</td>
<td>120,000</td>
<td>56 POs</td>
<td>II PH-I (2003-2004)</td>
</tr>
<tr>
<td>MOB 2</td>
<td>4 stories</td>
<td>95,200</td>
<td>38 POs</td>
<td>I PH-III (2010-2015)</td>
</tr>
<tr>
<td>MOB 3</td>
<td>5 stories</td>
<td>120,000(^4)</td>
<td>28 POs</td>
<td>I PH-IV (2010-2020)</td>
</tr>
<tr>
<td>MOB 4</td>
<td>4 stories</td>
<td>100,000(^5)</td>
<td>20 POs</td>
<td>II PH-V (2011-2025)</td>
</tr>
<tr>
<td>Cancer Care Center (East of Main St.)</td>
<td>2 stories</td>
<td>20,000</td>
<td>6 POs</td>
<td>PH-II (2004-2013)</td>
</tr>
<tr>
<td><strong>Administrative and Other Buildings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration (West of Main)</td>
<td>2 stories</td>
<td>20,000</td>
<td>0 POs</td>
<td>IV PH-III (2010-2015)</td>
</tr>
<tr>
<td>Active Use (Within Parking Structure C)</td>
<td>1 story</td>
<td>4,800</td>
<td>0 POs</td>
<td>I PH-II (2009-2013)</td>
</tr>
<tr>
<td>Walnut (Administration)</td>
<td>2 stories</td>
<td>11,300</td>
<td>0 POs</td>
<td>V Existing</td>
</tr>
<tr>
<td><strong>Parking</strong>(^7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parking Structure A</td>
<td>8 levels</td>
<td>289,300</td>
<td>749</td>
<td>II Existing</td>
</tr>
<tr>
<td>Parking Structure B</td>
<td>5 levels</td>
<td>199,000</td>
<td>654</td>
<td>III PH-III (2009-2013)</td>
</tr>
<tr>
<td>Parking Structure C</td>
<td>7 levels</td>
<td>175,000</td>
<td>475</td>
<td>I PH-IV (2009-2013)</td>
</tr>
<tr>
<td>Parking Structure D</td>
<td>6 levels</td>
<td>204,000</td>
<td>600</td>
<td>I PH-IV (2010-2020)</td>
</tr>
<tr>
<td>Parking Structure E</td>
<td>4 levels</td>
<td>164,800</td>
<td>498</td>
<td>II PH-V (2011-2025)</td>
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<tr>
<td>Parking Lot 3 (Walnut)</td>
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<td>30</td>
<td></td>
<td>V Existing</td>
</tr>
<tr>
<td><strong>Plazas</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Medical-Related Program</strong></td>
<td></td>
<td>959,300(^8)</td>
<td>148 POs 1,373 Staff 1,521 Total</td>
<td></td>
</tr>
<tr>
<td><strong>Total Parking Program</strong></td>
<td></td>
<td>3,006 spaces</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** EIP Associates, July 2, 2002; Michael I. Kay, Kaiser Foundation Health Plan Inc., Revised Application Material for Kaiser Redwood City Master Plan (electronic files), June 24, 2002.

**Notes:**
1. Provider Offices.
2. All staff count totals (exclusive of Providers) are Full Time Equivalent (FTE) figures. For example, two people working 25% and one person working 50% equals three staff members. However, this is only one FTE (25% plus 25% plus 50% equals 100%). Therefore, total employment will be greater due to part-time employees.
3. PH = Phase
4. Total GSF of MOB 3 includes approximately 16,700 GSF of administrative uses.
5. Total GSF of MOB 4 includes approximately 8,700 GSF of administrative uses.
6. Total support staff is based on a ratio of 4.7 staff per provider and includes staff located in administrative buildings.
7. Support staff totals do not include volunteer staff that averages 25 volunteers per day.
8. Parking structures typically include rooftop parking. Therefore, parking structures in this EIR are described by the number of levels rather than stories. For example, an eight-level parking structure is approximately the same height of a seven-story building.
9. Total excludes space at the plazas and in parking structures.
Control, among others. These divisions either did not exist in 1960s or were not as extensive. In addition, regulatory agencies have increased their oversight requirements. This has led to an increase in the need to prepare documents and reports to meet the standards for licensing and operating for each service, specialty, equipment, and staffing.

**Medical Office Buildings.** Medical office buildings have also changed in average size. This is due in part to several factors. The average number of patients per day per provider is higher than past practices. In the 1960s, a patient visit would last approximately 30 to 40 minutes. Today, the average time is 10 to 15 minutes. This has resulted in the need for larger waiting rooms and more exam rooms. Fifty years ago the office/exam rooms were one and the same separated by a curtain. Twenty years ago, the ratio of office to exam room was one to one. In today’s medical office building, the provider has a separate office with two or more exam rooms. Both of these exam rooms are fully equipped and allocated to each provider in order that they can see more patients.

The existing Kaiser Redwood City MOBs have an average of 960 GSF per provider. The four new MOBs will average 1,710 GSF per provider for MOB 1, 2,000 GSF per provider for MOB 2, 2,950 GSF per provider for MOB 3, and 3,650 GSF per provider for MOB 4. This represents an increase of approximately 1.8 to 3.8 times the amount of floor area per provider compared to existing conditions.

**Physicians.** In the past, there were more single provider practices. Today, there are more group practice models with greater efficiency and higher patient visits per day. For example, for every four to six providers, there are shared areas such as weigh stations, blood pressure stations, handicapped bathrooms, procedure rooms, equipment rooms, injection rooms, etc. Additional staff with offices performs many tasks previously only physicians were allowed to perform.

In the past, a physician would address multiple diseases. Now, there are specialties for every area of medicine, medically and technically, which require expertise. Referrals have become normal practice. Additionally, even newer models of care have become multidisciplinary and the health care team may include social workers, psychiatrists, physical therapists, and other specialists working with the general practitioner as a team. Each member of the health care team requires additional offices and supporting rooms when necessary. No shared offices are proposed for any of the new campus facilities.

With new advances in medical practices, many surgeries previously performed in an inpatient setting are now in outpatient procedure rooms. These new departments have increased in size, reducing the number of inpatient beds but in turn increasing the space needs for patient recovery areas, monitoring, equipment rooms, and adjacent equipment cleaning processing rooms.

**Technology and ADA Space Requirements.** Computers and associated accessory equipment require expanded areas. Modern hospitals and medical office buildings also need additional space for universal access and facilities for the physically disabled. An average of 500 to 700 square feet per patient-bed in a nursing unit (a designated area within the hospital for individuals receiving diagnostic, therapeutic, or preventative services, or for patients under observation for treatment of illness or injury) is required.
compared to 300 square feet per patient-bed for functions when the Kaiser campus was first constructed.9

**Isolation Rooms & Group Appointment Space Requirements.** Unlike facilities 30 years ago, today’s clinics and hospitals have areas for isolating infectious or immune-compromised patients. New health care facilities have higher standards for indoor air conditioning requiring larger equipment rooms and mechanical shafts, further increasing the space requirements. Group appointments that allow members to spend a significant amount of time with a physician along with others who have the same diagnosis have become popular in recent years. These visits require large spaces, currently not available at the Medical Center.

**Site Plan and Buildings**

Figure 2-3 presents the proposed conceptual site plan and arrangement of the MOBs, parking structures, and replacement Hospital at the Medical Center. The site plan shows that existing clinical offices and surface parking lots would be redeveloped with new MOBs and parking structures with much larger floorplates than the existing buildings. Two plazas are identified for open space purposes. Figures 2-4A, 2-4B, and 2-4C present various elevations, sections, and aerial views of the proposed structures and plans. The site elevations and sections are conceptual and are meant only to illustrate the potential scale and massing of the proposed project. The building materials that would be used, building facades, and other architectural treatment would be based on the *Kaiser Master Plan Urban Design Guidelines* (see Appendix C) developed by the City for the Precise Plan. The design of the various structures and open spaces would be required to comply with the Guidelines for each building and for the site. A description of the various Master Plan buildings and parking structures proposed at the Medical Center is presented below.

**New Hospital and Central Utility Plant**

The proposed 192-bed, 440,000-GSF, hospital building (new Hospital) which will vary from two to four stories, and six-story nursing tower (for a total of 10 stories, 160 feet in height) would replace the existing seven-story Redwood City Hospital tower at 1150 Veterans Boulevard which was constructed in 1968. Acute care and emergency services would continue to be offered at this new facility. The new Hospital building would be located at the southeast corner of Veterans Boulevard and Walnut Street on Parcel I.

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Figure 2-3 (11x17) Side 1, must start of ODD page number
Figure 2-4B (11x17) Side 2
The first two floors of the hospital would house the diagnostic and treatment areas. Level one would house inpatient and outpatient imaging (radiology), emergency, laboratory, admitting, and material management. Level two would house outpatient surgery, inpatient surgery, central sterile, and intensive- and critical-care units. These two floors would be connected with dedicated elevators for transfer of critical patients and staff. The third floor would tentatively include maternity, labor and delivery rooms, and Neonatal Intensive Care Unit and Pediatric Intensive Care Unit. The fourth through the tenth floors would contain nursing units (a designated area of the hospital that includes patient rooms and support facilities such as nursing stations for individuals receiving diagnostic, therapeutic, or preventive health services, or observation for illness or injury), consisting of 24 beds per floor and medical surgical units. One of the upper floors, not yet specified, would be dedicated to Neurology and Neuron-surgery. No POs would be located in the replacement Hospital.

The new, 28,000-GSF, two-level CUP proposed to serve the replacement Hospital would house the mechanical, electrical, and telecommunications equipment. The mechanical space would include hot water boilers, steam generators, chillers and air handling equipment for heating ventilating and air conditioning, compressed air and vacuum pumps, water softeners, and a tank farm for oxygen and other medical gases. The electrical equipment would include switchgear rooms, emergency generators, fuel tank, and space for information technology and telecommunications equipment. The actual number and types of equipment have not been determined at this time.

**Medical Office Buildings (MOBs) 1, 2, 3, and 4**

MOB 1, a 120,000-GSF, five-story building, would be located at the southeast corner of Veterans Boulevard and Maple Street (on Parcel II). The lower four floors of this building would house clinical facilities for medicine, allergy, and vision services, along with diagnostic and imaging services such as phlebotomy, radiology, mammography, pharmacy, member services, and health education. A fifth floor is proposed to be vacant upon completion and would be built out at a future date to house administrative staff. MOB 1 would house a total of 56 POs and associated staff.

MOB 2, a 95,200-GSF, four-story building, would be located at the northwest corner of Marshall Street and Maple Street (Parcel I) and would house a total of 38 POs and associated staff, including the 8 POs now located in the building located at 610 Walnut Street. MOB 3 would be a 120,000-GSF, five-story building, located at the southwest corner of Maple Street and Veterans Boulevard (Parcel I) and would house a total of 28 POs and associated staff. MOB 4, a 100,000-GSF, four-story building, would be located at the northeast corner of Maple and Marshall Streets (Parcel II) and would house a total of 20 POs and associated staff. Both MOB 3 and MOB 4 would also contain administrative staff. The specific clinical facilities that would be housed in MOBs 2, 3, and 4 have not been finalized at this stage of the Master Plan.

The siting and orientation of the four MOBs would define a central plaza, which would have a street entrance at Maple Street (see Figure 2-3). A second plaza between Parking Structure D and the

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10 After the completion of MOB 2, 610 Walnut Street will be used for administrative functions.
hospital tower is currently illustrated as an open green space in Figure 2-3. Although this space is proposed to be developed as a plaza, it would also be reserved for the potential relocation of some of the diagnostic and treatment areas currently proposed in the MOBs, whose size would then be reduced. Depending on medical practices in 10 to 20 years, if it is found that functionally and operationally it would be necessary to have these diagnostic and treatment services as part of the new Hospital, this open space would be utilized for this purpose. This added area would potentially replace the space in the MOBs now proposed for these services. This, in turn, would reduce the size and the height of the MOBs based on space constraints. Therefore, there would not be an increase in the overall square footage of the campus at buildout. At this time, the actual size of the reduction is not known.

**Cancer Care Center and Administrative Buildings - Main Street Downtown Gateway Parcels**

A two-story, 20,000-GSF Cancer Care Center is proposed on the east side of the gateway parcel on Main Street between Redwood Creek and Bradford Street (Parcel III). The Cancer Care Center would house diagnostic, administrative, and wellness cancer treatment. The Cancer Care Center is proposed to be built by mid-2004. The building would house six POs and associated staff.

A second two-story, 20,000-GSF building for administrative uses would be built on the west side of the gateway parcel on Main Street between Redwood Creek and Bradford Street on Parcel IV and would be built around 2010-2015 (Phase III).

**Parking Structures**

The existing eight-level Parking Structure A at 1250 Veterans Boulevard, housing 289,300 GSF and 749 parking spaces, will remain as part of the Master Plan. Construction of four new parking structures are called for by the Master Plan. The new five-level, 199,000-GSF Parking Structure B would be built on Parcel III, the City’s Main Street gateway parcel, on the southwest corner of Walnut Street and Veterans Boulevard. Parking Structure B would include 654 parking spaces on five levels, one of which would be partially underground. Access to Parking Structure B would be from Bradford Street and from Veterans Boulevard (see Figure 2-5 later in this section under “Circulation and Parking”). A pedestrian bridge would connect Parking Structure B with the replacement Hospital. This parking structure would be intended to serve the new Hospital, the Cancer Care Center, and the administrative building on Main Street.

The new seven-level, 175,000-GSF Parking Structure C would include 475 parking spaces. Parking Structure C, which would face the Downtown District, would be located on Parcel I at the corner of Marshall Street and Marshall Court with access from Marshall Court. The first floor of Parking Structure C would include material management facilities with dock, turn around, and internal driveway ramps to the parking areas. In addition, a 4,800-square-foot people-occupied administrative use would front the street edge of Parking Structure C along Marshall Street per the City’s draft *Urban Design Guidelines*. Parking Structure C would serve both the new Hospital and MOB 2.
The new six-level Parking Structure D would be located on Parcel I between MOB 3 and the new Hospital, adjacent to the proposed 30,200-square-foot plaza reserved for a potential future hospital expansion area with access from Veterans Boulevard. Parking Structure D would include 600 spaces and 204,000 GSF. This parking structure would primarily serve the patients and staff of MOB 3 and probably those going to the Hospital.

The new four-level, 164,800-GSF Parking Structure E would include 498 spaces and would be located on Parcel II at the northeast corner of Maple and Marshall Streets between MOB 1 and MOB 4. This parking structure would primarily serve MOB 4.

Recycling/BFI Garbage Pick Up Areas

BFI recycling/garbage pick-up areas would be located at the end of Marshall Court near the materials management facilities. All service vehicle access would be via Marshall Court. Recycling and garbage from campus buildings would be brought to this location via small trucks and electric vehicles.

Membership, Patient Visits, and Employment

Membership and Patient Visits

Table 2-3 indicates the projected membership, providers, and staff by phase. Kaiser Permanente regularly updates its forecasts for membership at each facility based upon population and demographic data from the U.S. Census and various research groups. The current trend towards non-invasive surgeries and procedures has reduced the demand for inpatient beds and has increased demand for outpatient services. The advent of advice centers, telemedicine, and home health has reduced patient visits to clinics or MOBs. Based on these factors, the project sponsor has projected the membership at its Redwood City facility to 2014. For the purposes of this EIR, the project sponsor has assumed that the rate of growth forecast through 2014 would continue unchanged into the future. The proposed changes at the Medical Center are intended to serve a projected increase in membership from 100,123 existing to 108,250 when the new Hospital opens in 2009, and to 121,513 by 2025 (see Table 2-3).

This increase in membership would correspond to projected growth in the number of patient visits. The total number of patients that visited the Kaiser Hospital was approximately 9,000 in 2001. Annual hospital use for 2025 is projected at 11,000 patients. Emergency Department visits for 2001, which are accounted for differently than other hospital visits, totaled approximately 24,000 and are projected to grow to 43,000 by the year 2025. MOB outpatient visits totaled approximately 752,200 in 2001 and are forecast to grow to about 856,300 in 2025. These figures translate into an annual change in patient visits from 785,200 in 2001 to 915,300 in 2025. On a daily basis, these figures indicate a growth in patient visits from 3,100 per day to 3,600 per day (assuming the Hospital and Emergency Department are open daily and the MOBs are open 250 days per year). The change in hospital utilization and patient visits is summarized in Table 2-4.
Table 2-3
Redwood City Kaiser Medical Center Current and Projected Providers, Staff, and Members

<table>
<thead>
<tr>
<th></th>
<th>POs</th>
<th>Staff</th>
<th>Total POs and Staff</th>
<th>Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXISTING (2002)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Campus Clinical</td>
<td>100</td>
<td>490</td>
<td>590</td>
<td></td>
</tr>
<tr>
<td>On-Campus Hospital</td>
<td>25</td>
<td>772</td>
<td>797</td>
<td></td>
</tr>
<tr>
<td><strong>Total On-Campus</strong></td>
<td>125</td>
<td>1,262</td>
<td>1,387</td>
<td>100,123</td>
</tr>
</tbody>
</table>

| **PHASE I: After MOB 1 Opens (2004)** |      |       |                     |            |
| On-Campus Clinical | 123  | 603   | 726                 |            |
| On-Campus Hospital | 25   | 772   | 797                 |            |
| **Total On-Campus** | 148  | 1,375 | 1,523               | 102,350    |

| **PHASE II: After Hospital Opens (assume 2009)** |      |       |                     |            |
| On-Campus Clinical | 123  | 603   | 726                 |            |
| On-Campus Hospital | 0    | 650   | 650                 |            |
| **Total On-Campus** | 123  | 1,253 | 1,376               | 108,250    |

| **PHASE III: After MOB 2 opens (assume 2010)** |      |       |                     |            |
| On-Campus Clinical | 135  | 648   | 783                 |            |
| On-Campus Hospital | 0    | 650   | 650                 |            |
| **Total On-Campus** | 135  | 1,298 | 1,433               | 109,470    |

| **PHASE IV: After MOB 3 opens (assume 2016)** |      |       |                     |            |
| On-Campus Clinical | 128  | 663   | 791                 |            |
| On-Campus Hospital | 0    | 678   | 678                 |            |
| **Total On-Campus** | 128  | 1,341 | 1,469               | 114,119    |

| **PHASE V: Ultimate Buildout After MOB 4 opens (assume 2025)** |      |       |                     |            |
| On-Campus Clinical | 148  | 695   | 843                 |            |
| On-Campus Hospital | 0    | 678   | 678                 |            |
| **Total On-Campus** | 148  | 1,373 | 1,521               | 121,513    |


*Notes:*  
1. POs = Provider Offices.  
2. Employment figures are number of staff present during shift.  
3. Day, evening and night hours vary by department  
4. "Today" based on staffing 1/02; projections are extrapolated based on a current ratio of 4.7 staff to providers.  
5. Count of total employees is greater than FTEs shown above due to part-time employees and does not include 38 projected volunteer staff from the current 25 volunteers.  
6. On campus staff decreases after opening of hospital due to relocation of POs to off-campus MOBs.  
7. Membership projections are based upon forecasted demographic and population changes through 2014. Changes after 2014 are assumed to be at the same rate of change as in 2014.  
8. Actual number of providers and staff will vary depending upon exact date of completion of various buildings. Dates shown here are based on Kaiser’s projected Master Plan growth assumptions.
Table 2-4
Change in Utilization at the Redwood City Kaiser Medical Center under the Master Plan

<table>
<thead>
<tr>
<th></th>
<th>Existing</th>
<th>Proposed</th>
<th># Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hospital Beds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Licensed Beds</td>
<td>213</td>
<td>192</td>
<td>-21</td>
<td>-9.8%</td>
</tr>
<tr>
<td>Set-up Beds</td>
<td>192</td>
<td>192</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Occupied Beds/Day</td>
<td>92.8</td>
<td>128.0</td>
<td>35.2</td>
<td>37.9%</td>
</tr>
<tr>
<td><strong>Patient Volumes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital Annual Admissions</td>
<td>8,700</td>
<td>11,000</td>
<td>2,300</td>
<td>26%</td>
</tr>
<tr>
<td>Hospital Annual Patient Days</td>
<td>33,900</td>
<td>46,700</td>
<td>12,800</td>
<td>38%</td>
</tr>
<tr>
<td>Medical Office Annual Patient Visits</td>
<td>752,200</td>
<td>856,300</td>
<td>104,100</td>
<td>14%</td>
</tr>
<tr>
<td>Emergency Room Visits</td>
<td>23,900</td>
<td>43,000</td>
<td>19,100</td>
<td>80%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>818,700</td>
<td>957,000</td>
<td>138,300</td>
<td>17%</td>
</tr>
</tbody>
</table>


Note: Figures have been rounded to the nearest 100.

**Employment**

Although the proposed project would result in additional developed space, the project sponsor is not expecting a significant change in the number of employees at the Medical Center. As noted earlier, the space in the inpatient and outpatient facilities (on a per patient or per staff basis) is greater than currently designed to account for new industry standards and equipment requirements. This trend of increasing amounts of space per patient while the number of providers and staff remain relatively unchanged is known in the health care industry as “decompression,” and is a common phenomenon at other hospitals undergoing modernization.11

In addition, Kaiser’s business planning model calls for the opening of “satellite” MOBs within the Kaiser Redwood City service area as future membership needs warrant. The satellite offices are intended to offer a range of medical services to Kaiser members who would otherwise travel to the Redwood City Medical Center. In addition to making health care delivery more convenient for more distant Kaiser Redwood City members, the concept of satellite offices avoids the need to expand facilities and services within Redwood City. Kaiser has not yet determined the location of these new satellite facilities, however.

According to the project sponsor, the combination of decompression and the opening of “satellite” facilities outside Redwood City would result in minimal changes to Kaiser’s current number of employees at the Medical Center. The number of employees is projected to increase from the current

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11 Other examples of environmental documents that have acknowledged this trend include the EIR for the Alta Bates Medical Center for the City of Berkeley in 2001 and the EIR for the Stanford University Medical Center for Cancer Treatment and Prevention/Ambulatory Care Pavilion and Parking Structure IV for the City of Palo Alto in March 2000.
figure of 1,387 to 1,521 at project buildout in 2025, an increase of approximately 134 employees. Currently, there are 125 providers and 1,262 staff at the on-campus hospital and clinics. At buildout, employment is projected to increase to 148 providers and 1,373 staff at the Medical Center campus.

Employees at the Medical Center can be divided primarily into health care providers and staff. The projected membership determines the demand for the number of providers required for each health category or specialty such as Adult Medicine, Obstetrics and Gynecology, Neurology, and Pediatrics. The number of staff required at the Medical Center depends upon the number of providers and the number of beds in the hospital. For purposes of this EIR, staff has been divided into two groups: those primarily associated with providing outpatient care (called “clinical” staff) and those primarily associated with providing inpatient care (called “hospital” staff). Table 2-3 shows a total of 148 providers and 1,373 staff (including 678 hospital staff) on the Kaiser campus, and a membership of 121,513 at project buildout. Future clinical and hospital staff numbers projected by Kaiser are based on a ratio of approximately 4.7 full-time equivalent (FTE) employees per provider and 7.0 FTE per average daily census (ADC), respectively. These ratios are applied to the number of providers and beds that would be present on the campus to arrive at the total number of staff on the campus. The number of providers on campus is limited to the number of POs in the proposed MOBs. Additional providers (totaling 163) and staff (totaling 323) required to serve growing membership would be located in “satellite” facilities which currently exist off-campus within Redwood City and at future sites to be located outside Redwood City. These employment statistics are summarized in Table 2-5, along with information on the space allocation or usage in the hospital and MOBs. Notably, the amount of square footage per hospital bed and per provider is projected to grow substantially between the current conditions and the year 2025 under the Master Plan. For example, whereas the current amount of clinical space per provider is less than 1000 GSF, by 2025 the space per provider is projected to be over 2,900 GSF. Similarly, the number of square feet per bed in the hospital is projected to more than double, from 1,000 GSF in 2001 to over 2,400 in 2025.

Higher Occupancy Scenario

In response to concerns regarding the square footage of the proposed project, Redwood City retained James Brinkley Company to perform an independent analysis of Kaiser’s projected membership, employment, and patient visits. The analysis examined Kaiser’s population and facility space planning assumptions from a health planning perspective to confirm that the facilities proposed at the Medical Center could be reasonably supported by comparative data from the healthcare industry. A full copy of the report prepared by the City’s independent health care consultant is included as Appendix D of this EIR.

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12 Providers are defined as physicians and medical assistants who provide care to patients. Staff includes all non-provider employees of the Medical Center such as support personnel in the administrative sections, clinics, laboratories, and hospital.

13 1.9 FTE per bed is based on Kaiser Permanente’s nursing (hospital) staff ratios (which exceed the minimums established by state law). The FTEs represent the average number of FTEs per bed over an entire year; the actual number of occupied beds – and thus the number of nursing personnel actually present – varies greatly depending on the day of the week, the work shift and the season of the year.
Table 2-5
Change in Employment at the Redwood City Kaiser Medical Center under the Master Plan

<table>
<thead>
<tr>
<th></th>
<th>Existing 2001</th>
<th>Proposed 2025</th>
<th># Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Staff and Providers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital Staff (FTEs)</td>
<td>650</td>
<td>678</td>
<td>28</td>
<td>4.3%</td>
</tr>
<tr>
<td>Medical Office Staff</td>
<td>612</td>
<td>695</td>
<td>83</td>
<td>13.5%</td>
</tr>
<tr>
<td>Providers</td>
<td>125</td>
<td>148</td>
<td>23</td>
<td>18.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,387</td>
<td>1,521</td>
<td>134</td>
<td>9.6%</td>
</tr>
<tr>
<td><strong>GSF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital Beds</td>
<td>209</td>
<td>192</td>
<td>-17</td>
<td>-8%</td>
</tr>
<tr>
<td>Hospital &amp; Support Buildings GSF</td>
<td>209,812</td>
<td>468,000</td>
<td>258,188</td>
<td>123%</td>
</tr>
<tr>
<td><strong>GSF/Bed</strong></td>
<td>1,004</td>
<td>2,438</td>
<td>1,434</td>
<td>143%</td>
</tr>
<tr>
<td>Providers in MOBs</td>
<td>100(^1)</td>
<td>148</td>
<td>48</td>
<td>48%</td>
</tr>
<tr>
<td>MOB GSF</td>
<td>96,360</td>
<td>429,800(^2)</td>
<td>333,440</td>
<td>346%</td>
</tr>
<tr>
<td><strong>GSF/Provider</strong></td>
<td>963</td>
<td>2,904</td>
<td>1,941</td>
<td>201%</td>
</tr>
<tr>
<td>Administrative GSF</td>
<td>24,645</td>
<td>61,500</td>
<td>36,855</td>
<td>149%</td>
</tr>
<tr>
<td><strong>Total Building GSF</strong></td>
<td>330,817</td>
<td>959,300</td>
<td>628,483</td>
<td>189%</td>
</tr>
<tr>
<td><strong>Total On-Campus Providers</strong></td>
<td>125(^3)</td>
<td>148</td>
<td>23</td>
<td>18%</td>
</tr>
<tr>
<td>Hospital and Support Staff</td>
<td>1,262</td>
<td>1,373</td>
<td>111</td>
<td>9%</td>
</tr>
</tbody>
</table>


Notes:
1. Does not include 25 providers in existing hospital.
2. GSF has been rounded for consistency with project description.
3. Includes 25 providers in existing hospital and 100 in existing MOBs.

As described above, Kaiser Permanente members in the Redwood City region are expected to increase from 100,123 to 121,513 by 2025, a 21 percent overall increase. This increase in membership will affect the Redwood City Medical Center Campus since the majority of the region’s providers are located on-campus next to the hospital. Campus population is driven by the number of occupied beds in the hospital and the number of providers on-campus that see outpatients and attend to inpatients. Providers on-campus are expected to increase from the current 125 to 148 by 2025. A number of published sources were used by James Brinkley Company to compare the proposed staffing and patient utilization levels as well as the sizing of the replacement Hospital and the MOBs, with current trends in healthcare. The results of this comparison are summarized below.

**Hospital.** A survey of 17 hospitals, constructed over the last 10 years, under design or master planned, of similar size to the Kaiser facility, was completed to assess the reasonableness of the hospital space proposed by the Master Plan. The 17 hospitals ranged from a low of 1,200 GSF per bed to a high of 2,640 GSF per bed. The average among the 17 hospitals was 1,903 GSF per bed. The proposed replacement Hospital, at 2,440 GSF per bed, appears on the high end of what would be considered a modern, state-of-the-art facility (that is, there is a generous amount of developed space per bed compared to other hospitals recently constructed). However, according to the James Brinkley Company, hospitals have been increasing in square feet per bed at a rapid rate over the past 10-15
years, because of trends to include more equipment in patient rooms; offer private rooms, which require more square footage than multiple bed rooms, to achieve greater patient satisfaction and infection control; encourage families to participate in patient care and stay overnight in patient rooms; invest in medical technology that requires new and larger rooms for specialized equipment (larger operating rooms, CT Scanners, MRIs, etc.); and satisfy ADA requirements at the beginning of each project.

Medical Office Buildings. The analysis by James Brinkley Company found that typical MOBs range from a low of 1,466 GSF per provider to a high of 2,125 GSF per provider. The higher end of the range is similar to the size per provider of a recently constructed Kaiser MOB. The GSF per provider may vary depending on a number of factors including:

- Type of practice (some require specialized room types in addition to exam rooms)
- Inclusion of special procedure rooms
- Group Practices
- Support services located within the MOB (outpatient imaging, pharmacy, lab, etc.)

For purposes of the analysis, it was assumed that 20 percent of the total space in the MOBs is devoted to diagnostic and treatment support services (same ratio as proposed for MOB 1). As shown in Table 2-6, MOBs 1 and 2 fall within the typical size range of square feet per provider, while MOBs 3 and 4 do not. According to industry statistics for other MOBs, the James Brinkley Company reports that more providers than forecast by the Kaiser Master Plan could be accommodated at the Redwood City Kaiser campus. At 2,266 GSF of space available per provider (netting out space allocated for support services), the projected space to be used for Medical Office Suites (80% of the total GSF) from the Master Plan would be able to accommodate 151 P0s (145 in the four MOBs and six in the Cancer Care Center), or an increase of 3 POs over the Master Plan’s proposed 148. On the other hand, at 1,466 GSF of space available per provider (the low end of the range of GSF per provider), 230 POs (224 in the four MOBs and six in the Cancer Care Center could “fit” into the clinical space at the Kaiser campus, an increase of 82 POs over the Master Plan’s proposed 148. In summary, the proposed MOB space has capacity for 3 to 82 more providers than projected by Kaiser in its Master Plan.

Conclusion. The analysis by James Brinkley Company determined that the replacement Hospital, as proposed, appears reasonably sized for a facility of its type. However, the proposed MOBs could conceivably accommodate a larger number of POs and staff employees than proposed by Kaiser. Therefore, in addition to the proposed project as defined by Kaiser, this EIR also evaluates a “Higher Occupancy Scenario” which considers higher utilization of the MOBs by providers and associated staff and reflects utilization levels experienced at other MOBs. The Higher Occupancy Scenario assumes an additional 82 POs plus 410 additional non-hospital support staff (based on a ratio of 5.0 staff per provider). These employment numbers are in addition to the 678 hospital support staff, 148 POs, and 695 clinical support staff projected by Kaiser. As a result, the Higher Occupancy Scenario projects an on-campus employment of 230 providers and 1,783 support staff, for a total of 2,013 employees at the
Redwood City Kaiser Medical Center. Table 2-7 contains a summary of the employment figures for the Kaiser proposed project and the Higher Occupancy Scenario.

### Table 2-6
2025 Proposed Medical Office Buildings

<table>
<thead>
<tr>
<th></th>
<th>Total GSF</th>
<th>GSF of Support Services@ 20% of Total</th>
<th>GSF of Provider Space</th>
<th># of Providers</th>
<th>GSF/Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOB 1</td>
<td>120,000</td>
<td>24,000</td>
<td>96,000</td>
<td>56</td>
<td>1,714</td>
</tr>
<tr>
<td>MOB 2</td>
<td>95,200</td>
<td>19,040</td>
<td>76,160</td>
<td>38</td>
<td>2,004</td>
</tr>
<tr>
<td>MOB 3</td>
<td>103,314</td>
<td>20,662</td>
<td>82,651</td>
<td>28</td>
<td>2,952</td>
</tr>
<tr>
<td>MOB 4</td>
<td>91,323</td>
<td>18,264</td>
<td>73,058</td>
<td>20</td>
<td>3,652</td>
</tr>
<tr>
<td>Total</td>
<td>409,837</td>
<td>81,926</td>
<td>327,869</td>
<td>142</td>
<td>2,308</td>
</tr>
</tbody>
</table>


Notes:
1. Cancer Care Center is excluded from this comparison since it is not a “typical” MOB. It is assumed to be sized appropriately for its use.
2. MOBs 3 and 4 have some administration/Health Plan functions in addition to support services.

### Table 2-7
Comparison of On-Campus Employment under the Proposed Project and the Higher Occupancy Scenario, 2025

<table>
<thead>
<tr>
<th></th>
<th>Proposed Project</th>
<th>Higher Occupancy Scenario</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>POs</td>
<td>148</td>
<td>230</td>
<td>82</td>
</tr>
<tr>
<td>Clinical Support Staff</td>
<td>695</td>
<td>1,105</td>
<td>410</td>
</tr>
<tr>
<td>Hospital Staff</td>
<td>678</td>
<td>678</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>1,521</td>
<td>2,013</td>
<td>492</td>
</tr>
</tbody>
</table>


### Circulation and Parking

#### Vehicular and Pedestrian Plan

The proposed circulation concept of the Master Plan is intended to provide for integrated movement of general vehicles, emergency vehicles, service vehicles, and pedestrians. Figures 2-5 and 2-6 present the Vehicular Circulation and Pedestrian Circulation Plans, respectively. The noticeable features in the proposed Vehicular Circulation Plan are the proposed reconfiguration of Maple Street to accommodate the proposed Main Central Plaza within the Medical Center and street parking and loading/unloading.
Slipsheet for Figure 2-5. (8.5 X 11)
Slipsheet for Figure 2-6 (8.5 X 11)
passenger areas, the reconfiguration of Walnut Street between Veterans Boulevard and Bradford Street to accommodate the Hospital and to provide a consistent street width, and the reconfiguration of Marshall Court for hospital purposes. The proposed Vehicular Plan includes curbside parking and passenger loading zones on Maple Street. Other changes to the existing Vehicular Circulation Plan include:

- entries into Parking Structures B and D from Veterans Boulevard;
- entry into Parking Structure B from Bradford Street;
- entry (including service vehicle entry) into Parking Structure C from Marshall Court;
- entry into Parking Structure E from Marshall Street; and
- drop-off zones on Main, Walnut, and Maple Streets.

A network of pedestrian walkways would connect the proposed buildings and parking structures, the drop-off zones, and the bus stop on the project site as shown in Figure 2-6.

Parking

A total of 3,006 parking spaces would be provided as a part of the project in four new parking structures, one existing parking structure, and a surface parking lot at 610 Walnut Street (see Table 2-2). The parking structures are described in more detail in the earlier section on “Site Plan and Buildings.” The City of Redwood City Zoning Ordinance (Ordinance No. 1130, effective July 10, 1964, amended through July 1, 1997) specifies the following parking requirements which would total 4,005 spaces:

- **Required Parking – Commercial Uses.** Medical or dental offices and clinics: One (1) space for each two hundred (200) square feet of floor area, plus five (5) spaces per doctor (30.2.2 H) or 2,889 spaces.
- **Required Parking – Commercial Uses.** Business or administrative offices: One (1) space for each two hundred and fifty (250) square feet of floor area (30.2.2 B) or 246 spaces.
- **Required Parking – Miscellaneous Uses.** Hospitals, but not including outpatient clinics: One (1) space for each patient bed, plus one (1) space per employee on the largest shift. Hospitals that have more than ten (10) employees on the largest shift shall have ten percent (10%) of required parking designated for carpool and/or vanpool parking (30.3 B) or 870 spaces.

The Precise Plan will establish the parking requirement for the Medical Center. The proposed project includes a request to revise the parking standards to five spaces per 1,000 square feet for medical use and two spaces per bed for the Hospital. Under the revised standards, the Medical Center would be required to provide about 2,880 parking spaces; the project proposes 3,006 parking spaces. Section 3.4, Transportation, of this EIR includes an analysis of the adequacy of the proposed number of parking spaces.
Landscaping and Site Amenities

Figure 2-3 shows the conceptual Landscape Plan proposed by the project sponsor. The main plaza space (also called Central Court) between MOB 2, MOB 3, and the main entrance from Maple Street would serve as the focal point of the proposed Landscape Plan. The project sponsor proposes a contiguous network of pedestrian spaces separated from vehicular and service traffic that would surround the project site. The proposed Pedestrian Circulation Plan would be composed of a series of walkways, or paseos, extending from the main open space plaza (see Figure 2-6). A comprehensive, wayfinding palette of planting materials, paving patterns, and lighting standards would be chosen as outlined below.

Planting

The types of conceptual planting arrangements proposed for the Medical Center campus are described below.

Campus Edge Planting. Large deciduous shade species are proposed along Maple Street, Veterans Boulevard, Walnut Street, and Marshall Street to help create a uniform edge, signal a uniform use, and help define the character of the Medical Center campus at the street edge.

Campus Circulation Planting. Smaller scaled trees that would provide fall color and seasonal flowering are proposed for the campus walkways, or paseos, to help emphasize connectivity across the campus by facilitating movement and establishing sight lines.

Gateway Planting and Garden Planting. Trees are proposed to help enclose and define individual outdoor spaces or gardens. Taller plantings would be used for points of arrival and entrance. The gardens and outdoor spaces would be augmented with a mixture of shrubs and ground covers to help create cohesion and clarity.

Plazas

The main plaza area (also called Central Court) would contain contiguous pedestrian walks and include pedestrian amenities such as benches, trellises, lighting, and trash receptacles. The main plaza would be designed to provide attractive views from the surrounding MOBs. An additional 30,200-GSF plaza is proposed to be located adjacent to the replacement Hospital along Veterans Boulevard. However, as described above, this space is also reserved for future potential expansion of the hospital.

Paving

Paving types that would be used within the Medical Center campus are described below.

Specialty Paving. Interlocking pavers or patterned colored concrete would be employed at gateway points, pedestrian nodes, and at the main plaza drop-off area to help emphasize points of arrival, calm traffic and establish pedestrian access, and strengthen the character of the plaza.
Campus Paving. Colored concrete or exposed aggregate would be used in all the campus pedestrian corridors to help promote clarity in pedestrian circulation and campus visual cohesiveness.

Public Paving. Public paving would be used along City sidewalks and City streets at the perimeter of the campus.

Lighting

The conceptual lighting planned for the Medical Center campus would include specifications for the plaza, internal walkways, and the campus perimeter.

Plaza Lighting. A procession of lighting – from large feature light fixtures to smaller lighting elements – drawing pedestrians through the main plaza and along internal walkways would be used for the project. The composition of lighting would include façade lighting, feature lighting, and pedestrian-scale pathway lighting. Focal points, including entrances, kiosks, artwork, and signage, would be illuminated to provide visual interest and indicate nodes of higher activity. Ornamental lanterns mounted on 18- to 24-foot poles would be used along all hardscaped areas.

Internal Walkway Lighting. The walkway lighting would be lower in level than the plaza lighting (12- to 18-foot pole-mounted ornamental lanterns). Sufficient vertical illumination would be provided to identify pedestrian walkways. Light fixtures would be placed between trees to minimize light blockage. The lighting would provide visual links between landmarks and open areas and would clearly communicate the destination and length of the passageway.

Perimeter Street Lighting. The perimeter street lighting is proposed to be consistent with the City planning standards and the draft Redwood City Downtown Area Plan to help reinforce connectivity with the surrounding neighborhood.

Site Furniture

A family of site furniture – benches, trashcans, bike racks, ash urns, and planters – is proposed to help reinforce campus character and the urban setting.

City's Gateways

Several major and secondary gateways into downtown Redwood City have been designated to provide a sense of entry into downtown. The Kaiser Medical Center campus includes one of the City’s Downtown District gateways at Main Street and Veterans Boulevard. Kaiser’s proposed Master Plan recommends that this intersection be developed and designed with a parking structure, a Cancer Care Center, and an administrative building, accented with landscaping and architectural features, to identify points of arrival and entrance into downtown.
2.6 PROJECT PHASING, CONSTRUCTION TRAFFIC, AND STAGING

Master Plan Development Phases and Staging

The project site is currently developed and Medical Center activities are in full operation. The proposed project would replace existing buildings with newer, larger structures on the project site. In order to continue to provide services currently offered at the Medical Center, construction and demolition activities must be phased so that the Medical Center functions are allowed to continue without disruption and adequate construction staging areas, construction/patient/employee parking requirements, and other services are available at all times during project implementation. As currently proposed, the project would be implemented in five major phases, PH-I to PH-V, between 2003 and 2025. Various buildings on- and off-campus would be decommissioned (and demolished) as new space is developed on the site. Table 2-8 summarizes the construction, decommissioning, and demolition activities and the implementation period of the various phases. Tables 2-8 and 2-9 and Figures 2-7A to 2-7I illustrate the phasing plan proposed by the project sponsor. The actual order and timing of the phases will occur in response to the health care delivery requirements of Kaiser. At this time, Kaiser cannot predict the timing, rate, order or actual number of phases with certainty. Prior to the start of construction, the City will require the project sponsor to provide a construction staging and demolition plan that includes mitigation measures to address potential visual, noise, dust, odor, parking, and traffic and circulation impacts associated with the various phases of development.

Phase I (PH-I). The project sponsor proposes to complete MOB 1 in 2004 during Phase I. Construction of MOB 1 would take approximately 24 months. Construction staging for MOB 1 would take place at the actual construction site. The top two levels of Parking Structure A would be set aside for construction worker parking without compromising the parking needs of Medical Center staff, patients, or visitors.

Phase II (PH-II). This phase includes the construction of the Cancer Care Center building on the east side of Main Street (a downtown gateway parcel), the new Hospital and CUP, and Parking Structures B (located on a Main Street gateway parcel) and C (located off Marshall Street adjacent to the replacement Hospital). The existing Hospital, and the existing Laurel and Poplar Buildings would be demolished in Phase II. The Cancer Care Center is proposed to be completed in 2004, following a construction period of 18 months. The new Hospital, CUP, and Parking Structures B and C would be implemented between 2009 and 2013. The new Hospital and CUP would take 24 months to build. Demolition of the existing hospital and CUP would follow, with site clearance to be completed by the end of 2015. Demolition of the existing hospital and CUP would take 18 months. The construction of Parking Structures B and C would each take 12 months.
Table 2-8
Redwood City Kaiser Medical Center Construction Phasing and Duration

<table>
<thead>
<tr>
<th>Phase</th>
<th>Buildings Constructed</th>
<th>Construction Duration</th>
<th>Buildings Demolished/ Decommissioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I</td>
<td>MOB 1</td>
<td>24 months</td>
<td>QA/UR Trailer, Controller Trailer, Aspen</td>
</tr>
<tr>
<td>2003 – 2004</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase II</td>
<td>Cancer Care Center</td>
<td>18 months</td>
<td>Old hospital and CUP, MRI, Laurel, Poplar</td>
</tr>
<tr>
<td>2004 – 2013</td>
<td>Hospital and CUP</td>
<td>24 months</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parking Structure B</td>
<td>12 months</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parking Structure C</td>
<td>12 months</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Partial Main Plaza²</td>
<td></td>
<td>1800 Broadway¹, 805 Veterans¹, 600 Galveston¹</td>
</tr>
<tr>
<td>Phase III</td>
<td>MOB 2</td>
<td>24 months</td>
<td>Magnolia, Birch (910 Marshall)¹</td>
</tr>
<tr>
<td>2010 – 2015</td>
<td>Administrative (West of Main)</td>
<td>12 months</td>
<td></td>
</tr>
<tr>
<td>Phase IV</td>
<td>MOB 3</td>
<td>24 months</td>
<td>Cypress, Oak, 900 Veterans¹</td>
</tr>
<tr>
<td>2010 – 2020</td>
<td>Parking Structure D</td>
<td>18 months</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Complete Main Plaza</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase V</td>
<td>MOB 4</td>
<td>24 months</td>
<td>Maple, Willow</td>
</tr>
<tr>
<td>2011-2025</td>
<td>Parking Structure E</td>
<td>12 months</td>
<td></td>
</tr>
</tbody>
</table>


Notes:
1. 1800 Broadway, 805 Veterans, 600 Galveston, 910 Marshall, and 900 Veterans are off-campus leased facilities that would be decommissioned once new space becomes available at the Medical Center.
2. Part of the main plaza will be constructed during Phase II; the balance will be completed during Phase IV.

Similar to Phase I, construction staging for all new construction during Phase II would occur on the actual construction/demolition sites. Kaiser has determined that adequate parking for construction workers would be available on-site without compromising the parking needs of the Medical Center. Parking Lot 1 (Figure 2-2 illustrates existing Parking Lots 1 through 7) and a portion of Parking Lot 2 would be set aside for the construction of the Cancer Care Center. Part of Parking Lot 6 would be set aside for the demolition of the Laurel and Popular Buildings. Following the demolition of these buildings, all of Parking Lot 6 would be set aside for the construction of Parking Structure C. Part of Parking Structure C would then be set aside for the construction of the replacement Hospital and the subsequent demolition of the existing Hospital. Adequate parking would remain available to accommodate construction, construction workers, and Medical Center staff and visitors.

Phase III (PH-III). Phase III would include the demolition of the Magnolia Building followed by the construction of both MOB 2 on the corner of Maple Street and Marshall Street and the administrative building on the west side of Main Street. This phase would be completed between 2010 and 2015. Construction of MOB 2 would take approximately 24 months and the administrative building would take approximately 12 months.
Slipsheet for Table 2-9

Pages 40-44
Slipsheet for Figure 2-7 A, Side 1 (11 X 17) start on odd page
Slipsheet for Figure 2-7 B, Side 1 (11 X 17)
Slipsheet for Figure 2-7 C, Side 1 (11 X 17)
Slipsheet for Figure 2-7 C, Side 2 (11 X 17)
Slipsheet for Figure 2-7 D, Side 1 (11 X 17)
Slipsheet for Figure 2-7 D, Side 2 (11 X 17)
Slipsheet for Figure 2-7 E, Side 1 (11 X 17)
Slipsheet for Figure 2-7 G, Side 1 (11 X 17)
Slipsheet for Figure 2-7 G, Side 2 (11 X 17)
Slipsheet for Figure 2-7 H, Side 1 (11 X 17)
Slipsheet for Figure 2-7 H, Side 2 (11 X 17)
Slipsheet for Figure 2-7 I, Side 2 (11 X 17)
Construction staging during this phase would occur on the site of the new buildings. Part of Parking Structure C would be used for construction parking for both the demolition of the Magnolia Building and the construction of MOB 2 and the Main Street Administrative Building. As with all construction phases, Kaiser has determined that the use of this parking structure by construction workers would not compromise the parking needs of the Medical Center.

**Phase IV (PH-IV).** Phase IV includes the demolition of the Cypress Building and the construction of MOB 3 and Parking Structure D. Phase IV would be implemented between 2010 and 2020; the construction of MOB 3 would take approximately 24 months and Parking Structure D, approximately 18 months. The proposed main plaza open space area would be completed and the plaza to be located adjacent to the hospital would be developed during this phase. Construction staging would take place at the construction site. Construction parking would be available at the construction site and in a portion of Parking Structure C.

**Phase V (PH-V).** Phase V includes the demolition of the Maple Street and Willow Buildings, and the construction of MOB 4 and Parking Structure E. Phase V would be completed between 2011 and 2025, with a construction duration of approximately 12 months for Parking Structure E and 24 months for MOB 4. Construction staging will take place at the construction site. Parking for construction workers will be provided at the construction site and at a portion of Parking Structure C.

**Construction Traffic and Parking**

Construction of the proposed project would involve the movement of traffic delivering materials to the site and transporting demolition material from the site in addition to trips to the construction sites by construction workers. Kaiser has estimated the number of total trips per day, on a monthly basis, for each phase of the project. These averages range from 80 trips per day during Phase I to 190 trips per day during Phase II. The peak period would occur during the construction of the replacement Hospital and the demolition of the existing Hospital in Phase II. During a two-year period within Phase II, construction-related trips per day would average 330.

Based on this level of activity, Kaiser has also estimated the available parking supply to accommodate the construction workers as well as its ongoing medical patients and employees. A detailed accounting of the parking supply and demand, by phase, is presented in Appendix E. A summary of that information is presented in Table 2-10 which shows that Kaiser’s medical and construction parking needs would be satisfied in all phases through a combination of off-street spaces on the Kaiser campus and on-street spaces along those streets that surround or pass through the Kaiser campus.
Table 2-10
Proposed Project – Parking Supply and Demand by Phase

<table>
<thead>
<tr>
<th></th>
<th>Demand</th>
<th>Supply</th>
<th>Difference (Parking Supply/Deficit)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Medical</td>
<td>Construction</td>
<td>Total</td>
</tr>
<tr>
<td>Existing</td>
<td>1,035</td>
<td>N/A</td>
<td>1,035</td>
</tr>
<tr>
<td>Phase I</td>
<td>1,484</td>
<td>140</td>
<td>1,624</td>
</tr>
<tr>
<td>Phase II A</td>
<td>1,554</td>
<td>120</td>
<td>1,674</td>
</tr>
<tr>
<td>Phase II B</td>
<td>1,497</td>
<td>190</td>
<td>1,687</td>
</tr>
<tr>
<td>Phase II C</td>
<td>1,862</td>
<td>470</td>
<td>2,332</td>
</tr>
<tr>
<td>Phase II D</td>
<td>1,444</td>
<td>80</td>
<td>1,524</td>
</tr>
<tr>
<td>Phase III</td>
<td>1,880</td>
<td>180</td>
<td>2,060</td>
</tr>
<tr>
<td>Phase IV</td>
<td>2,308</td>
<td>310</td>
<td>2,618</td>
</tr>
<tr>
<td>Phase V</td>
<td>2,781</td>
<td>310</td>
<td>3,091</td>
</tr>
<tr>
<td>Buildout</td>
<td>2,781</td>
<td>N/A</td>
<td>2,781</td>
</tr>
</tbody>
</table>

Source: Gordon H. Chong & Partners

2.7 PROJECT APPROVALS

Redwood City

As the public agency with the principal responsibility for approving the project, Redwood City will serve as the lead agency for the purposes of the California Environmental Quality Act (CEQA). The proposed project will be implemented with the adoption of a Precise Plan pursuant to Article 52 of the Redwood City Municipal Code. The Precise Plan will delineate uses, relationships to other areas, intensity of use, circulation, design criteria, procedures for development review and special conditions. The Precise Plan will also delineate the procedures for future development entitlements on the site. The Precise Plan may authorize issuance of a Planned Community (PC) Permit by the Planning Director or designee and may authorize administrative approval of signs, minor site changes and minor building alterations that are in conformity with the Precise Plan without the necessity of a PC Permit, provided in such cases the Precise Plan contains reasonable and adequate standards for the granting of such administrative approvals.

A Planned Community District (P District) will be established for the area of the Precise Plan, and the P District will be adopted simultaneously along with the Precise Plan. The P District will contain the applicable zoning regulations for the site and is designed to provide for those uses or combination of uses envisioned by the Precise Plan, and to afford the project sponsor flexibility to develop the site under conditions not otherwise attainable under other zoning districts.
The proposed project is expected to be subject to the following discretionary approvals from Redwood City:

1. Adoption of a Precise Plan and P District. The Precise Plan will, among other things, implement the following:
   - Increase the allowable height limit to 160 feet for the proposed hospital (including mechanical penthouse);
   - Establish parking standards for the medical use at 5 spaces per 1,000 square feet, based upon industrial standards, the experience of Kaiser Permanente at other locations, and the practices of neighboring cities; and
   - Establish parking standards for the hospital at 2 spaces per bed.

2. General Plan amendment consistent with the Precise Plan.

3. Tentative Maps(s) and/or street closures and/or street abandonments to implement the following:
   - Reconfigure parcels as appropriate;
   - Realign and/or close the Marshall Court right-of-way to facilitate the project;
   - Reconfigure Maple Street between Veterans Boulevard and Marshall Street to allow curbside parking and passenger loading zones; and
   - Reconfigure Walnut Street between Bradford Street and Veterans Boulevard to provide a consistent street width between Veterans Boulevard and Marshall Street and to accommodate the new hospital.

4. PC Permits for the development phases of the site, building, landscaping, and signage improvements as required by the Precise Plan.

5. Cultural Resources Management Plan approval recommendation from the Historic Resources Advisory Committee to the Planning Commission.

6. Building Permits for the structures.

7. Tree Removal Permit(s), as required, from the City of Redwood City Parks and Recreation Director.

8. Any other discretionary approval to implement the Precise Plan.

**State of California and Other Regional Agencies**

In addition to the lead agency, there are also local, State and federal responsible agencies that may have discretionary authority over the specific aspects of the proposed project. The responsible agencies will rely on this EIR when acting on those aspects of the project that require their approval. The following
agencies are currently anticipated to use this document in their reviews, although this list is not necessarily exhaustive.

**Office of Statewide Health Planning and Development.** The new Hospital and those portions of the proposed Medical Center that connect to the hospital (e.g., any pedestrian bridge connections) would require a review application and issuance of a permit from the California State Office of Statewide Health and Planning and Development. Project plans would also need to be reviewed for compliance with fire safety codes by the State Fire Marshall.

**California Regional Quality Control Board, San Francisco Bay Region.** The Regional Water Quality Control Board would need to issue a National Pollutant Discharge Elimination System (NPDES) permit for construction activities.

**Bay Area Air Quality Management District (BAAQMD).** Operation permits for stationary air pollution sources, e.g., equipment in the CUP, and operating permits, as required, for any sterilizers and abaters.

**San Mateo City/County Association of Governments of San Mateo County, Congestion Management Agency.** The City/County Association of Governments functions as the County’s Congestion Management Agency, responsible for reviewing traffic studies for projects that would contribute at least 100 peak-hour trips on roadways of regional significance. Since the proposed Kaiser Master Plan would generate vehicular trips in excess of this threshold, this regional agency would review the proposed project.

**South Bayside System Authority.** The proposed project may require a Wastewater Discharge Permit from the South Bayside System Authority, the regional wastewater treatment plant.

**Federal Aviation Administration and/or City/County of Association of Governments of San Mateo County, Airport Land Use Commission.** The tallest building on the site would be a 10-story structure. The buildings on the project site are just outside the “Outside Airport Protection Zone” for the San Carlos Airport. Therefore, the project would not be subject to the jurisdiction of the Federal Aviation Administration (FAA). However, because the project site is just outside the Outside Airport Protection Zone, the project sponsor should consider informing FAA to avoid potential future risks. This informal consultation was recommended by the City/County Association of Governments of San Mateo County, Airport Land Use Committee, in response to Redwood City’s Notice of Preparation. One possible means of accomplishing this would be to complete FAA’s Form 7460-1, Notice of Proposed Construction and Operation.
Section 3
Environmental Analysis

3.1 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS

Organization of this Section

This section of the Draft EIR presents an analysis of environmental factors that may be affected by the proposed Kaiser Permanente Redwood City Medical Center project. The environmental analysis has been prepared consistent with Sections 15125 and 15126 of the CEQA Guidelines. For each issue, the following information is presented:

- Setting—describes existing baseline conditions, including the environmental context and regulatory background.
- Impact Assessment—identifies standards of significance and evaluates how the proposed project would affect the baseline conditions.
- Mitigation Measures—identifies ways to reduce, eliminate or avoid impacts that are considered significant and adverse.

Classification of Impacts

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

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

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

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

3. Less-than-significant (LTS) impacts include effects that are noticeable, but do not exceed established or defined thresholds. For example, air pollution caused by an increase in the development and density of population in the project area may be perceptible, but need not exceed acceptable thresholds or standards. Therefore, the effect would not be considered significant.
4. No Impact (NI) includes situations where there is no adverse effect.

Thresholds or significance criteria are used to classify an impact into one of the above categories. These significance criteria are defined for each environmental topic, based on existing standards of the City of Redwood City, Caltrans, or CEQA. These significance criteria explain to the reader the basis for determining the significance of an impact.

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

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

Enumeration of Impacts and Mitigation. Each impact topic is numbered using an alpha-numerical system that identifies the environmental issue. For example, NO-1 denotes the first impact discussion in the Noise subsection. The two letter codes used to identify the environmental issues discussed in this section are:

- LU – Land Use and Planning
- VQ – Visual Quality
- TR – Transportation
- AQ – Air Quality
- NO – Noise
- HM – Hazardous Materials
- PH – Population and Housing
- PS – Public Services
- UT – Utilities and Service Systems

Mitigation measures are numbered to correspond to the impacts they address; e.g., Mitigation Measure TR-3.1 refers to the first mitigation for Impact 3 in the Transportation subsection. A brief title is included to easily identify the mitigation measure. Mitigation measures that apply to particular alternatives are also denoted after the mitigation measure title.

CEQA Methodological Requirements

The CEQA Guidelines at Section 15151 describe standards for the preparation of an adequate EIR. Specifically, “an EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. . . . Disagreement among experts does not make an EIR inadequate, but
the EIR should summarize the main points of disagreement among the experts.” In practice, this means that EIR preparers should adopt a reasonable methodology upon which to estimate impacts. This approach means making reasonable assumptions using the best information available. In some cases, typically when information is scarce or there is possible variation in project characteristics, EIR preparers will employ a reasonable “worst-expected-case analysis” in order to capture the largest expected potential change from existing baseline conditions that a project might have. This practice of creating worst-expected-case scenarios is not mandated by CEQA but is one common practice to address uncertainty; such exists with the Master Plan project that is expected to be completed over five phases. Again, CEQA requires analysis of a project’s reasonably foreseeable, most likely impacts, not the unlikely maximum possible impacts.

**Estimating Future Impacts**

**Footprint Impacts.** The proposed project would add approximately 628,450 GSF of medical floor area to the Kaiser Medical Center, an increase of about 190 percent over the Medical Center’s existing 330,850 GSF. This increase of built space as shown in the site plan (Figure 2-3) defines a building envelope and that allows the analysis of various physical impacts. The extension of a building footprint into a surface parking lot, the construction of a taller MOB, the construction of buildings along Redwood Creek – all involve occupying space. From the building envelope, one can estimate how much development might encroach into biologically sensitive areas, hazardous areas subject to flooding or severe groundshaking, or highly scenic view corridors, for example. These so-called footprint impacts are derived from the increase in floor area and their spatial arrangement on the campus.

**Population Impacts.** How many trips are made to the hospital and MOBs, how much water is consumed, how many new residents are projected for Redwood City – these type of “population” impacts depend on how intensely the building space is utilized. As discussed in Section 2, Project Description, there is a phenomenon in healthcare known as “decompression.” As new space is built at the Medical Center, the number of employees and physicians per square foot is expected to decrease, because the new space must accommodate new medical technology. As a result, rather than using the change in square feet as a way of estimating population impacts, this EIR examines the change in providers, i.e., individuals who provide health care. Health care industry standards and Kaiser’s own facilities were used to derive a certain number of employees per provider and a certain number of vehicle trips per provider.

**Consumption/By-Products Impacts.** One potential effect of changes in the Medical Center size, operations, and utilization is the change in the use of hazardous materials and the generation of hazardous waste, including biomedical wastes. Use and disposal of hazardous materials is not a function of the size of the facilities nor is it necessarily dependent on the number of providers or staff. For purposes of this EIR, hazardous materials use and waste generation is assumed to be correlated to the growth in Kaiser Permanente membership. According to the project sponsor, Kaiser membership is projected to grow by about 20 percent between 2001 and 2025.

**Worst-Case Scenario.** As a final note, it is important to point out that deriving the ultimate “worst-case” scenario (that is, the greatest level of impact) is possible. One would identify the department or
activity that has the highest visitor rate and greatest turnover and assume that all of the new space
would be developed with this particular use. From a practical standpoint, however, it is highly
unlikely that a full-service acute care hospital with a similar amount of square footage devoted to
clinical floor area would be developed which would be occupied by activities that all exhibit the highest
trip-making characteristics and activity levels. This methodology requires that patient visits and trips
per department are available and that the department with the highest activity levels can be identified.
From a practical standpoint, trip generation data for the “high-volume” services or specialties are not
available and would be difficult to collect. Further, the Institute of Transportation Engineers, which
produces a commonly used reference book on trip generation, does not have data on trip generation
factors by department. Thus, data to present this worst-case assessment do not presently exist. Lastly,
as noted above, even if the data were available, CEQA does not require use of the most extreme,
maximum possible worst-case scenario, but a reasonable assessment of project impacts.

For these reasons, the emphasis in this EIR is on conservative estimates of impacts, rather than a
worst-case scenario. A monitoring program (see discussion below) is proposed to ensure that
development of various phases of the Master Plan will not create significant environmental impacts,
regardless of the way Kaiser uses space at the Medical Center in the future.

**Role of the Monitoring Program**

Given the uncertainty over future specific medical-related services and programs and the number of
providers and staff that could be accommodated with buildout of the Master Plan and given Kaiser’s
requests for flexibility in developing the Master Plan consistent with the Precise Plan, this EIR
proposes an ongoing monitoring program to ensure that impacts associated with any City discretionary
approval of subsequent development phases of the Master Plan would not exceed the established
significance thresholds or other key monitoring milestones set forth in this EIR. If monitoring reveals
that activities at Kaiser would create a significant impact, then the project sponsor could be required to
modify its operations, alter activities, or reduce the size of the Master Plan project as proposed to
remain within the significance thresholds in the EIR. Under this program, Kaiser would have the
flexibility to change uses onsite consistent with the Precise Plan to respond to a fast-changing health
care market provided that it did not exceed the EIR impact envelope. The City will develop details of
the monitoring program, such as the specific indicators to monitor and the frequency of reporting. At a
minimum, possible indicators could include:

- Number of total employees, including number of providers,
- Number of employee visits per day,
- Patient visits per day, and
- Water consumption and wastewater generation.

In summary, approval of the Master Plan is approval in concept for all Master Plan improvements,
with subsequent approvals for constructing specific components of the Master Plan phased according to
Kaiser’s need for them, but consistent with the Precise Plan. With approval of the Master Plan,
monitoring would be required on a regular basis, possibly annually, and reports would be required to inform the City of the status of each indicator and whether they were near, at, or already over the established significance thresholds. In addition, monitoring data would be required whenever a new City approval is sought and the conditions of the new approval would consider the status of each indicator in determining the conditions for the new approval. As noted above, additional Master Plan improvements would not be permitted, if it was determined that the impacts from the additional Master Plan improvement would exceed the impact envelope identified in the EIR. Alternatively, if it were feasible for Kaiser to alter its operations to create enough room under the impact envelope to allow the Master Plan improvement to be approved, Kaiser could propose this to the City.

The mitigation monitoring program is expected to be administered by the City; however, the project sponsor would be expected to pay for the consultant(s) hired by the City to collect, compile, synthesize, and submit the data to the City for review.

**Economic and Fiscal Effects**

Under CEQA, economic and fiscal effects of a project are not required to be evaluated. However, lead agencies may choose to present economic or fiscal information in, or associated with, an EIR in order to disclose the relative impact of a project, or series of projects, on these important community considerations. In addition, there are specific ways that economic or fiscal effects may be considered as part of the EIR. Section 15131 of the CEQA Guidelines states:

a. Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes.

b. Economic or social effects of a project may be used to determine the significance of physical changes caused by the project.

c. Economic, social, and particularly housing factors shall be considered by public agencies together with technological and environmental factors in deciding whether changes in a project are feasible to reduce or avoid the significant effects on the environment identified in the EIR.
3.10 UTILITIES AND SERVICE SYSTEMS

Introduction

This utilities and service systems section examines the project’s potential impacts on water supply, storage, and distribution facilities; wastewater collection, transmission, and treatment facilities; and storm drain collection and transmission facilities. The Initial Study (Appendix B) analyzed the above utilities and concluded:

- The increase in square footage of the Medical Center and the resultant increase in demand for water and wastewater treatment due to additional providers, staff, and members, could require the expansion of existing water, storm, and wastewater systems and/or construction of new systems.

The Initial Study also concluded that the proposed project would have no impact on solid waste regulations; the landfill serving the Medical Center would have sufficient capacity to serve the projected demand from the proposed project; and impacts associated with the construction of new water, wastewater, and storm water facilities could be mitigated to a less-than-significant level with implementation of the mitigation measures included in the Initial Study. Therefore, this section only examines potential long-term operational project impacts to existing water, wastewater, and storm water facilities.

Setting

Water Supply, Storage, and Distribution

The Redwood City water system, which is administered by the Public Works Service Department, services approximately 10.3 square miles. The service area includes Redwood City, and the Cañada College and Emerald Lake Hills areas. In 2000, Redwood City consumed approximately 13,170 acre-feet per year (AF/Y) or an average of 11.94 million gallons per day (mgd) of water. Redwood City purchases water from the San Francisco Public Utilities Commission (SFPUC). The SFPUC obtains its water supply from a combination of local Bay Area supplies and the Tuolumne River through the Hetch Hetchy system. Existing Redwood City water supply entitlements are codified in the “1984 Settlement Agreement and Master Water Sales Contract between Suburban Purchasers and the City and County of San Francisco,” and the “Water Supply Contract between the City of Redwood City (August

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1984).” The City does not use groundwater and there are no future plans to use groundwater as a source of water supply.²

In 2000, approximately 13,170 AF/Y of water was consumed by Redwood City, and a total demand of 15,520 AF/Y of water has been forecasted to meet the City’s needs in 2020.³ This water use forecast assumes water demand growth over time, based on a variety of growth factors within the City. In an agreement with the SFPUC, Redwood City is “assured” a water allocation of up to 10.93 mgd (12,243 AF/Y).⁴ Redwood City currently uses all its allocated water and is supplied additional water over its allocated amount during normal water supply conditions by SFPUC to satisfy its current demand. This practice will change, however, when the aggregate demand of the 29 “suburban purchasers” reaches the total suburban “supply assurance,” now projected to occur between 2005 and 2010.⁵

In conjunction with the South Bayside System Authority (SBSA), which operates the wastewater treatment plant, Redwood City’s Public Works Department has developed tentative plans for recycled water treatment, storage, pumping and distribution system that would be used for landscape irrigation and other industrial uses. If the Public Works Department implements the use of recycled water in the near future, there should be sufficient supply to meet the demands from projected future use by existing and new developments to a certain extent.⁶

Drinking and fire water services for the project area are mainly provided by nearby Hetch-Hetchy direct-pipe connections with hydraulic grade line of 178 feet. The streets around the site are criss-crossed with old 10” and 12” water mains. According to City staff, there seems to be sufficient water pressure under normal service conditions but not under emergency service conditions. In other words, the transmission and distribution systems are not sized to provide adequate flows and pressures for additional demands. Emergency water storage volume for emergency uses in a fire, earthquake, or a shutdown of Hetch-Hetchy pipes is also inadequate.

**Wastewater Collection, Transmission, and Treatment**

The SBSA provides treatment services to the proposed project site. The service area of the SBSA stretches from the City of Belmont in the north to the southern boundary of San Mateo County, and from Skyline Drive in the west to San Francisco Bay in the east. The SBSA wastewater treatment plant, located at 1400 Radio Road along Redwood Shores, serves Redwood City. The SBSA is owned

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⁴ City of Redwood City Redevelopment Agency, Proposed Second Amendment to the City of Redwood City Redevelopment Plan for Redevelopment Project #2 Draft Environmental Impact Report, SCH #88120610, November 1989.

⁵ Bay Area Water Users Association Annual Report, Exhibit 4, April 17, 2002.

by the West Bay Sanitary District, and the cities of Belmont, San Carlos, and Redwood City. The

treatment plant provides tertiary treatment, including primary and secondary treatment, final filtration,

and disinfection. Treated effluent is discharged into San Francisco Bay. The plant has a permitted

wastewater treatment capacity of 29 mgd dry weather flow, of which Redwood City’s allocation is 11.4

mgd, or about 34 percent of this total. This capacity figure does not include a Stage II expansion of

2.685 mgd, which has been only partially implemented. Capacity is expanded on an as-needed basis.

The current average dry weather flow to the treatment plant is 26 mgd.

The project site is served by a series of sewer mains varying from 6” to 33”. Notable large mains are

the 18” vitrified clay pipe (VCP) in Maple Street, the 33” reinforced concrete pipe (RCP) in Veterans

Boulevard, and two 27” pipes (one VCP and the other RCP) in Walnut Street. These four mains are

connected to the 48” RCP at the intersection of Veterans Boulevard and Walnut Street. This 48” RCP

conveys the wastewater under US 101 to SBSA’s Maple Street Sanitary Sewer Pump Station on Maple

Street. The pump station then pumps the wastewater to SBSA’s treatment plant via a 48” RCP force

main. These wastewater collection and transmission systems currently serving the area are functioning

at maximum capacity and would not be adequate for increased development intensity at the project

site.7

Storm Drain System

Storm water from the project site and the surrounding area drains toward the Maple Street Storm Drain

Pump Station at the corner of Maple Street and Veterans Boulevard. Major piping on Maple Street

(36”), Marshall Street (24”) and within the existing Kaiser campus (18”) is old and may function at

maximum capacities. The Maple Street Storm Drain Pump Station discharges into a manhole on the

north side of Veterans Boulevard and west of Maple Street. Storm waters then travel via gravity flow

in closed conduits and an open channel to another pump station at Steinberger Creek. Unverified pump

station capacities at the Maple Street Storm Drain Pump Station are 3,900 gpm for pump no. 1, 6,500

gpm for pump no. 2, and 10,700 gpm for pump no. 3.

Applicable Plans and Regulations

Water. Policy C-6 of the City of Redwood City Strategic General Plan describes the City’s emphasis

on water conservation: “Conserve existing sources of water supply by... protect[ing] the water quantity

and quality of underground aquifers as an alternate emergency source of fresh water.” The City of

Redwood City Urban Water Management Plan 2000 (UWMP) presents the long-term management and

conservation of water resources for Redwood City. It contains information on projected water use

through 2020, water supply and demand, a water shortage contingency plan, wastewater disposal, and

reclaimed water. The proposed Master Plan was not included in the Redwood City Water Use Forecast

2000 to 2020, which contains water use forecast projections that were incorporated into Revision #1 –

July 15, 2002 of the UWMP 2000. Because the project site is within the Redevelopment Area, the

7 Charles Csicsman, Supervising Engineer, Redwood City Community Development Services, Engineering

proposed project would be subject to water supply mitigation measures contained in the *Redevelopment Plan for Redevelopment Project #2*.

**Wastewater.** The State’s Regional Water Quality Control Board (RWQCB) regulates the wastewater treatment plant through its National Pollution Discharge Elimination System (NPDES) permit. This permit sets limits on the discharge of pollutants to avoid water quality problems in the receiving water body. Policy C-6 of the *City of Redwood City Strategic General Plan* states, “Conserve existing sources of water supplies by increasing reclamation of waste waters for suitable uses,” which would help control the quality of wastewater discharges. Redwood City and the Uniform Plumbing Code have design criteria for wastewater collection systems. Because the project site is within the Redevelopment Area, the proposed project would be subject to wastewater mitigation measures contained in the *Redevelopment Plan for Redevelopment Project #2*.

**Storm Water.** The RWQCB also regulates storm water runoff through its NPDES. The City is a co-permittee with San Mateo County on the Stormwater Pollution Prevention Program (STOPPP). The permit is due to be amended in December 2002 and the new permit requirements will apply to future development at the Kaiser Medical Center.

**Regulatory Framework**

**SB 610.** Effective January 1, 2002, the state of California, through Senate Bill 610 (SB 610) requires that a city or county, and the associated public water system, prepare a Water Supply Assessment (WSA) for any project approval subject to CEQA. According to SB 610, the Medical Center would be defined as “a commercial office building employing more than 1,000 persons or having more than 250,000 sq. ft. of floor space.” The water supply assessment that is required as part of the CEQA process must include, among other information, an identification of existing water supply assessments, water rights, or water service contracts relevant to the identified water supply for the proposed project and water received in prior years pursuant to those entitlements, rights, and contracts. If a water supplier cannot be identified to serve the project, the city or county must prepare the assessment in consultation with any agency providing water service in or adjacent to the project area and the local agency formation commission. If the water demand for the proposed development has been accounted for in a recently adopted Urban Water Management Plan, the water supplier may incorporate information contained in that plan to satisfy certain requirements of a water supply assessment. In addition, the WSA must cover a 20-year planning horizon and should be consistent with the 20-year planning horizon for the city’s Urban Water Management Plan. A WSA dated November 4, 2002, has been prepared for this project and is included in Appendix H and findings from the WSA will be discussed further in this section under Environmental Analysis. However, the City and Kaiser have agreed that a new WSA should be prepared in order to consider more detailed studies which would be more specific to building types on the campus. The new WSA would use the square footage and types

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of uses of the buildings, and would result in a more accurate estimation of water demand. The City
would prepare the new WSA prior to approval of the various development phases.

**SB 221.** Senate Bill 221 became effective at the same time as SB 610. SB 221 is not as broad as SB
610 in terms of its applicability to a variety of development projects; however, SB 221 applies to the
Subdivision Map Act, conditioning a tentative map on the applicant to verify that the public water
supplier has sufficient water supply available to serve the proposed development. This bill requires the
public water supplier to provide written verification of available supplies to the applicant. If the
written verification concludes that water supplies are insufficient, the approving agency can either find
that water sources not considered by the public water supplier will be available or waive the condition
imposed by SB 221. For purposes of this requirement, SB 221 defined subdivision to mean a proposed
residential development of more than 500 dwelling units, except that for a public water system that has
fewer than 5,000 service connections, “subdivision” means any proposed residential development that
would account for an increase of 10 percent or more in the number of the public water system’s
existing service connections.

**Impacts and Mitigation Measures**

**Significance Criteria**

Impacts on utilities and service systems from the proposed Master Plan would be considered significant
under the following conditions:

- If there are insufficient water supplies available to serve the project from existing entitlements
  and resources;
- If serving the proposed project would result in a determination by the water supply provider
  that serves or may serve the project that its storage, transmission, and distribution systems are
  inadequate to serve the project’s projected demand without significant system modifications and
  upgrades;
- If serving the proposed project would result in a determination by the wastewater service and
  treatment provider that serves or may serve the project that its collection, transmission, and
  treatment systems are inadequate to serve the project’s projected demand without significant
  system modifications and upgrades;
- If serving the proposed project would result in a determination by the storm drain service
  provider that serves or may serve the project that its collection and transmission systems are
  inadequate to serve the project’s projected demand without significant system modifications and
  upgrades.

**Environmental Analysis**

As described in Section 3.1, for each impact, a level of significance is determined and is reported in
the impact statement. Conclusions of significance are defined as follows: significant (S), potentially
significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant effects to a less-than-significant level, the impacts are classified as “significant unavoidable effects (SU).” For this section, UT refers to Utilities and Service Systems.

A separate discussion of the Higher Occupancy Scenario is not included in the Environmental Analysis for Utilities and Service Systems. All utilities and services systems impacts are based on square footage, which does not vary between the proposed project and the Higher Occupancy Scenario.

**UT-1. Water Supply** - The Water Supply Assessment (WSA) required by SB 610 shows Redwood City would not have sufficient water supply to meet projected future demands of the proposed project or the Higher Occupancy Scenario. (S)

The projected average daily water demand for the proposed Medical Center at buildout, calculated based on City standards, is 0.818 mgd (916.72 AF/Y) (see Table 3.10-1). This demand forecast is about 11 times above the current average demand of 0.07251 mgd (81.26 AF/Y). Given that Redwood City already exceeds its allotment for water supply, this increase in water demand would exacerbate the existing acknowledged shortfall. Redwood City in 2002 is only able to meet its water needs because other suburban purchasers of SFPUC Hetch Hetchy water are not using their full allotments. Project-related increases in water demand of 0.745 mgd (835.46 AF/Y) would be a significant impact. The projected water demand is based on load factors contained in the 1997 Uniform Building Code for the proposed uses and not on the employment and patient visits presented in Section 2, Project Description. Accordingly, the same water demand would be expected under the Higher Occupancy Scenario as under Kaiser’s projected employment figures.

<table>
<thead>
<tr>
<th>Table 3.10-1</th>
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<tbody>
<tr>
<td><strong>Kaiser Medical Center Projected Water Demand at Buildout</strong></td>
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<tr>
<td><strong>Millions of Gallons Per Day</strong></td>
</tr>
<tr>
<td>Existing Water Demand (2002)</td>
</tr>
<tr>
<td>Projected Water Demand at Master Plan Buildout (2025)</td>
</tr>
<tr>
<td>Change as a result of Proposed Project</td>
</tr>
</tbody>
</table>

*Source:* Existing Water Demand is approximated based on available 2001-2002 water meter readings and is shown here for reference only. Projected water demand at buildout is calculated according to Redwood City Standards and Guidelines by first estimating the wastewater generation from the project using UBC-97 occupancy load factors and wastewater generation volumes per State Water Resources Control Board (see Table 3.10-2). Water demand is then estimated at 40 percent more than wastewater demand.

As stated above, Redwood City has been satisfying its current demand for water by receiving additional water from cities that are not currently using their full entitlement from SFPUC – 1.01 mgd (about 1,100 AF/Y) more than allocated. The WSA prepared by the Redwood City
Public Works Service Department has determined that the City does not have a sufficient water supply to meet the projected demands of the proposed Master Plan.

The WSA also includes an initial water supply sufficiency analysis that compares the projected water demand of the City with the proposed project. According to the WSA, increased water demand as a result of the Medical Center would cause further degradation in reliability in the City’s water system. The degradation makes the shortage cutbacks about 1.1% more for existing users than without the project. The initial estimated net increase shown in the WSA of 142.14 AF/Y is based on preliminary water demand estimates. The updated net increase calculated in accordance with the City Standards and shown in this EIR is 835.46 AF/Y. This update will further increase the shortage cutback stated in the WSA. In any case, the City has determined that the frequency and magnitude of the cutbacks for existing users is unacceptable.

As the planning and design of the project progress, revisions of water demand shall be refined and recalculated accordingly to adhere to the City Engineering Standard and Guidelines. As discussed, the City would prepare a new WSA to present a more accurate estimation of water demand prior to approval of the various development phases.

MITIGATION MEASURES. The following mitigation measures together would reduce the significant water supply shortage to a less-than-significant effect. Mitigation Measure UT-1.1, which calls for use of recycled water, has not been approved by the City, and Mitigation Measure UT-1.2 by itself would not be sufficient to reduce demands on the City’s potable water supply system. If Mitigation Measure UT-1.1 is not approved by the City prior to implementation of Phase 1 of the Master Plan, the proposed project would have a significant and unavoidable impact on water supply. (PSU)

**UT-1.1 Obtain Potable Water Supply Via Tentative City’s Recycled Water Program.** The WSA states that the City has tentative plans to serve high quality recycled water to existing and future water users for landscape irrigation and various industrial uses. If implemented, this system will provide a means of meeting water demands that would otherwise have to be met from potable water sources. The program would, at full utilization, deliver up to 1,995 AF/Y, thereby reducing existing and future demands on City’s potable water supply. The project sponsor shall contribute its fair share to the cost of implementation of the recycled water system, assuming that the recycled water program is adopted by the City. The project sponsor shall also be required to comply with all applicable current and future City of Redwood City water demand performance standards, including standards in the *City of Redwood City Urban Water Management Plan*, the City’s recycled water project, and the City’s water conservation program. If the recycled water program is not approved, the applicant shall be responsible for obtaining water supply from a third-party water supplier, if feasible.
UT-1.2 Include Techniques of Water Conservation in Medical Center Buildings and Landscaping. The project sponsor shall include methods of water conservation in Medical Center buildings and landscaping. These methods shall include, but not be limited to, the following:

a. Install water conserving dishwashers, washing machines, and water efficient centralized cooling systems in the hospital, medical and administrative buildings, and laboratories.

b. Incorporate water efficient laboratory techniques in laboratory facilities, where feasible.

c. Install water conserving irrigation systems (e.g., drip irrigation and automated irrigation systems).

d. Design landscaping with drought-resistant and other low water use plants.

e. Include limited turf areas in open space.

f. Install water-saving devices such as water-efficient toilets, faucets, and showerheads.

Minus substantial evidence that these measures would mitigate the impact--i.e., would lead to the identification and realization of an adequate additional water source--the effectiveness of this mitigation measure is unknown at this time. Therefore, until an achievable water supply is identified, this impact is considered to be a significant impact (i.e., would require adoption of a Statement of Overriding Consideration).

UT-2. Water Distribution and Emergency Storage System - The proposed project and the Higher Occupancy Scenario may adversely affect the water distribution and emergency storage system around the Medical Center. (PS)

The area surrounding the Medical Center is served by several old 10” and 12” water mains. While the City believes there is sufficient existing water pressure and supply under normal service conditions, increased demand from expansion of the Medical Center (under either Kaiser’s projected employment figures or the Higher Occupancy Scenario), coupled with emergency service conditions, would likely exceed the capabilities of the water distribution and emergency storage system in the project vicinity. The service conditions are defined below:

- Normal service condition (Hetch-Hetchy is available) = maximum (hour or day) flow + fire flow, or at peak hour flow.

- Emergency service condition (Hetch-Hetchy pipe is not available and the nearest reservoir is 2+ miles away) = maximum (hour or day) flow + fire flow, or at peak hour flow.
Water distribution lines around the Medical Center may not be adequately sized to handle the increased demand in flow and pressure from the proposed project. Design capacities of water mains are based on several control variables; namely, desirable pressures and limiting velocity and head loss. The system around the Kaiser site is complex and its flows would be altered by the new building components and project phasing. As required for larger projects, Kaiser’s effects on pipe capacities, water storage tank requirements, and pump station capacity and the Medical Center’s potential upgrade/replacement options would need to be evaluated with each new building using the City’s computer water model and design standards.

**MITIGATION MEASURES.** The following measures would reduce potentially significant impacts related to increased water demand from the proposed project to less than significant. (LTS)

**UT-2.1 Upgrade Water Lines.** The project sponsor shall be responsible for the cost of analysis, design, and construction of all necessary upgrades and new water transmission and distribution systems in accordance with City Standards and Guidelines to adequately serve the project.

**UT-2.2 Build New Water Tank and Pump Station.** The project sponsor shall be responsible for the cost of analysis, design, and construction of a new water tank and pump station in accordance with City Standards and Guidelines to adequately serve the proposed project. The required volume is calculated as three times the average-day water usage of the project per City Standards. The required emergency storage for this project at buildout would be 2.45 million gallons (i.e., 3 x 0.818 mgd).

**UT-3. Wastewater Collection System** - The proposed project and the Higher Occupancy Scenario would result in increased wastewater flows from the project site. While there is sufficient capacity at the wastewater treatment plant to accommodate the additional flows from the Master Plan, the number of buildings, their locations, and their sequencing may adversely affect the local wastewater collection system. (PS)

Based upon Redwood City Standards and Guidelines, the amount of wastewater flow is regularly equivalent to about 71 percent of the amount of water demand. The proposed project at buildout would produce a total wastewater flow of about 0.583 mgd, a net increase of 0.531 mgd (see Table 3.10-2). The treatment plant currently has the permitted treatment capacity to handle the projected demand from the proposed Master Plan. The projected wastewater generation is based on load factors contained in the 1997 Uniform Building Code for the proposed uses and not on the employment and patient visits presented in Section 2, Project Description. Accordingly, the same wastewater flows would be expected under the Higher Occupancy Scenario as under Kaiser’s projected employment figures.

While the wastewater treatment plant has sufficient existing capacity to accommodate the Master Plan, the proposed project would develop in phases over a more than 20-year horizon. Accordingly, Kaiser may need to acquire treatment capacity from future stages of SBSA expansion in the future, depending on the availability of capacity when Kaiser’s future
entitlements are sought (see further discussion under Impact UT-5 which addresses cumulative effects with the proposed Master Plan).

Table 3.10-2
Kaiser Medical Center Projected Wastewater Flows at Buildout

<table>
<thead>
<tr>
<th></th>
<th>Millions of Gallons Per Day</th>
<th>Acre-Feet Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Wastewater Flows (2002)</td>
<td>0.05179</td>
<td>58.04</td>
</tr>
<tr>
<td>Future Wastewater Flows at Buildout (2025)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital:</td>
<td>0.55</td>
<td>616.38</td>
</tr>
<tr>
<td>(440,000 GSF/120 GSF/person) x (150 gpp/d)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Utilities Plant (CUP):</td>
<td>0.001</td>
<td>1.12</td>
</tr>
<tr>
<td>(28,000 GSF/300 GSF/person) x (15 gpp/d)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Office:</td>
<td>0.028</td>
<td>31.38</td>
</tr>
<tr>
<td>(455,200 GSF/240 GSF/person) x (15 gpp/d)</td>
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<td></td>
</tr>
<tr>
<td>Administrative &amp; Support:</td>
<td>0.005</td>
<td>5.60</td>
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<tr>
<td>(36,100 GSF/100 GSF/person) x (15 gpp/d)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Flow</td>
<td>0.583</td>
<td>654.48</td>
</tr>
<tr>
<td>Change as a result of Proposed Project</td>
<td>+0.531</td>
<td>+596.44</td>
</tr>
</tbody>
</table>

Sources and Notes: Existing Wastewater Flows is approximated based on available 2001-2002 water meter readings divided by 1.4, and is shown here for reference only. Future wastewater flows at buildout are calculated according to Redwood City Standards and Guidelines, UBC-97 occupancy load factors and wastewater generation volumes per State Water Resources Control Board.

As noted earlier, the sewer collection and transmission systems are functioning at maximum capacities. Being the most downstream pipe systems in the service area, these pipes are quite large and in service at all times. In some cases, these old pipes are functioning under surcharged, or overflow, conditions (48” at Maple Street, and others at Maple Street and Veterans Boulevard for example). SBSA’s Maple Street Sanitation Pump Station, and transmission pipe from Maple Pump Station to the treatment plant are at capacity during wet weather flow conditions.

Mitigation Measure. The following measure would reduce impacts related to increased wastewater flows from the proposed project to less than significant. (LTS)

UT-3.1 Upgrade Sewer Collection and Transmission System. The project sponsor shall be responsible for the cost of analysis, design, and construction of all necessary upgrades to or replacement of sewer collection and transmission in accordance with City Standard and Guidelines to adequately serve the project. Upgrades shall include pipes around and downstream of the project site, SBSA’s Maple Street Sanitary Pump Station, and SBSA’s transmission facilities.
UT-4. Storm Drain System - The proposed project and the Higher Occupancy Scenario may adversely affect the existing storm drain system; however, coordination with the City and the San Mateo Countywide Storm Water Pollution Prevention Program should protect receiving waters from any increase in storm water runoff. (LTS)

The proposed project envisions the intensification and expansion of the existing Medical Center. The Medical Center is already extensively developed with impervious surfaces (i.e., buildings, surface parking lots, and roadways). According to the Initial Study prepared for the proposed project (see Appendix B), the existing drainage pattern would not be substantially altered, and the future amount of site runoff at buildout may decrease from existing volumes because a greater proportion of the site area is planned to be landscaped which would allow storm water to percolate into the ground rather than run off the site. Nevertheless, the storm drains serving the project site are old and may be at maximum capacities. Furthermore, the project site is located close to Redwood Creek and could be classified as a Sensitive Area by the RWQCB for additional and permanent Storm Water Quality Controls requirement. As part of the normal routine development review process, Kaiser will submit its plans and applications and demonstrate how it would comply with the City and the RWQCB’s San Mateo Countywide Storm Water Pollution Prevention Program (STOPPP) guidelines and regulations to detain, treat storm water runoff, reduce contaminants from entering the storm drain system, and prevent erosion during construction and post-construction. The STOPPP guidelines and regulations and the County’s discharge permit (provision C.3.) are in the process of being amended. The amendments will require documentation of on-site treatment and storage of storm water runoff measures during construction, and operation and maintenance of structural controls in conditions of approval for both public and private projects. This standard review of future applications, in conjunction with the water quality mitigation measures recommended in the Initial Study, will result in less-than-significant effects to water quality.

UT-5. Cumulative Water Supply, Wastewater, and Storm Drain System - The proposed Master Plan in conjunction with other pending and future development would create significant cumulative water supply impacts and could have potentially significant wastewater and storm drainage impacts. (S)

Water Supply. As discussed under Impact UT-1, the proposed project alone would have significant impacts on water supply, because the City has already exceeded its entitlement to Hetch Hetchy water from the SFPUC. With other future development projects, the potential lack of available water supply would worsen unless the City approves the recycling program that is now only at the planning/feasibility stage. Accordingly, cumulative development with the Master Plan would have significant cumulative water supply impacts.

Wastewater Transmission and Treatment. The City of Redwood City possesses an option to purchase an additional 2.685 mgd from the SBSA’s Stage II expansion to accommodate wastewater flows from Kaiser and other cumulative development. Currently, approximately 2.08 mgd out of the 2.685 mgd sewer treatment capacity rights are available for purchase. The
Master Plan proposes development at the Medical Center over a 20+-year horizon. Depending on when future projects pursuant to the Master Plan are submitted to the City, the remaining reserve capacity could be exhausted, and development and purchase of additional wastewater treatment capacity as part of a Stage III expansion would be necessary. SBSA’s sewer transmission facilities are functioning at maximum capacity and will need to be upgraded.

**Storm Drains.** The Storm Drain (SD) Sub-basin, in which the Medical Center is located, is relatively small and serviced by the Maple Street Storm Drain Pump Station and the (K-Mart) Pump Station at Steinberger Creek. Although the project’s effects on storm water volumes is expected to be less than significant, the storm drains may already be at capacity. Cumulative development may therefore adversely affect the piping system and the pump stations at Maple Street and at Steinberger Creek. The project’s contribution to this cumulative effect is anticipated to be less than significant; although this assumption shall be confirmed as Kaiser submits future plans for later phases of its development plans. Cumulative runoff from planned development in this sub-basin should be included in the sizing of the new collection pipes and pumps, including the replacement/relocation of the Maple Street Storm Drain Pump Station, and the possible enlargement requirement of the existing (K-Mart) storm water pump station at Steinberger Creek.

**Mitigation Measures.** The following measures would reduce potential cumulative impacts related to increased wastewater flows and storm water runoff from the proposed project to less than significant. (LTS) As noted previously (see Impact UT-1), however, the cumulative water demand may remain significant and unavoidable. (PSU)

**UT-5.1 Pay Fair Share of Future Wastewater Treatment Plant Expansion.** If additional wastewater treatment capacity rights are needed at the SBSA facility due to the increase of flows from any future phases of the Master Plan, the project sponsor shall provide its fair share of funds for SBSA’s Stage II, or future stages of expansion of rights in accordance with a formula to be adopted by the City and SBSA.

**UT-5.2 Pay Fair Share of Future Storm Drain Facilities Improvements.** If additional storm drain collection capacity or pump station capacity is needed due to the increase of storm water flows from any future phases of the Master Plan, the project sponsor shall provide its fair share of funds for improvements to the storm drain facilities, in accordance with a formula to be adopted by the City.
3.2 LAND USE AND PLANNING

Introduction

This section describes existing land uses at the Kaiser Permanente Redwood City Medical Center campus (Medical Center) and surrounding areas that potentially could be affected by the proposed Kaiser Master Plan project. The 15.3-acre Medical Center campus is considered a gateway to the City’s Downtown District due to its proximity to the downtown retail core and its location between two gateway entrances into the downtown at Main Street and Veterans Boulevard and at Maple Street and Veterans Boulevard. The land uses surrounding the Medical Center include a mixture of medical-related, commercial, office, residential, and light industrial uses. EIR discussions of land use and planning generally consider compatibility of a proposed project with neighboring areas, change to or displacement of existing uses, compliance with zoning regulations, and consistency of the proposed project with relevant local land use policies.

With respect to land use conflicts or compatibility issues, one’s perception of land use conflicts necessarily considers how a proposed project may affect the existing development pattern, development intensity, traffic circulation, noise, and visual setting in the immediately surrounding area. Specific environmental-related issues and their potential significance (pedestrian safety, traffic, air quality, noise, etc.) are discussed in detail in the associated topical sections of this EIR (see Section 3.3, Visual Quality; Section 3.4, Transportation; Section 3.5, Air Quality; and Section 3.6, Noise). These sections collectively indicate the Master Plan would not substantially alter the land use pattern to result in a significant land use conflict. In addition, as discussed in the Initial Study (Appendix B), no impacts would result from a physical disruption to the surrounding community or due to conflicts with any conservation plans.

Accordingly, this section focuses on the consistency of the proposed project with the applicable adopted goals and policies related to land use from the Strategic General Plan of the City of Redwood City, and the Redevelopment Plan for Redevelopment Project #2, and the regulations of Redwood City’s Zoning Ordinance. In addition, this section will address the consistency of the proposed project with the goals and policies contained in the City’s draft Downtown Area Plan, scheduled for adoption in 2003 and the draft Kaiser Master Plan Urban Design Guidelines (Appendix C) which will be incorporated into the Kaiser Master Plan Precise Plan. The Precise Plan will be adopted in whole or in part by the City Council at the time of EIR certification or shortly thereafter.

Section 3.3, Visual Quality, of this EIR also describes the proposed project’s consistency with the City’s Draft Kaiser Master Plan Urban Design Guidelines.
Setting

Land Uses

The project site is located within Redwood City’s Downtown District. For the purposes of this land use discussion, the “project vicinity” encompasses approximately a one-quarter mile radius from the existing hospital, which is centrally located within the project site.

Adjacent Uses. Land uses surrounding the project site are illustrated in Figure 3.2-1 and generally include light industrial, retail/commercial, office, and residential uses. North of the project site across Veterans Boulevard are commercial uses dominated by K-Mart and Mervyns’ Plaza. To the east of the Medical Center are three six-story apartment buildings and a multi-story convalescent home. To the south of the Medical Center are office buildings and small retail establishments. Fairly new, mid-rise office buildings are immediately adjacent along Marshall Street, between Marshall Court and Walnut Street. To the west of the Medical Center is a mix of small apartment buildings and retail shops. Nearby land uses show that the project vicinity contains a mix of land uses, of which Kaiser’s campus makes up approximately 12 percent of the project vicinity acreage.1

Kaiser Permanente Redwood City Medical Center. The Medical Center occupies approximately 15.3 acres and includes a seven-story Hospital, five medical office buildings (MOBs), seven administrative and support buildings, a central utility plant, a seven-story parking garage, and seven surface parking lots. The project site encompasses approximately one and a half blocks, plus parking lots at Main and Bradford Streets and the Walnut MOB, at the corner of Walnut and Bradford Streets (see Figure 3.2-1 and Figure 2-2).

Applicable Plans and Regulations

City of Redwood City Strategic General Plan. The City’s Strategic General Plan, adopted in 1990, guides the physical development and character of the City. Figure 3.2-2 shows the General Plan land use designations for the project vicinity. Heavy commercial is the designated land use for most of the project vicinity, including the project site. Other General Plan land use designations in the project vicinity include light industrial, open space, office park (commercial), high density residential, and public and quasi-public uses2 (see Figure 3.2-2). The variety of land use designations is further indication that the City intends this area to be mixed use. Because the project site is located on land designated for commercial use, the proposed project is subject to commercial land use policies of the Strategic General Plan.3 In addition, other general plan policies related to the development of the

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1 The area of the project site is approximately 15.3 acres, and the area of the project vicinity is approximately 126 acres.
2 “Kaiser Permanente General Plan Parcel Map,” provided by the City of Redwood City, Community Development Services Department, Planning and Redevelopment to EIP Associates, October 9, 2002.
3 Maureen Riordan, Senior Planner, City of Redwood City, telephone conversation with EIP Associates, November 8, 2002.
Slipsheet

Figure 3.2-1 Nearby Land Uses
Slipsheet

Figure 3.2-2 General Plan Designations
proposed project (i.e., circulation, conservation, noise, and safety) are identified in Table 3.2-3 later in this section.

The City will be updating its General Plan in the middle of 2003 and expects to complete the process by 2004. Until an updated General Plan is adopted, the current Strategic General Plan is the primary document guiding land use in the City of Redwood City.

Redevelopment Plan for Redevelopment Project #2. Because the project site is located in the Redevelopment Area, policies from the Redevelopment Plan for Redevelopment Project #2 (Redevelopment Plan #2) are applicable to the Kaiser Master Plan and are presented in Table 3.2-3 later in this section. The boundaries of the Redevelopment Area generally stretch beyond the Kaiser Medical Center site from Whipple Avenue to the west, Charter Street to the east, Veterans Boulevard to the north, and El Camino Real to the south.

Developed by the Redevelopment Agency of the City of Redwood City in 1985, Redevelopment Plan #2 is the amended 1982 Redwood City Redevelopment Plan. In 1989, a second amendment was made to the Plan. Redevelopment Plan #2 contains major changes to the original Redevelopment Plan, including an expanded boundary, objectives for rehabilitation of residential and commercial properties, retention of persons residing in the Redevelopment Area, and extension of development controls until December 31, 2027. The Redevelopment Plan #2 is intended to enhance commercial and residential areas and improve circulation in the project area. Specific objectives of the plan include making property suitable for private construction and public improvements; rehabilitating the Civic Center, commercial, and residential properties; improving transportation and parking facilities including linking together circulation within the area with the City street system; providing access to landlocked parcels; and making public improvements to alleviate flooding in parts of the area.

Zoning Ordinance. The primary zoning designations in the project vicinity are commercial/business (which allows residential development above first floor retail) and multi-family residential (see Figure 3.2-3). There are also areas zoned for residential and light industrial in the vicinity of the campus.

Zoning Designations of Surrounding Land Uses. The applicable zoning districts surrounding the project site are as follows:

- CG, General Commercial District, is intended to provide a district for commercial uses which do not specialize in serving the pedestrian shopper, and is more appropriately located along thoroughfares or away from the central shopping districts where more land is available or where special facilities can be provided for the performance of their function.

- CBR, Central Business Retail, is intended to strengthen the retail vitality and economic base of the downtown area, and to concentrate retail uses downtown. Residential uses are also permitted above ground floor retail in this district.

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4 Tom Passinisi, Principal Planner, City of Redwood City, telephone conversation with EIP Associates, October 9, 2002.
Slipsheet for Figure 3.2-3 Zoning

Slipsheet
• R-4, Multi-Family - Medium Density Residential, is intended to stabilize and maintain the residential character of the district for medium density small apartments with adequate space for cooperatively used facilities and open space.

• R-5, Multi-Family - High Density Residential, is intended to stabilize and maintain the residential character of the district for high-density apartments with a minimum of cooperatively used outdoor space and a minimum of individual service facilities.

• PF, Public Facilities, is intended to accommodate governmental, public utility, and educational facilities, such as Redwood City Hall and the San Mateo County Center.

• IP, Industrial Park, is intended to provide a set of regulations which will ensure the creation of an environment exclusively for and conducive to the development and protection of modern, large-scale administrative facilities, research institutions, specialized manufacturing organizations, and specified retail establishments all of a type in which the architecture, landscaping, and operation of the uses is such that each is a credit to other and investment in well designed and maintained plants and grounds is secured by the maintenance of the highest standards throughout the district.

Kaiser Medical Center Zoning Designations and Parking Regulations. Table 3.2-1 shows relevant zoning regulations at the Medical Center, although it is noted that the proposed project includes application for a Precise Plan that would supersede the zoning regulations of the current districts that govern the project site. The majority of the project site is zoned CA. The purpose of this district is to provide large-scale office and administrative uses and buildings to promote the development of employment and administrative activities near the central business district. Permitted uses in the CA zone include medical uses, administrative or professional office uses, medical or dental offices, clinics, and laboratories. The height limit in the CA zone is 75 feet, and the permitted lot coverage is not more than 60 percent.5

A small portion at the northeast corner of Walnut and Bradford Street (the Walnut MOB) is zoned CB. The purpose of this district is to promote the orderly development of the downtown business district as a central shopping facility for the whole city and surrounding area. Permitted uses in the CB zone include professional or administrative offices, retail and retail services, and residential uses above ground floor. The height limit in the CB zone is 100 feet. There is no limitation on lot coverage in the CB District.6

Section 30.2.2 of the City of Redwood City Zoning Ordinance requires financial services, professional, business or administrative offices generating fewer than 100 PM peak period trips to provide one parking space for each 250 square feet of floor area. In addition, medical or dental offices and clinics

5 City of Redwood City, Planning Department, Community Development Services, Zoning Ordinance, Ordinance No. 1130, Article 12, 2001.

6 City of Redwood City, Planning Department, Community Development Services, Zoning Ordinance, Ordinance No. 1130, Article 14, 2001.
would require off-street parking and loading at the rate of one space for each 200 square feet of floor area, plus five spaces per doctor. Section 30.3 requires off-street parking and loading for hospitals, not including out-patient clinics, at the rate of one space for each patient bed, plus one space per employee on the largest shift. For hospitals that have more than ten employees on the largest shift, ten percent of required parking shall be designated for carpool and/or vanpool parking. Based on these zoning requirements, the Kaiser Medical Center at full buildout would be required to provide 4,005 parking spaces.7

| Table 3.2-1 |
| City of Redwood City Zoning Ordinance Regulations Applicable to the Proposed Project |
| Central Administrative (CA) | Central Business (CB) |
| Maximum height of building (in feet) from grade to roof level | 75 ft. | 100 ft. |
| Minimum Lot Area | 6,000 sq. ft. | 2,500 sq. ft. |
| Minimum Lot Width | 60 ft. (corner lots) 50 ft. (interior lots) Every lot shall have a minimum of 35 feet of frontage on a street. |
| Maximum Site Coverage (percentage) | 60% | No limitations. |
| Setbacks | None required. | None required. |

*Source: City of Redwood City Zoning Ordinance, Ordinance No. 1130, Redwood City Zoning Code 2001.*

**Other Plans and Policies Related to the Proposed Project**

Two other noteworthy planning documents are relevant to the project site. While neither of them has yet been adopted by the City, they are expected to be approved in 2003 at the time of Kaiser Master Plan EIR Certification or shortly thereafter, and therefore will influence the City’s decisions and reviews of future development plans at the Kaiser Medical Center campus. Thus, even though CEQA requires that lead agencies consider a project’s consistency only with adopted plans and policies, information relevant to these planning documents is discussed below.

**Draft Downtown Area Plan.** The City recommended draft *Redwood City Downtown Area Plan*, dated October 2001 and proposed for adoption in 2003, outlines the policy guidelines for future growth and

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7 At full buildout, the Kaiser Redwood City Medical Center hospital would have 192 licensed beds and 678 employees at the largest shift. At one space per bed and one space per employee for the daytime shift, the parking requirement under existing zoning would be 870 spaces at the Hospital. MOBs would total 429,800 GSF of clinical space, requiring 2,149 parking spaces. At 5 spaces per doctor (assume providers), there would need to be 740 parking spaces for the 148 on-campus providers. The administrative and support buildings would total 61,500 GSF, and at one space per 250 square feet of floor area, the administrative areas would require 246 spaces. Total parking required for the Medical Center would be 4,005 spaces.
development of the Downtown District. The Downtown District is an area bounded by Whipple Avenue to the west, Woodside Expressway to the east, Veterans Boulevard to the north, and El Camino Real to the south. The Kaiser Medical Center campus, an integral 15.3-acre portion of the larger Downtown District area, is located close to the downtown retail core (an area primarily bounded by Marshall Street, Main Street, and El Camino Real). While a small portion of the project site lies within the immediate boundaries of this retail core area, the majority of the Medical Center lies within a two- to three-block walking distance (adjacent to or just southeast) of the downtown retail core.

The key aspects of the draft Downtown Area Plan are to create a livable neighborhood with a mix of uses; provide a variety of open space; make walkways and sidewalks pedestrian friendly; provide linkages between the Caltrain Station, Broadway, and Redwood Creek; revitalize the historic architecture of downtown; and create major gateways into the area.

Goals from the Downtown Area Plan are summarized below:

- Create and define an accessible, safe, attractive and convenient downtown;
- Create an economically viable downtown;
- Create a friendly environment for a diverse mix of people and uses in the downtown;
- Respect the historic character, architecture and cultural heritage of Redwood City; and
- Establish a central downtown public gathering space that serves as a focal point for the community.

Draft Kaiser Master Plan Urban Design Guidelines. The City recommended draft Kaiser Master Plan Urban Design Guidelines, developed to optimize the relationship of the Kaiser Medical Center to the Downtown District, serves to reinforce/reflect the objectives, goals and policies of the draft Downtown Area Plan by providing overall direction for the location, orientation and design of Kaiser campus structures, open space, pedestrian walkways, streetscape and landscape improvements. The guidelines contain specific City recommended objectives and policies pertaining to the urban design of the Kaiser Medical Center campus. Consequently, the discussion of the project’s conformance with this planning document is presented later in Section 3.3, Visual Quality.

Impacts and Mitigation Measures

Significance Criteria

The proposed project would result in significant land use impacts if the components of the Master Plan individually or cumulatively would:

- Conflict with any applicable land use plan, policy, or regulation of any agency with jurisdiction over the project. Applicable plans include the Strategic General Plan, the Redevelopment Plan
As previously described in the Initial Study (attached as Appendix B), the proposed project would be comparable in use and intensity of development to surrounding land uses and therefore is not expected to result in land use conflicts with nearby land uses.

**Environmental Analysis**

As described in Section 3.1, for each impact, a level of significance is determined and is reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant effects to a less-than-significant level, the impacts are classified as “significant unavoidable effects (SU).” For this section, LU refers to Land Use and Planning.

The Higher Occupancy Scenario, described in Section 2, would result in the same increase of GSF as the proposed project, and would therefore represent the same land use changes as the proposed project. In addition, the Higher Occupancy Scenario would result in the same campus configuration and project phasing as the proposed project. Therefore, conflicts with land use, plans, and zoning would be the same under the Higher Occupancy Scenario as anticipated with the proposed project and land use and planning impacts would be similar to those under the proposed project. As such, the Higher Occupancy Scenario would have similar land use impacts as the proposed project.

**LU-1. Strategic General Plan** – Neither the proposed project nor the Higher Occupancy Scenario would conflict with applicable policies in the Strategic General Plan. (LTS)

As presented in Table 3.2-2, providing that the Master Plan does not change significantly in the future and Kaiser development occurs as envisioned by the Master Plan, the proposed project would be consistent with applicable policies in the Strategic General Plan. Based on a review of the Strategic General Plan, eight policies relevant to the proposed project are found in the Circulation, Conservation, Noise, and Safety Elements. Project features are considered to be consistent with five of the policies; mitigation measures proposed in this EIR would ensure that the project is consistent with the other three policies.

Regarding the latter three policies, the proposed project cannot be fully evaluated for consistency with Transportation Policy PT-4, which concerns the implementation of transit-related improvements, since this is a design detail which is not addressed in the conceptual Master Plan. Nevertheless, it is expected that the project would be consistent with this policy because there are mitigation measures recommended to address traffic impacts (see Section 3.4, Transportation), which call for inclusion of on-site transit and pedestrian facility improvements. Similarly, Policy PT-5 calls for project applicants to contribute their fair share for transit improvements. It is expected that the proposed project would fulfill this policy through the project sponsor’s payment of traffic impact fees and implementation of mitigation measures.
called for in Section 3.4, Transportation. Finally, Policy N-3 requires that all exterior noise sources be brought down to acceptable noise levels with adjacent uses. The design of the buildings and the mechanical equipment are not addressed in the Master Plan because of its conceptual nature and thus it cannot be definitively stated that the project would be consistent with this policy. However, because the noise analysis in this EIR (Section 3.6, Noise) proposed mitigation measures to abate noise levels from the proposed project, Kaiser is expected to comply with Noise Policy N-3. As a result, the proposed project is expected to conform with existing Strategic General Plan policies and have a less-than-significant effect on the plan policies.

### Table 3.2-2

<table>
<thead>
<tr>
<th>Policy</th>
<th>Consistent</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Circulation</strong></td>
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</tr>
<tr>
<td>Policy PT-4. Establish site planning and architectural standards for new building projects that would incorporate transit access and orientation. Such standards would apply to both public and private building projects located along existing bus routes to enhance pedestrian access and convenient public transit.</td>
<td>Expected</td>
<td>Mitigation measures that include relocation of existing SamTrans bus stops, designation of Caltrain shuttle stops, bicycle parking spaces, benches, and other pedestrian friendly transit improvements have been included in this EIR. See Section 3.4, Transportation.</td>
</tr>
<tr>
<td>Policy PT-5. Where a new building project is located along a bus route, the developer shall be required to pay for some of the cost of providing improved bus stop facilities or, where appropriate, dedicate land for improved bus stop facilities.</td>
<td>Expected</td>
<td>The proposed project would be required to cover the cost of construction for all frontage improvements and the project’s fair shares of the cost of off-site mitigation measures over and above payment of the Traffic Impact Fees.</td>
</tr>
<tr>
<td><strong>Conservation</strong></td>
<td></td>
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<tr>
<td>Policy C-2. Foster development which, by its location and design, reduces the need for nonrenewable energy resources.</td>
<td>Yes</td>
<td>The consolidation of medical facilities at the project site and its proximity to the downtown core and other commercial/retail centers would reduce the number of vehicle trips and encourage pedestrian activity, both of which would diminish reliance on non-renewable transportation fuels. Buildings will incorporate Green Building energy conserving materials and design.</td>
</tr>
<tr>
<td><strong>Noise</strong></td>
<td></td>
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<tr>
<td>Policy N-2. Limit the hours of operation at all noise generation sources wherever practicable, unless an emergency exists.</td>
<td>Yes</td>
<td>The Hospital provides emergency services and would operate 24-hours a day.</td>
</tr>
<tr>
<td>Policy N-3. Require all exterior noise sources (construction operations, air compressors, pumps, fans, and leaf blowers) to use available noise suppression devices and techniques to bring exterior noise down to acceptable levels compatible with adjacent land uses.</td>
<td>Expected</td>
<td>Mitigation measures that include noise suppression devices and techniques to reduce noise to acceptable levels have been included in this EIR. See Section 3.6, Noise.</td>
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(Continued)
### Table 3.2-2 (Continued)

**Consistency of Proposed Project with Applicable Policies in the Strategic General Plan**

<table>
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<tr>
<th>Policy</th>
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<tr>
<td><strong>Safety</strong></td>
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</tr>
<tr>
<td>Policy S-1. Identify structural types and land uses highly sensitive to earthquake activity, and abate or modify them to achieve acceptable levels of risk.</td>
<td>Yes</td>
<td>The replacement of the Hospital is necessary in order to meet seismic safety standards mandated by the State of California under the Alfred E. Alquist Hospital Facilities Seismic Act of 1983 (SB 1953). The purpose of this act is to assure that acute care hospitals remain fully functional after an earthquake. The Kaiser Redwood City Hospital has been identified as seismically inadequate. Since retrofit of the fully occupied, functioning hospital would not be practical or cost-effective, a full replacement of the hospital will meet current standards.</td>
</tr>
<tr>
<td>Policy S-7. New development should provide adequate access for emergency vehicles, particularly fire fighting equipment, as well as provide secure evacuation routes for the inhabitants of the area.</td>
<td>Yes</td>
<td>The Medical Center is designed to provide adequate emergency access at four locations at the Medical Center (see Figure 2-5). Pedestrian walks, which will offer evacuation routes for Medical Center employees and visitors, are adjacent to Medical Center structures throughout the campus and are along Veterans Boulevard, Main Street, Bradford Street, Walnut Street, Marshall Street, and Maple Street.</td>
</tr>
<tr>
<td>Policy S-8. New development should be designed to provide protection from potential impacts of flooding during the 100-year flood.</td>
<td>Yes</td>
<td>The project site is not within the 100-year flood zone designated by FEMA and would not place any structures within such zones.</td>
</tr>
</tbody>
</table>

Source: *Strategic General Plan*, City of Redwood City, January 22, 1990; EIP Associates.

**LU-2. Redevelopment Plan for Project #2** - The proposed project and the Higher Occupancy Scenario would be consistent with applicable land use policies in the Redevelopment Plan for Project #2. (LTS)

Table 3.2-3 evaluates the project’s consistency with all applicable land use policies from Redevelopment Plan for Project #2. Providing the Master Plan does not change significantly from the current concepts and development occurs as proposed in the Master Plan, the proposed project would be consistent with the Redevelopment Plan. The proposed project fulfills the applicable Redevelopment Plan objectives through private construction in the Redevelopment Area, rehabilitation of commercial property, provision of improved parking facilities in the area, and provision of improved access and safety. Furthermore, proposed retail and commercial uses at the Medical Center, which include optical sales, prescription and over-the-counter pharmaceuticals, and food service, are consistent with the land uses envisioned by the Redevelopment Plan, particularly when these uses are accessible at ground floor pedestrian level.

Revitalization of the Downtown District would be further enhanced and consistent with the Redevelopment Plan through incorporation of the Kaiser Master Plan Urban Design policies.
Table 3.2-3
Consistency of Proposed Project with Applicable Policies in the
Redevelopment Plan for Redevelopment Project #2

<table>
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<tr>
<th>Policy</th>
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<tbody>
<tr>
<td>All land designated in said Land Use Element as commercial may be developed and used for commercial uses including but not limited to office, retail, service, and related auxiliary uses. New developments shall conform to the requirements of the City’s General Plan and Zoning Ordinance. (Section V.A (2))</td>
<td>Yes</td>
<td>The project is subject to the referenced Redevelopment Plan citation because the project site is located within an area that is designated by the General Plan as commercial. The project’s commercial uses are consistent with those identified in the Redevelopment Plan, including office (administrative or professional offices, medical or dental offices, clinics, and laboratories), retail (including drug stores) service (restaurants and cafes), and related auxiliary uses (parking structures).</td>
</tr>
<tr>
<td>The objectives of the Redevelopment Project are to make lowlands property useful for private construction and placement of public improvements, improve circulation, rehabilitate commercial and residential properties and the Civic Center, improve transportation and parking facilities including linking together circulation within the Redevelopment Project to the City street system, providing access to landlocked parcels and safer intersections, and public improvements to alleviate flooding of parts of the Project. (Section III)</td>
<td>Yes</td>
<td>The proposed project fulfills the applicable Redevelopment Plan objectives through private construction in the Redevelopment Area, rehabilitation of commercial property, improved parking facilities in the area, improved access, and safety. With the proposed project, private construction would occur through phased replacement of various inpatient and outpatient facilities at the Medical Center. Enhanced landscaping, lighting, and signage would complement the rehabilitation and replacement of existing structures on the campus. Improved on-site parking is anticipated through the construction of four new parking structures. The proposed project would create 2,227 additional parking spaces in the Redevelopment Area. For improved circulation at the project site, the Vehicular Circulation Plan of the Kaiser Master Plan proposes the reconfiguration of Maple Street to accommodate the proposed entry plaza to the Medical Center, narrowing of Walnut Street between Veterans Boulevard and Bradford Street, but keeping it a viable vehicular and pedestrian roadway connection/link to the downtown, and the reconfiguration of Marshall Court. The proposed Vehicular Plan includes curbside parking and passenger loading zones on Maple Street.</td>
</tr>
</tbody>
</table>


LU-3. Zoning Ordinance - The proposed project and the Higher Occupancy Scenario would conflict with applicable height and parking requirements in the Redwood City’s Zoning Ordinance. However, the proposed project would be developed under a Precise Plan that would include new height and parking standards that would accommodate the proposed development. (LTS)

The proposed project is consistent with all permitted and accessory uses for the Central Administrative (CA) and Central Business (CB) Districts and would be consistent with the development regulations for these districts as stipulated in the Zoning Ordinance with two exceptions. One, the proposed height of the nursing tower (up to 160 feet) would exceed the maximum height of 75 feet in the CA District. Two, the provision of approximately 3,000 off-
street parking spaces would not satisfy the off-street parking requirements of 4,005 parking spaces. Because the proposed project would include a Planned Community District designation for the Kaiser Medical Center that would permit structures up to 160 feet and a revision of the parking standards for this project (see Table 3.2-4), impacts resulting from inconsistencies with Sections 30.2H and 30.3A would be less than significant.

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<tr>
<th>Policy</th>
<th>Consistent</th>
<th>Rationale</th>
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<tbody>
<tr>
<td>Section 30.2.2B (Required Parking – Commercial Uses, Administrative Offices) Financial services, professional, business or administrative offices generating fewer than one hundred peak period trips shall provide one space for each 250 square feet of gross floor area.</td>
<td>No, but parking requirements to be revised per the Precise Plan.</td>
<td>The proposed project includes about 3,006 off-street parking spaces. Under Section 30.2.2B, 30.2.2H and 30.3A, on- and off-campus facilities in Redwood City would require 4,005 parking spaces. See response to Section 30.2.2B above.</td>
</tr>
<tr>
<td>Section 30.2.2H (Required Parking – Commercial Uses, Medical or Dental Office and Clinics) One (1) space for each two hundred (200) square feet of floor area, plus five (5) spaces per doctor.</td>
<td>No, but parking requirements to be revised per the Precise Plan.</td>
<td>See response to Section 30.2.2B above.</td>
</tr>
<tr>
<td>Section 30.3A (Required Parking – Miscellaneous Uses, Hospitals but not including out-patient clinics) One (1) space for each patient bed, plus one (1) space per employee on the largest shift. Hospitals which have more than ten (10) employees on the largest shift shall have ten percent (10%) of required parking designated for carpool and/or vanpool parking.</td>
<td>No, but parking requirements to be revised per the Precise Plan.</td>
<td>Carpool and vanpool parking will be provided per the Zoning Ordinance. See response to Section 30.2.2B above.</td>
</tr>
</tbody>
</table>

Source: City of Redwood City Zoning Ordinance, Ordinance No. 1130, Redwood City Zoning Code 2001; EIP Associates.

**LU-4. Draft Downtown Area Plan** - The proposed project and the Higher Occupancy Scenario may not reflect the policies of the Draft Downtown Area Plan, but further review by the City would ensure that development on the campus satisfies the City’s policies. (LTS)

Although the Downtown Area Plan has not yet been adopted, it is anticipated to be adopted in 2003. A discussion of the consistency of the Master Plan with draft Redwood City Downtown Area Plan policies, therefore, has also been included. The discussion below highlights the areas that the proposed Master Plan could conflict with draft Redwood City Downtown Area Plan policies.
Because the development details of the Medical Center are not available given the conceptual nature of the Master Plan, it cannot be definitively stated that the proposed project would fulfill and implement the Downtown Area Plan. Nevertheless, as future development applications are submitted at the Kaiser campus, they would be reviewed by the City to ensure consistency with the Downtown Area Plan.

The Master Plan would be consistent with a “park-once” strategy (Policy 4.16) by consolidating Kaiser facilities in Redwood City, to one central location. Members would only need to park once to obtain services at the Kaiser campus. Each building on the campus would have an adjacent parking structure and an on-campus shuttle service would be provided. The Master Plan would be expected to facilitate the long-term development of adequate parking for a convenient and accessible downtown (Policy 4.17). The proposed project would provide five parking structures and surface parking, or about 3,006 parking spaces for Kaiser members and staff near the downtown core, and would not result in spillover of parking demand to the downtown area. The Master Plan would also be consistent with ensuring that the downtown is barrier free and accessible to all. The proposed project would comply with the American Disabilities Act and would include curb ramps, and curb cuts, and walkways and sidewalks with appropriate widths to accommodate people with disabilities. The proposed project should also comply with policies regarding the undergridding of utilities. Over the course of the Master Plan, the City should look for opportunities to require the project sponsor to underground existing facilities, such as the storm water pump station at the corner of Veterans Boulevard and Maple Street, that detract from the streetscape. However, this storm water pump station is an existing City facility that is not on Kaiser property.

However, with respect to the Downtown Area Plan, the proposed Master Plan does not explicitly address in detail how the future development would enhance the downtown core as the functional symbol of the downtown area (Policy 3.17), create a series of usable open spaces in the downtown (Policy 4.4), provide incentives for development that incorporate various usable outdoor spaces beyond the minimum requirements (Policy 4.6), and provide safe and direct pedestrian connections to and from the parking structures (Policy 4.19). While these aspects are expected to come into much greater focus as future buildings/projects are submitted to the City, the absence of discussion in the Master Plan means that these items may be inconsistent with the draft Downtown Area Plan.

Cumulative Analysis

LU-5. **Cumulative Land Use** - The proposed project and the Higher Occupancy Scenario in combination with other development in the project vicinity would not cause cumulative land use impacts for existing land uses in the Downtown Area. (LTS)

No significant cumulative land use impacts are expected in the downtown area, since the proposed project generally conforms to the Strategic Plan (see Impact LU-1) and future buildout of the Kaiser campus in combination with other foreseeable development in the vicinity would be expected to conform to the Downtown Area Plan when it is adopted in 2003.
Because the proposed project is consistent with the *Strategic General Plan* and will be required to be consistent with the *Downtown Area Plan*, Kaiser’s development would not be expected to create nor contribute to significant cumulative land use impacts.
3.3 VISUAL QUALITY

Introduction

This visual quality section documents the existing visual characteristics and community character surrounding the Kaiser Permanente Redwood City Medical Center. The analysis considers the proposed project’s effect on community character, its consistency with the City’s adopted visual and urban design policies, and its functional and visual relationship to the City’s Downtown and scenic views and resources.

Community Character. Character is defined here in terms of development patterns of the built environment (i.e., the appearance and function of the downtown entrances/gateway parcels, and the general location, orientation, massing, height, and scale of buildings in the vicinity); the architectural style, appearance, and lot coverage of adjacent parcels and structures; the streetscape, landscaping, building façades and setbacks along principal travel and pedestrian corridors in the project vicinity; and views of natural settings or physical landmarks. Changes to components of the visual setting of the Medical Center that result from the proposed project are evaluated qualitatively in this section.

Consistency with City Plans/Policies. The conformance of the project with Redwood City’s urban design goals and policies is evaluated in this section through consistency analysis with the City’s General Plan Urban Design and Visual Policies, Redevelopment Plan for Redevelopment Project #2, and the draft Downtown Area Plan, and draft Kaiser Master Plan Urban Design Guidelines. ¹

Medical Center’s Relationship to Downtown/Downtown Image. Chief among the City’s goals is the importance of creating a positive relationship between the Master Plan and the City’s downtown retail core. For example, the Medical Center development of downtown gateway parcels (located on Main Street) should foster a positive City image and help to orient/invite pedestrians/autos to the downtown. Downtown building orientation and strong building design and pedestrian connections/linkages to the downtown are recommended. Building massing, height, scale and architectural detailing should reflect a positive, pedestrian-friendly image within the urban context of the larger downtown district. This section uses computer-generated photomontages to illustrate the visual effect of the proposed Medical Center at the gateway parcels.

¹ The draft Kaiser Master Plan Urban Design Guidelines (Appendix C) have been developed for incorporation into a Precise Plan for the Kaiser Redwood City Medical Center campus. The Precise Plan will be adopted, in whole or in part, at the time of certification (or shortly thereafter) of the Master Plan Final EIR. The Precise Plan will be used to guide future growth and development of the Medical Center’s Downtown context and economic vitality potential; building orientation and pedestrian circulation; downtown gateways; Redwood Creek enhancement; circulation, parking and emergency vehicle access; and architectural character and image.
Scenic Views/Resources. As noted in the Initial Study (see Appendix B), there are no scenic vistas that include the Medical Center site as a major part of the view. The project would also not result in substantial obstruction or impairment of views from an identified scenic roadway corridor or other publicly accessible location and does not include any scenic resources, such as rock outcroppings, ridgelines or other topographic forms, that could be affected by proposed development. To address adverse impacts from new sources of light and glare, the Initial Study specifies appropriate mitigation measures to reduce impacts to a less-than-significant level. Therefore, these topics are not discussed further in this EIR section.

Setting

An area’s visual quality is based on the physical appearance and characteristics of the built environment, the proximity and balance of man-made structures with open space or landscaping, and views of public open space or of more distant landscape features such as hills, the Bay or built landmarks, such as bridges. These elements help define a sense of place and a physical orientation in a larger visual setting.

Redwood City, incorporated as a city in 1867, is one of the oldest settlements on the San Francisco Peninsula. The urban setting of Redwood City is shaped by its natural features including Redwood Creek, the foothills, and the San Francisco Bay. The City’s downtown area is characterized by street-oriented retail shops, offices, and the historic San Mateo County Courthouse, distinctive because of its dome constructed in the early 1900s. Due to its central location and height, the Courthouse dome is visible from several locations approaching the downtown area and often serves as a point of orientation. Several other historic structures and landmarks are visible along the downtown streets. Neighborhood parks and streetscape elements within the downtown area also contribute to creating a pedestrian-friendly environment.

Development Pattern

Much of the physical development pattern for Downtown Redwood City is rooted in the City’s history as a point of shipment for lumber to San Francisco during the Gold Rush. Lumber was transported from Santa Cruz to San Francisco via Redwood Creek. Main Street, which is located parallel to the creek, established the City’s downtown street layout. The proposed project site is located within the downtown sub-district known as the “Veterans Corridor.” Development in this area is generally larger scale than other parts of downtown and consists of a series of freestanding buildings and a strip of connected retail stores, surrounded by large surface parking lots.

Architectural characteristics vary within Redwood City and include both contemporary and traditional styles popular in the Bay Region. Architectural characteristics featured in the area include Gothic revival, Italianate, American colonial residences, Queen Ann “Victorian,” Mission revival, California Bungalow, Monterey revival, and other Bay Region styles. Although many different architectural styles exist within the project vicinity, modernist styles are most prevalent in the project area.
The Medical Center is surrounded by three distinctive development styles: low-rise shopping centers to the north; dense, multi-story development to the southeast, east, and west; and large-scale office buildings to the southwest. Across Veterans Boulevard to the north, development is predominantly dense retail including fast food and shopping centers (see Figure 3.3-1A), combined with some light industrial structures to the northeast. Buildings along Veterans Boulevard include a series of low-rise shopping centers with surface parking lots set back approximately 25 to 30 feet from the curb. Development along this street is dense and parking lots include small street trees and bushes.

Several multi-story residential apartments (see Figure 3.3-1B), a six-story convalescent home, auto parts and retail stores, and motels are located to the east and west of the project site. These buildings are mostly concrete with regularly spaced windows. The buildings are located fairly close to one another forming fairly dense blocks immediately surrounding the project area, and are often directly adjacent to the curb. Parking is located in surface lots adjacent to the buildings. A few scattered, larger trees line Marshall, Maple, and Main Streets surrounding these buildings.

To the southwest of the project site, four-story concrete office buildings with opaque windows front directly onto the curb (see Figure 3.3-2A). These buildings are massive and located close to one another with medium size trees lining Marshall Street. Limited parking is located along the street in front of the buildings. The major Downtown thoroughfares are located further to the south of the project area and include historic buildings. The larger project vicinity, beyond the immediate retail and residential buildings, is characterized by industrial buildings. The main Kaiser Hospital building, at approximately 100 feet in height, is the tallest building in the general project vicinity.

**Gateways, Corridors, and Project Site Views**

The visual impression of a neighborhood, district, or community is derived in two ways: 1) by views observed from the major travel corridors along and through the area, and 2) by the impressions/experience one has at the pedestrian-level while walking along neighborhood streets. Views provide a sense of orientation for those traveling/walking through an area. This section of the visual setting describes the character of the streets in the project vicinity in terms of use, vegetation, and views of the project site when applicable.

**Gateways.** There are two types of gateways defined by the City’s draft *Downtown Area Plan*, as described below.

**Primary Gateways.** The Medical Center campus lies to the northeast of the downtown core of Redwood City. The City’s draft *Downtown Area Plan* identifies four major gateways to the downtown at Jefferson Street and Veterans Boulevard, El Camino Real and Broadway, El Camino Real and Main Street, and Woodside Expressway and Broadway. None of the four major gateway intersections border the Medical Center campus.

**Secondary Gateways.** The draft *Downtown Area Plan* also identifies Main Street and Veterans Boulevard as a secondary gateway that provides a sense of entry into downtown. The two Main Street gateway parcels of the Kaiser Medical Center campus (on either side of Main Street) are strategic sites.
Slipsheet for Figure 3.3-1A & 3.3-1B
Slipsheet for Figure 3.3-2A & 3.3-2B
because they signal entry into the downtown, both visually and functionally. Special land uses and design features can help convey the importance of these downtown gateway parcels. The Medical Center’s Maple Street and Veterans Boulevard parcels also provide access to the downtown and provide an opportunity to reflect a positive downtown/city image.

**Travel Corridors.** Travel corridors are travel ways/walkways that offer views of the project site and help convey the character and visual setting of the project vicinity.

*Veterans Boulevard.* Veterans Boulevard is a major arterial road within the project vicinity. This major east-west thoroughfare defines the northerly edge of the Medical Center and is characterized by auto-oriented commercial and professional offices with a fast-paced, high intensity, commercial character. Six lanes run along Veterans Boulevard in the vicinity of the project site, divided by a small island of street trees in front of the main Hospital building. A continuous median strip runs along the middle of Veterans Boulevard with scattered trees located intermittently along the median. Mervyn’s Plaza, a one-story shopping center, is located directly across from the Medical Center. The 100-foot tall main Hospital building is highly visible from Veterans Boulevard.

The existing Medical Center can be seen traveling east and intermittently when traveling west on Veterans Boulevard, between the street trees and landscaping. The existing campus is not significantly visible from vehicles approaching the site from north of the Main Street and Veterans Boulevard intersection, but is visible at the pedestrian level. Looking east on Veterans Boulevard, the view does not include the coastal mountains. The view includes trees and streetlights and the road eventually curves further north. Looking west on Veterans Boulevard (see Figure 3.3-2B), the coastal mountains are partially visible in the distance, but are blocked on north and south sides of the street by trees and buildings.

*Main Street.* Main Street is a two-lane, pedestrian-oriented street that runs in a north-south direction and serves as a direct gateway to the City’s downtown retail core. Main Street is characterized by significant historic structures in the downtown vicinity and by residential and commercial development in the project site vicinity. Two Kaiser campus surface parking lots are on either side of Main Street, just south of Veterans Boulevard.

Southward views along Main Street are of the hills in the distance beyond downtown Redwood City. Views to the north include the shopping center and some larger structures and trees. The existing Medical Center can be seen when traveling/walking along Main Street north of Marshall Street.

*Marshall Street.* Marshall Street, which also lies close to the Downtown District and borders the southerly edge of the Medical Center, is a two-lane street in the project vicinity. This street runs east-west through the downtown area and is characterized by residential and medical buildings with street trees. The main Hospital building and several parking garages are highly visible from Marshall Street, although site landscaping helps to screen the buildings.
Views to the west along Marshall Street do not include the surrounding hills in the distance, because downtown buildings screen the view. Views to the east include apartment buildings. The main Hospital building is also visible along Marshall Street between Main Street and Maple Street, with larger buildings further east and west of the immediate project vicinity screening this view.

Maple Street. Maple Street is also a two-lane street and downtown gateway entrance that runs north-south through the Medical Center. Maple Street is characterized by residential and office developments in the project vicinity along with the medical buildings located on the campus. Views along Maple Street facing south mostly contain downtown buildings with little view of the hills. Looking north on Maple Street, views include trees and shopping center buildings beyond Veterans Boulevard.

Walnut Street. Walnut Street is also a two-lane road that runs north-south through the Medical Center from Veterans Boulevard to Marshall Street. Walnut Street provides a vehicular entrance into the Medical Center and is characterized by medical and office development. As part of the proposed project, this street would be narrowed between Veterans Boulevard and Bradford Street. The City also intends to eventually convert Walnut Street to a two-way, two-lane street from Marshall to Broadway, in order to provide a more direct and improved way to travel to the Downtown core.

Kaiser Redwood City Medical Center

Existing On-Campus Facilities. The Medical Center is currently composed of buildings that vary in character and height. The existing campus layout is shown in Figure 2-2 in Section 2, Project Description. The campus contains two massive structures including the 100-foot-tall Hospital and the eight-story Parking Structure A located at Maple Street and Veterans Boulevard. Besides these two structures, only one other building on campus is four stories tall (the MRI structure); all of the other structures are one to two stories. Other structures on campus have a temporary appearance such as the Aspen, QA/UR building, Controllers Office, and several (occupied and unoccupied) construction trailers. Building styles also vary, from grey, one- and two-story concrete block buildings with an institutional style containing the Kaiser logo, to buildings that are made of wood or stucco. Overall, the buildings are scattered throughout various parts of the campus in a fragmented pattern. There is little uniformity among the different building architectural styles or characteristics of the campus.

Main Hospital. This seven-story concrete structure is located along the northern side of the Medical Campus and is set back in the campus interior, off Veterans Boulevard. Opaque windows and vegetation filter light in the building’s interior and help maintain privacy. The main Hospital building fronts Veterans Boulevard and is segmented by a vertical tower in the center, giving the building a vertical character that differs from the rest of the buildings on the campus, as seen in Figure 3.3-3A. This structure is 100 feet in height, making it the tallest and most visually prominent structure in the project vicinity.

Cypress Building. This two-story medical clinic, illustrated in Figure 3.3-3B, fronts Veterans Boulevard at the northern edge of the Medical Center. The building is concrete and is characterized by the typical medical institutional style of the campus. Street trees line the front of the building and
Slipsheet for Figure 3.3-3A & 3.3-3B

Will the clarity of these photos improve in the Draft EIR? (YES) They are a little dark.
screen it from view from Veterans Boulevard. A stone two- to three-foot-high wall fronts the side of the building that faces Maple Street.

**Laurel Building and adjacent Service Building.** Both buildings are small single-story structures that are mostly screened from Marshall Street by trees. The structures are both concrete and box-shaped with windows that are not highly visible.

**Oak Building.** A one-story medical clinic, the Oak Building (illustrated in Figure 3.3-4A), is located on Maple Street directly south of the Cypress Building. The building is cement with smooth, thick, round decorative columns located on the side.

**Aspen Building.** This building is a temporary, modular clinic including administrative offices and maintenance trailers located west of Marshall Court. The building is a one-story wood structure with an attached pharmacy.

**Maple Building.** This single-story building is located on the northeastern corner of Maple and Marshall Streets. The building is characterized by rock face, long ribbon windows, and a red roof, giving the appearance of a single-family home. As a result, the building differs from the majority of the other buildings on the campus that have a more institutional feel.

**Willow Building and the QA/UR.** The Willow Building is a single-story concrete block administrative office. The QA/UR Building is a single-story temporary trailer building. Both buildings are located off Marshall Street at the eastern border of the campus and are small, box-shaped institutional-style structures.

**Walnut Building.** This building is a two-story medical clinic located on the southwest corner of the intersection of Walnut and Bradford Streets. The building is an institutional-style, concrete structure screened by trees along Walnut Street.

**MRI Building.** This building is a four-story, concrete structure located to the west of the main hospital building off of Walnut Street. The building has the institutional character that is typical of most of the buildings on the Medical Center; however, trees located in the parking lot soften its appearance.

**Poplar Building.** This building is a single-story, concrete-block administrative office located on Marshall Street just east of Marshall Court. The building is largely screened from view by trees along Marshall Street.

**Magnolia Building.** This building is a single-story, concrete block administrative office located on Marshall Street just east of the Poplar Building at the corner of Maple and Marshall Streets. The building is also largely screened from view along Marshall Street by trees.

**Parking Structure ‘A’.** An eight-level parking structure forms the northeastern corner of the Medical Center at Veterans Boulevard and Maple Street. The building is made of smooth concrete without windows, but includes open air spaces between parking levels.
Slipsheet for Figure 3.3-4A & 3.3-4B
Off-Campus Facilities. Off-campus Kaiser buildings in Redwood City reflect either the institutional style buildings of the campus or the surrounding non-medical office buildings in the project area.

1400 Veterans. This four-story building, as illustrated in Figure 3.3-4B, is largely made of glass and concrete and fronts Veterans Boulevard just northeast of the Medical Center. This clinical/medical office building is set back from the street by a surface parking lot. The north-facing building façade is predominantly windows with some shrub and tree landscaping in front. The amount of windows and the more modern variation in architectural style of the building slightly diverges from the institutional character of the rest of the Medical Center buildings.

Birch Building. This building, located off-campus at the southeastern corner of the intersection of Walnut and Marshall Streets near the Medical Center, is a two-story building of the typical medical institutional style.

Broadway Hearing Aid Center. This building is a small, one-story white brick building located at the corner of Maple Street and Broadway and is not immediately adjacent to the Medical Center. The building is part of a small strip commercial shopping center.

Applicable Plans and Regulations

Several City policy documents and plans contain visual and urban design policies that are relevant to the Kaiser project site. Applicable documents include the General Plan Urban Design and Visual Policies and the Redevelopment Plan for Redevelopment Project #2. Relevant policies have been abstracted and are presented later in Tables 3.3-1 and 3.3-2, under “Impacts and Mitigation Measures.”

The Redwood City Downtown Area Plan is currently in draft form, but is anticipated to be adopted by early to mid-2003. Therefore, this EIR also includes a discussion of the project’s consistency with this policy document.

The draft Kaiser Master Plan Urban Design Guidelines (Appendix C) have also been developed and will be adopted as part of a Precise Plan by the City of Redwood City in whole or in part at the time of Final EIR certification or shortly thereafter. The Kaiser Master Plan Urban Design Guidelines include recommendations for:

- building design and landscaping;
- gateway parcels;
- streets and street frontages along Main Street, Marshall Street, Maple Street, Walnut Street and Veterans Boulevard;
- the development of MOB 1;
• open space including the Central Open Space, pedestrian ways, and supporting open spaces; and
• signage and wayfinding.

Although the details of building design and layout for the Kaiser Medical Center are not available at this stage in the planning process, building materials, façades, architectural treatment, and other programs identified in the *Kaiser Master Plan Urban Design Guidelines* would be incorporated into each phase of project development and reviewed by the City prior to construction.

**Impacts and Mitigation Measures**

**Significance Criteria**

Potential impacts resulting from a change in visual character are partially subjective. To some, any development and change in the existing setting, regardless of the design, is considered significantly adverse; others may consider any development to be beneficial. This EIR identifies significance criteria based on CEQA and general urban design principles. According to the CEQA Guidelines and the Environmental Checklist Form suggested by the CEQA Guidelines, significant visual impacts would arise if the proposed project:

• substantially degrades the existing visual character or quality of the site and its surroundings; or
• conflicts 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.

**Environmental Analysis**

As described in Section 3.1, for each impact, a level of significance is determined and is reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant effects to a less-than-significant level, the impacts are classified as “significant unavoidable effects (SU).” For this section, VQ refers to Visual Quality.

The Higher Occupancy Scenario described in Section 2 would result in the same increase of GSF as the proposed project, and would therefore represent the same change in mass and scale as the proposed project. In addition, the Higher Occupancy Scenario would result in the same campus configuration and project phasing as the proposed project. Therefore, effects on visual character, corridors and gateways, and visual and urban design policies would be the same under the Higher Occupancy Scenario as anticipated with the proposed project. As a result, visual quality impacts would be similar to those under the proposed project.
VQ-1. **Building Mass and Scale** - Under the proposed project and the Higher Occupancy Scenario, the Master Plan (if developed as proposed) would result in an increase in mass and scale of the Medical Center, but the intensification of development would not have an adverse visual impact on the surrounding area because of the existing pattern, mass, and scale of nearby development. (LTS)

As mentioned in the setting, the Medical Center is surrounded by three distinctive development styles. Across Veterans Boulevard to the north, buildings are characterized by multiple single-story shopping centers set back approximately 25-30 feet from the curb. This area is distinctively different from the Medical Center because development is typically single story in height and surrounded by large expanses of parking. The shops also have colorful signage and similar architectural styles, typical of a mall or a shopping center.

Structures located to the southeast, east, and west of the Medical Center include multi-story apartment complexes made of concrete with regularly spaced windows. These buildings are large scale and tend to be located close to one another. Continuing east from the project site beyond the multi-story apartment buildings, the area becomes more industrial. Buildings to the west as well as to the southeast also include residential multi-story buildings, but tend to also incorporate buildings of a more commercial nature, such as delis, repair shops, and offices. The Medical Center is located directly adjacent to the residential apartment buildings east of the campus. Buildings to the southeast and west also vary in style, but in terms of mass and scale, they are visually similar to the Medical Center.

Large office buildings are located to the southwest of the Medical Center. These buildings are four-story, massive structures. Buildings increasing in mass extend further southwest into the main thoroughfare of Downtown Redwood City. Currently, the western portion of the Medical Center campus provides a visual contrast to these large-scale structures.

The proposed development under the Master Plan would increase the mass and scale of buildings on campus. Parking structures would range from four to eight levels and the main Hospital would become larger (from 203,955 GSF to 440,000 GSF) and taller (from 100 feet to 160 feet, or from seven to ten stories). Other clinical buildings would be up to 5 stories tall. Buildings, including parking structures, would be more massive with a net increase of 1,371,250 GSF (from 620,150 GSF to 1,991,400 GSF). In general, development of the Master Plan would triple the square footage of the campus, making the Medical Center development more dense. Structures would also average four and a half stories in height, which is twice as tall as the majority of the existing medical facilities.

Although the mass and scale of development on campus would be altered, the campus would not be incompatible with the development pattern, mass, and scale of the surrounding area. Surrounding development to the east, west and south are currently more massive than the existing Medical Center. Proposed development would be more comparable in size to the four-story office buildings located to the southwest, multi-story apartment buildings located to the east and west, and commercial buildings located to the southeast. Development to the north
would remain considerably lower in height than the proposed Medical Center and appears as a conglomeration of multiple single-story retail stores, but the area is separated from the Medical Center by six lanes of traffic across Veterans Boulevard and is set back from the curb. For this reason, changes in the building mass and scale of the proposed Medical Center would not have an adverse visual impact on buildings across Veterans Boulevard.

Development of the Medical Center would not visually conflict with development in downtown, since the downtown area is separated from the campus by tall and fairly massive buildings. Therefore, as proposed, development of the Master Plan would not visually conflict with the scale and mass of development surrounding the project site.

**VQ-2. Visual Character** - Under the proposed project and the Higher Occupancy Scenario, the Master Plan (if developed as proposed) would substantially alter the visual character of the Medical Center, but the effect on the overall visual setting of the campus could be positive, because it would make the campus easier to navigate and more visually cohesive. (LTS)

The current Medical Center campus building style, as described in the setting section, varies throughout the campus. Structures are scattered throughout the campus forming a fragmented and visually incoherent appearance. Buildings are not uniform in size or style. In addition, wayfinding for pedestrians and vehicles is difficult. Signage exists but is difficult to find and directions are not easily identifiable.

The proposed Master Plan would improve the visual cohesiveness and linkages on campus by defining a consistent architectural vocabulary for the buildings, establishing strong building edges and distinctive pedestrian pathways, and using landscaping to differentiate parts of the campus. The Master Plan recommends buildings that are similar to one another in size and scale as well as lighting, paving, and other features that would improve wayfinding between buildings. The Master Plan also includes pedestrian walkways to adjacent parking structures and would establish more pronounced entryways into the campus.

Therefore, the project would result in a substantial change in the character of the campus. However, this change would not introduce significant adverse visual effects; rather the Master Plan should make the campus easier to navigate and more visually cohesive.

**VQ-3. Views from Corridors & Gateways** - Under the proposed project and the Higher Occupancy Scenario, the Master Plan (if developed as proposed) would alter views from major and minor travel corridors and gateways within and adjacent to the project area, but would not have a significant adverse visual impact on travelways or views. (LTS)

Views in the project area are generally diverse. There are no scenic vistas or scenic resources located in the project area, but the mountains of the coastal ranges can be seen from some locations on the site and these views are considered scenic. Looking south on Main Street from Veterans Boulevard, the mountains of the coastal ranges are visible in the distance, but they are mostly screened by buildings such as the Bay Area Bank. Proposed development
under the Master Plan would not permanently alter these views. Views to the west along Marshall Street do not include the distant hills, because downtown buildings obstruct views of the hills.

The existing Medical Center can be seen traveling east and intermittently when traveling west on Veterans Boulevard and from Main Street to the north of Marshall Street (see Figure 3.3-5A). The main Hospital building is the most visually prominent structure in the project vicinity. The project site can be seen intermittently from Veterans Boulevard between the street trees and landscaping.

The proposed replacement Hospital would remain the most dominant visual structure in the project area. Although views of the Hospital would be partially blocked by the six-level parking structure proposed for development on the Main Street gateway parcel, the Hospital would still be visible traveling east and seen intermittently traveling west on Veterans Boulevard, and the surrounding views and the visibility of the Medical Center along Veterans Boulevard would not be adversely affected (see Figure 3.3-5B). As shown in the visual simulation in Figure 3.3-5B, looking southeast from Veterans Boulevard at Main Street, the proposed project would not substantially alter views of the gateway located at this intersection. If the proposed project were implemented, the campus would become more visually prominent. However, through the use of special landscaping and paving treatments, the gateway would function visually to signal entry into the downtown, although a parking structure is not recommended for this site per Kaiser Master Plan Urban Design Guidelines Policy #24. Overall, visual impacts to the gateway at the intersection of Veterans Boulevard and Main Street would be considered less than significant.

Street trees located along the northern frontage of Veterans Boulevard would help to mask the size and mass of campus structures, especially for pedestrians. Development of the proposed Medical Center along Veterans Boulevard, which includes the main Hospital, would have a minimal visual effect, on the northern facade of the Medical Center. The increase in size of the main Hospital would alter views, but would not substantially degrade the quality of views in the area or along the streetscape.

None of the proposed developments for the Medical Center would be located to the north of the existing campus. Development of the proposed project would have little visual effect, if any, on views from Main Street or Marshall Street because the Medical Center would remain visible and views of the surrounding hills would not be altered along these corridors.

Historic downtown Redwood City is not visible from the project site and the Medical Center is also blocked from view in the downtown retail core along Main Street by large buildings. The Master Plan would in general strengthen the secondary gateway to downtown by calling for special landscaping and paving to help define the entrance to the downtown. The Urban Design Guidelines (see Appendix C) recommend the development of complementary signature buildings, designed to create a sense of entry into the downtown along the east and west sides
of the Medical Center’s Main Street parcels. The Guidelines, however, do not recommend development of the gateway sites with surface or structured parking (Policy #24).

The proposed Master Plan would also include more landscaping along travelways and would be more pedestrian-friendly with added signage and pathways between buildings. Views of the hills would not be substantially degraded by the project. The main Hospital building would remain prominent and the campus would be enhanced by vegetation and designated open space. Views would be altered by the project but would not be adversely changed.

VQ-4. Consistency with City’s Visual/Urban Design Plans and Policies - Under the proposed project and the Higher Occupancy Scenario, the Master Plan (if developed as proposed) would be generally consistent with the visual/urban design and economic development policies of Redwood City’s Strategic General Plan and Redevelopment Plan. While aspects of the proposed Master Plan are not fully consistent with the draft Kaiser Master Plan Urban Design Guidelines for the Kaiser Medical Center Master Plan, the City will require that Kaiser refine its designs prior to construction to ensure consistency these plans and guidelines. (LTS)

Strategic General Plan and Redevelopment Plan, Project #2. If developed as proposed, the Master Plan would be generally consistent with the visual and urban design policies of the Strategic General Plan and the Redevelopment Plan for Redevelopment Project #2. Relevant policies from these planning documents are presented in Table 3.3-1 with an assessment of the project’s features relative to the policies. It is noted, however, that the assessment is based on a conceptual Master Plan. The City will evaluate each phase and project of development as they are submitted to ensure compliance with the visual, urban design, and economic development policies of these planning documents.

Draft Downtown Area Plan and Kaiser Master Plan Urban Design Guidelines. Other important policy documents that will influence development in the Downtown District and at gateway locations are discussed below, in terms of how well the proposed Master Plan conforms to them.

Draft Downtown Area Plan. Although the Downtown Area Plan has not yet been adopted, it is anticipated to be adopted in 2003. As such, a discussion of the consistency of the Master Plan with draft Downtown Area Plan policies has also been included for discussion since it will influence the City’s decisions and reviews of future development plans for the Kaiser Medical Center. While the Master Plan does not provide design details at this stage, a discussion below highlights the areas that the proposed Master Plan could conflict with draft Downtown Area Plan policies. The City will review the Master Plan gateway treatment, building location, orientation and architectural design details for consistency with the Downtown Area Plan prior to issuance of various building permits.

With respect to the Downtown Area Plan, the proposed Master Plan does not explicitly address in detail how the future development would celebrate Redwood Creek through interpretive design (Policy 4.11), take advantage of views of landmarks and natural resources (Policy
Insert Figure 3.3-5 A (SIDE 1) COLOR PHOTO, MUST start on odd page, allow 2 page (no text to be printed on back of this figure).
Insert Figure 3.3-5 A (SIDE 2) COLOR PHOTO.
Insert Figure 3.3-5 B (SIDE 1) COLOR PHOTO, MUST start on odd page, allow 2 page (no text to be printed on back of this figure).
Insert Figure 3.3-5 B (SIDE 2) COLOR PHOTO, MUST start on odd page, allow 2 page (no text to be printed on back of this figure).
Table 3.3-1
Consistency of Proposed Project with Applicable Visual Quality/Urban Design Plans, Policies, and Guidelines

<table>
<thead>
<tr>
<th>Policy</th>
<th>Consistent</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Redwood City Strategic General Plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Policy L-6.</strong> The City should promote the revitalization, upgrading, and beautification of the Downtown, other shopping centers, and existing strip commercial areas.</td>
<td>Expected</td>
<td>The project, which will double the size of the Kaiser Medical Campus over a 22-year period, proposes to replace its existing inpatient and outpatient medical facilities in five phases. The Kaiser Campus, particularly as it expands, is an important market for the downtown merchants. Kaiser employees and members could benefit from a closer interaction with the Downtown District. Thoughtful siting and orientation of new campus buildings as well as the incorporation of stronger pedestrian linkages from the Medical Center to the Downtown District can help to foster a closer relationship to the downtown and promote its revitalization. High quality building design and landscape improvements of the Medical Center’s Downtown gateway parcels can also help to create a positive downtown image. In addition, development of people-occupied building spaces that frame downtown streets as public spaces can foster greater pedestrian activity in the downtown. The Master Plan is conceptual and details of building design are not available at this stage in the planning process. The City will review gateway treatment, building orientation and design details prior to construction of structures proposed by the Master Plan, to ensure consistency with the <strong>General Plan</strong> and the <strong>Kaiser Master Plan Urban Design Guidelines</strong> for the Master Plan prior to construction.</td>
</tr>
<tr>
<td><strong>Policy O-7.</strong> The City should preserve and enhance small parcels of open space in developed areas, wherever practical, especially in those neighborhoods with the greatest park deficiency.</td>
<td>Yes</td>
<td>The proposed Master Plan includes two plaza areas: a 37,000-square-foot Main Central Plaza between the Hospital and MOBs 2 and 3; and a 30,200-square-foot plaza adjacent to the Veterans Boulevard and between the Hospital and Parking Structure D (proposed hospital expansion area). Over time, these plazas would consist of pedestrian walkways, benches, trellises, deciduous shade trees, and a mixture of shrubs and ground covers.</td>
</tr>
</tbody>
</table>

(Continued)
Table 3.3-1 (Continued)
Consistency of Proposed Project with Applicable Visual Quality/Urban Design Plans, Policies, and Guidelines

<table>
<thead>
<tr>
<th>Policy</th>
<th>Consistent</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy O-8.</strong> Encourage the preservation of heritage trees as defined in the tree preservation ordinance.</td>
<td>Not applicable</td>
<td>Per the Initial Study, the proposed project site does not include any heritage trees as defined by the tree preservation ordinance. The City, as a condition of project approval, will require Kaiser to replace many of the non-heritage campus trees that may be lost as a result of the proposed project.</td>
</tr>
<tr>
<td><strong>Policy C-7.</strong> The visual qualities of the community should be preserved and improved.</td>
<td>Yes</td>
<td>Based on the preceding assessment and recommended mitigation, the project would not result in significant impacts to scenic views, scenic resources, or the visual quality of the site. If the Medical Center is developed as proposed, it would also provide more continuity in scale and height on the campus, improving the overall visual quality of the site. The Master Plan as submitted is conceptual and details of building design are not available at this stage in the planning process. However, the City will review gateway treatment, orientation and design details at the time of more complete plan submittals to ensure consistency with the General Plan policies and the Kaiser Master Plan Urban Design Guidelines for the Master Plan prior to construction.</td>
</tr>
</tbody>
</table>

Redevelopment Plan for Redevelopment Project #2

Land devoted to public purposes may include all public rights-of-way, accessways, public grounds, parking, open spaces and any other public and quasi-public uses which will enhance the potential of the Project. (Section V.4(A)) (This policy only addresses ‘public’ spaces.)

Yes | If the Medical Center is developed as proposed it would be consistent with Section V.4(A) of the Redevelopment Plan, and would enhance public grounds through incorporation of public paving, perimeter street landscaping, lighting, signage, and improved public access to Redwood Creek. The Master Plan as submitted is conceptual and details of building design are not available at this stage in the planning process. However, the City will review gateway treatment, building location, orientation and design details to ensure consistency with the Redevelopment Plan policies and the Kaiser Master Plan Urban Design Guidelines for the Master Plan prior to construction. |

4.13), or form a defined edge with visual interest at the pedestrian level (Policies 4.34 and 4.35). While these design aspects are expected to come into much greater focus as future buildings/projects are submitted to the City, the absence of discussion in the Master Plan means that these items may be inconsistent with the draft Downtown Area Plan.

The draft Downtown Area Plan also contains specific design recommendations for appearance and function of the Veterans Boulevard and Main Street streetscapes because of their role as a secondary gateway to downtown (Policy 4.41). The proposed project supports many of the urban design considerations. The Master Plan, however, does not address the undergrounding of utilities and major utility facilities that could have the beneficial effect of strengthening streetscapes and reinforcing the building edge along the sidewalks. For example, the storm drain pump station at the Veterans Boulevard/Maple Street intersection is housed in a large, boxy structure with appurtenant mechanical equipment visible. However, this pump station is not on Kaiser property nor is it part of the project. This street also contains overhead utility wires.

Kaiser Master Plan Urban Design Guidelines (Refer to Appendix C). The project could potentially be inconsistent with Policy 15 from the Kaiser Master Plan Urban Design Guidelines that specifies that parking structures should not exceed the height of occupied buildings. Six- and eight-level parking structures are proposed on Veterans Boulevard and Marshall Street and could be taller than adjacent four- and five-story medical office buildings at the Medical Center. A five-level parking structure is also proposed on Main Street adjacent to the proposed two-story Cancer Care Center (see Figure 2-7A).

The project could also conflict with Policy 18 from the Kaiser Master Plan Urban Design Guidelines that states that utilities should be undergrounded in conjunction with new construction wherever possible. Details of construction for utilities have not been specified in the Master Plan and could therefore potentially be inconsistent with this policy if they are built above ground; however, it is the intent of Kaiser to construct all utilities underground. In addition, the storm drain pump station, located at the Veterans Boulevard/Maple Street downtown gateway intersection on Redwood City property, provides services to properties in and around the Medical Center campus. If the City finds that a nexus can be established between the pump station and the Medical Center campus, Kaiser may be required to contribute their fair share towards visual improvements to this gateway intersection which may include one of the following options: undergrounding the entire pump station facility including overhead wires; undergrounding the overhead wires to the pump station and aesthetic improvements to the pump station facility; or only make aesthetic improvements to the pump station facility.

The project does not support Policy 24 from the Kaiser Master Plan Urban Design Guidelines that states that the parcel at Main Street and Veterans Boulevard should not be used for parking. The proposed project calls for a four-level Parking Structure B at this gateway location.
The project also could also be inconsistent with policies related to Redwood Creek included in both the *Kaiser Master Plan Urban Design Guidelines* and the *Downtown Area Plan*. Details of the Redwood Creek frontage are not available at this stage in the planning process and details of creek enhancement and connection to downtown have not been formulated. Therefore, the proposed project could potentially be inconsistent with envisioned improvements along the creek.

The project may also conflict with Policy 45 from the *Kaiser Master Plan Urban Design Guidelines* that states that a children’s play area should be incorporated in an accessible indoor and outdoor space. A children’s play area is not currently in the Master Plan, which could potentially result in conflict with the *Kaiser Master Plan Urban Design Guidelines*.

**VQ-5. Project Phasing** - Under the proposed project and the Higher Occupancy Scenario, the Master Plan (if developed as proposed) would be implemented in five phases between 2003 and 2025. As portions of the campus could be under construction for lengthy periods of time, parts of the site could be unsightly and create a potentially significant visual impact. (See Table 2-9 and Figures 2-7A through 2-7I.) (PS)

Since the project would be implemented in five phases over 22 years, between 2003 to 2025, various buildings on- and off-site would be demolished and constructed during different stages in the process. Phases I through V would include construction of the following buildings: MOB 1 during Phase I (2003); the Cancer Care Center Clinic Building (2004); Hospital and CUP, Parking Structure B, Parking Structure C with administrative building, and partial Main Plaza during Phase II (2009-2013); MOB 2 and the administrative building (west of Main) during Phase III (2010-2015); MOB 3, Parking Structure D, and the Main Plaza during Phase IV (2010-2020); and MOB 4 and Parking Structure E during Phase V (2011-2025).

As buildings are constructed and demolished, the campus would be further fragmented by partial development. As described in the setting section, the more modern style of the developed facilities could potentially be incompatible with existing temporary trailers currently located on the campus and with institutional and other varying architectural-style structures. A specific phase, for example Phase I of the Master Plan, would involve the development of the new, five-story, modern-style MOB 1 on the corner of Maple Street and Veterans Boulevard (2003). This new building would be 120,000 GSF, adjacent to Kaiser’s existing traditional-architectural style eight-level parking structure. In addition, Kaiser’s two-story concrete-block Cypress building would be maintained in its existing style until Phase IV, or roughly 2020, and would be located across Maple Street from the modern-architectural style building, MOB 1, to be constructed in 2003.

Phase II A through D (2004-2013) of the Master Plan would involve construction of the proposed Cancer Care Center (2004) on Main Street (east); and (2009-2013) demolition of the existing Central Utilities Plant (CUP), the existing Hospital, the MRI building, the Laurel and the Poplar buildings; and construction of the replacement Hospital, CUP, Parking Structure C with administrative building, Parking Structure B, an interim surface parking area and partial
open space area within the future Main Plaza, and an interim parking area between the Hospital and the Cypress building off Veterans Boulevard between 2004 and 2013. Demolition of the existing CUP would create an open lot area on Maple Street adjacent to the replacement Hospital. This area is designated for development as the Main Central Plaza for open space amenities, but the plaza would not be completed until Phase IV between 2015 to 2020. In the meantime, this area designated for a future Main Plaza would be partially used as a parking lot and partially as open green space, but would be considered visually altered and degraded by the changes. The lot between the replacement Hospital and the Cypress building would also be vacant and used for surface parking, and would similarly be altered and degraded by these changes.

Phasing would lead to multiple years between construction of various facilities and potentially vacant lots or open areas between construction on parcels such as the Main Plaza described above. The Phasing Plans (see Figures 2-7A through 2-7I) in Section 2, Project Description, depict the changes to individual parcels in more detail. Based on the possible fragmentation and inconsistency between campus buildings described above, the project could potentially create an adverse effect on the visual quality of the site. The Medical Center is located within an area that is currently developed and Kaiser would be responsible for maintenance, landscaping, and upkeep of the facilities in the interim. Some parts of the campus may also serve alternate purposes in the short-term, such as parking, and construction staging areas with the intention of future development. However, the project could result in a change to the visual character of the site surroundings through segmented construction that could last for 22 years. Therefore, impacts to the existing visual quality of the site would be potentially significant.

Mitigation Measure. The following measures would reduce phased construction impacts on visual quality to less than significant. (LTS)

VQ-5.1 Implement Construction Demolition Phasing Plan to Reduce Visual Quality Degradation by Phased Construction. Prior to the start of construction, the project sponsor shall prepare and submit to the City a construction staging and demolition plan that addresses visual, noise, dust, odor, parking, and traffic impacts during the various stages of development. With respect to visual considerations, the project sponsor shall agree to make visual improvements to construction zones within a given development phase and between phases if the zone is not scheduled for construction activity or will remain unused for a period greater than six months. Construction zones subject to this mitigation measure shall be defined by the Community Development Director, and shall consider the size of the area, the nature of the construction activity, and the proximity or visibility of the area to public vantage points or residential uses. The visual improvements shall be implemented by the project contractor(s) and must be approved by the Community Development Director. The intent of these improvements is to aesthetically improve portions of the campus that would remain unimproved for an extended period and screen the
construction zone from view by passerbys along the public streets and sidewalks, or
to make the zone usable for Kaiser employees, patients, and the public. Possible
improvements include, but are not limited to, the following (if timelines other than
six months are specified below, the shorter of six months or the time specified below
shall apply):

a. The project sponsor shall clear a construction zone of construction debris and
   remove construction equipment whenever construction is not anticipated for at
   least two weeks.

b. If a site is a construction zone, but no construction activities are scheduled for
   more than one month, the project sponsor shall be responsible for regular
   garbage removal and watering of any existing landscaping.

c. The project sponsor shall remove or visually treat fencing around construction
   zones that front onto a public street, an on-campus plaza, or Redwood Creek, in
   a manner deemed acceptable by the Community Development Director, in order
   to promote safety, connectivity through the site, and pedestrian friendliness.

d. If a site is not in use as a construction zone for more than six months due to
demolition or construction of a structure, the project sponsor shall improve the
site with landscaping (e.g., trees, shrubs and groundcover), passive
recreation/open space facilities (e.g., benches, picnic tables), decorative fencing
and/or seating walls, and pedestrian and bicycle routes that connect to adjacent
open spaces and pedestrian/bicycle networks as defined by and to the satisfaction
of the Community Development Director.
3.4 TRANSPORTATION

Introduction

This section of the EIR analyzes transportation impacts resulting from the implementation of the proposed project. The information is based on current traffic movement surveys and computer models produced for this EIR by Fehr & Peers Associates, Incorporated, Transportation Consultants. Potential impacts to the roadway, bicycle, pedestrian, and parking systems are evaluated. Mitigation measures are suggested that would reduce or eliminate potential significant impacts of the project.

Setting

The project site and surrounding roadway network are shown on Figure 3.4-1. For the purpose of this report, US 101 is assumed to be oriented north-south. Veterans Boulevard, Bradford Street, and Marshall Street are all assumed to be oriented east-west.

Roadway Network

US 101 is a major north-south regional route on the west coast. It extends northward from Redwood City through San Francisco, Marin, and Sonoma Counties and continues into the states of Oregon and Washington. South of Redwood City, US 101 extends through San Jose and the California Central Coast into southern California. Near the project site, US 101 is generally an eight-lane freeway. South of Whipple Avenue and into Santa Clara County, one lane in each direction is restricted to high occupancy vehicles (carpools, van pools, buses, and motorcycles) during the commute hours. Access to the project site from US 101 would be accommodated via interchanges at Whipple Avenue and Woodside Road (State Route (SR) 84).

Woodside Road (SR 84) is a four- to six-lane arterial roadway between I-280 and US 101. West of I-280 to SR 1, Woodside Road becomes a two-lane rural highway. East of US 101, Woodside Road becomes Seaport Boulevard. The Woodside Road/Seaport Boulevard interchange with US 101 is a major access point for Redwood City and Woodside Road is the only major east-west high-capacity facility through the City. A grade-separated interchange is provided at El Camino Real.

El Camino Real (SR 82) is a four-lane arterial roadway and is one of the primary commercial corridors in the City. El Camino Real begins in Santa Clara County and extends north, through Redwood City, and into San Francisco. In Redwood City, El Camino Real includes an interchange with Woodside Road.
Insert Figure 3.4-1: Site Location
Veterans Boulevard is an east-west, six-lane, divided arterial roadway extending south from Whipple Avenue to Chestnut Street. Between Chestnut Street and Woodside Road, Veterans Boulevard becomes two-lanes. The northern and southern termini of this street are a southbound off-ramp and on-ramp to US 101, respectively. Veterans Boulevard provides direct access to the project site.

Whipple Avenue is a two-lane collector from Alameda de las Pulgas to El Camino Real and a four-lane arterial roadway from El Camino Real to US 101. East of US 101, Whipple Avenue turns to the south and becomes East Bayshore Road, a two-lane collector roadway. Whipple Avenue includes an at-grade crossing of the Caltrain railroad tracks just east of El Camino Real. Whipple Avenue also includes an interchange at US 101.

Main Street is a two-lane roadway beginning at Veteran Boulevard and terminating at El Camino Real.

Walnut Street is a mostly two-lane, east-west, local roadway beginning at Stambaugh Street and terminating east of Veterans Boulevard. For one block on either side of Veterans Boulevard, Walnut Street is four lanes. Walnut Street would also provide direct access to a portion of the project site.

Maple Street is a two-lane local roadway beginning at El Camino Real and extending eastward over US 101. Maple Street terminates east of its intersection with Blomquist Street.

Bradford Street is a local, two-lane, north-south roadway. Bradford Street begins at Arguello Street and extends south to Walnut Street where it terminates.

Marshall Street is a two-lane local roadway. It begins at Chestnut Street and extends northward to its terminus at Broadway.

Bicycle and Pedestrian Facilities

Bicycle facilities include bike paths, bike lanes, and bike routes. Bike paths are paved trails that are separated from roadways. Bike lanes are lanes on roadways designated for use by bicycles by striping, pavement legends, and signs. Bike routes are roadways that are designated for bicycle use with signs but do not necessarily include any additional pavement width. Pedestrian facilities consist of sidewalks, crosswalks, and pedestrian signals. A limited number of bicycle facilities are located near the project site. Bike lanes are provided on Main Street east of Veterans Boulevard, and a multi-use path is located east of US 101 in the Bair Island Refuge Area. Otherwise, bicycles share the roadway with automobiles.

Near the project site, sidewalks are provided on both sides of Veterans Boulevard from Chestnut Street to Whipple Avenue. There are sidewalks on both sides of Main Street, Bradford Street, Marshall Street, Marshall Court, Walnut Street, and Maple Street in the vicinity of the project site.
Transit Facilities

Transit service in San Mateo County is provided by San Mateo County Transit District (SamTrans). Commuter rail service (Caltrain) between San Jose and San Francisco is provided by the Peninsula Corridor Joint Powers Board. During peak commute periods, Caltrain provides extended service to Morgan Hill and Gilroy located in southern Santa Clara County. Kaiser also operates two shuttle systems to minimize vehicle trips. Each transit service is described below.

**SamTrans Service.** Route 270 provides direct access to the project site. Route 270 is a local bus route operating between the Redwood City Caltrain Station and Marsh Road via El Camino Real, Jefferson Avenue, Veterans Boulevard, Maple Street, Blomquist Street, and East Bayshore Road in Redwood City. Route 270 operates from 6:30 am until 7:00 pm on one-hour headways and travels in a clockwise direction in the morning and counterclockwise in the afternoon. Limited service is provided during commute periods only on Seaport Boulevard to the Seaport Plaza development area. Saturday service is provided between 9:30 am and 6:15 pm at 60-minute headways. There is no Sunday service. Existing stops on Veterans Boulevard are located mid-block between Walnut Street and Maple Street.

**Caltrain Service.** The closest Caltrain station is the Redwood City Caltrain Station, located approximately ¾ of a mile from the project site. Caltrain operates from 4:30 am until 1:30 am on 15- to 60-minute headways during the weekday. Weekend service has been suspended until May 2004 to allow for construction of improvements to the rail line. Although substitute bus service (Route RRX) is being provided, the closest stop is provided at the Caltrain station in Palo Alto.

**Shuttle Service.** Kaiser operates two shuttle services. One of the shuttles provides service between the Redwood City Caltrain Station and the Medical Center. The second shuttle provides service within the Medical Center. These services are described in greater detail below.

**Kaiser Permanente Medical Center/1400 Veterans Boulevard Shuttle.** This shuttle service operates Monday through Friday between the Caltrain station and the Medical Center. The morning route operates from 7:32 to 9:02 am on approximately 15-minute headways. The shuttle is “on-call” from 9:02 am until 3:45 pm. The evening route then operates from 3:52 pm to 5:17 pm on approximately 15-minute headways. The shuttle is then “on-call” from 6:00 pm until 10:00 pm.

**Aspen Building/1400 Veterans Boulevard Shuttle.** This shuttle is an intra-campus shuttle that operates Monday through Friday. The shuttle operates from 6:30 am to 8:55 am and from 3:00 pm to 5:30 pm on 15-minute headways. The shuttle is “on-call” between the hours of 9:00 am to 3:00 pm and 5:30 pm to 7:00 pm.

Study Intersections

Intersections, rather than midblock roadway segments, are almost always the critical capacity-controlling locations for urban and suburban roadway networks. Fourteen study intersections were selected with input from city staff as locations to include in the transportation analysis.
The study intersections identified by City staff for inclusion in this analysis include:

1. Walnut Street/Marshall Street  
2. Marshall Court/Marshall Street  
3. Maple Street/Marshall Street  
4. Chestnut Street/Marshall Street  
5. Main Street/Bradford Street  
6. Walnut Street/Bradford Street  
7. Whipple Avenue/Veterans Boulevard  
8. Jefferson Avenue/Veterans Boulevard  
9. Main Street/Veterans Boulevard  
10. Walnut Street/Veterans Boulevard  
11. Maple Street/Veterans Boulevard  
12. Hansen Way/Veterans Boulevard  
13. Chestnut Street/Veterans Boulevard  
14. Woodside Road/Veterans Boulevard

The locations of the 14 study intersections are shown on Figure 3.4-2. Figure 3.4-3 illustrates the existing lane configurations and associated traffic control devices (i.e., traffic signal or stop signs) at each study intersection.

**Existing Traffic Volumes**

The operations of the key intersections were analyzed under weekday morning (AM) and evening (PM) peak-hour traffic conditions. Peak conditions usually occur during the morning and evening commute periods between 7:00 and 9:00 am and 4:00 and 6:00 pm, respectively. Intersection operations were evaluated using the highest one-hour volume counted during each of these periods. Recent traffic counts were obtained at four of the study intersections from the *Marina Shores EIR* analysis conducted by Fehr & Peers Associates. These counts were supplemented with new counts in July 2002. Figure 3.4-4 presents the existing AM and PM peak-hour turning movement counts at the study intersections. The raw count data is available for review at the City’s Community Development Services Department.

**Intersection Analysis Methodologies**

The operations of roadway facilities are described with the term *level of service*. Level of service (LOS) is a qualitative description of traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, as the best operating conditions, to LOS F, as the worst operating conditions. LOS E represents “at capacity” operations. When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F. Redwood City has defined LOS D as the minimal acceptable operation for an intersection.

**Analysis of Signalized Intersections.** The operations of the signalized study intersections were calculated using the methodology described in Chapter 16 of the *2000 Highway Capacity Manual (HCM)* (Transportation Research Board). This methodology correlates the LOS to the average control delay experienced at the intersection in seconds per vehicle. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration. The average delay for the signalized intersections, as calculated using the TRAFFIX analysis software, is correlated to an LOS designation as summarized in Table 3.4-1.
Insert Figure 3.4-2: Study intersection locations
Insert Figure 3.4-3: Lane Configurations
Insert Figure 3.4-4: Existing Peak-Hour Volumes
Table 3.4-1  
Signalized Intersection Level of Service Definitions

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Description</th>
<th>Average Control Delay in Seconds/Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Operations with very low delay occurring with favorable progression and/or short cycle lengths.</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>B</td>
<td>Operations with low delay occurring with good progression and/or short cycle lengths.</td>
<td>&gt; 10 and &lt; 20</td>
</tr>
<tr>
<td>C</td>
<td>Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.</td>
<td>&gt; 20 and &lt; 35</td>
</tr>
<tr>
<td>D</td>
<td>Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.</td>
<td>&gt; 35 and &lt; 55</td>
</tr>
<tr>
<td>E</td>
<td>Operations with high delay volumes indicating poor progression, long cycle length, and high V/C ratios. Individual cycle failures are frequent occurrences.</td>
<td>&gt; 55 and &lt; 80</td>
</tr>
<tr>
<td>F</td>
<td>Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.</td>
<td>&gt; 80</td>
</tr>
</tbody>
</table>


Note: V/C = Volume to Capacity Ratio.

**Analysis of Unsignalized Intersections.** For unsignalized (four-way stop-controlled and side-street stop-controlled) intersections, the LOS calculations were conducted using the methodology contained in Chapter 17 of the *2000 Highway Capacity Manual*. The LOS rating is based on the average control delay expressed in seconds per vehicle. At two-way or side street stop-controlled intersections, level of service is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. At four-way stop-controlled intersections, LOS is based on the average delay experienced on all approaches. Table 3.4-2 summarizes the relationship between delay and LOS for unsignalized intersections.

**Existing Intersection Level of Service.** The existing lane configurations and the peak-hour turning movement volumes were used to calculate the LOS for the study intersections during the AM and PM peak hours. The results of the LOS analysis under existing conditions are presented in Table 3.4-3.
### Table 3.4-2
Unsignalized Intersection Level of Service Definitions

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Description</th>
<th>Average Control Delay in Seconds/Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Little or no delay.</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>B</td>
<td>Short traffic delays.</td>
<td>&gt; 10 and &lt; 15</td>
</tr>
<tr>
<td>C</td>
<td>Average traffic delays.</td>
<td>&gt; 15 and &lt; 25</td>
</tr>
<tr>
<td>D</td>
<td>Long traffic delays.</td>
<td>&gt; 25 and &lt; 35</td>
</tr>
<tr>
<td>E</td>
<td>Very long traffic delays.</td>
<td>&gt; 35 and &lt; 50</td>
</tr>
<tr>
<td>F</td>
<td>Extreme traffic delays with intersection capacity exceeded.</td>
<td>&gt; 50</td>
</tr>
</tbody>
</table>


### Table 3.4-3
Intersection Level of Service Summary – Existing Conditions

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Walnut Street/Marshall Street</td>
<td>Stop-Control</td>
<td>10.7 B</td>
<td>10.8 B</td>
</tr>
<tr>
<td>#2 Marshall Court/Marshall Street</td>
<td>Stop-Control</td>
<td>9.8 A</td>
<td>10.6 B</td>
</tr>
<tr>
<td>#3 Maple Street/Marshall Street</td>
<td>Stop-Control</td>
<td>9.1 A</td>
<td>10.1 B</td>
</tr>
<tr>
<td>#4 Chestnut Street/Marshall Street</td>
<td>Stop-Control</td>
<td>11.0 B</td>
<td>13.1 B</td>
</tr>
<tr>
<td>#5 Main Street/Bradford Street</td>
<td>Stop-Control</td>
<td>12.1 B</td>
<td>14.3 B</td>
</tr>
<tr>
<td>#6 Walnut Street/Bradford Street</td>
<td>Stop-Control</td>
<td>7.7 A</td>
<td>8.2 A</td>
</tr>
<tr>
<td>#7 Whipple Avenue/Veterans Boulevard</td>
<td>Traffic Signal</td>
<td>35.8 D</td>
<td>35.6 D</td>
</tr>
<tr>
<td>#8 Jefferson Avenue/Veterans Boulevard</td>
<td>Traffic Signal</td>
<td>15.1 B</td>
<td>26.4 C</td>
</tr>
<tr>
<td>#9 Main Street/Veterans Boulevard</td>
<td>Traffic Signal</td>
<td>18.1 B</td>
<td>30.2 C</td>
</tr>
<tr>
<td>#10 Walnut Street/Veterans Boulevard</td>
<td>Traffic Signal</td>
<td>21.1 C</td>
<td>33.2 C</td>
</tr>
<tr>
<td>#11 Maple Street/Veterans Boulevard</td>
<td>Traffic Signal</td>
<td>21.5 C</td>
<td>32.0 C</td>
</tr>
<tr>
<td>#12 Hansen Way/Veterans Boulevard</td>
<td>Stop-Control</td>
<td>18.9 C</td>
<td>23.9 C</td>
</tr>
<tr>
<td>#13 Chestnut Street/Veterans Boulevard</td>
<td>Traffic Signal</td>
<td>15.7 B</td>
<td>16.2 B</td>
</tr>
<tr>
<td>#14 Woodside Road/Veterans Boulevard</td>
<td>Traffic Signal</td>
<td>21.1 C</td>
<td>40.1 D</td>
</tr>
</tbody>
</table>


Notes:
1. Signalized intersection LOS based on average control delay expressed in seconds per vehicle. Unsignalized intersection LOS based on average control delay expressed in seconds per vehicle. Signalized and unsignalized analysis methodologies obtained from the 2000 Highway Capacity Manual, Transportation Research Board.
2. Level of service.
The results of the analysis indicate that all study intersections are operating at an acceptable level (LOS D or better) during the AM and PM peak hours under existing conditions.

**Freeway Ramp Merging/Diverging Analysis**

In addition to analyzing the 14 study intersections, a merging, diverging, and weaving analysis was conducted at the US 101/Whipple Avenue and US 101/Woodside Road interchanges. A freeway capacity analysis was also conducted on segments of US 101.

The ramp merging and diverging analyses on freeway segments were conducted using the 2000 Highway Capacity Software (HCS) package. The software is consistent with the methodologies contained in Chapters 24 and 25 of the *2000 Highway Capacity Manual*. This methodology correlates the LOS to the expected density of vehicles in passenger cars per mile per lane. Table 3.4-4 summarizes the relationship between density and LOS for freeway ramps.

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Density (pc/mi/ln)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&lt; 10.0</td>
</tr>
<tr>
<td>B</td>
<td>&gt; 10.0 and ≤ 20.0</td>
</tr>
<tr>
<td>C</td>
<td>&gt; 20.0 and ≤ 28.0</td>
</tr>
<tr>
<td>D</td>
<td>&gt; 28.0 and ≤ 35.0</td>
</tr>
<tr>
<td>E</td>
<td>≥ 35.0</td>
</tr>
<tr>
<td>F</td>
<td>Demand Exceeds Capacity</td>
</tr>
</tbody>
</table>


**Existing Freeway Ramp Merging and Diverging Levels of Service.** Existing ramp volumes, freeway mainline volumes, free-flow speeds, merging/diverging lengths, and proximity to upstream/downstream ramps were used as inputs to calculate existing LOS at the freeway ramps. The results of the ramp merging and diverging analysis are presented in Table 3.4-5.

**Freeway Segment Analysis**

To evaluate project impacts on freeway segments, a capacity analysis was conducted. For the purpose of this analysis, a freeway segment is considered to operate acceptably if the volume of vehicles using the segment is less than that segment’s capacity. Mixed-flow lanes were analyzed separately from high occupancy vehicle (HOV) lanes. A capacity of 2,300 vehicles per lane per hour (vplph) was used for mixed-flow lanes, while a capacity of 1,800 vplph was used for HOV lanes.
Table 3.4-5
Freeway Ramp Merging/Diverging Level of Service Summary – Existing Conditions

<table>
<thead>
<tr>
<th>Merge/Diverge</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Density¹</td>
<td>LOS²</td>
</tr>
<tr>
<td>Southbound US 101 Off-Ramp/Veterans Boulevard</td>
<td>39.3</td>
<td>E</td>
</tr>
<tr>
<td>Northbound US 101 On-Ramp/Whipple Avenue</td>
<td>33.7</td>
<td>D</td>
</tr>
<tr>
<td>Southbound US 101 On-Ramp/Woodside Road</td>
<td>39.3</td>
<td>F</td>
</tr>
<tr>
<td>Northbound US 101 Off-Ramp/Woodside Road</td>
<td>23.5</td>
<td>C</td>
</tr>
</tbody>
</table>

Source: Merging and Diverging LOS evaluated using the 2000 Highway Capacity Software (HCS) package.

Notes:
1. Density is presented in passenger cars per mile per lane (pc/mi/ln).
2. Level of Service.

Existing Freeway Segment Levels of Service. Conditions along county freeways are periodically reported by the San Mateo City and County Association of Governments (C/CAG) as part of their Congestion Management Program (CMP). Existing freeway segment operating levels were obtained from the 2001 San Mateo County CMP Monitoring Report (Fehr & Peers Associates, 2002). The operating levels presented in the CMP Monitoring Report are based on travel time surveys and the LOS is correlated to speed. The current status of freeway operating conditions is presented in Table 3.4-6.

Table 3.4-6
US 101 Freeway Segment Level of Service Summary – Existing Conditions

<table>
<thead>
<tr>
<th>Freeway Segment</th>
<th>Lane Type</th>
<th>AM Peak Hour LOS¹</th>
<th>PM Peak Hour LOS¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southbound US 101 from State Route 92 to Whipple Avenue</td>
<td>Mixed-Flow</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td>SouthBound US 101 from Whipple Avenue to Marsh Road</td>
<td>Mixed-Flow ¹</td>
<td>F</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>HOV²</td>
<td>E</td>
<td>B</td>
</tr>
<tr>
<td>North Bound US 101 from Marsh Road to Whipple Avenue</td>
<td>Mixed-Flow ¹</td>
<td>F</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>HOV²</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>North Bound US 101 from Whipple Avenue to State Route 92</td>
<td>Mixed-Flow ¹</td>
<td>B</td>
<td>F</td>
</tr>
</tbody>
</table>


Notes:
1. Level of Service.
As shown, during the AM peak hour, the mixed-flow lanes of southbound US 101 operate at unacceptable levels (LOS F) between SR 92 and Marsh Road and the mixed-flow lanes of northbound US 101 operate at unacceptable levels between Marsh Road and Whipple Avenue. During the PM peak, the mixed-flow lanes of southbound US 101 operate at unacceptable levels between SR 92 and Whipple Avenue and the mixed-flow lanes of northbound US 101 operate at unacceptable levels between Whipple Avenue and SR 92.

Applicable Plans and Regulations

This section of the EIR discusses agencies with jurisdiction over transportation facilities and services in Redwood City, and plans and policies that could affect the proposed project.

Agencies with Jurisdiction in Redwood City. The City of Redwood City has jurisdiction over all city streets and city-operated traffic signals. Several regional agencies, including the City/County Association of Governments of San Mateo County (C/CAG), the congestion management agency in San Mateo County, and the Metropolitan Transportation Commission (MTC) coordinate and establish funding priorities for intra-regional transportation improvement programs. Freeways in Redwood City (US 101 and I-280), freeway ramps, and designated State Routes 82 (El Camino Real) and 84 (Woodside Road) are under the jurisdiction of the State of California Department of Transportation (Caltrans). Transit service providers such as Caltrain, SamTrans, and the Water Transportation Authority (the agency responsible for providing ferry service) have jurisdiction over their respective services. These agencies, their responsibilities, and funding sources are more specifically described below.

City of Redwood City. The City of Redwood City is responsible for planning, constructing, and maintaining local public transportation facilities, including all city streets, city-operated traffic signals, sidewalks, and bicycle facilities. These local services are funded primarily by gas-tax revenue and developer fees.

San Mateo City/County Association of Governments (C/CAG). C/CAG is the Congestion Management Agency (CMA) that sets State and federal funding priorities for improvements affecting the San Mateo County Congestion Management Program (CMP) roadway system. C/CAG-designated CMP roadway system components in Redwood City include SR 82 (El Camino Real), SR 84 (Woodside Road), US 101, and I-280. C/CAG-designated CMP intersections in or near Redwood City include El Camino Real/Whipple Avenue, Bayfront Expressway/Marsh Road (borders Redwood City), and Woodside Road/Middlefield Road.

C/CAG has adopted guidelines to reduce the number of net new vehicle trips generated by new developments. These guidelines apply to all developments that generate 100 or more net new peak period trips on the CMP network and are subject to CEQA review. These guidelines ensure that “the
developer and/or tenants will reduce the demand for all new peak hour trips (including the first 100 trips) projected to be generated by the development."

Metropolitan Transportation Commission (MTC). The regional transportation planning agency for the Bay Area is the Metropolitan Transportation Commission (MTC). MTC is the clearinghouse for State and federal funds for transportation improvements. Each county’s CMA, including C/CAG, forwards a capital improvement project list to MTC. MTC reviews the lists submitted by all nine Bay Area counties and submits a regional priority list to the California Transportation Commission (CTC) and/or the Federal Highway Administration (FHWA) for selection of projects to receive funding. Funded projects are included in the Regional Transportation Plan (RTP) prepared by MTC.

California Department of Transportation (Caltrans). Caltrans has authority over the State highway system including mainline facilities, interchanges, and arterial state routes. Caltrans approves the planning and design of improvements for all state-controlled facilities. The facilities in Redwood City include US 101 and its interchanges at Whipple Avenue and Woodside Road, SR 82 (El Camino Real), and SR 84 (Woodside Road), including the El Camino Real/Woodside Road interchange.

Plans and Policies. There are several agencies that have plans and policies in place that affect transportation in Redwood City relevant to the proposed project. These plans and policies are described and summarized below.

Redwood City Strategic General Plan. The Redwood City Strategic General Plan Circulation Element (adopted in 1990, revised in 1993) contains the following relevant transportation- and circulation-related objectives and policies:

- Allow for the safe and convenient movement and access of motor vehicles in Redwood City, but not at the expense of the environment or the overall quality of life in Redwood City or to the detriment of alternative transportation modes. (Motor Vehicle Transportation Objective 1, page 7-7.)

- Local road projects that are not part of the State Highway System shall not be included in the Circulation Element if one or more of the following impacts are likely to result:
  - Increases road capacity, thereby encouraging increased through automobile traffic;
  - Requires a substantial acquisition of land;
  - Results in a substantial loss of housing and/or business;
  - Encroaches into environmentally sensitive areas, such as open space and wetlands, resulting in a substantial loss of these areas;
  - Routes increased traffic through residential neighborhoods; or

- Is extremely costly in terms of benefits achieved. (Motor Vehicle Transportation Objective 2, page 7-7.)

- Participate in formulating and supporting the goals and policies of the Congestion Management Plan for San Mateo County by cooperating with adjacent jurisdictions so as to more effectively deal with traffic congestion and traffic impacts. (Motor Vehicle Transportation Policy MV-2, page 7-7.)

- Create conditions to allow for better utilization of the existing public transportation system that will increase public transportation use and the subsequent improvement of the public transportation infrastructure and expansion of service. (Public Transportation Objective 1, page 7-13.)

- Establish site planning and architectural standards for new building projects that would incorporate transit access and orientation. Such standards would apply to both public and private building projects located along existing bus routes to enhance pedestrian access and convenient public transit access. (Public Transportation Policy PT-4, page 7-14.)

- Make walking and bicycling a realistic and more widespread transportation alternative in Redwood City by establishing a series of policies to create an urban environment that will make walking and bicycling safe, efficient, and convenient. (Non-Motorized Transportation Objective, page 7-26.)

- Designate areas for mixed use and higher density residential development to create pedestrian-oriented environments. This policy shall complement the policies in the Public Transportation section as they pertain to land use. (Non-Motorized Transportation Policy NM-1, page 7-26.)

- Minimum standards for sidewalk widths shall be maintained. Loss of sidewalk surface due to encroachment and/or the installation of poles, street furniture, and/or other utility hardware shall be avoided. If any sidewalk surface is lost to these or other uses, additional sidewalk surface shall be provided that is equal to or more than the amount of sidewalk surface lost. (Non-Motorized Transportation Policy NM-3, page 7-26.)

- Provide and maintain continuity to the existing bikeway system within Redwood City by eliminating missing segments in the system. Bikeway continuity shall also be provided, whenever possible, through such means as eliminating parking on one or both sides of the street and/or through street modification. If these measures are not feasible, the posting of appropriate signs and pavement markings shall be required. (Non-Motorized Transportation Policy NM-8, page 7-27.)

- All new traffic signal installations and existing traffic signal modifications shall include installation of bicycle-sensitive signal detector loops. (Non-Motorized Transportation Policy NM-11, page 7-27.)

C/CAG Guidelines for the Implementation of the Land Use Component of the 1999 Congestion Management Program (CMP). C/CAG, the Congestion Management Agency (CMA) in San Mateo
County, has adopted guidelines for the land use component of the CMP. The purpose of the guidelines is to reduce the impacts of the traffic created as a result of new development. The guidelines must be followed for all projects that generate 100 or more net new peak period trips on the CMP network and are subject to CEQA review. If a project meets the above-mentioned criteria, the project sponsor should determine if a combination of acceptable options/measures will fully reduce the net number of trips that the project is anticipated to generate on the CMP roadway network (including the first 100 trips). The plan is included in Appendix F of this Draft EIR and will be reviewed by C/CAG staff and ultimately adopted by the Redwood City Council. If an agreement is not reached with C/CAG staff on the plan, an immediate review by the C/CAG Board will be scheduled so that the local jurisdiction project approval process will not be delayed.

Impacts and Mitigation Measures

Significance Criteria

According to State CEQA Guidelines, a project typically results in a significant impact if it causes an increase in traffic that is substantial and adverse in relation to the traffic load and capacity of the existing street system. This standard of significance relates to automobile traffic only and does not address the potential effects on other travel modes including transit, bicycle, and pedestrian facilities. In order to evaluate a broad range of travel characteristics, the following standards of significance apply to the transportation impacts discussed in this EIR. These standards are consistent with recent transportation/circulation sections prepared for other EIRs in Redwood City.

Intersection Impacts. According to Redwood City standards, traffic impacts at intersections are defined to occur when the addition of project traffic causes:

- Operations at a signalized intersection to deteriorate from an acceptable level (LOS D or better) to an unacceptable level (LOS E or F); or
- The average delay at a signalized intersection operating at an unacceptable level (LOS E or F) to increase by five (5) or more seconds; or
- Operations at an unsignalized intersection to deteriorate from an acceptable level (LOS D or better) to an unacceptable level (LOS E or F) and the traffic volumes at the intersection satisfy the Caltrans Peak Hour Volume warrant for traffic signal installation; or
- The delay at an unsignalized intersection operating at an unacceptable level (LOS E or F) to increase by five or more seconds and the traffic volumes at the intersection satisfy the Caltrans Peak Hour Volume warrant for traffic signal installation.

Freeway Segment Impacts. For the purposes of this EIR, traffic impacts on the surrounding freeway segments are defined to occur when the addition of project traffic causes:

- The volume on the freeway segment to exceed its capacity; or
• Increases the amount of traffic on a freeway segment already exceeding its capacity by adding more than one percent of the freeway segment’s capacity to that segment.

Freeway Ramp Merging and Diverging Impacts. The proposed project is considered to result in a significant freeway ramp merging or diverging impact if its implementation:

• Causes the LOS of a freeway ramp to degrade from an acceptable LOS (LOS D or better) to an unacceptable LOS (LOS E or LOS F); or
• Adds any traffic to a freeway ramp operating at an unacceptable level (LOS E or LOS F).

Freeway Ramp Capacity Impacts. The proposed project is considered to result in a significant freeway ramp capacity impact if its implementation:

• Causes the volume-to-capacity ratio (V/C) of the freeway ramp to exceed 1.0; or
• Adds any traffic to a freeway ramp with a V/C greater than 1.0.

Transit, Bicycle and Pedestrian Impacts. The proposed project is considered to result in a significant transit, bicycle, and/or pedestrian impact if its implementation:

• Conflicts with any existing, planned, or possible future transit, bicycle and/or pedestrian facilities and services; or
• Causes transit, bicycle, or pedestrian facilities to be frequently blocked by cars or other potential safety obstruction hazards; or
• Causes vehicles to cross pedestrian or bicycle facilities on a regular basis at driveway entrances lacking adequate sight distance or warning systems; or
• Encourages pedestrians to cross roads in undesignated areas.

Background Conditions (Baseline for Project Traffic Analysis)

Background Conditions are defined as conditions prior to completion of the proposed development. Traffic volumes for Background Conditions include existing volumes from counts plus traffic generated by approved developments in the area. Approved developments are defined as approved projects that are not yet constructed. Background Conditions serve as the baseline scenario against which project impacts are identified. Typically, background conditions are correlated to a two- to three-year horizon (or Year 2005-2006) when MOB 1 and the replacement hospital are expected to be at or near completion.

Background Roadway Improvements. There are no near-term intersection improvements planned at the study intersections within the next several years. However, there is a planned improvement to add auxiliary lanes to US Highway 101 from Ralston Avenue in the City of Belmont to Marsh Road in the City of Menlo Park. This improvement would link the on-ramp from the upstream interchange to the off-ramp at the downstream interchange with a continuous freeway lane. This improvement will create
a “weaving” maneuver on US 101 where vehicles entering and exiting the freeway via the auxiliary lane would cross each other.

**Background Traffic Estimates.** The traffic volumes for Background Conditions were estimated by adding traffic from approved but not yet constructed or occupied developments to existing conditions volumes obtained from counts. Appendix G contains the list of approved projects, their associated trip generation estimates, and their projected volumes at the study intersections. The expected volumes under Background Conditions are presented in Figure 3.4-5.

**Background Intersection Level of Service.** LOS was calculated for the study intersections using background traffic volumes and existing lane configuration (no intersection improvements were identified by City staff for inclusion in the Background Conditions analysis). Table 3.4-7 presents the LOS results under Background Conditions.

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Walnut Street/ Marshall Street</td>
<td>Stop-Control</td>
<td>10.7 B</td>
<td>10.8 B</td>
</tr>
<tr>
<td>#2 Marshall Court/ Marshall Street</td>
<td>Stop-Control</td>
<td>9.8 A</td>
<td>10.6 B</td>
</tr>
<tr>
<td>#3 Maple Street/ Marshall Street</td>
<td>Stop-Control</td>
<td>9.5 A</td>
<td>11.1 B</td>
</tr>
<tr>
<td>#4 Chestnut Street/ Marshall Street</td>
<td>Stop-Control</td>
<td>11.0 B</td>
<td>13.1 B</td>
</tr>
<tr>
<td>#5 Main Street/ Bradford Street</td>
<td>Stop-Control</td>
<td>12.1 B</td>
<td>14.3 B</td>
</tr>
<tr>
<td>#6 Walnut Street/ Bradford Street</td>
<td>Stop-Control</td>
<td>7.7 A</td>
<td>8.2 A</td>
</tr>
<tr>
<td>#7 Whipple Avenue/ Veterans Boulevard</td>
<td>Traffic Signal</td>
<td>36.3 D</td>
<td>36.7 D</td>
</tr>
<tr>
<td>#8 Jefferson Avenue/ Veterans Boulevard</td>
<td>Traffic Signal</td>
<td>15.7 B</td>
<td>28.3 C</td>
</tr>
<tr>
<td>#9 Main Street/ Veterans Boulevard</td>
<td>Traffic Signal</td>
<td>18.2 B</td>
<td>29.1 C</td>
</tr>
<tr>
<td>#10 Walnut Street/ Veterans Boulevard</td>
<td>Traffic Signal</td>
<td>21.0 C</td>
<td>32.2 C</td>
</tr>
<tr>
<td>#11 Maple Street/ Veterans Boulevard</td>
<td>Traffic Signal</td>
<td>23.3 C</td>
<td>32.8 C</td>
</tr>
<tr>
<td>#12 Hansen Way/ Veterans Boulevard</td>
<td>Stop-Control</td>
<td>20.0 C</td>
<td>27.4 D</td>
</tr>
<tr>
<td>#13 Chestnut Street/ Veterans Boulevard</td>
<td>Traffic Signal</td>
<td>15.7 B</td>
<td>17.8 B</td>
</tr>
<tr>
<td>#14 Woodside Road/ Veterans Boulevard</td>
<td>Traffic Signal</td>
<td>22.4 C</td>
<td>41.9 D</td>
</tr>
</tbody>
</table>


*Notes:*
1. Signalized intersection LOS based on average control delay expressed in seconds per vehicle. Unsignalized intersection LOS based on average control delay expressed in seconds per vehicle. Signalized and unsignalized analysis methodologies obtained from the *2000 Highway Capacity Manual*, Transportation Research Board.
2. Level of service.
Insert Figure 3.4-5: Background Condition Volumes
The results of the LOS analysis under Background Conditions indicate that all of the study intersections are expected to maintain acceptable operations (LOS D or better) during the AM and PM peak hours.

The addition of approved projects in the area is expected to increase the average delay at most of the study intersections. However, approved projects that are expected to add traffic to non-critical intersection turning movements actually slightly decreases the overall average delay per vehicle at some of the study intersections.

**Background Freeway Segment Capacity Analysis.** Segments of US 101 were reviewed to assess the freeway’s capacity after the US 101 auxiliary lane project has been completed. South of Whipple Avenue in the study area, US 101 is expected to have one HOV lane, three mixed-flow lanes, and one auxiliary lane in each direction. North of Whipple Avenue, US 101 is expected to have four mixed-flow lanes and one auxiliary lane (no HOV lanes) in each direction. The addition of auxiliary lanes under this scenario will improve operations compared to existing conditions.

Existing freeway segment operations shown in Table 3.4-6 are based on speed and travel time surveys from the San Mateo County CMP. Since speed cannot be projected under future conditions (Background or otherwise), a capacity analysis was used as a baseline for identifying potential project impacts to the freeway system.

A capacity of 2,300 vehicles per lane per hour was used to estimate the capacity of the mixed-flow lanes on US 101. The HOV lanes were assumed to have a capacity of 1,800 vehicles per lane per hour. To estimate the number of vehicles using the HOV lanes, the existing percentage of HOVs on US 101 was obtained from the Measures of Effectiveness report presented in the *US 101 Auxiliary Lane Project Study* (Fehr & Peers Associates, November 2000).

Vehicles in the mixed-flow lanes wishing to exit the freeway via the auxiliary lane will occupy capacity in the mixed-flow lanes of US 101 for a portion of each study segment. Additionally, vehicles entering the freeway from the auxiliary lanes will occupy capacity in the mixed-flow lanes of US 101 for only a portion of each study segment. For the mixed-flow lane capacity analysis, it was assumed that half of the total vehicles using the auxiliary lane would use capacity on the mainline section of US 101. The results of the freeway segment capacity analysis are summarized in Table 3.4-8.

The results of the freeway segment capacity analysis indicate that, during the AM peak hour, the volume of vehicles in the southbound US 101 mixed-flow lanes from Woodside Road to Marsh Road exceeds the freeway segment capacity. All other study segments have V/C ratios less than 1.0, where volume does not exceed capacity.
Table 3.4-8
US 101 Freeway Segment Capacity Analysis – Background Conditions

<table>
<thead>
<tr>
<th>Freeway Segment</th>
<th>Lane Type</th>
<th>Capacity</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Volume</td>
<td>V/C</td>
</tr>
<tr>
<td>SB SR 92 to Whipple</td>
<td>Mixed-Flow</td>
<td>9,200</td>
<td>8,640</td>
<td>0.94</td>
</tr>
<tr>
<td>SB Woodside to Marsh</td>
<td>Mixed-Flow</td>
<td>6,900</td>
<td>7,720</td>
<td>1.12</td>
</tr>
<tr>
<td></td>
<td>HOV</td>
<td>1,800</td>
<td>1,136</td>
<td>0.63</td>
</tr>
<tr>
<td>NB Marsh to Woodside</td>
<td>Mixed-Flow</td>
<td>6,900</td>
<td>5,187</td>
<td>0.75</td>
</tr>
<tr>
<td></td>
<td>HOV</td>
<td>1,800</td>
<td>889</td>
<td>0.49</td>
</tr>
<tr>
<td>NB Whipple to SR 92</td>
<td>Mixed-Flow</td>
<td>9,200</td>
<td>7,008</td>
<td>0.76</td>
</tr>
</tbody>
</table>


Notes:
1. Capacity assumes 2,300 vehicles per hour per lane for mixed-flow lanes and 1,800 vehicles per hour per lane for HOV lanes. Auxiliary lane capacity not included in the freeway segment capacity analysis. See text of description on how traffic in the auxiliary lanes was addressed in the analysis.
2. Volumes obtained from existing count data provided by Caltrans.

Background Freeway Ramp Capacity Analysis. The addition of auxiliary lanes to US 101 will affect the merging and diverging analysis conducted under existing conditions. The auxiliary lanes will provide a weaving section for vehicles entering and exiting US 101.

To analyze the operation of weaving segments in California, the nomograph presented in the Caltrans 2000 Highway Design Manual (Figure 504.7A) is typically used to correlate weaving volume and length of the weaving section to an LOS. However, due to the proposed length of the auxiliary lanes on US 101, the nomograph indicates that weaving segment is “out of realm of weaving.”

Discussions with Caltrans operations staff indicated that weaving segments on US 101 that are “sufficiently long” provide more than an adequate amount of space for drivers to find a gap and conduct the weaving maneuver. Thus, no further analysis of weaving is required.

To verify that the freeway ramps would have sufficient capacity to serve expected demand, a volume-to-capacity analysis was conducted for the ramp itself. For the purpose of this analysis, capacities presented in Chapter 25 of the 2000 Highway Capacity Manual were used based on the free-flow speed of the study ramps. The results are presented in Table 3.4-9.

The results of the capacity analysis indicate that all of the study freeway ramps have sufficient capacity (i.e., V/C ratios are less than 1.0). It is important to note that the constraint point for ramps is typically the controlled or uncontrolled intersection at the end of the ramp.
Table 3.4-9
US 101 Freeway Ramp Capacity Analysis – Background Conditions

<table>
<thead>
<tr>
<th>Weaving Segment</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capacity¹</td>
<td>Volume²</td>
</tr>
<tr>
<td>Southbound US 101 Off-Ramp/Veterans Boulevard</td>
<td>3,800</td>
<td>1,747</td>
</tr>
<tr>
<td>Northbound US 101 On-Ramp/Whipple Avenue</td>
<td>1,900</td>
<td>1,085</td>
</tr>
<tr>
<td>Southbound US 101 On-Ramp/Woodside Road</td>
<td>2,000</td>
<td>1,007</td>
</tr>
<tr>
<td>Northbound US 101 Off-Ramp/Woodside Road</td>
<td>1,900</td>
<td>1,284</td>
</tr>
</tbody>
</table>


Notes:
2. Volumes obtained from existing count data provided by Caltrans.

Environmental Analysis

As described in Section 3.1, for each impact, a level of significance is determined and is reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant effects to a less-than-significant level, the impacts are classified as “significant unavoidable effects (SU).” For this section, TR refers to Transportation.

Project-related impacts in the near term are those anticipated to occur with MOB 1 and the replacement Hospital (Background Conditions + Project). Full buildout of the Kaiser Medical Center Master Plan would occur in the long term and is evaluated in the context of cumulative development (Cumulative Conditions + Project). Because the traffic effects of the Higher Occupancy Scenario would only occur at buildout of the Kaiser campus when all phases have been completed, traffic and parking analyses of the Higher Occupancy Scenario are only relevant in the context of long-term cumulative development.

TR-1. Intersection Operations in the Near Term - The proposed project would not significantly affect study area intersections. (LTS)

Traffic projections for the proposed project were estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In the first step, the amount of traffic added to the surrounding roadway system is estimated. In the second step, the directions the trips use to approach and depart the site are estimated. In the third step, the trips are assigned to specific street segments and intersection turning movements. The results of this process are described in the following sections.
**Trip Generation.** From a traffic perspective, the proposed project includes three components that could generate new vehicle trips: 1) expansion of the hospital building, 2) expansion of MOB space, and 3) relocation of administrative office staff from buildings in other parts of Redwood City to the project site (i.e., the existing campus). Each of these elements is discussed below.

*Hospital Trips.* The existing Redwood City Kaiser Hospital has 209 total beds. Kaiser’s proposed project includes replacement of the existing hospital with a new, 192-bed hospital. The existing hospital is currently 50 percent occupied on average according to information provided by James Brinkley Company (the City’s health care consultant) and Kaiser. Both indicate that the new hospital will be 75 percent occupied on average. While the increase in occupancy could occur even if Kaiser were to do nothing to its current facilities, to be conservative, this increased occupancy is assumed to be part of Kaiser’s proposed project and thus are treated as project-related impacts.

Assuming that the existing hospital is currently 50 percent occupied, it has 104 occupied beds. The new hospital, assuming 75 percent occupancy, would have 144 occupied beds. Therefore, there would be 40 additional occupied beds.

Trip generation rates for hospitals as presented in the Institute of Transportation Engineers (ITE) *Trip Generation* (Sixth Edition) are based on trips per hospital bed. However, a trip rate per occupied bed is needed to estimate the number of new trips generated by the 40 additional occupied beds associated with the proposed project. Accordingly, the ITE rates (presented as trips per bed) were divided by 75 percent to develop trip rates per occupied bed. These rates were applied to the 40 additional occupied beds to estimate the number of new trips that would be generated by the increased occupancy. The trip generation estimates are presented in Table 3.4-10.

*Emergency Room Trips.* The existing emergency room provides care to approximately 24,000 patients annually. Information provided by James Brinkley Company and Kaiser indicate that the number of patients seen annually at the campus could increase to 43,000 annually in 2025. This equates to approximately 52 new patients per day, or five new patients during each peak hour (assuming that 10 percent of the patients visit during each peak hour, similar to the ratio of peak hour traffic to daily traffic volumes). To estimate the number of new trips generated by the five new patients during each peak hour, it was conservatively assumed that each patient would generate six new peak hour trips (two by the ambulance or private vehicle carrying the patient, and four by visiting relatives or friends). The trip generation estimates for emergency room trips are presented in Table 3.4-10.

*Medical Office Trips.* Based on conversations with Kaiser planning staff, MOB floor area is not a good indicator of trip generation because buildings are being made larger to accommodate new equipment and to meet current industry operating standards. Kaiser’s intent is not to provide numerous new provider offices at the Medical Center. This direction is supported by Kaiser’s projected increase in the number of providers (i.e., physicians primarily)
Table 3.4-10
Project Trip Generation Estimates

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Size</th>
<th>Weekday</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rate²Trips</td>
<td>Rate³In³Out³Total</td>
<td>Rate³In³Out³Total</td>
<td>Rate³In³Out³Total</td>
</tr>
<tr>
<td>Emergency Room</td>
<td>52 patients</td>
<td>6.0 312</td>
<td>0.60 16 15 31</td>
<td>0.60 15 16 31</td>
</tr>
<tr>
<td>Hospital</td>
<td>40 new occupied beds</td>
<td>15.7 628</td>
<td>1.43 41 16 57</td>
<td>1.63 22 43 65</td>
</tr>
<tr>
<td>MOB</td>
<td>23 new providers</td>
<td>95.0 2,185</td>
<td>10.9 125 127 252</td>
<td>8.6 113 85 198</td>
</tr>
<tr>
<td>Office</td>
<td>40,000 GSF</td>
<td>11.0 440</td>
<td>1.55 55 7 62</td>
<td>1.50 10 50 60</td>
</tr>
<tr>
<td><strong>Total (Phase I and Buildout)</strong></td>
<td><strong>3,565</strong></td>
<td>— 237 165 402</td>
<td>— 160 194 354</td>
<td></td>
</tr>
</tbody>
</table>


Notes:

1. Trip generation is for increases in hospital bed occupancy, emergency room visits, MOB space, plus relocated administrative staff from off-campus office space. See text for details. Kaiser expects highest trip generation during Phase I plus increased use of the hospital and emergency room.

2. Trip generation rates for emergency room in trips per patient. Rate estimated at six trips per patient. Trip generation rates for hospital are in trips per occupied bed. Trip rates developed by dividing trip rates presented in the Institute of Transportation Engineers’ (ITE) Trip Generation, Sixth Edition, by 0.75 (average proportion of occupied beds based on information from James Brinkley Company (City consultant). Trip generation rates for MOBs in trips per provider based on rates developed from driveway counts conducted at the Roseville Kaiser MOB complex. Trip generation rates for office in trips per 1,000 s.f. from ITE Trip Generation, Sixth Edition.

3. Inbound and outbound splits from counts conducted at the Roseville Kaiser MOB complex and ITE. Number of trips are net new trips over existing trip generation.

from 125 under existing conditions to 148 at project buildout. In addition, Kaiser projects the number of on-site staff to remain essentially the same. The largest increase in staff is expected at off-site clinics located outside Redwood City that would not result in a traffic impact to city streets. Since the number of patients, staff, and other facilities (e.g., pharmacies, laboratories, etc.) is generally tied to the number of providers, a more appropriate independent variable for estimating trip generation at the MOBs is the number of providers.

To estimate trip generation for the MOBs, use of standard trip rates per 1,000 square feet for Medical-Dental Office Building (Land Use Code 720) from *Trip Generation* (Sixth Edition) published by ITE was initially considered. However, the ITE rates are based on an average facility size of 30,000 to 45,000 square feet, which according to the accompanying survey description “is generally operated by one or more private physicians or dentists.” The proposed project includes an expansion of over 350,000 GSF of MOB space. As such, the ITE rate was not considered appropriate for application to the Kaiser proposal.
A more accurate method of estimating trip generation for the proposed project is to conduct a survey of a comparable facility. To that end, daily and peak hour counts were taken at an existing Kaiser clinic without a hospital in the City of Roseville located at Riverside Boulevard and Cirby Road near I-80. That facility was chosen because it offers services similar to those projected for MOB 1 and because transit and other non-automobile modes do not serve a significant number of trips generated by the site. Use of the Roseville facility as a surrogate for the Redwood City project results in a more conservative estimate of vehicle trip generation for the project site in Redwood City. Raw count data from the Roseville site show that the facility generated 6,840 daily trips, 787 AM peak hour trips, and 622 PM peak hour trips. Based on 72 providers at Roseville, the data resulted in a trip generation rate of 95 daily trips per provider, 10.9 AM peak hour trips per provider, and 8.6 PM peak hour trips per provider. These rates were applied to Kaiser’s projected number of providers at the Redwood City campus.

The proposed project would be built in phases and the number of providers would change as new buildings are constructed. According to Kaiser, the number of on-campus providers would be the same under Phase I as under project buildout conditions, with lower numbers of on-campus providers expected during interim phases. It should be noted that according to Kaiser the number of on-campus staff (providers and both clinical and support staff) is expected to increase by 136 persons under Phase I, but at buildout Kaiser projects the number of on-campus staff members to be at the approximately the same as it is at the conclusion of Phase I. Based on all of this information, traffic generated under Phase I of Kaiser’s proposed project is used in the transportation analysis to represent “the project.” This assumption, based on Kaiser’s projections, is conservative for the interim phases and is representative of development levels at project buildout.

As noted earlier in Section 2, Project Description, a Higher Occupancy Scenario has also been defined to acknowledge that Kaiser’s projections of the future number of providers staff and patient visits at the Medical Center could potentially underestimated. Project trips under the Higher Occupancy Scenario are presented later in the cumulative condition analysis of this Section 3.4, Transportation.

**Off-Site Administrative Trips.** Kaiser currently occupies approximately 34,000 GSF of administrative office space in off-campus facilities. The proposed project includes relocating staff from those administrative spaces into on-campus facilities. The number of trips generated by on-campus administrative offices was estimated by applying trip generation rates for General Office Buildings (Land Use Code 710) from ITE *Trip Generation*, Sixth Edition. Since the off-campus space would eventually be occupied by others and would replace the Kaiser staff trips, no reduction in background traffic was assumed, which also provides a more conservative analysis.

**Summary of Project Trip Generation.** Based on Kaiser’s phasing plan for the project, the highest increase in providers and staff would occur in the near term; that is, after Phase I of the proposed project has been completed, when 23 new providers (for a total of 148) and 111 new...
staff members would be located onsite, plus relocated staff from the off-campus office space. To be conservative, it is assumed that the increase in the number of providers and the increased use of the hospital occur at the same time. Therefore, the trips generated by the increased occupancy of the hospital beds and the increased use of the emergency room are added to the trip generation estimates for Phase I to estimate the number of new trips generated by the “proposed project.” Applying the trip rates discussed above, Kaiser’s proposed project is estimated to generate 3,565 new daily trips, 402 new AM peak hour trips (237 inbound/165 outbound), and 354 new PM peak hour trips (160 inbound/194 outbound). The project trip generation estimates are presented in Table 3.4-10. The corresponding trips for the Higher Occupancy Scenario are presented in the cumulative discussion later in this section.

**Trip Distribution.** The directions of approach and departure for project trips were estimated based on existing travel patterns in the area, the relative locations of complementary land uses, and the project trip distribution used in the *City of Redwood City Kaiser TIS – Proposed MOB and Parking Garage* (TJKM, 1993). Data from the 1990 Census Transportation Planning Package that indicates place of residence and place of work was also reviewed. Unfortunately, 2000 census journey-to-work data is not expected to be available until Spring 2003. The trip distribution was reviewed by City staff and is presented on Figure 3.4-6.

In general, approximately 28 percent of the project traffic is distributed to the north on US 101 and El Camino Real; four percent is distributed to the east to the Bair Island and Pacific Shores areas; 46 percent is distributed to the south on East Bayshore Road, US 101, Broadway, Bay Street, Middlefield Road, and El Camino Real; and 22 percent is distributed to the west on Woodside Road, Jefferson Avenue, Broadway, and Whipple Avenue.

**Trip Assignment.** The number of new trips generated by the project was assigned to the roadway system based on the directions of approach and departure discussed above. Figure 3.4-7 presents the project trip assignment at each of the study intersections.

The project trips were added to intersection turning movement volumes under Background Conditions to estimate intersection turning movement volumes under Project Conditions. Project Condition volumes are presented on Figure 3.4-8.

**Intersection Operations.** The Project Condition volumes were used to conduct LOS calculations at the study intersections to analyze the potential impacts of Kaiser’s proposed project on the local roadway system. The results of the calculations under Background and Project Conditions, including the change in average control delay, are presented in Table 3.4-11.
Insert Figure 3.4-6 – Trip Distribution
Insert Figure 3.4-7: Project Trip Assignment
Insert Figure 3.4-8: Project Condition Volumes
Table 3.4-11
Intersection Level of Service Summary –
Background and Project Conditions

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Peak Hour</th>
<th>Background Conditions</th>
<th>Project Conditions</th>
<th>Change in Average Delay</th>
</tr>
</thead>
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<tr>
<td></td>
<td></td>
<td>Delay¹</td>
<td>LOS²</td>
<td>Delay¹</td>
</tr>
<tr>
<td>#1 Walnut Street/ Marshall Street (U)</td>
<td>AM</td>
<td>10.7</td>
<td>B</td>
<td>11.1</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>10.8</td>
<td>B</td>
<td>11.3</td>
</tr>
<tr>
<td>#2 Marshall Court/ Marshall Street (U)</td>
<td>AM</td>
<td>9.8</td>
<td>A</td>
<td>10.3</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>10.6</td>
<td>B</td>
<td>11.1</td>
</tr>
<tr>
<td>#3 Maple Street/ Marshall Street (U)</td>
<td>AM</td>
<td>9.5</td>
<td>A</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>11.1</td>
<td>B</td>
<td>11.9</td>
</tr>
<tr>
<td>#4 Chestnut Street/ Marshall Street (U)</td>
<td>AM</td>
<td>11.0</td>
<td>B</td>
<td>11.4</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>13.1</td>
<td>B</td>
<td>13.6</td>
</tr>
<tr>
<td>#5 Main Street/ Bradford Street (U)</td>
<td>AM</td>
<td>12.1</td>
<td>B</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>14.3</td>
<td>B</td>
<td>15.1</td>
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<tr>
<td>#6 Walnut Street/ Bradford Street (U)</td>
<td>AM</td>
<td>7.7</td>
<td>A</td>
<td>7.9</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>8.2</td>
<td>A</td>
<td>8.3</td>
</tr>
<tr>
<td>#7 Whipple Avenue/ Veterans Boulevard</td>
<td>AM</td>
<td>36.3</td>
<td>D</td>
<td>36.9</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>36.7</td>
<td>D</td>
<td>36.9</td>
</tr>
<tr>
<td>#8 Jefferson Avenue/ Veterans Boulevard</td>
<td>AM</td>
<td>15.7</td>
<td>B</td>
<td>15.7</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>28.3</td>
<td>C</td>
<td>28.0</td>
</tr>
<tr>
<td>#9 Main Street/ Veterans Boulevard</td>
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<td>18.2</td>
<td>B</td>
<td>18.6</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>29.1</td>
<td>C</td>
<td>28.8</td>
</tr>
<tr>
<td>#10 Walnut Street/ Veterans Boulevard</td>
<td>AM</td>
<td>21.0</td>
<td>C</td>
<td>21.5</td>
</tr>
<tr>
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<td>35.0</td>
</tr>
<tr>
<td>#11 Maple Street/ Veterans Boulevard</td>
<td>AM</td>
<td>23.3</td>
<td>C</td>
<td>23.5</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>32.8</td>
<td>C</td>
<td>33.7</td>
</tr>
<tr>
<td>#12 Hansen Way/ Veterans Boulevard (U)</td>
<td>AM</td>
<td>20.0</td>
<td>C</td>
<td>22.5</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>27.4</td>
<td>D</td>
<td>31.0</td>
</tr>
<tr>
<td>#13 Chestnut Street/ Veterans Boulevard</td>
<td>AM</td>
<td>15.7</td>
<td>B</td>
<td>15.9</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>17.8</td>
<td>B</td>
<td>19.2</td>
</tr>
<tr>
<td>#14 Woodside Road/ Veterans Boulevard</td>
<td>AM</td>
<td>22.4</td>
<td>C</td>
<td>23.7</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>41.9</td>
<td>D</td>
<td>44.9</td>
</tr>
</tbody>
</table>


Notes:
1. Signalized intersection LOS based on average control delay expressed in seconds per vehicle. Unsignalized intersection LOS based on average control delay expressed in seconds per vehicle. Signalized and unsignalized analysis methodologies obtained from the 2000 Highway Capacity Manual, Transportation Research Board and include different delay ranges for each LOS.
2. Level of service.
3. “Change in Average Delay” is the change in the average delay between Background and Project Conditions.
(U) = Unsignalized intersection.
The results of the LOS calculations under Project Conditions indicate that all of the study intersections are expected to maintain acceptable operations (LOS D or better) during the AM and PM peak hours in the near term, which represents Phase I plus increased use of the hospital and emergency room according to the project construction schedule. Based on the LOS results and the significance criteria described above, Kaiser’s proposed project is expected to have a less-than-significant impact to the study intersections.

**TR-2. US 101 Freeway Segments and Ramp Operations in the Near Term** – The proposed project would not significantly affect US 101 freeway segments or ramp operations within the study area. (LTS)

**Freeway Segments.** Study segments of US 101 were reviewed during the AM and PM peak hours to determine if a significant amount of project traffic would be added to these freeway segments. This analysis was conducted to identify potential near-term freeway impacts. The results of the AM peak hour freeway segment capacity analysis are summarized in Table 3.4-12. The results of the PM peak hour freeway segment analysis are summarized in Table 3.4-13.

The results of the freeway segment capacity analysis indicate that, during the AM peak hour, the volume of vehicles in the southbound US 101 mixed-flow lanes, Woodside Road to Marsh Road, exceeds the theoretical freeway segment capacity. All other study segments have V/C ratios of less than 1.0, where volume does not exceed capacity.

The proposed project is expected to add less than one percent of each freeway segment’s capacity. Based on the significance criteria, the proposed project would result in a less-than-significant impact on the nearby freeway segments under Project Conditions.

As discussed under Background Conditions, the addition of auxiliary lanes would create a weaving section for vehicles entering and exiting US 101. Discussions with Caltrans operations staff indicated that weaving segments that are “sufficiently long,” like those planned for US 101 in Redwood City, provide more than an adequate amount of space for drivers to find a gap and conduct the weaving maneuver. Thus, no weaving analysis is needed.

**Freeway Ramps.** To verify that the freeway ramps would have sufficient capacity to serve expected demand under Project Conditions, a volume-to-capacity analysis for each ramp was conducted. The results are presented in Table 3.4-14.

The results of the capacity analysis indicate that all of the study freeway ramps are expected to have a surplus of capacity (i.e., V/C ratios are less than 1.0) under Project Conditions.
### Table 3.4-12
AM Peak Hour US 101 Freeway Segment Capacity Analysis – Project Conditions

<table>
<thead>
<tr>
<th>Freeway Segment</th>
<th>Lane Type</th>
<th>Capacity&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Existing Volume&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Existing V/C&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Project Trips</th>
<th>Project Volume&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Project V/C&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Percent Impact&lt;sup&gt;4&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB SR 92 to Whipple Ave</td>
<td>Mixed-Flow</td>
<td>9,200</td>
<td>8,640</td>
<td>0.94</td>
<td>47</td>
<td>8,687</td>
<td>0.94</td>
<td>0.51%</td>
</tr>
<tr>
<td>SB Woodside Rd to Marsh Rd</td>
<td>Mixed-Flow</td>
<td>6,900</td>
<td>7,720</td>
<td>1.12</td>
<td>38</td>
<td>7,758</td>
<td>1.12</td>
<td>0.55%</td>
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<tr>
<td></td>
<td>HOV</td>
<td>1,800</td>
<td>1,136</td>
<td>0.63</td>
<td>6</td>
<td>1,142</td>
<td>0.63</td>
<td>0.33%</td>
</tr>
<tr>
<td>NB Marsh Rd to Woodside Rd</td>
<td>Mixed-Flow</td>
<td>6,900</td>
<td>5,187</td>
<td>0.75</td>
<td>55</td>
<td>5,242</td>
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<tr>
<td></td>
<td>HOV</td>
<td>1,800</td>
<td>889</td>
<td>0.49</td>
<td>9</td>
<td>898</td>
<td>0.50</td>
<td>0.50%</td>
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<tr>
<td>NB Whipple Ave to SR 92</td>
<td>Mixed-Flow</td>
<td>9,200</td>
<td>7,008</td>
<td>0.76</td>
<td>33</td>
<td>7,041</td>
<td>0.77</td>
<td>0.36%</td>
</tr>
</tbody>
</table>


*Notes:*
1. Capacity assumes 2,300 vehicles per hour per lane for mixed-flow lanes and 1,800 vehicles per hour per lane for HOV lanes.
2. Auxiliary lane capacity not included in the freeway segment capacity analysis.
4. Percent Impact determined by dividing the number of project trips by the freeway segment’s capacity.

### Table 3.4-13
PM Peak Hour US 101 Freeway Segment Capacity Analysis – Project Conditions

<table>
<thead>
<tr>
<th>Freeway Segment</th>
<th>Lane Type</th>
<th>Capacity&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Existing Volume&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Existing V/C&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Project Trips</th>
<th>Project Volume&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Project V/C&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Percent Impact&lt;sup&gt;4&lt;/sup&gt;</th>
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</thead>
<tbody>
<tr>
<td>SB SR 92 to Whipple Ave</td>
<td>Mixed-Flow</td>
<td>9,200</td>
<td>7,772</td>
<td>0.84</td>
<td>32</td>
<td>7,804</td>
<td>0.85</td>
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<tr>
<td>SB Woodside Rd to Marsh Rd</td>
<td>Mixed-Flow</td>
<td>6,900</td>
<td>6,388</td>
<td>0.93</td>
<td>45</td>
<td>6,433</td>
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<td>0.65%</td>
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<td></td>
<td>HOV</td>
<td>1,800</td>
<td>939</td>
<td>0.52</td>
<td>7</td>
<td>946</td>
<td>0.53</td>
<td>0.39%</td>
</tr>
<tr>
<td>NB Marsh Rd to Woodside Rd</td>
<td>Mixed-Flow</td>
<td>6,900</td>
<td>4,001</td>
<td>0.58</td>
<td>36</td>
<td>4,037</td>
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<td></td>
<td>HOV</td>
<td>1,800</td>
<td>639</td>
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<td>7</td>
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<td>0.38%</td>
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<td>39</td>
<td>6,313</td>
<td>0.69</td>
<td>0.42%</td>
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*Notes:*
1. Capacity assumes 2,300 vehicles per hour per lane for mixed-flow lanes and 1,800 vehicles per hour per lane for HOV lanes.
2. Auxiliary lane capacity not included in the freeway segment capacity analysis.
4. Percent Impact determined by dividing the number of project trips by the freeway segment’s capacity.
### Table 3.4-14
US 101 Freeway Ramp Capacity Analysis – Project Conditions

<table>
<thead>
<tr>
<th>Weaving Segment</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Capacity¹</td>
<td>Volume²</td>
</tr>
<tr>
<td>Southbound US 101 Off-Ramp/Veterans Boulevard</td>
<td>3,800</td>
<td>1,794</td>
</tr>
<tr>
<td>Northbound US 101 On-Ramp/Whipple Avenue</td>
<td>1,900</td>
<td>1,118</td>
</tr>
<tr>
<td>Southbound US 101 On-Ramp/Woodside Road</td>
<td>2,000</td>
<td>1,051</td>
</tr>
<tr>
<td>Northbound US 101 Off-Ramp/Woodside Road</td>
<td>1,900</td>
<td>1,348</td>
</tr>
</tbody>
</table>


*Notes:*
2. Volumes obtained from existing count data provided by Caltrans plus traffic from the proposed project.

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**TR-3. Local Circulation** - *Neither the proposed project or the Higher Occupancy Scenario would interfere with existing or proposed bicycle, pedestrian, or transit facilities. However, there are potentially significant impacts to bus-related traffic flow, bus and shuttle access, site access, and on-site circulation. (PS)*

The proposed pedestrian and transit circulation plan of the proposed project was reviewed to address transit, pedestrian, and bicycle access and circulation.

**Buses.** The addition of providers, staff, and patients would increase demand for SamTrans bus service. Assuming up to five percent of the new trips are made by bus transit, this could result in up to 16 new peak hour transit trips. This number is not expected to result in any capacity issues for existing service.

SamTrans Bus Route 270 provides direct access to the project site via existing stops on Veterans Boulevard. The stops are located mid-block between Walnut Street and Maple Street. Buses serving this stop may interrupt traffic flow on Veterans Boulevard if sufficient right-of-way is not available for buses to pull out of the travel way while passengers board and disembark. This would be a potentially significant impact. However, sufficient right-of-way is currently available.

The proposed project is expected to generate transit demand near the Veterans Boulevard/Walnut Street intersection, where the future hospital and administration buildings are to be located, and near the Veterans Boulevard/Maple Street intersection, where the MOBs are to be located. Without adequate outside lane width or a bus turn-out, a stopped bus could...
interrupt traffic on Veterans Boulevard. In addition, the location of the eastbound bus stop encourages pedestrians attempting access the shopping center across Veterans Boulevard to jaywalk across this major roadway.

**Shuttles.** Buildout of the proposed project would affect the circulation of the two existing shuttles. Additionally, new shuttle routes, depending on where they stop, could affect through traffic on city streets.

A key element to increasing the use of Caltrain and bus transit service as an alternative to automobile trips by project employees is frequent and reliable shuttle service. Shuttle service should be provided at a minimum of 15-minute intervals during peak periods and when staff shifts change at campus facilities. Shuttle arrivals and departures should be coordinated with the train schedule. Although some patients may use Caltrain, staff is expected to represent the greatest proportion of riders. In addition, the Caltrain station is a major stop for SamTrans bus routes other than Route 270, and the shuttle would help make bus service a more viable alternative.

**Pedestrian Facilities.** As depicted on Figure 2-6 in Section 2, Project Description, the proposed project includes pedestrian facilities (i.e., sidewalks) along all portions of the project site that fronts city streets with the exception of Bradford Street and Walnut Street adjacent to Kaiser’s Walnut building. The Master Plan shows additional pedestrian facilities within the campus. A pedestrian bridge over Walnut Street is proposed that would directly connect Parking Structure B to the Hospital. An existing pedestrian signal is located mid-block on Maple Street between Marshall Street and Veterans Boulevard and fosters access between portions of the campus located east and west of Maple Street. The Main Street/Bradford Street intersection is proposed to become signalized presumably to provide a controlled pedestrian crossing to the administration building on the north side of Main Street (the traffic signal is not warranted from an intersection operations perspective). Pedestrian crossings are provided at all signalized intersections and at the Walnut Street/Bradford Street unsignalized intersection. These facilities are expected to help minimize conflicts between pedestrians and vehicles and provide opportunities for campus employees and patients to walk to and between buildings.

Pedestrian access is an extremely important component of the transportation system for the project site. Its proximity to the downtown core and adjacent land uses, the links to Caltrain and bus service, and the need to minimize intra-campus vehicular travel are all key reasons to provide adequate pedestrian facilities around and within the site. If adequate pedestrian facilities are not provided, this may lead to a potentially significant impact on pedestrians.

**Bicycle Facilities.** There are no designated bicycle facilities in the vicinity of the project site. Bicycles share the roadway with vehicles. The project is not proposing to add any on-street facilities, and there are no planned/future bicycle facilities in the vicinity of the project. Therefore, the proposed project is not expected to prohibit future facilities and no significant impact would occur (based on the significance criteria identified above).
Site Access. The proposed vehicular circulation plan (Figure 2-5 in Section 2, Project Description) was reviewed to address vehicular access to the project site. Parking Structures A, B, and D would have direct access to Veterans Boulevard. Due to the center median on Veterans Boulevard, left turns out of these parking structures would be prohibited but right turns in and out would be permitted. An existing median break does permit westbound left-turn lane ingress to existing Parking Structure A. Vehicles exiting the Medical Center via driveways onto Veterans Boulevard and desiring to travel west on Veterans Boulevard would be required to turn right and make a U-turn at the next downstream intersection. Additional access to Parking Structure B would be provided via a full access driveway on Bradford Street. Parking Structures C and E would have access from Marshall Street only, with Parking Structure C sharing access with a service courtyard.

The number of driveways is expected to be sufficient to serve the expected demand of the proposed project. Access to the project site driveways is also expected to be adequate. Nevertheless, because design details are not yet available, if driveways are located too close to the adjacent public street intersection, the proposed project could create turning conflicts at the intersection. Similarly, driveways to parking structures without adequate warning systems and signage may not adequately signal the presence of pedestrians to vehicle drivers and the presence of vehicles to pedestrians.

Designated drop-off areas would be provided on either side of Main Street (providing access to the administrative offices and Cancer Care Center), on the east side of Walnut Street (providing access to the Hospital), and on the east and west sides of Maple Street (providing access to the MOBs). Because design details are not yet available, it is possible for the drop-off areas to interfere with through traffic on the adjacent street and for drop-offs from the passenger side of vehicles to occur next to the curb.

On-Site Circulation. As noted above, a detailed site plan is currently unavailable to assess the roadway geometrics and parking structure circulation design. Thus, this assessment is based on City and industry standards. It is recommended that all two-way circulation aisles maintain a minimum width of 24 feet. All parking spaces should be designed according to City standards. Dead-end parking aisles should be avoided, but if needed, an adequate turn-around area should be provided. Turning templates should be applied to the final site plan to ensure that all vehicles circulating within the site can negotiate all required turning movements. The Redwood City Fire Department should review the final site plan to ensure that adequate emergency access would be provided.

On-site pedestrian circulation is shown in Figure 2-6 via public sidewalks along the project site frontage and on sidewalks through the central plaza surrounded by the Hospital and MOB 2/Parking Structure C and MOB 3/Parking Structure D. There does not appear to be a pedestrian connection between the central plaza and Marshall Street via Marshall Court (the service courtyard entrance). This could encourage pedestrians to circulate on Marshall Court, competing with motorized vehicles, a potentially significant impact.
MITIGATION MEASURES. The following mitigation measures would reduce the potentially significant bus-related traffic flow, bus and shuttle access, site access, and on-site circulation impacts to a less-than-significant level. (LTS)

TR-3.1 Design Bus Access to Minimize Conflicts Among Vehicles and Pedestrians. To maintain traffic flow along Veterans Boulevard and minimize conflicts between buses and other vehicles:

a. The existing 20-foot width of the southbound curb lane on Veterans Boulevard adjacent to the project site shall be maintained. This lane width allows a bus to exit the flow of traffic while making a stop.

b. Red curb shall be located for 20 feet on either side of the stop if on-street parking is permitted.

c. If the lane width is narrowed at all, a separate bus turnout shall be provided.

TR-3.2 Design Pedestrian Access to Minimize Conflicts with Vehicles. To maintain pedestrian and traffic flow and minimize conflicts between pedestrians and vehicles:

a. All public and on-site sidewalks shall provide additional width where possible.

b. Sidewalks shall maintain a minimum of five feet in width in low traffic areas, and 10 or more feet in width where high pedestrian volumes are anticipated (e.g. near bus stops, between parking structures and the Hospital or MOBs) and where street furniture or street luminaries may reduce the effective walking area, or as otherwise stipulated in the Precise Plan.

c. The proposed pedestrian bridge, linking Parking Structure B with the Hospital, shall be designed so that it does not interfere with visibility for vehicles on Walnut Street. To be effective in reducing the number of pedestrians crossing midblock at this location, the lower level of the parking structure shall be designed to preclude pedestrian access on Walnut Street. The vehicle entrances are currently proposed for Veterans Boulevard and Bradford Street, which will discourage at-grade pedestrian crossings.

d. The existing pedestrian signal located on Maple Street will provide access between the portions of the campus on either side of Maple Street. The pedestrian signal could adversely affect operations at the Veterans Boulevard/Maple Street intersection due to its proximity to that intersection. A combination of pedestrian enhancements could be installed at this location, including bulbouts (narrowing the amount of roadway pedestrians would have to cross), up-lit crosswalks, or pedestrian crossing warning systems.
e. Adequate pedestrian access shall be provided throughout the Medical Center, including between the central plaza and Marshall Street.

**TR-3.3 Design Site Access and Circulation to Minimize Conflicts with Vehicles.** To maintain traffic flow and minimize conflicts between pedestrians and vehicles, the project sponsor shall comply with the following standards, unless they conflict with the Precise Plan in which case the Precise Plan would govern:

a. All driveways shall be located at a minimum of 75 feet from the adjacent public street intersection (measured from the curb return to the first driveway cut).

b. Driveways to parking structures shall be installed with warning systems and signage to alert motorists and pedestrians of each other.

c. Drop off areas shall include one lane for drop-offs with a by-pass lane for vehicles exiting the drop-off lane.

d. Drop off areas shall be designed so drop-offs occur from the passenger side of vehicles next to the curb.

e. Parking aisles, turning templates, and circulation aisles shall be designed to City standards or as stipulated in the Precise Plan.

**TR-3.4 Reduce Project-related Motor Vehicle Emissions through Alternate Transportation Facilities.** Incorporation of the following measures into the proposed project and/or into the Transportation Demand Management (TDM) program required by C/CAG would ensure further reduction of the number of motor vehicle trips or the length of the trips. This list is not intended to be exhaustive, and other equivalent measures may be introduced by the City, C/CAG, or the project sponsor. All TDM measures are subject to review and approval by Redwood City.

a. Kaiser shall subsidize transit tickets for employees wishing to use Caltrain or SamTrans buses as a commute alternative. This will encourage the use of the existing transit facilities as a commute alternative.

b. Kaiser shall work with SamTrans to evaluate relocation of the existing mid-block Veterans Boulevard stop and the addition of a second stop on Veterans Boulevard. The project sponsor should provide a turnout (as required), a transit shelter, and other amenities at all bus stops located along the project frontage to encourage the use of this mode.

c. Caltrain shuttle stop locations shall be designated onsite or in turnouts along the project site frontage to minimize the impact to through traffic on city streets. Additionally, the shuttle stops shall be designed to avoid conflict with on or off site vehicular, pedestrian, or bicycle circulation.
d. Kaiser shall increase the frequency and number of shuttles to provide convenience access to the Caltrain station and downtown Redwood City.

e. To encourage bicycle travel, the project shall include secure and covered bicycle parking spaces on site for staff. Additional bicycle racks shall be installed throughout the campus to allow patients and other visitors to lock their bicycle. Enhanced bicycle facilities will allow Caltrain riders an alternative to using the shuttle and will permit bicycle usage for other activities such as travel to downtown lunch and shopping destinations, as well as exercise opportunities.

f. Kaiser shall provide on-site amenities to encourage bicycles and walking as a commute alternative. These amenities shall include showers and changing rooms.

g. The City’s draft Downtown Area Plan and draft Kaiser Master Plan Urban Design Guidelines both call for enhanced pedestrian connections to and through the Downtown District. The City shall review Kaiser’s development applications to ensure that the campus is designed and built in compliance with these City policies. In developing its plans, the project sponsor shall design sidewalks and pedestrian routes in a manner that encourages walking to, from, and around the Medical Center.

TR-4. Parking Supply and Demand - The proposed project would provide sufficient onsite parking spaces to meet the projected parking demand. (LTS)

Parking demand at the Medical Center consists of spaces required to serve hospital, emergency room, medical office, and administrative office parking needs. Each of these components is described below.

Hospital Parking. ITE Parking Generation (6TH Edition) presents parking generation rates for hospitals based on occupied parking spaces per hospital bed. Similar to the trip generation rates developed for the hospital to determine trips per occupied bed, the ITE parking generation rate was divided by 0.75 (information provided by James Brinkley Company indicated that most hospitals are approximately 75 percent occupied) to develop a parking rate per occupied bed.

The ITE rate is 1.79 occupied parking spaces per bed. The adjusted rate is 2.39 occupied parking spaces per occupied bed. Therefore, the increase in 40 occupied beds associated with the proposed project is expected to generate demand for 96 additional spaces over the current hospital demand. Standard transportation engineering practice recommends that the parking demand be multiplied by 1.10 to determine the number of parking spaces that should be provided (to account for circulation). Therefore, a minimum of 106 parking spaces would be required for the increased hospital use.
Emergency Room Parking. The trip generation estimates for the increase in emergency room parking assumed that a total of five patients would be admitted and treated during the peak hour. Assuming that each patient visit lasts four hours, it was conservatively estimated that the parking demand generated by the increased emergency room use would be approximately 40 parking spaces. Using the circulation factor of 1.10, a minimum of 44 parking spaces would be required for the increased emergency room use.

Medical Office Parking. Parking occupancy surveys were conducted at the existing Kaiser clinic in the City of Roseville located at Riverside Boulevard and Cirby Road near I-80 (the same facility that was surveyed to estimate trip generation). The results of the survey indicate that the facility generates a total parking demand of 629 spaces. Based on 72 providers at the facility, the data resulted in a parking generation rate of 8.74 parking spaces per provider.

During Phase I of the proposed project, Kaiser projects that the number of on-campus providers will increase by 23. Using the surveyed parking generation rate, the MOBs are expected to generate an additional parking demand of 201 parking spaces. Using the circulation factor of 1.10, a minimum of 221 parking spaces would be required for the MOBs.

Administrative Office Parking. The 34,000 GSF of administrative office space that is currently located in off-campus facilities is expected to transfer to the Redwood City campus. The administrative office space is expected to have parking characteristics that are similar to regular office space. The City of Redwood City parking code was reviewed to determine the number of parking spaces that should be provided. The code, which already includes a circulation factor, requires one parking space per 300 s.f. of office space. Therefore, the relocation of administrative office staff would require at least 114 parking spaces.

Summary of Parking. The proposed project requires at least 485 new parking spaces to accommodate the increased uses on the campus and avoid causing a parking impact or deficiency. The proposed project includes a total of 3,006 parking spaces in structures and lots, which represents an increase of 1,633 spaces, or 119 percent more than the existing supply of 1,373 spaces. Thus, the increase in demand of 485 spaces related to the proposed project would be accommodated by the proposed 1,633 new spaces and no parking deficiencies are anticipated.

TR-5. Congestion Management Agency Requirements - Both the proposed project and the Higher Occupancy Scenario would generate more than 100 new peak hour trips and would be required to prepare a Transportation Demand Management Plan to satisfy C/CAG requirements. (LTS)

Kaiser’s proposed project is expected to generate 402 new AM peak-hour trips and 354 new PM peak hour trips. Because the proposed project is expected to generate more than 100 net new peak-hour trips and is subject to CEQA review, the proposed project must meet the requirements presented in the C/CAG Guidelines for the Implementation of the Land Use Component of the 1999 Congestion Management Program.
Based on the C/CAG requirements, the project sponsor must implement and maintain a transportation demand management (TDM) plan that has the capacity to fully reduce all 402 net new peak-hour trips on the CMP roadway network. The TDM plan, to be developed by the project sponsor, must be approved by both the City of Redwood City and C/CAG prior to certification of this EIR. Kaiser’s proposed TDM plan is presented in Appendix E.

**TR-6. Construction Period Trips and Parking** - Construction-related trips from construction deliveries and workers would add to congestion at study area intersections but because the effects would be temporary, they are considered to be less than significant. The parking demand associated with construction activities would not exceed on-street and off-street parking supply (Refer to Table 2-10). (LTS)

Development of the proposed project would require demolition of existing structures, transport of waste, earth, materials, and construction of new buildings. All of these activities would generate trips by construction vehicles and workers. The vehicles with the greatest impact on peak period traffic operations are trucks because of their slow acceleration, long deceleration, and wide turning radii. These characteristics can reduce the capacity of the adjacent streets if they constitute a significant proportion of traffic. It should be noted that Kaiser’s current construction plans would not involve any street closures. The project description (in Section 2.7) notes that Kaiser will be required to prepare a construction and demolition plan that will address potential construction-period impacts including traffic and parking issues.

Two components of project construction would add traffic to the surrounding roadway system. The first component is traffic associated with deliveries to the project site. Peak construction deliveries are expected to occur in October 2013 when MOB 2 and the Administration Building are both under construction. The second component is trips generated by on-site construction workers. The greatest number of on-site construction workers is expected to occur between August 2008 and January 2009 when the replacement Hospital and Parking Structure B are both expected to be under construction. These components are described in greater detail below.

**Construction Deliveries.** Information provided by the project sponsor indicates that when MOB 2 and the Administration Building are under construction (October 2013), a total of 80 deliveries per day are expected. Assuming that ten percent of these deliveries occur during the peak hours, it is estimated that eight deliveries would occur during each peak hour. Assuming that all deliveries constitute two trips (one inbound trip and one outbound trip) and that each delivery truck has a passenger car equivalency of 2.0 cars, it was estimated that trips generated by delivery vehicles would be equivalent to 32 peak hour vehicle trips (16 inbound trips and 16 outbound trips). This volume would not significantly affect any of the study intersections during the peak periods.

**Construction Workers.** Based on information provided by the project sponsor, the greatest number of on-site construction workers would occur when the replacement Hospital and Parking Structure B are both under construction (August 2008 thru January 2009). During this
time, the project sponsor projects that 350 construction workers would be on-site. Although construction workers typically generate traffic outside the peak hours, for purposes of this analysis, it was conservatively assumed that half (or 175) of the construction workers would be arriving during the AM peak hour and departing during the PM peak hour.

**Intersection Level of Service.** An LOS analysis was conducted for year 2008 conditions (when the hospital and Parking Structure B are under construction) and when construction traffic is expected to be at its highest level. This analysis was conducted by: 1) applying a growth factor of one percent per year to existing volumes, 2) adding trips generated by approved and pending projects in the area, 3) adding trips associated with Phase I of the proposed project, and 4) adding traffic generated by the construction workers. The results of the LOS analysis under year 2008 conditions indicated that all but one of the study intersections are expected to operate acceptably (LOS D or better) during the AM and PM peak hours. The Veterans Boulevard/Hansen Way intersection is expected to operate at an unacceptable level (LOS E during the PM peak hour only) under this scenario. However, the minor street approach to this intersection is not expected to meet the minimum volume requirement for traffic signal installation. Therefore, the addition of construction worker traffic is *not* expected to significantly affect peak period intersection operations in 2008.

In year 2020 (the year which corresponds to Cumulative Conditions), MOB 4 and Parking Structure E are expected to be under construction. Based on information provided by the project sponsor, approximately 150 construction workers are expected to be on site at this time. Similar to the Year 2008 analysis described above, 50 percent of the traffic generated by the 150 construction workers (75 inbound AM peak hour trips and 75 outbound PM peak hour trips) was added to the trips generated by the proposed project under Cumulative Conditions and an LOS analysis was conducted. The results of the LOS analysis indicate that, with construction traffic added to the Cumulative with Project Condition volumes, the Whipple Avenue/Veterans Boulevard intersection is expected to operate at LOS F during the AM and PM peak hours. The Hansen Way/Veterans Boulevard intersection is expected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour. The Woodside Road/Veterans Boulevard intersection is expected to operate at an acceptable LOS D during the AM peak hour and an unacceptable LOS F during the PM peak hour. All other study intersections are expected to operate acceptably under this scenario.

The addition of construction traffic (in addition to project traffic) under Cumulative Conditions is expected to exacerbate unacceptable operations at the Whipple Avenue/Veterans Boulevard intersection during the AM and PM peak hours. Construction traffic accounts for 1.0 second and 0.2 seconds of added delay during the AM and PM peak hours, respectively. Without this construction-related traffic, the proposed project would not result in a significant cumulative impact at this location. Since the presence of construction-related traffic is a temporary condition, the construction impact are expected to be less-than-significant at this location.

The Hansen Way/Veterans Boulevard intersection is expected to operate unacceptably during the PM peak hour under Cumulative with Project Conditions. The addition of construction...
traffic is expected to exacerbate this condition. However, the minor street approach would not meet the peak hour warrants for signal installation. Therefore, the addition of construction traffic is expected to have a less-than-significant impact at the intersection under year 2020 conditions.

The Woodside Road/Veterans Boulevard intersection would operate at an acceptable LOS D during the AM peak hour and an unacceptable LOS F during the PM peak hour under Cumulative with Project Conditions. The addition of construction traffic is expected to further exacerbate operations at this intersection during the PM peak hour. Under Cumulative with Project Conditions, intersection modifications were identified for this intersection to operate at an acceptable level. Although the identified intersection modifications would provide acceptable operations at the intersection even with added construction traffic, the modifications are considered to be infeasible due to right-of-way constraints. The addition of project traffic is expected to result in a significant cumulative intersection impact; however, the presence of construction-related traffic is a temporary condition. Therefore, the added impact from construction traffic is considered to be less-than-significant at this location.

**Parking.** As shown in Table 2-10 in Section 2, Project Description, the demand for parking during any given phase would be satisfied by spaces available onsite and on the streets surrounding the Kaiser campus. Kaiser has projected the parking demand from the medical uses at each phase, as well as the construction activities. Sufficient spaces exist on the campus from building removal and installation of temporary lots without having to rely on on-street spaces during Phases IIB, IID, III, and IV. During the other construction phases (I, IIA, IIC, and V), parking demand at the Kaiser Medical Center would need to be satisfied by using some of the 280 parking spaces on the streets surrounding and traversing the campus.

**Cumulative (Year 2020) Conditions Analysis**

A Cumulative Conditions analysis was performed to identify potential project impacts under conditions expected to occur in year 2020. First, Cumulative No Project Conditions are presented. Next, the impact of adding traffic associated with the proposed project to 2020 volumes, which represents Cumulative with Project Conditions, is discussed. The Project Conditions reflect Kaiser’s projected increase of 23 providers onsite at buildout.

In addition to cumulative impacts associated with the proposed project, a Higher Occupancy Scenario analysis was conducted under Cumulative Conditions. The Higher Occupancy Scenario analysis was conducted to estimate impacts if the campus were occupied at a higher density (i.e., more providers per square foot) than Kaiser has projected. The Higher Occupancy Scenario density projections were developed by James Brinkley Company (the City’s health care consultant) and assume an increase of 105 providers onsite at buildout.

**Cumulative (Year 2020) No Project Conditions.** The same methodology used to derive baseline conditions for the near-term scenario was applied to develop future Cumulative Conditions.
Roadway Improvements. Based on discussions with City staff, the following roadway improvements were assumed to be implemented under Cumulative Conditions:

- **Veterans Boulevard, Chestnut Street to Woodside Road.** Southbound Veterans Boulevard is expected to be widened to two lanes. This improvement is part of the Redwood City Traffic Impact Fee Mitigation Program. Discussions with City staff have indicated that this project is approximately ten to 15 years from implementation. This improvement is expected to increase queuing capacity at the Veterans Boulevard/Woodside Road intersection.

- **Veterans Boulevard/Middlefield Road Intersection.** This intersection is currently unsignalized. Signalization of the intersection was identified as mitigation for the Downtown Cinema Mixed-Use project.

Cumulative No Project Intersection Volume Estimates. Cumulative No Project Conditions are defined as year 2020 conditions without the proposed project. Volumes under this scenario were developed following a three-step process:

1. Year 2020 No Project forecasts were obtained from the C/CAG travel demand model and compared to the base year volumes. A per annum growth factor was developed to estimate the amount of regional traffic growth expected in the area.

2. A growth factor of one percent per year, determined in step 1, was applied to existing volumes that were obtained from the intersection counts.

3. Traffic associated with approved and pending projects in the area were assigned to the roadway network. These trips were then added to the factored volumes at the study intersections to obtain turning movement volumes under Cumulative Conditions.

The Cumulative No Project Conditions turning movement volumes are presented on Figure 3.4-9.

Cumulative No Project Intersection Level of Service. LOS were calculated for the study intersections using cumulative traffic volumes. Table 3.4-15 presents the LOS results under Cumulative No Project Conditions. The results of the LOS analysis under Cumulative No Project Conditions indicate that, during the AM and PM peak hours, operations at the Veterans Boulevard/Whipple Avenue intersection are expected to degrade to an unacceptable level (LOS F). Operations at the Veterans Boulevard/Hansen Way intersection are expected to degrade to an unacceptable level (LOS E) during the AM peak hour and LOS F during the PM peak hour. The Veterans Boulevard/Woodside Road intersection is expected to maintain acceptable operations during the AM peak hour but is expected to degrade to an unacceptable LOS F during the PM peak hour. All other study intersections are expected to maintain acceptable operations (LOS D or better) during the AM and PM peak hours.
Slipsheet for Figure 3.4-9 Cumulative No Project Condition Volumes
Table 3.4-15
Intersection Level of Service Summary – Cumulative No Project Conditions

<table>
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<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
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<td>#1 Walnut Street/ Marshall Street</td>
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<td>Stop-Control</td>
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<td>B</td>
</tr>
<tr>
<td>#3 Maple Street/ Marshall Street</td>
<td>Stop-Control</td>
<td>11.7</td>
<td>B</td>
</tr>
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<td>B</td>
</tr>
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<td>Stop-Control</td>
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<td>B</td>
</tr>
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</tr>
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<td>#8 Jefferson Avenue/ Veterans Boulevard</td>
<td>Traffic Signal</td>
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<td>C</td>
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<td>#14 Woodside Road/ Veterans Boulevard</td>
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Notes:
1. Signalized intersection LOS based on average control delay expressed in seconds per vehicle. Unsignalized intersection LOS based on average total control delay expressed in seconds per vehicle. Signalized and unsignalized analysis methodologies obtained from the 2000 Highway Capacity Manual, Transportation Research Board.
2. Level of Service.

Cumulative No Project Freeway Segment Capacity Analysis. Study segments of US 101 were reviewed during the AM and PM peak hours to evaluate expected freeway operations under Cumulative No Project Conditions. An annual growth rate of 0.5 percent per year was estimated based on information from the C/CAG travel demand forecasting model and regional growth trends. This growth rate was applied to the existing volumes and the freeway segment capacity analysis was conducted under Cumulative No Project Conditions. The results of the freeway segment capacity analysis are summarized in Table 3.4-16.

The results of the freeway segment capacity analysis indicate that the volume of vehicles in the southbound US 101 mixed-flow lanes exceeds the segment’s capacity from SR 92 to Whipple Avenue and from Woodside Road to Marsh Road during the AM peak hour. During the PM peak hour, the demand in the southbound US 101 mixed-flow lanes from Woodside Road to Marsh Road is expected to exceed capacity. All other study segments are expected to have V/C ratios less than 1.0.
### Table 3.4-16
US 101 Freeway Segment Capacity Analysis – Cumulative No Project Conditions

<table>
<thead>
<tr>
<th>Freeway Segment</th>
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<th>Capacity¹</th>
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<th>PM Peak Hour</th>
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<td>V/C³</td>
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<td>SB Woodside Rd to Marsh Rd</td>
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<td>9,200</td>
<td>0.83</td>
<td>6,863</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7,666</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Fehr & Peers Associates, October 2002.

**Notes:**
1. Capacity assumes 2,300 vehicles per hour per lane for mixed-flow lanes and 1,800 vehicles per hour per lane for HOV lanes. Auxiliary lane capacity not included in the freeway segment capacity analysis. See text of description on how traffic in the auxiliary lanes was addressed in the analysis.
2. Volumes obtained by applying a 0.5-percent per year growth factor to the existing count data provided by Caltrans.

**Cumulative No Project Freeway Ramp Capacity Analysis.** Operation of the study freeway ramps was reviewed by conducting a volume-to-capacity analysis under Cumulative No Project Conditions. The purpose of the analysis was to verify that the freeway ramps would have sufficient capacity to serve demand under Cumulative No Project Conditions.

A growth rate of 0.5 percent per year was applied to the existing volumes (obtained from Caltrans counts) and traffic from approved and pending projects in the area was then added together to estimate volumes under Cumulative No Project Conditions. The results of the volume-to-capacity analysis are presented in Table 3.4-17.

The results of the analysis indicate that all of the study ramps are expected to have a V/C ratio less than 1.0 during the AM and PM peak hours under Cumulative No Project Conditions (i.e., the ramps are expected to have sufficient capacity to serve demand). The northbound off-ramp from US 101 to Woodside Road is expected to approach capacity during the PM peak hour, but all other locations are projected to have a V/C ratio of 0.85 or less.

**Cumulative (Year 2020) With Proposed Project Conditions.** Project-related conditions (23 additional providers, plus increased hospital bed occupancy and emergency room use) in combination with cumulative development result in the following impacts.
### Table 3.4-17

US 101 Freeway Ramp Capacity Analysis – Cumulative No Project Conditions

<table>
<thead>
<tr>
<th>Weaving Segment</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capacity¹</td>
<td>Volume²</td>
</tr>
<tr>
<td>Southbound US 101 Off-Ramp/Veterans Boulevard</td>
<td>3,800</td>
<td>2,382</td>
</tr>
<tr>
<td>Northbound US 101 On-Ramp/Whipple Avenue</td>
<td>1,900</td>
<td>1,512</td>
</tr>
<tr>
<td>Southbound US 101 On-Ramp/Woodside Road</td>
<td>2,000</td>
<td>1,492</td>
</tr>
<tr>
<td>Northbound US 101 Off-Ramp/Woodside Road</td>
<td>1,900</td>
<td>1,617</td>
</tr>
</tbody>
</table>


Notes:
2. Volumes obtained by applying a 0.5-percent growth factor per year to existing count data provided by Caltrans plus traffic from approved and pending projects.

**TR-7. Intersection Operations under Cumulative with Project Conditions** - The Cumulative with Project Conditions would result in several intersections (Whipple Avenue/Veterans Boulevard, Hansen Way/Veterans Boulevard, and Woodside Road/Veterans Boulevard) operating at unacceptable levels during various peak periods. However, the proposed project would contribute substantially only to the unacceptable levels of service at the Woodside Road/Veterans Boulevard intersection. (S)

To estimate volumes under Cumulative with Project Conditions, traffic from the proposed project was added to the Cumulative No Project Conditions volumes. The “with Project” volumes are presented on Figure 3.4-10. LOS was calculated for the study intersections using cumulative traffic volumes plus traffic from Kaiser’s proposed project. Table 3.4-18 presents the LOS results under Cumulative with Proposed Project Conditions.

**Whipple Avenue/Veterans Boulevard.** The results of the intersection analysis indicate that the Whipple Avenue/Veterans Boulevard intersection is expected to operate at an unacceptable LOS F during the AM and PM peak hours. The addition of project traffic is expected to increase the average delay at the intersection by 4.9 and 1.5 seconds during the AM and PM peak hours, respectively. Therefore, the proposed project in combination with regional growth and traffic from pending projects in the area, is expected to have a less-than-significant cumulative project impact on the Whipple Avenue/Veterans Boulevard intersection.
Figure 3.4-10: Cumulative With Project Conditions Volumes
<table>
<thead>
<tr>
<th>Intersection</th>
<th>Peak Hour</th>
<th>No Project Conditions</th>
<th>With Proposed Project Conditions</th>
<th>Change in Average Delay</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Delay¹</td>
<td>LOS²</td>
<td>Delay¹</td>
</tr>
<tr>
<td>#1 Walnut Street/ Marshall Street</td>
<td>AM</td>
<td>12.4</td>
<td>B</td>
<td>13.0</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>11.6</td>
<td>B</td>
<td>12.2</td>
</tr>
<tr>
<td>#2 Marshall Court/ Marshall Street</td>
<td>AM</td>
<td>10.5</td>
<td>B</td>
<td>11.0</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>11.4</td>
<td>B</td>
<td>12.1</td>
</tr>
<tr>
<td>#3 Maple Street/ Marshall Street</td>
<td>AM</td>
<td>11.7</td>
<td>B</td>
<td>12.7</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>21.7</td>
<td>C</td>
<td>26.0</td>
</tr>
<tr>
<td>#4 Chestnut Street/ Marshall Street</td>
<td>AM</td>
<td>13.4</td>
<td>B</td>
<td>14.1</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>15.7</td>
<td>C</td>
<td>16.7</td>
</tr>
<tr>
<td>#5 Main Street/ Bradford Street</td>
<td>AM</td>
<td>14.7</td>
<td>B</td>
<td>15.5</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>20.8</td>
<td>C</td>
<td>22.8</td>
</tr>
<tr>
<td>#6 Walnut Street/ Bradford Street</td>
<td>AM</td>
<td>7.9</td>
<td>A</td>
<td>8.1</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>8.6</td>
<td>A</td>
<td>8.8</td>
</tr>
<tr>
<td>#7 Whipple Avenue/ Veterans Boulevard</td>
<td>AM</td>
<td>82.1</td>
<td>F</td>
<td>87.0</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>84.6</td>
<td>F</td>
<td>86.1</td>
</tr>
<tr>
<td>#8 Jefferson Avenue/ Veterans Boulevard</td>
<td>AM</td>
<td>20.5</td>
<td>C</td>
<td>21.1</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>32.7</td>
<td>C</td>
<td>33.0</td>
</tr>
<tr>
<td>#9 Main Street/ Veterans Boulevard</td>
<td>AM</td>
<td>20.8</td>
<td>C</td>
<td>21.4</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>30.1</td>
<td>C</td>
<td>30.4</td>
</tr>
<tr>
<td>#10 Walnut Street/ Veterans Boulevard</td>
<td>AM</td>
<td>20.4</td>
<td>C</td>
<td>22.8</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>32.5</td>
<td>C</td>
<td>36.6</td>
</tr>
<tr>
<td>#11 Maple Street/ Veterans Boulevard</td>
<td>AM</td>
<td>27.9</td>
<td>C</td>
<td>28.5</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>37.5</td>
<td>D</td>
<td>38.3</td>
</tr>
<tr>
<td>#12 Hansen Way/ Veterans Boulevard</td>
<td>AM</td>
<td>35.2</td>
<td>E</td>
<td>41.0</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>104.1</td>
<td>F</td>
<td>132.2</td>
</tr>
<tr>
<td>#13 Chestnut Street/ Veterans Boulevard</td>
<td>AM</td>
<td>16.8</td>
<td>B</td>
<td>21.2</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>19.0</td>
<td>B</td>
<td>20.0</td>
</tr>
<tr>
<td>#14 Woodside Road/ Veterans Boulevard</td>
<td>AM</td>
<td>47.2</td>
<td>D</td>
<td>54.0</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>114.2</td>
<td>F</td>
<td>128.8</td>
</tr>
</tbody>
</table>


Notes:
1. Signalized intersection LOS based on average control delay expressed in seconds per vehicle. Unsignalized intersection LOS based on average total control delay expressed in seconds per vehicle. Signalized and unsignalized analysis methodologies obtained from the 2000 Highway Capacity Manual, Transportation Research Board.
2. Level of Service.
3. “Change in Average Delay” is the change in the average delay between No Project and With Project Conditions. Significant cumulative project impacts indicated in bold type.
The addition of a dedicated northbound right-turn lane was identified for this intersection in the Redwood City Traffic Impact Mitigation Fee Study. However, the LOS analysis indicated that this improvement would not allow the intersection to operate acceptably under Cumulative with Proposed Project Conditions, although it would improve operations to LOS E during the AM and PM peak hours and mitigate the impact to a less-than-significant level. For the intersection to operate acceptably (LOS D or better) during the AM and PM peak hours under Cumulative with Proposed Project Conditions, the following improvements would be needed:

- Reconfigure the northbound approach to include one left-turn lane, three through lanes, and one right-turn lane.
- Change northbound permitted left-turn phase to a protected phase.
- Provide eastbound right-turn with a green arrow during northbound left-turn phase, creating an “overlap” phase for the eastbound right-turns. Northbound u-turns would be prohibited.
- Add a second southbound left-turn lane.

With these improvements, the intersection is expected to operate at LOS D during the AM and PM peak hours. It should be noted that improvements to the northbound approach would likely be infeasible due to right-of-way constraints. Additionally, improvements to the southbound approach may require modifications to the Whipple Avenue overpass and would likely require coordination with Caltrans. Since the project does not have a significant impact at this location, no mitigation, beyond payment of the transportation fee, is required.

**Hansen Way/Veterans Boulevard.** This intersection is expected to operate at an unacceptable LOS E during the AM peak hour and LOS F during the PM peak hour under Cumulative with Proposed Project Conditions. The proposed project is expected to increase the average delay at the unsignalized intersection by more than 5.0 seconds. However, volumes on the minor street are not expected to meet the minimum volume requirement of 100 vehicles to satisfy the Caltrans Peak Hour Volume Warrant (although the minor street is expected to have 94 peak-hour vehicles). Since both conditions for a significant impact are not satisfied, the proposed project in combination with regional growth and traffic from pending projects would have a less-than-significant cumulative project impact.

It is recommended that the intersection be monitored in a similar manner as other unsignalized intersections in Redwood City to determine if signalization would be warranted in the future. If the intersection were to become signalized under Cumulative with Proposed Project Conditions, the intersection is expected to operate at LOS A during the AM and PM peak hours.

**Woodside Road/Veterans Boulevard.** This intersection is expected to maintain acceptable operations during the AM peak hour but is expected to operate at LOS F, an unacceptable level, during the PM peak hour. The proposed project, under Cumulative Conditions, is
expected to increase the average delay by more than 5.0 seconds. Therefore, the proposed project in combination with regional growth and traffic from pending projects, is expected to have a significant cumulative project impact on the Woodside Road/Veterans Boulevard intersection.

**MITIGATION MEASURE.** The following mitigation measures would reduce Cumulative with Proposed Project Conditions to a less-than-significant effect. However, the feasibility of implementing these measures at the intersection of Woodside Road/Veterans Boulevard is unlikely and therefore the impact is expected to remain significant and unavoidable. Approval of the proposed project would require a Statement of Overridding Considerations by the Redwood City Council. (SU)

**TR-7.1 Contribute to Woodside Road/Veterans Boulevard Intersection Improvements.** To mitigate cumulative project impacts, the eastbound approach on Veterans Boulevard would need to be widened to accommodate an additional through lane (with an associated receiving lane on the on-ramp to US 101). Additionally, the southbound right-turn movement would need to be controlled by a separate phase (i.e., an arrow) that would be green while the eastbound left-turn phase occurs (this is known as an “overlap” right-turn phase and would require prohibition of eastbound U-turns). With this improvement, the intersection is expected to operate at LOS C during the AM peak hour and LOS D during the PM peak hour.

It should be noted that a second receiving lane would have to be added on the US 101 on-ramp and the ramp would have to be widened to accommodate merging with the ramp connection from eastbound Woodside Road. If the ramp is not sufficiently widened, merging congestion could degrade ramp operations making this mitigation undesirable. Additionally, Caltrans approval would be required. City staff has indicated that widening of the freeway ramp is most likely infeasible.

**TR-8. US 101 Freeway Segments under Cumulative with Proposed Project Conditions - Under Cumulative With Project Conditions, certain freeway segments would be over capacity, but the proposed project would result in a minimal contribution and thus have a less-than-significant impact on the nearby freeway segments. (LTS)**

Study segments of US 101 were reviewed during the AM and PM peak hours to determine if a significant amount of project traffic would be added to these freeway segments under Cumulative Conditions. The results of the AM peak hour freeway segment capacity analysis are summarized in Table 3.4-19. The results of the PM peak hour freeway segment analysis are summarized in Table 3.4-20.
### Table 3.4-19
AM Peak Hour US 101 Freeway Segment Capacity Analysis – Cumulative With Proposed Project Conditions

<table>
<thead>
<tr>
<th>Freeway Segment</th>
<th>Lane Type</th>
<th>Capacity</th>
<th>Volume</th>
<th>V/C</th>
<th>Project Trips</th>
<th>Volume</th>
<th>V/C</th>
<th>Percent Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB SR 92 to Whipple Ave</td>
<td>Mixed-Flow</td>
<td>9,200</td>
<td>9,452</td>
<td>1.03</td>
<td>47</td>
<td>9,499</td>
<td>1.03</td>
<td>0.51%</td>
</tr>
<tr>
<td>SB Woodside Rd to Marsh Rd</td>
<td>Mixed-Flow HOV</td>
<td>6,900</td>
<td>8,445</td>
<td>1.22</td>
<td>38</td>
<td>8,483</td>
<td>1.23</td>
<td>0.55%</td>
</tr>
<tr>
<td>NB Marsh Rd to Woodside Rd</td>
<td>Mixed-Flow HOV</td>
<td>6,900</td>
<td>5,674</td>
<td>0.82</td>
<td>55</td>
<td>5,729</td>
<td>0.83</td>
<td>0.80%</td>
</tr>
<tr>
<td>NB Whipple Ave to SR 92</td>
<td>Mixed-Flow</td>
<td>9,200</td>
<td>7,666</td>
<td>0.83</td>
<td>33</td>
<td>7,699</td>
<td>0.84</td>
<td>0.36%</td>
</tr>
</tbody>
</table>


Notes:
1. Capacity assumes 2,300 vehicles per hour per lane for mixed-flow lanes and 1,800 vehicles per hour per lane for HOV lanes. Auxiliary lane capacity not included in the freeway segment capacity analysis.
2. Volumes obtained by applying a growth factor of 0.5 percent per year to existing count data provided by Caltrans.
4. Percent Impact determined by dividing the number of project trips by the freeway segment’s capacity.

### Table 3.4-20
PM Peak Hour US 101 Freeway Segment Capacity Analysis – Cumulative With Proposed Project Conditions

<table>
<thead>
<tr>
<th>Freeway Segment</th>
<th>Lane Type</th>
<th>Capacity</th>
<th>Volume</th>
<th>V/C</th>
<th>Project Trips</th>
<th>Volume</th>
<th>V/C</th>
<th>Percent Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB SR 92 to Whipple Ave</td>
<td>Mixed-Flow</td>
<td>9,200</td>
<td>8,502</td>
<td>0.92</td>
<td>32</td>
<td>8,534</td>
<td>0.93</td>
<td>0.35%</td>
</tr>
<tr>
<td>SB Woodside Rd to Marsh Rd</td>
<td>Mixed-Flow HOV</td>
<td>6,900</td>
<td>6,988</td>
<td>1.01</td>
<td>45</td>
<td>7,033</td>
<td>1.02</td>
<td>0.65%</td>
</tr>
<tr>
<td>NB Marsh Rd to Woodside Rd</td>
<td>Mixed-Flow HOV</td>
<td>6,900</td>
<td>4,377</td>
<td>0.63</td>
<td>36</td>
<td>4,413</td>
<td>0.64</td>
<td>0.64%</td>
</tr>
<tr>
<td>NB Whipple Ave to SR 92</td>
<td>Mixed-Flow</td>
<td>9,200</td>
<td>6,863</td>
<td>0.75</td>
<td>39</td>
<td>6,902</td>
<td>0.75</td>
<td>0.42%</td>
</tr>
</tbody>
</table>


Notes:
1. Capacity assumes 2,300 vehicles per hour per lane for mixed-flow lanes and 1,800 vehicles per hour per lane for HOV lanes. Auxiliary lane capacity not included in the freeway segment capacity analysis.
2. Volumes obtained by applying a growth factor of 0.5-percent per year to existing count data provided by Caltrans.
4. Percent Impact determined by dividing the number of project trips by the freeway segment’s capacity.
During the AM peak hour, the estimated volume of vehicles in the southbound US 101 mixed-flow lanes from SR 92 to Whipple Avenue and from Woodside Road to Marsh Road is expected to exceed the freeway segment capacity with or without the proposed project. All other study segments are expected to have V/C ratios less than 1.0. During the PM peak hour, the capacity of the southbound US 101 mixed-flow lanes is expected to be exceeded from Woodside Road to Marsh Road. All other study segments are expected to have V/C ratios less than 1.0.

The proposed project is expected to add less than one-percent of each freeway segment’s capacity to each segment during the AM and PM peak hours. Therefore, the proposed project would result in a less-than-significant impact on the nearby freeway segments.

**TR-9. US 101 Freeway Ramp Operations under Cumulative with Proposed Project Conditions - Under Cumulative with Project Conditions, the study freeway ramps would have sufficient capacity to serve demand. (LTS)**

Project trips onto nearby freeway ramps were added to volumes that were estimated under Cumulative No Project Conditions. The results of the volume-to-capacity analysis are presented in Table 3.4-21. The results of the analysis indicate that all of the study ramps are expected to have a V/C ratio less than 1.0 during the AM and PM peak hours under Cumulative Conditions with or without the proposed project (i.e., there is sufficient capacity to serve expected demand). The off-ramp from northbound US 101 to Woodside Road is projected to be close to capacity (V/C ratio = 0.99) by 2020. All other ramps are projected to have a V/C ratio of 0.88 or less.

<table>
<thead>
<tr>
<th>Weaving Segment</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capacity¹</td>
<td>Volume²</td>
</tr>
<tr>
<td>Southbound US 101 Off-Ramp/Veterans Boulevard</td>
<td>3,800</td>
<td>2,429</td>
</tr>
<tr>
<td>Northbound US 101 On-Ramp/Whipple Avenue</td>
<td>1,900</td>
<td>1,545</td>
</tr>
<tr>
<td>Southbound US 101 On-Ramp/Woodside Road</td>
<td>2,000</td>
<td>1,531</td>
</tr>
<tr>
<td>Northbound US 101 Off-Ramp/Woodside Road</td>
<td>1,900</td>
<td>1,681</td>
</tr>
</tbody>
</table>


*Notes:*
2. Volumes obtained by applying a 0.5-percent growth factor per year to existing count data provided by Caltrans plus traffic from approved and pending projects plus traffic from the proposed project.
Higher Occupancy Scenario - Cumulative (Year 2020) Conditions. The Higher Occupancy Scenario was developed to address the possibility that Kaiser’s projections for future occupancy of the MOBs could be underestimated. The City engaged an independent health care consultant, the James Brinkley Company, to derive this alternative scenario. In addition to the increased hospital bed occupancy and growth in the emergency room visits, the Higher Occupancy Scenario assumes that an additional 105 providers could be onsite at the Redwood City Kaiser Medical Center, compared to the Kaiser projection of 23 additional providers. The impacts of the Cumulative with Higher Occupancy Scenario Conditions are presented below.

**TR-10. Intersection Operations under Cumulative with Higher Occupancy Scenario Conditions** - Under the Cumulative with Higher Occupancy Scenario Conditions, the intersections at Maple Street/Marshal Street, Whipple Avenue/Veterans Boulevard, Hansen Way/Veterans Boulevard, and Woodside Road/Veterans Boulevard are projected to operate at unacceptable levels. (S)

**Trip Generation.** The trip generation estimates for the proposed project were revised to include the 105 on-site new providers associated with the Higher Occupancy Scenario. The revised trip generation estimates are presented in Table 3.4-22.

### Table 3.4-22

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Size</th>
<th>Weekday</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Rate²</td>
<td>In³</td>
<td>Out³</td>
</tr>
<tr>
<td>Emergency Room</td>
<td>52 patients</td>
<td>6.0</td>
<td>0.60</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>312</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hospital</td>
<td>15.7</td>
<td>1.43</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>40 new occupied</td>
<td>628</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>beds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MOB</td>
<td>95.0</td>
<td>10.9</td>
<td>572</td>
</tr>
<tr>
<td></td>
<td>105 new providers</td>
<td>9,975</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Office</td>
<td>11.0</td>
<td>1.55</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>40,000 GSF</td>
<td>440</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>11,355</td>
<td>684</td>
<td>615</td>
</tr>
</tbody>
</table>


Notes:
1. Trip generation is for increases in hospital bed occupancy, emergency room visits, medical office building (MOB) space, plus relocated administrative staff from off-campus office space. See text for details.
2. Trip generation rates for emergency room in trips per patient. Rate estimated at six trips per patient. Trip generation rates for hospital are in trips per occupied bed. Trip rates developed by dividing trip rates presented in the ITE *Trip Generation*, Sixth Edition, by 0.75 which is the average proportion of occupied beds based on information from Health Facility Planning and Design (City consultant). Trip generation rates for MOBs in trips per provider based on rates developed from driveway counts conducted at the Roseville Kaiser MOB complex. Trip generation rates for office in trips per 1,000 s.f. from ITE *Trip Generation*, Sixth Edition.
3. Inbound and outbound splits from counts conducted at the Roseville Kaiser MOB complex and ITE. Number of trips are net new trips over existing trip generation.
The Higher Occupancy Scenario is expected to generate 11,355 daily trips, 1,299 AM peak hour trips (684 inbound/615 outbound), and 1,063 PM peak hour trips (565 inbound/498 outbound). By comparison, the proposed project was estimated to generate 3,565 new daily trips, 402 AM peak hour trips, and 354 PM peak hour trips.

**Cumulative Intersection Volume Estimates.** The trips expected to be generated by the Higher Occupancy Scenario were assigned to the roadway system using the expected directions of approach and departure described under Project Conditions. These trips assignments were added to the Cumulative No Project Conditions volumes to estimate cumulative intersection volumes under this scenario.

**Cumulative Intersection Level of Service.** LOS was calculated for the study intersections using cumulative traffic volumes plus traffic from the Higher Occupancy Scenario. Table 3.4-23 presents the LOS results under Cumulative with Higher Occupancy Scenario Conditions. The results of the analysis indicate the Higher Occupancy Scenario would significantly exacerbate operations at four locations by increasing average delay by five or more seconds. The remaining study intersections are expected to operate at an acceptable level during the AM and PM peak hours.

*Maple Street/Marshall Street.* This intersection is expected to operate at an unacceptable level (LOS E) during the PM peak hour under this scenario. Under Cumulative with Higher Occupancy Scenario Conditions, intersection volumes are expected to satisfy the Caltrans Peak Hour Volume for traffic signal installation. Therefore, the Higher Occupancy Scenario in combination with regional growth and traffic from pending projects in the area is expected to result in a significant cumulative impact on the Maple Street/Marshall Street intersection.

*Whipple Avenue/Veterans Boulevard.* This intersection is expected to operate at an unacceptable LOS F during the AM and PM peak hours. The addition of Higher Occupancy Scenario traffic is expected to increase the average delay at the intersection by 15.4 seconds during the AM peak hour and 5.1 seconds during the PM peak hour. Therefore, the Higher Occupancy Scenario in combination with regional growth and traffic from pending projects in the area is expected to result in a significant cumulative impact on the Whipple Avenue/Veterans Boulevard intersection during the AM and PM peak hours.

*Hansen Way/Veterans Boulevard.* This intersection is expected to operate at an unacceptable LOS F during the AM and PM peak hours. The Higher Occupancy Scenario is expected to increase the average delay at the unsignalized intersection by more than 5.0 seconds. Volumes on the minor street are not expected to meet the minimum volume requirement of 100 vehicles to satisfy the Caltrans Peak Hour Volume Warrant (although the minor street is expected to have 94 peak-hour vehicles during the PM peak hour). Therefore, the Higher Occupancy Scenario, in combination with regional growth and traffic from pending projects, is expected to have a less-than-significant cumulative impact on the Hansen Way/Veterans Boulevard intersection.
### Table 3.4-23
Intersection Level of Service Summary – Cumulative No Project and Higher Occupancy Scenario Cumulative Conditions

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Peak Hour</th>
<th>No Project Conditions</th>
<th>With Higher Occupancy Scenario Conditions</th>
<th>Change in Average Delay³</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Delay¹</td>
<td>LOS²</td>
<td>Delay¹</td>
</tr>
<tr>
<td>#1 Walnut Street/ Marshall Street</td>
<td>AM</td>
<td>12.4</td>
<td>B</td>
<td>15.2</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>11.6</td>
<td>B</td>
<td>13.9</td>
</tr>
<tr>
<td>#2 Marshall Court/ Marshall Street</td>
<td>AM</td>
<td>10.5</td>
<td>B</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>11.4</td>
<td>B</td>
<td>13.6</td>
</tr>
<tr>
<td>#3 Maple Street/ Marshall Street</td>
<td>AM</td>
<td>11.7</td>
<td>B</td>
<td>15.9</td>
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<tr>
<td></td>
<td>PM</td>
<td>21.7</td>
<td>C</td>
<td>39.7</td>
</tr>
<tr>
<td>#4 Chestnut Street/ Marshall Street</td>
<td>AM</td>
<td>13.4</td>
<td>B</td>
<td>16.1</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>15.7</td>
<td>C</td>
<td>19.0</td>
</tr>
<tr>
<td>#5 Main Street/ Bradford Street</td>
<td>AM</td>
<td>14.7</td>
<td>B</td>
<td>18.0</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>20.8</td>
<td>B</td>
<td>28.6</td>
</tr>
<tr>
<td>#6 Walnut Street/ Bradford Street</td>
<td>AM</td>
<td>7.9</td>
<td>A</td>
<td>8.6</td>
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<tr>
<td></td>
<td>PM</td>
<td>8.6</td>
<td>A</td>
<td>9.3</td>
</tr>
<tr>
<td>#7 Whipple Avenue/ Veterans Boulevard</td>
<td>AM</td>
<td>82.1</td>
<td>F</td>
<td>97.5</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>84.6</td>
<td>F</td>
<td>89.7</td>
</tr>
<tr>
<td>#8 Jefferson Avenue/ Veterans Boulevard</td>
<td>AM</td>
<td>20.5</td>
<td>C</td>
<td>22.8</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>32.7</td>
<td>C</td>
<td>33.5</td>
</tr>
<tr>
<td>#9 Main Street/ Veterans Boulevard</td>
<td>AM</td>
<td>20.8</td>
<td>C</td>
<td>21.6</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>30.1</td>
<td>C</td>
<td>31.0</td>
</tr>
<tr>
<td>#10 Walnut Street/ Veterans Boulevard</td>
<td>AM</td>
<td>20.4</td>
<td>C</td>
<td>24.9</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>32.5</td>
<td>C</td>
<td>38.3</td>
</tr>
<tr>
<td>#11 Maple Street/ Veterans Boulevard</td>
<td>AM</td>
<td>27.9</td>
<td>C</td>
<td>29.9</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>37.5</td>
<td>D</td>
<td>40.0</td>
</tr>
<tr>
<td>#12 Hansen Way/ Veterans Boulevard</td>
<td>AM</td>
<td>35.2</td>
<td>E</td>
<td>57.7</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>104.1</td>
<td>F</td>
<td>&gt; 180</td>
</tr>
<tr>
<td>#13 Chestnut Street/ Veterans Boulevard</td>
<td>AM</td>
<td>16.8</td>
<td>B</td>
<td>17.6</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>19.0</td>
<td>B</td>
<td>23.6</td>
</tr>
<tr>
<td>#14 Woodside Road/ Veterans Boulevard</td>
<td>AM</td>
<td>47.2</td>
<td>D</td>
<td>78.8</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>114.2</td>
<td>F</td>
<td>151.5</td>
</tr>
</tbody>
</table>

**Source:** Fehr & Peers Associates, January 2003.

**Notes:**
1. Signalized intersection LOS based on average control delay expressed in seconds per vehicle. Unsignalized intersection LOS based on average total control delay expressed in seconds per vehicle. Signalized and unsignalized analysis methodologies obtained from the 2000 Highway Capacity Manual, Transportation Research Board.
2. Level of service.
3. “Change in Average Delay” is the change in the average delay between “No Project” and “With Project” conditions. Significant cumulative impacts indicated in **bold** type.
Woodside Road/Veterans Boulevard. This intersection is expected to operate at an unacceptable LOS E during the AM peak hour and an unacceptable LOS F during the PM peak hour with the addition of traffic from the Higher Occupancy Scenario. This scenario is expected to increase the average delay by more than 5.0 seconds during the AM and PM peak hour and is also expected to degrade intersection operates during the AM peak hour from LOS D to LOS E. Therefore, the proposed project in combination with regional growth and traffic from pending projects, is expected to have a significant cumulative impact on the Woodside Road/Veterans Boulevard intersection during the AM and PM peak hours.

Mitigation Measures. The following mitigation measures would reduce Cumulative with Higher Occupancy Scenario Conditions to a less-than-significant effect. However, the feasibility of implementing these measures is unlikely and therefore the impacts at the intersections of Whipple Avenue/Veterans Boulevard and Woodside Road/Veterans Boulevard are expected to remain significant and unavoidable. Approval of the Higher Occupancy Scenario would require a Statement of Overriding Considerations by the Redwood City Council. (SU)

TR-10.1 Contribute to Maple Street/ Marshall Street Intersection Improvements. To mitigate Cumulative with Higher Occupancy Scenario Conditions impacts at the Maple Street/ Marshall Street intersection, a traffic signal would need to be installed. The project sponsor shall contribute its fair share to the design and installation of the signal, which would enable the intersection to operate at LOS B during the AM and PM peak hours.

TR-10.2 Contribute to Whipple Avenue/Veterans Boulevard Intersection Improvements. An improvement has been identified for this intersection in the Redwood City Traffic Impact Mitigation Fee Study (TIMFS). The identified improvement includes the addition of a dedicated northbound right-turn lane. However, the LOS analysis conducted for this EIR indicates that this improvement alone would not provide acceptable operations during the AM or PM peak hours under Cumulative with Higher Occupancy Scenario Conditions.

In addition to the TIMFS-identified additional northbound right-turn lane, to mitigate the Cumulative with Higher Occupancy Scenario Conditions impact (i.e., to achieve LOS D at this intersection), the following improvements would be needed:

- Add a second southbound left-turn lane;
- Add a dedicated northbound left-turn lane and change northbound left-turns from permitted to protected phasing;
- Restripe the existing northbound shared through/left-turn lane as a dedicated through lane;
• Provide a “green-arrow” for eastbound right-turns while the northbound left-turn phase is occurring creating an “overlap” right-turn phase. This would also require prohibiting northbound U-turns.

With these improvements, the intersection is expected to operate at LOS D during the AM and PM peak hours. It should be noted that improvements to the northbound approach would require widening the roadway and are likely be infeasible due to right-of-way constraints. Additionally, improvements to the southbound approach may require modifications to the Whipple Avenue overpass and will likely require coordination with Caltrans. As such, the potential impact at this location would remain significant and unavoidable.

TR-10.3 *Contribute to Hansen Way/Veterans Boulevard Intersection Improvements.* It is recommended that the intersection be monitored in a similar manner as other unsignalized intersections in Redwood City to determine if signalization would be warranted in the future. If the intersection were to become signalized under Cumulative with Higher Occupancy Scenario Conditions, the intersection is expected to operate at LOS A during the AM and PM peak hours.

TR-10.4 *Contribute to Woodside Road/Veterans Boulevard Intersection Improvements.* The same improvements identified in Mitigation Measure 6.1 for this intersection for Cumulative with Proposed Project Conditions would apply under the Higher Occupancy Scenario. With these improvements, the intersection is expected to operate at LOS C during the AM peak hour and LOS D during the PM peak hour, the same as described for Cumulative with Proposed Project Conditions. As before, these improvements were considered to be infeasible and thus the impact would remain significant and unavoidable.

**TR-11. US 101 Freeway Segments under Cumulative with Higher Occupancy Scenario Conditions -**

Under the Cumulative with Higher Occupancy Scenario Conditions, the southbound US 101 mixed flow lanes from SR 92 to Whipple Avenue and from Woodside Road to Marsh Road would be significantly affected by Higher Occupancy Scenario traffic. (S)

Study segments of US 101 were reviewed during the AM and PM peak hours to determine if a significant amount of Higher Occupancy Scenario traffic would be added to these freeway segments under Cumulative Conditions. The results of the AM peak hour freeway segment capacity analysis are summarized in Table 3.4-24. The results of the PM peak hour freeway segment analysis are summarized in Table 3.4-25.

During the AM peak hour, the estimated volume of vehicles in the southbound US 101 mixed-flow lanes from SR 92 to Whipple Avenue and from Woodside Road to Marsh Road is expected to exceed the freeway segment capacity with or without the Higher Occupancy Scenario. During the AM peak hour, all other study segments are expected to have V/C ratios
### Table 3.4-24
AM Peak Hour US 101 Freeway Segment Capacity Analysis – Higher Occupancy Scenario Cumulative Conditions

<table>
<thead>
<tr>
<th>Freeway Segment</th>
<th>Lane Type</th>
<th>Capacity¹</th>
<th>Cumulative No Project Conditions</th>
<th>Project Trips</th>
<th>Higher Occupancy Scenario</th>
<th>Percent Impact⁴</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB SR 92 to Whipple Ave</td>
<td>Mixed-Flow</td>
<td>9,200</td>
<td>9,452 1.03</td>
<td>135</td>
<td>9,587 1.04</td>
<td>1.47%</td>
</tr>
<tr>
<td>SB Woodside Rd to Marsh Rd</td>
<td>Mixed-Flow, HOV</td>
<td>6,900 1,800</td>
<td>8,445 1.22 1.24 0.69 143 1,265 0.70</td>
<td>1.24 1.47% 1.28%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NB Marsh Rd to Woodside Rd</td>
<td>Mixed-Flow, HOV</td>
<td>6,900 1,800</td>
<td>5,674 0.82 0.70 155 1,002 0.56</td>
<td>2.25% 1.50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NB Whipple Rd to SR 92</td>
<td>Mixed-Flow</td>
<td>9,200</td>
<td>7,666 0.83</td>
<td>123</td>
<td>7,789 0.85</td>
<td>1.34%</td>
</tr>
</tbody>
</table>


Notes:
1. Capacity assumes 2,300 vehicles per hour per lane for mixed-flow lanes and 1,800 vehicles per hour per lane for HOV lanes. Auxiliary lane capacity not included in the freeway segment capacity analysis.
2. Volumes obtained by applying a growth factor of 0.5 percent per year to existing count data provided by Caltrans.
3. \( V/C = \text{Volume-to-Capacity Ratio}. \)
4. Percent Impact determined by dividing the number of project trips by the freeway segment’s capacity. Significant impacts shown in **BOLD** type.

### Table 3.4-25
PM Peak Hour US 101 Freeway Segment Capacity Analysis – Higher Occupancy Scenario Cumulative Conditions

<table>
<thead>
<tr>
<th>Freeway Segment</th>
<th>Lane Type</th>
<th>Capacity¹</th>
<th>Cumulative No Project Conditions</th>
<th>Project Trips</th>
<th>Higher Occupancy Scenario</th>
<th>Percent Impact⁴</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB SR 92 to Whipple Ave</td>
<td>Mixed-Flow</td>
<td>9,200</td>
<td>8,502 0.92</td>
<td>113</td>
<td>8,615 0.94</td>
<td>1.23%</td>
</tr>
<tr>
<td>SB Woodside Rd to Marsh Rd</td>
<td>Mixed-Flow, HOV</td>
<td>6,900 1,800</td>
<td>6,988 1.01 1.03 0.57 115 1,046 0.58</td>
<td>1.67% 1.06%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NB Marsh Rd to Woodside Rd</td>
<td>Mixed-Flow, HOV</td>
<td>6,900 1,800</td>
<td>4,377 0.63 0.39 132 720 0.40</td>
<td>1.91% 1.17%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NB Whipple Ave to SR 92</td>
<td>Mixed-Flow</td>
<td>9,200</td>
<td>6,863 0.75</td>
<td>100</td>
<td>6,963 0.76</td>
<td>1.09%</td>
</tr>
</tbody>
</table>


Notes:
1. Capacity assumes 2,300 vehicles per hour per lane for mixed-flow lanes and 1,800 vehicles per hour per lane for HOV lanes. Auxiliary lane capacity not included in the freeway segment capacity analysis.
2. Volumes obtained by applying a growth factor of 0.5 percent per year to existing count data provided by Caltrans.
3. \( V/C = \text{Volume-to-Capacity Ratio}. \)
4. Percent Impact determined by dividing the number of project trips by the freeway segment’s capacity. Significant impacts shown in **BOLD** type.
less than 1.0. During the PM peak hour, the capacity of the southbound US 101 mixed-flow lanes is expected to be exceeded from Woodside Road to Marsh Road under Cumulative No Project and Cumulative with Higher Occupancy Scenario Conditions. All other study segments are expected to have V/C ratios less than 1.0 during the PM peak hour.

The addition of traffic associated with the Higher Occupancy Scenario is expected to be greater than one percent of both freeway segments’ capacities. This constitutes a significant cumulative impact on the southbound US 101 mixed-flow lanes from SR 92 to Whipple Avenue and from Woodside Road to Marsh Road during the AM peak hour and on the southbound US 101 mixed-flow lanes from Woodside to Marsh Road during the PM peak hour.

**MITIGATION MEASURE.** The following mitigation measures would reduce Cumulative with Higher Occupancy Scenario Conditions to a less-than-significant effect. However, the feasibility of implementing these measures is unlikely and therefore the impacts are expected to remain significant and unavoidable. Approval of the Higher Occupancy Scenario would require a Statement of Overriding Considerations by the Redwood City Council. (SU)

*TR-11.1 Contribute to Construction of An Additional Southbound US 101 Lane.* Full mitigation of this impact to a less-than-significant level would require the addition of another southbound through lane to both segments. The addition of another through travel lane, with a design capacity of 2,300 vph, would more than offset the addition of traffic generated by the Higher Occupancy Scenario. However, freeway widening is generally considered to be beyond the scope of a single development project, i.e., an infeasible mitigation requirement. Therefore, the effect of Higher Occupancy Scenario traffic on the southbound segments of US 101 is considered to represent a significant unavoidable cumulative impact. To minimize this impact the Higher Occupancy Scenario could implement a transportation demand management (TDM) program.

*TR-12. US 101 Ramp Operations under Cumulative with Higher Occupancy Scenario Conditions -* The Cumulative with Higher Occupancy Scenario Conditions would exceed the capacity of the northbound US 101 off-ramp to Woodside Road during the PM peak hour. (S)

Operations of the study freeway ramps were reviewed by conducting a volume-to-capacity analysis under Higher Occupancy Scenario Cumulative Conditions. The purpose of the analysis was to verify that the freeway ramps would have sufficient capacity to serve demand under Higher Occupancy Scenario Cumulative Conditions.

Trips generated by the Higher Occupancy Scenario were added to volumes that were estimated under Cumulative No Project Conditions. The results of the volume-to-capacity analysis are presented in Table 3.4-26. The results of the analysis indicate that the northbound US 101 off-ramp to Woodside Road is expected to have a volume-to-capacity ratio (V/C) of 0.95 and 1.05 during the AM and PM peak hours, respectively. In other words, traffic from the Higher Occupancy Scenario plus traffic associated with regional growth is expected to add sufficient
### Table 3.4-26
US 101 Freeway Ramp Capacity Analysis – Higher Occupancy Scenario Cumulative Conditions

<table>
<thead>
<tr>
<th>Weaving Segment</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capacity¹</td>
<td>Volume²</td>
<td>Project Trips</td>
<td>Project V/C³</td>
<td>Volume²</td>
</tr>
<tr>
<td>Southbound US 101 Off-Ramp/Veterans Boulevard</td>
<td>3,800</td>
<td>2,517</td>
<td>135</td>
<td>0.66</td>
<td>2,142</td>
</tr>
<tr>
<td>Northbound US 101 On-Ramp/Whipple Avenue</td>
<td>1,900</td>
<td>1,635</td>
<td>123</td>
<td>0.86</td>
<td>1,222</td>
</tr>
<tr>
<td>Southbound US 101 On-Ramp/Woodside Road</td>
<td>2,000</td>
<td>1,653</td>
<td>166</td>
<td>0.83</td>
<td>1,780</td>
</tr>
<tr>
<td>Northbound US 101 Off-Ramp/Woodside Road</td>
<td>1,900</td>
<td>1,799</td>
<td>182</td>
<td>0.95</td>
<td>1,991</td>
</tr>
</tbody>
</table>


*Notes:*
2. Volumes obtained by applying a 0.5-percent growth factor per year to existing count data provided by Caltrans plus traffic from approved and pending projects plus traffic from the proposed project.

Traffic to this off-ramp during the PM peak hour such that the ramp volumes would exceed the capacity of the off-ramp. This constitutes a significant cumulative impact on the northbound US 101 Off-Ramp to Woodside Road during the PM peak hour.

All other study ramps are expected to have V/C ratios less than 1.00 under Higher Occupancy Scenario Cumulative Conditions.

**MITIGATION MEASURE.** The following mitigation measures would reduce Cumulative with Higher Occupancy Scenario Conditions to a less-than-significant effect. However, the feasibility of implementing these measures is unlikely and therefore the impact is expected to remain significant and unavoidable. Approval of the Higher Occupancy Scenario would require a Statement of Overriding Considerations by the Redwood City Council. (SU)

**TR-12.1 Contribute to Construction of Another Ramp Lane at the Northbound US 101 Off-Ramp to Woodside Road.** Full mitigation of this impact to a less-than-significant level would require the addition of another lane on the off-ramp. The addition of another ramp lane would more than offset the number of project trips being added to the ramp (153 trips during the PM peak hour). However, freeway ramp widening is generally considered to be beyond the scope of a single development project, i.e., an infeasible mitigation requirement. Therefore, the effect of Higher
Occupancy Scenario traffic on this off-ramp is considered to represent a significant unavoidable cumulative impact. To minimize this impact the Higher Occupancy Scenario could implement a transportation demand management (TDM) program.

**TR-13. Parking Supply and Demand under the Higher Occupancy Scenario** - The Higher Occupancy Scenario would provide sufficient onsite parking spaces to meet the projected parking demand. (LTS)

The Higher Occupancy Scenario indicated that the MOBs could accommodate a total of 105 new providers or 82 more providers than what was analyzed under Project Conditions. Under Project Conditions (using Kaisers estimates), it was determined that the proposed project would require 485 new parking spaces to serve the expected demand.

The 82 additional providers associated with the Higher Occupancy Scenario are expected to generate an additional parking demand of 717 parked cars which would require a minimum supply of 789 additional parking spaces to account for circulation and turnover. Therefore, a minimum of 1,274 parking spaces would be required with the Higher Occupancy Scenario. The project, as proposed, would provide 1,574 new parking spaces. Thus, the proposed supply is expected to accommodate the expected demand for the Higher Occupancy Scenario and no parking deficiencies are anticipated.
3.5 AIR QUALITY

This section summarizes pertinent air quality baseline information, including descriptions of the climate in the project area; federal, State, and regional air quality standards; and existing air quality conditions in the San Francisco Bay Area for both “criteria air pollutants” (pollutants for which State and federal ambient standards exist) and “toxic air contaminants” (TACs) (pollutants that pose human health risks). Air quality effects caused by stationary and mobile sources related to the proposed Master Plan project and cumulative development are then evaluated. Regional and localized air emissions are compared to the State and federal ambient air quality standards, as well as the standards established by the Bay Area Air Quality Management District (BAAQMD).

Introduction

According to the Initial Study (Appendix B), implementation of the mitigation measures from BAAQMD CEQA Guidelines would reduce the impacts of construction emissions of particulate matter to a less-than-significant level. As a result, construction-related air quality impacts are not addressed further in this EIR.

Setting

Ambient air quality is influenced by climatological conditions, topography, and the quantity and type of pollutants released in an area. The major determinants of transport and dilution of a given pollutant are wind, atmospheric stability, terrain, and sunshine for photochemical pollutants. Motor vehicle emissions in this section are calculated using air emission modeling based on information from the traffic study prepared for the proposed project.

Regional Climate and Topography

The climate of the Bay Area is characterized by meteorological conditions associated with the semi-permanent high-pressure area in the eastern Pacific Ocean which leads to mild, rainy winter weather from November through March, and warm, dry weather from June through September. The months of April, May, and October are usually characterized by mild weather conditions. The climate combined with the complex regional topography of the San Francisco Bay Area air basin make it an area of potential smog, a blend of combustion emissions and gaseous emissions such as reactive organic gases (ROG) and (NOx), that undergo photochemical reactions in sunlight to form ozone.

Region-wide temperature inversions, caused by warm air positioned above the cool daytime surface air, prohibit vertical mixing of air. Air pollution potential in the region is highest when inversions are strong and winds are light. This condition occurs because pollutants are emitted into an air mass that has a limited capacity to disperse the contaminants. Inversions most commonly occur during calm cool winter weather or still weather in the summer.
The proposed project is located within the Peninsula climatological subregion that extends from northwest of San Jose to the Golden Gate. The Santa Cruz Mountains run up the center of the Peninsula, creating an area of warmer temperatures and fewer foggy days to the east where the ridgeline blocks the marine layer. Redwood City, where the proposed project is located, averages summer high temperatures in the low-80’s, and in the winter, average low temperatures are in the 30’s to low 40’s. Annual average wind speed in this area ranges from 5 to 10 miles per hour. Air pollution along this portion of the Peninsula is the highest in the subregion due to motor vehicle traffic and stationary sources.

Air Quality Conditions

Regional Air Quality. With the assistance of the BAAQMD, the California Air Resources Board (CARB) compiles inventories and projections of carbon monoxide (CO), reactive organic gases (ROG), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and particulate matter (less than 10 microns in size) (PM₁₀) emissions for the Bay Area. ROG is included in the inventories because it is a precursor to ozone formation. Table 3.5-1 presents a summary of the emissions inventory and trends of air pollutants for the Bay Area and San Mateo County. Estimates of substantial reductions in CO emissions projected from 2001 to 2010 are primarily based on projections of motor vehicle emissions reducing over time as older vehicles are retired. PM₁₀ and SO₂ are forecast to increase slightly, due to growth in stationary source and industry activities.

San Mateo County lies within the San Francisco Bay Area Air Basin. The Air Basin has a history of recorded violations of federal and State ambient air quality standards for ozone, CO, and PM₁₀. Since the early 1970s, substantial progress has been made toward controlling these pollutants. As a result, the Bay Area is in attainment for all State and federal standards except those for ozone and PM₁₀. For ozone, the Bay Area does not meet either the State or federal standard. For PM₁₀, the Bay Area does not meet the State standard but does meet the federal standard.

Local Air Quality. BAAQMD operates an air quality monitoring station in Redwood City. During the period of 1998 through 2001 for Redwood City, the State 1-hour ozone standard was only exceeded one day total in a year, and the federal 1-hour and 8-hour standards were not exceeded at this station. During the period of 1998 through 2001 at the Redwood City station, the measured State 24-hour PM₁₀ standard was exceeded in no more than 4 days per year, the federal 24-hour standard was not exceeded at all, and the State and federal annual standards were not exceeded at all.

The regional and local air quality data show that while the region has made considerable progress to meet the State and federal standards, violations of particulate matter and ozone standards still occasionally occur. The violations that typically occur in the San Mateo County area are caused by a combination of locally generated emissions and pollutants transported into the area from upwind sites. In this respect, the air quality conditions in the project area will continue to benefit from local and regionwide efforts to control emissions.

1 BAAQMD, CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans, April 1996, Appendix D.
| Table 3.5-1
Criteria Pollutant Emissions Inventory and Projections
(Tons/Day - Annual Average) |
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CO</td>
<td>ROG</td>
<td>NO&lt;sub&gt;x&lt;/sub&gt;</td>
<td>SO&lt;sub&gt;x&lt;/sub&gt;</td>
<td>PM&lt;sub&gt;10&lt;/sub&gt;</td>
</tr>
<tr>
<td><strong>Bay Area</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2001 Estimated</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Emissions</td>
<td>2810</td>
<td>536</td>
<td>625</td>
<td>82</td>
<td>187</td>
</tr>
<tr>
<td>On-Road Motor Vehicle Emissions</td>
<td>2138</td>
<td>228</td>
<td>337</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td><strong>2010 Forecasted</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Emissions</td>
<td>1727</td>
<td>396</td>
<td>443</td>
<td>84</td>
<td>359</td>
</tr>
<tr>
<td>On-Road Motor Vehicle Emissions</td>
<td>1125</td>
<td>123</td>
<td>198</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td><strong>San Mateo County</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2001 Estimated</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Emissions</td>
<td>298</td>
<td>56</td>
<td>65</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>On-Road Motor Vehicle Emissions</td>
<td>230</td>
<td>25</td>
<td>35</td>
<td>.2</td>
<td>1</td>
</tr>
<tr>
<td><strong>2010 Forecasted</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Emissions</td>
<td>185</td>
<td>41</td>
<td>48</td>
<td>2</td>
<td>38</td>
</tr>
<tr>
<td>On-Road Motor Vehicle Emissions</td>
<td>123</td>
<td>13</td>
<td>21</td>
<td>.1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Source:** California Air Resources Board, Emissions by Category. Available at: www.arb.ca.gov/emisinv/eib.htm.

**Notes:**
1. Reactive organic gases (excluding emissions from natural vegetation).
2. On-Road Motor Vehicle Emissions category in this table includes paved road dust generated by traffic.

At locations throughout the Bay Area, BAAQMD measures ambient levels of approximately 15 of the most commonly occurring TACs. The monitoring station for TACs that is nearest to the project site is on Chapel Way in Fremont. The TACs monitored at this station in the highest concentrations are benzene, toluene, and meta/para-xylenes. Each of these compounds is commonly associated with automobile emissions. These data represent the combined impacts of TACs emitted from various sources, including stationary (e.g., industry) and mobile sources.

**Local Source Inventory.** Emissions from mobile sources are responsible for the overwhelming majority of emissions in the project area. Vehicles traveling the roadways near the site contribute to the local emissions base. The residential uses near the project site also cause minor amounts of emissions through operation of heating and cooling equipment and operation of area-wide sources such as landscaping equipment, water heaters, and fireplaces. These are not considered to be significant operational emission sources, because the quantity of emissions generated by motor vehicles substantially outweighs stationary source emissions.

Currently on site, the Medical Center operates a Central Utilities Plant (CUP) near the existing service building. The CUP houses mechanical equipment including hot water boilers; steam generators; chillers and air handling for heating ventilating and air conditioning (HVAC); compressed air and vacuum pumps; water softeners; and a tank for oxygen and other medical gases. The CUP also
houses electrical equipment including switchgear rooms, and emergency generators. These operations mainly emit heat and steam and are not associated with TAC emissions.

**Applicable Plans and Regulations**

Federal, State, regional, and local laws and regulations are the basis for controlling air pollution. The major control efforts focus on the six “criteria” air pollutants and the precursor compounds that react to form those pollutants. The six criteria pollutants include ozone, CO, NO₂, SO₂, PM₁₀, and lead. The federal Clean Air Act (CAA), as amended, and the California Clean Air Act (CCAA) are the primary drivers for attaining and maintaining the ambient air standards. These laws also provide the basis for the implementing agencies to develop mobile and stationary source control measures. The U.S. Environmental Protection Agency (EPA) is responsible for enforcing the 1990 amendments to the federal CAA and the national ambient air quality standards (federal standards) that it establishes.

The California Air Resources Board (CARB), a department of the California Environmental Protection Agency (Cal/EPA), oversees air quality planning and control throughout California. It is primarily responsible for ensuring implementation of the 1989 amendments to the CCAA, responding to the federal CAA requirements, and for regulating emissions from motor vehicles and consumer products within the state. CARB has established emission standards for vehicles sold in California and for various types of equipment available commercially. It also sets fuel specifications to further reduce vehicular emissions.

Like EPA, CARB has established ambient air quality standards for the state (State standards). These standards apply to the same six criteria pollutants as the federal CAA, and also include sulfate, visibility, hydrogen sulfide, and vinyl chloride. They are also more stringent than the federal standards in the case of PM₁₀ and SO₂. The amendments to the CCAA require air pollution control districts to achieve the State standards by the earliest practicable date.

**Ambient Air Quality Standards.** Based on the authority of the Federal CAA, as amended, and the CCAA, federal and State regulatory agencies set upper limits on airborne concentrations of ozone, CO, NO₂, SO₂, particulate matter, and lead. Particulate matter is regulated as inhalable particulate matter less than ten microns in diameter (PM₁₀) and fine particulate matter less than 2.5 microns in diameter (PM₂.₅). ROG are regulated as precursors to ozone. Control of these pollutants includes reducing emissions from motor vehicles, industrial processes, and area-wide sources such as use of consumer products.

The federal and State standards for these pollutants are summarized in Table 3.5-2. These “ambient air quality standards” (AAQS) are designed to protect all segments of the population including those most susceptible to the pollutants’ adverse effects (e.g., the very young, the elderly, people weak from illness or disease, or persons doing heavy work or exercise). The potential human health effects of these air pollutants are presented in Table 3.5-3. Pollution potential in the project area is high because of the sheltering effects of the Santa Cruz Mountains and upwind emissions generated by San Francisco and other north Peninsula cities.
Table 3.5-2
Federal and State Air Quality Standards

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>California Standard</th>
<th>Federal Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone</td>
<td>1-hour</td>
<td>0.09 ppm</td>
<td>0.12 ppm</td>
</tr>
<tr>
<td></td>
<td>8-hour</td>
<td>—</td>
<td>0.08 ppm</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>1-hour</td>
<td>20.00 ppm</td>
<td>35.00 ppm</td>
</tr>
<tr>
<td></td>
<td>8-hour</td>
<td>9.00 ppm</td>
<td>9.00 ppm</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>1-hour</td>
<td>0.25 ppm</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Annual Average</td>
<td>—</td>
<td>0.053 ppm</td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>1-hour</td>
<td>0.25 ppm</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>3-hour</td>
<td>—</td>
<td>0.5 ppm</td>
</tr>
<tr>
<td></td>
<td>24-hour</td>
<td>0.04 ppm</td>
<td>0.14 ppm</td>
</tr>
<tr>
<td></td>
<td>Annual Average</td>
<td>—</td>
<td>0.03 ppm</td>
</tr>
<tr>
<td>Particulate Matter (PM10)</td>
<td>24-hour</td>
<td>50 µg/m³</td>
<td>150 µg/m³</td>
</tr>
<tr>
<td></td>
<td>Annual Geometric Mean</td>
<td>20 µg/m³</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Annual Arithmetic Mean</td>
<td>—</td>
<td>50 µg/m³</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM2.5)</td>
<td>24-hour</td>
<td>—</td>
<td>65 µg/m³</td>
</tr>
<tr>
<td></td>
<td>Annual Arithmetic Mean</td>
<td>12 µg/m³</td>
<td>15 µg/m³</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>30-day Average</td>
<td>1.5 µg/m³</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Calendar Quarter</td>
<td>—</td>
<td>1.5 µg/m³</td>
</tr>
</tbody>
</table>

Source: Summarized by EIP Associates.

Notes:
- ppm = parts per million by volume
- µg/m³ = micrograms per cubic meter
- = No standard exists for this category

1. California standards for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter (PM10) are values that are not to be exceeded.
2. The form of the federal standards (i.e., how the standard is applied) varies from pollutant to pollutant. For further information, 40 CFR Part 50 includes the relevant form for each federal standard. The federal 8-hour ozone standard and the PM2.5 standards were remanded by appeals court in 1999. Implementation of the standards may be abandoned or delayed.
Table 3.5-3
Health Effects Summary of the Major Criteria Air Pollutants

<table>
<thead>
<tr>
<th>Air Pollutant</th>
<th>Adverse Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone</td>
<td>eye irritation</td>
</tr>
<tr>
<td></td>
<td>respiratory function impairment</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>impairment of oxygen transport in the blood stream</td>
</tr>
<tr>
<td></td>
<td>aggravation of cardiovascular disease</td>
</tr>
<tr>
<td></td>
<td>impairment of central nervous system function</td>
</tr>
<tr>
<td></td>
<td>fatigue, headache, confusion, dizziness</td>
</tr>
<tr>
<td></td>
<td>can be fatal in the case of very high concentrations in enclosed places</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>risk of acute and chronic respiratory illness</td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>aggravation of chronic obstruction lung disease</td>
</tr>
<tr>
<td></td>
<td>increased risk of acute and chronic respiratory illness</td>
</tr>
<tr>
<td>Lead</td>
<td>impairment of blood functions and nerve constriction</td>
</tr>
<tr>
<td></td>
<td>behavioral and learning problems in children</td>
</tr>
<tr>
<td>Particulate Matter</td>
<td>may be inhaled and lodge in and irritate the lungs</td>
</tr>
<tr>
<td></td>
<td>increased risk of chronic respiratory disease with long exposure</td>
</tr>
<tr>
<td></td>
<td>altered lung function in children</td>
</tr>
<tr>
<td></td>
<td>may produce acute illness with sulfur dioxide</td>
</tr>
</tbody>
</table>

*Source: Bay Area Air Quality Management District.*

TACs, which may have the potential to cause cancer or may pose a present or potential hazard to human health, are also regulated through federal, State, and local programs. Unlike criteria pollutants, there are no ambient standards for TACs; this is primarily due to the localized nature of the adverse health impacts caused by TAC emissions. Stationary sources of TACs are regulated through emission standards and risk reduction strategies implemented at the sources of the emissions, and mobile sources are not directly regulated as sources of TACs, except for lead. Improvement of fuel efficiency standards and reformulation of fuels provides indirect control of lead and other TACs from mobile sources.

**Air Quality Management Plan (AQMP).** The federal CAA, as amended, and the CCAA provide the legal framework for attaining and maintaining the ambient air quality standards. Both the federal and State acts require that CARB designate as “nonattainment areas” portions of the State where federal or State ambient air quality standards are not met. Where a pollutant exceeds standards, air quality management plans must be formulated that demonstrate how the standards will be achieved. These laws also provide the basis for the implementing agencies to develop mobile and stationary source performance standards.

BAAQMD is primarily responsible for planning, implementing, and enforcing the federal and State ambient standards in the Bay Area. EPA approval of the 1982 Bay Area Air Quality Plan (referred to as the 1982 Plan), which indicates how BAAQMD will implement federal air quality requirements, resulted in the 1982 Plan being incorporated into the State Implementation Plan (SIP). The region’s
SIP is a compilation of plan components and air pollution control regulations that when taken together are designed to enable the region to attain and maintain the federal standards. Along with the BAAQMD, the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) also contribute to the SIP. BAAQMD updated the 1982 Plan and adopted the Bay Area ’91 Clean Air Plan to implement the requirements of the CCAA of 1988. As required by the CCAA and subsequent 1992 amendments, BAAQMD also prepared the 1994 Clean Air Plan Update, the Bay Area 97 Clean Air Plan, and the Bay Area 2000 Clean Air Plan. The State ozone standard and the State PM$_{10}$ standard are exceeded in the region. To meet the State ozone standard, BAAQMD adopted the 2000 Clean Air Plan on December 20, 2000 and submitted it to CARB as required by the CCAA. The 2000 Clean Air Plan includes a control strategy review to ensure that the plan continues to include “all feasible measures” to reduce ozone. No State plan is required to meet state PM$_{10}$ measures.

In 1998, the Bay Area was redesignated as nonattainment for the federal ozone standards. Under EPA direction, BAAQMD prepared and submitted the Bay Area Ozone Attainment Plan in June 1999 as a revision to the SIP. This attainment plan was partially rejected by EPA. The parts of the 1999 Plan that were disapproved include ozone attainment assessment, consistency of regional transportation plans and programs with air quality attainment plans, and the Reasonably Available Control Measure (RACM) demonstration. In response to EPA’s disapproval of the 1999 Plan, a Bay Area 2001 Ozone Attainment Plan (Final Plan) was prepared in June 2001 by BAAQMD, MTC, and ABAG. This 2001 Plan was initially rejected by CARB prior to its submittal to EPA. Addenda to this plan were presented to CARB on November 1, 2001, approved and submittal to EPA. On February 14, 2002, EPA determined that the motor vehicle emission budgets in the Bay Area’s 2001 Ozone Attainment Plan are adequate for conformity purposes.

The SIP measures for reducing emissions of reactive organic compounds and nitrogen oxides affect all source categories. Emissions limitations are imposed upon sources of air pollutants by rules and regulations promulgated by the federal, State, or local agencies. Mobile sources of air pollutants are largely controlled by federal and State agencies through emission performance standards and fuel formulation requirements. BAAQMD regulates stationary sources through its permitting and compliance programs. BAAQMD is responsible for implementing stationary source performance standards and other requirements of federal and State laws.

**Redwood City General Plan.** The City of Redwood City Strategic General Plan adopted in 1990 does not contain any policies or programs that specifically address the clean air goals of the community. However, the Strategic General Plan does include the following transportation systems management policies and programs that would contribute to improved air quality in the City:

- Policy TSM-1: Explore and consider alternative techniques and requirements within Redwood City as they pertain to various transportation modes including parking, land use, and traffic mitigation which would encourage the use of alternative transportation modes to meet or exceed the 25% goal as specified by the San Mateo County Transportation Systems Management Plan.
Impacts and Mitigation Measures

Significance Criteria

According to Appendix G of the CEQA Guidelines (Environmental Checklist Form) a project would have a significant air quality effect 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 criteria air pollutant for which the project region is in 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; and (e) Create objectionable odors affecting a substantial number of people.

The BAAQMD recommends consideration of the following significance criteria for project operations:

- For operational impacts, an increase in combined stationary and mobile source emissions of more than 80 pounds/day of ROG, NOx, or inhalable particulates (PM10) over existing conditions would be considered significant.

- A project contributing to CO concentrations above the State ambient air quality standard would be considered to have a significant impact. (State ambient air quality standards for CO are shown in Table 3.5-2.)

Direct emissions sources are found on site and would include stationary sources and on-site mobile equipment. Examples of land uses and activities that generate direct emissions are industrial operations and sources subject to an operating permit by BAAQMD. Hospitals usually are not significant sources of direct emissions. Indirect emissions come from mobile sources that access the project site but generally emit off site. The primary source of long-term, indirect emissions associated with institutional projects such as a hospital is motor vehicle emissions.

CO emissions are considered significant if they will contribute to a violation of the State standards for CO (9 ppm averaged over 8 hours and 20 ppm for one hour). CO emissions are localized, and typically analyzed in terms of their impacts to specific roadway segments or intersections. The BAAQMD requires CO modeling if the project would add trips to intersections currently operating at LOS D, E, or F, or cause a decline to LOS D, E, or F.

Cumulative Impacts. Cumulative impacts on ozone for institutional projects, such as the Medical Center Master Plan, are based on the project’s consistency with Redwood City’s General Plan and its consistency with the regional AQMP. Projects consistent with the City’s General Plan and the AQMP are not considered cumulatively significant, because the AQMP addresses attainment of the State ozone AAQS and maintenance of federal AAQS.

For CO, the cumulative impact threshold for direct emissions is the same as that for project-specific impacts (550 pounds/day direct of CO). For analysis of cumulative indirect CO emissions, cumulative
traffic impacts are compared to the same criteria listed above for project-specific indirect CO emissions.

A significant project-specific impact from PM$_{10}$ emissions would also be considered cumulatively significant, because the background concentration reflects the collective contribution of PM$_{10}$ from nearby sources. According to the Initial Study (Appendix B), implementation of the mitigation measures from the BAAQMD CEQA Guidelines would reduce the impacts of construction emissions of particulate matter to a less-than-significant level. As a result, this topic is not addressed further in this EIR.

**Methodology**

In the following analysis, mobile and stationary source emissions of ROG, NO$_x$, PM$_{10}$, and CO were estimated using CARB’s URBEMIS 2001 computer model assuming that project build out would be complete by 2025. Mobile source emissions estimates rely on vehicle trip generation rates derived from factors published by the Institute of Transportation Engineers (ITE) and project-specific vehicle turning movements. However, the ITE emission rate was not considered appropriate for application to the Medical Center Plan. A more accurate method was derived by conducting a survey of trip generation rates at Kaiser’s medical clinic in the City of Roseville, California, a comparable facility to the Medical Center (see Section 3.4, Transportation).

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

**Environmental Analysis**

As described in Section 3.1, for each impact, a level of significance is determined and is reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant effects to a less-than-significant level, the impacts are classified as “significant unavoidable effects (SU).” For this section, AQ refers to Air Quality.

Potential air quality-related impacts associated with the Higher Occupancy Scenario could result from increased traffic caused by a more intensive use of the Medical Center due to a higher number of POs at the Medical Center. However, this scenario is dependent on the completion of all four MOBs. Therefore, this section only considers the Higher Occupancy Scenario in the cumulative air analysis.
AQ-1. **Operational Air Quality** – Under the proposed project, project contributions of new mobile sources of air pollutants would not cause emissions of ROG, NOx, and PM10 that would contribute substantially to an existing or projected air quality violation or be inconsistent with regional air quality plans to achieve attainment. As such, project impacts on criteria air pollutants would be less than significant. (LTS)

**Mobile Source Emissions** Regional emissions caused by project-related traffic were estimated using CARB’s URBEMIS 2001 computer program. The URBEMIS model assesses the regionwide impacts of proposed land use development based on daily vehicle trips derived in the project’s transportation analysis in Section 3.4, Transportation, of this EIR. The construction of MOB 1 and the replacement hospital at the Medical Center would result in a total of approximately 3,565 new vehicle trips to the site per day. Based on URBEMIS 2001 modeling results, these new project trips would generate approximately 29 pounds/day of ROG, 20 pounds/day of NOx, and 10 pounds/day of PM10 over existing conditions in the year 2004 (see Table 3.5-4). Although the replacement hospital is not anticipated to be built until 2009, 2004 was chosen for the model in order to be consistent with project’s transportation analysis (Section 3.2).

As illustrated by Table 3.5-4, project-related emissions of ROG, NOx, and PM10 would not exceed significance thresholds of 80 pounds/day. Therefore, emissions of these levels would not cause a significant impact.

**Stationary Source Emissions.** The proposed project would also result in nominal emissions from the use of electricity and natural gas for site heating, cooling, ventilation, and lighting. Emissions would be produced either directly at the site or indirectly through increased use of utility services.

The proposed CUP (to be constructed after the construction of MOB 1 and the replacement hospital) would be located on the south wing of the main hospital building, and would house mechanical equipment including: hot water boilers, steam generators, chillers and air handling for the HVAC system, compressed air and vacuum pumps, water softeners, and a tank for oxygen and other medical gases. The new CUP would also house electrical equipment including switchgear rooms, emergency generators, and a fuel tank. The hot water boilers and the steam generators associated with medical center facilities would primarily involve the emission of steam, which would not contain toxic contaminants. According to the **BAAQMD CEQA Guidelines**, Generalized Emission Factors for Selected Industry Groups, the average

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3 The URBEMIS 2001 model uses emission factors from the CARB EMFAC 2001 emissions model. Vehicle operating characteristics are determined by each land use type in the proposed project and the setting of the project. Default values recommended by BAAQMD **CEQA Guidelines** are used for the average trip length. Worst-case summer (ozone season) temperatures are as recommended in Appendix H of the URBEMIS7G User’s Guide, August 1998.
particulate matter emissions for a general hospital facility would be 2.9 lbs/acre/day. The new CUP would occupy 0.64 acres and would, therefore, generate approximately 1.9 pounds/day of particulate matter based on this approximation. This would be well below the BAAQMD significance threshold for PM_{10}.

Fume hoods and other vents would also be installed at the Medical Center for small research and pharmacy laboratories. Similarly, these stationary source emissions would not be significant when compared to the emissions caused by project-related traffic.

### Table 3.5-4

<table>
<thead>
<tr>
<th>Scenario</th>
<th>ROG (lb/day)</th>
<th>NOx (lb/day)</th>
<th>PM_{10} (lb/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Project</td>
<td>136</td>
<td>122</td>
<td>67</td>
</tr>
<tr>
<td>Proposed Project</td>
<td>165</td>
<td>142</td>
<td>77</td>
</tr>
<tr>
<td><strong>Proposed Project Net Emission</strong></td>
<td><strong>29</strong></td>
<td><strong>20</strong></td>
<td><strong>10</strong></td>
</tr>
<tr>
<td>BAAQMD Significance Threshold</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
</tbody>
</table>


*Notes:*
1. Particulate matter includes entrained road dust.
2. Vehicle emissions in this analysis are based on model year 2004 fleets. Emissions in future years will decrease as a result of cleaner burning fuels and improved engine efficiency.

**AQ-2. Localized Air Quality** – *Under the proposed project and the Higher Occupancy Scenario, project traffic would create congestion at intersections in the project vicinity and in enclosed parking structures. This traffic would increase concentrations of carbon monoxide around the intersections and in the parking structure, but would not exceed the ambient air quality standards. As such, project impacts on localized CO concentrations would be less than significant. (LTS)*

Because project-related traffic would affect intersections currently operating at Level of Service (LOS) D, E, or F, project traffic has the potential to generate emissions of CO that could adversely affect localized air quality. Carbon monoxide build-up could occur around congested intersections. The BAAQMD CEQA Guidelines specifies that localized CO concentrations should be analyzed at intersections impacted by project traffic operating at LOS D, E, and F. For this analysis, the CALINE4 program and the CO Protocol from the Institute of Transportation Studies was used to evaluate “worst-case” air quality conditions at five of the

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most heavily affected and worst-performing intersections.\textsuperscript{5,6} Emission factors were recommended by BAAQMD CEQA Guidelines.\textsuperscript{7} For the model, receptors are located at 50, 100, and 300 feet from the center of the intersection and a stable atmospheric environment is assumed where dispersion of CO in the vicinity of the intersection would be minimal.

The transportation analysis in Section 3.4 of this EIR shows that many intersections along Veterans Boulevard operate at LOS D or worse during either the AM or the PM peak hours under both existing and future (2004 and 2025) conditions. The five intersections selected for analysis of CO impacts are chosen based on a combination of their likelihood to either operate at LOS D or worse with the project, carry a notable increase in traffic caused by the proposed project, or be located next to an air quality sensitive or residential land use.

Tables 3.5-5 and 3.5-6 show the modeled CO concentrations for each of the intersections considered in this analysis. The CO concentrations resulting from conditions at the Phase I build out year, both with and without the project, would not exceed either State or federal AAQS. Measures not related to the proposed project would cause further reductions of these concentrations as statewide emission control programs for motor vehicles continue to reduce ROG, NO\textsubscript{x}, and CO emissions in the future. These reductions are shown in the tables below for the conditions in year 2004 and 2025. Because the localized CO concentrations around these congested intersections would not violate the standards, impacts at project intersections would not be significant.

\textbf{AQ–3. TAC and Objectionable Odors} – Neither the proposed project nor the Higher Occupancy Scenario would expose the public to toxic air contaminants or objectionable odors because TAC and odor emissions would not be substantial. (LTS)

As mentioned in Impact AQ-1, the proposed project would result in nominal emissions from the use of electricity and natural gas for site heating, cooling, ventilation, and lighting. Emissions would be produced either directly at the site or indirectly through increased use of utility services. However, these sources are usually not associated with TAC emissions or objectionable odors.

Based on a review of BAAQMD’s Toxic Air Contaminants Annual Report,\textsuperscript{8} the Medical Center is not listed as a TAC source. In addition, the Medical Center does not currently

\begin{itemize}
\item \textsuperscript{5} CALINE4 - \textit{A Dispersion model for Predicting Air Pollutant Concentrations Near Roadways}. California Department of Transportation, Division of New Technology and Research, June 1989.
\item \textsuperscript{6} \textit{Transportation Project-Level Carbon Monoxide Protocol}. Institute of Transportation Studies, University of California, Davis, Revised December 1997.
\item \textsuperscript{7} \textit{BAAQMD CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans}, April 1996. Table 10, p. 35.
\item \textsuperscript{8} Bay Area Air Quality Management District, \textit{Toxic Air Contaminants 2000 Annual Report}, for San Mateo County and Redwood City, December 2001.
\end{itemize}
Table 3.5-5
Localized 1-hour CO Concentrations at Selected Intersections

<table>
<thead>
<tr>
<th>Location</th>
<th>1-hr Standard</th>
<th>Year 2002 Existing</th>
<th>Year 2004 Background plus Project</th>
<th>Year 2025 Future</th>
<th>Year 2025 Future plus Project</th>
<th>Year 2025 Future plus Higher Occupancy Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whipple/ Veterans</td>
<td>20 ppm</td>
<td>9.2</td>
<td>8.7</td>
<td>9.2</td>
<td>9.2</td>
<td>9.3</td>
</tr>
<tr>
<td>Walnut/ Veterans</td>
<td>20 ppm</td>
<td>7.2</td>
<td>7.1</td>
<td>6.9</td>
<td>7.0</td>
<td>7.1</td>
</tr>
<tr>
<td>Maple/ Veterans</td>
<td>20 ppm</td>
<td>7.2</td>
<td>7.0</td>
<td>6.8</td>
<td>6.9</td>
<td>7.2</td>
</tr>
<tr>
<td>Hansen/ Veterans</td>
<td>20 ppm</td>
<td>6.8</td>
<td>6.7</td>
<td>6.6</td>
<td>6.7</td>
<td>6.8</td>
</tr>
<tr>
<td>Woodside/ Veterans</td>
<td>20 ppm</td>
<td>9.3</td>
<td>8.9</td>
<td>8.8</td>
<td>9.0</td>
<td>9.1</td>
</tr>
</tbody>
</table>


Notes:
1. Total concentrations are based on CALINE4 output including background ambient 1-hour CO concentrations of 5.2 ppm for year 2003.
2. The State one-hour standard is 20 ppm; the federal standard is 35 ppm. The more stringent standard is reflected in the table.

Table 3.5-6
Localized 8-hour CO Concentrations at Selected Intersections

<table>
<thead>
<tr>
<th>Location</th>
<th>8-hr Standard</th>
<th>Year 2002 Existing</th>
<th>Year 2004 Background plus Project</th>
<th>Year 2025 Future</th>
<th>Year 2025 Future plus Project</th>
<th>Year 2025 Future plus Higher Occupancy Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whipple/ Veterans</td>
<td>9 ppm</td>
<td>6.4</td>
<td>6.1</td>
<td>6.4</td>
<td>6.4</td>
<td>6.5</td>
</tr>
<tr>
<td>Walnut/ Veterans</td>
<td>9 ppm</td>
<td>5.0</td>
<td>5.0</td>
<td>4.8</td>
<td>4.9</td>
<td>5.0</td>
</tr>
<tr>
<td>Maple/ Veterans</td>
<td>9 ppm</td>
<td>5.0</td>
<td>5.0</td>
<td>4.8</td>
<td>4.8</td>
<td>5.1</td>
</tr>
<tr>
<td>Hansen/ Veterans</td>
<td>9 ppm</td>
<td>4.7</td>
<td>4.7</td>
<td>4.6</td>
<td>4.7</td>
<td>4.8</td>
</tr>
<tr>
<td>Woodside/ Veterans</td>
<td>9 ppm</td>
<td>6.5</td>
<td>6.5</td>
<td>6.3</td>
<td>6.3</td>
<td>6.4</td>
</tr>
</tbody>
</table>


Notes:
1. Total concentrations are based on CALINE4 output including background ambient 8-hour CO concentrations of 3.6 ppm for year 2003.
2. The State and federal eight-hour standard is 9 ppm.
operate any equipment that emits TACs nor are there any plans to in the future. All hazardous waste generated on site is transported to an off-site disposal or recycling facility (see Section 3.8, Hazards and Hazardous Materials). Therefore, emissions of TAC or objectionable odors are not considered a significant impact.

Cumulative Analysis

**AQ-4. Cumulative Air Quality** – *Neither the proposed project’s nor the Higher Occupancy Scenario’s contributions to regional air emissions would be significant, therefore, the project’s cumulative effect would also not be a significant impact.* (LTS)

The state CEQA Guidelines state that agencies shall consider whether the cumulative impact of a project is significant and whether the proposed project’s incremental effects are cumulatively considerable. BAAQMD CEQA Guidelines recommend that lead agencies conclude that a significant cumulative air quality impact would result if the proposed project would individually have a significant air quality impact.9 The analysis for Impact AQ-1 indicates that the proposed project would not cause potentially significant regional impacts of criteria air pollutants from motor vehicle trips and stationary source operation when the first phase of the project is completed in 2004. In addition, when the buildout of the Medical Center is completed (2025), criteria air pollutants are expected to be approximately 17 pounds/day of ROG, 9 pounds/day of NOx, and 11 pounds/day of PM10 over the no project scenario for the proposed project and approximately 48 pounds/day of ROG, 35 pounds/day of NOx, and 43 pounds/day of PM10 for the Higher Occupancy Scenario (see Table 3.5-7), all less than the BAAQMD threshold of 80 pounds/day. Also, localized CO concentrations in the long-term cumulative conditions would also be less than the AAQS (see Tables 3.5-5 and 3.5-6).

Cumulative air quality impacts would be limited to regional emissions. Incorporating Mitigation Measure TR-3.4, Reduce Project-related Motor Vehicle Emissions through Alternate Transportation Facilities, would minimize the adverse regional impacts caused by project emissions. Mitigation Measure TR-3.4 would help reduce vehicle trips and minimize cumulative impacts to regional air quality.10 In addition, implementation of Mitigation Measure TR-3.4 would be consistent with Policy TSM-1 of the City of Redwood City Strategic General Plan; therefore, the cumulative impacts to regional air quality would not be significant.

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10 These transportation-related measures are derived from the Traffic Impact Analysis prepared by Fehr and Peer Associates, October 2002.
Table 3.5-7  
Proposed Project Plus Cumulative Air Emissions (2025)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>ROG  (lb/day)</th>
<th>NOx  (lb/day)</th>
<th>PM10 (lb/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Project</td>
<td>67</td>
<td>53</td>
<td>68</td>
</tr>
<tr>
<td>Proposed Project</td>
<td>84</td>
<td>62</td>
<td>79</td>
</tr>
<tr>
<td>Higher Occupancy Scenario</td>
<td>115</td>
<td>88</td>
<td>111</td>
</tr>
<tr>
<td><strong>Proposed Project Net Emission</strong></td>
<td><strong>17</strong></td>
<td><strong>9</strong></td>
<td><strong>11</strong></td>
</tr>
<tr>
<td>Higher Occupancy Scenario Net Emission</td>
<td><strong>48</strong></td>
<td><strong>35</strong></td>
<td><strong>43</strong></td>
</tr>
<tr>
<td>BAAQMD Significance Threshold</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
</tbody>
</table>

*Notes:*  
1. Particulate matter includes entrained road dust.  
2. Vehicle emissions in this analysis are based on model year 2020 fleets, URBEMIS 2001 does not extend to 2025 conditions. Emissions in future years will decrease as a result of cleaner burning fuels and improved engine efficiency. Therefore, emission estimates are conservative.
3.6 NOISE

Introduction

This section describes the existing noise environment and potential impacts associated with the proposed Master Plan for the Medical Center. The description of the noise environment is based on noise measurements taken by EIP Associates. Projected increases in noise levels in the project vicinity can be expected from additional traffic, expansion of various mechanical systems, and construction activities. The incremental change in noise levels experienced by receptors in the project vicinity is evaluated against standards in the City’s Noise Element and Noise Ordinance. Potential groundborne noise and vibration during construction activities, as well as during operations, are also considered in this section.

According to the Initial Study (Appendix B), the proposed project is not located within an adopted airport land use plan nor is it located within the vicinity of a private airstrip. As a result, there would no significant airport noise impacts and this topic will not be addressed further in this EIR.

Setting

Fundamentals of Noise

Definition of Noise. Sound is technically described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The decibel scale adjusted for A-weighting (dBA) provides this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Over the audible range of pitch, the human ear is less sensitive to low frequencies and is more sensitive to mid-level and high-pitched sound. Table 3.6-1 lists dBA noise levels for common events in the environment and industry.

The ambient noise environment in an area consists of a base of steady “background” noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These sources can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major highway.

Measurement Scales for Describing Noise. Several rating scales have been developed to analyze the adverse effect of community noise on people. To account for the varying nature of environmental noise, these scales recognize that the potential effect of noise upon people depends on the total acoustical energy and the time of day when the noise occurs.
Table 3.6-1
Typical Sound Levels Measured in the Environment and Industry

<table>
<thead>
<tr>
<th>Noise Source (Distance)</th>
<th>A-Weighted Sound Level in Decibels (dBA)</th>
<th>Subjective Impression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Defense Siren (100')</td>
<td>130</td>
<td>Pain Threshold</td>
</tr>
<tr>
<td>Jet Takeoff (200')</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Rock Music Concert (50')</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>Pile Driver (50')</td>
<td>100</td>
<td>Very Loud</td>
</tr>
<tr>
<td>Ambulance Siren (100')</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Diesel Locomotive (25')</td>
<td>85</td>
<td>Loud</td>
</tr>
<tr>
<td>Pneumatic Drill (50')</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Freeway (100')</td>
<td>70</td>
<td>Moderately Loud</td>
</tr>
<tr>
<td>Vacuum Cleaner (10')</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Light Traffic (100')</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Large Transformer (200')</td>
<td>40</td>
<td>Quiet</td>
</tr>
<tr>
<td>Soft Whisper (5')</td>
<td>30-0</td>
<td>Threshold of Hearing</td>
</tr>
</tbody>
</table>


Common measures along these scales are as follows:

- $L_{eq}$, the equivalent energy noise level, is the average acoustic energy content of noise, usually measured over one hour. Thus, the $L_{eq}$ of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. $L_{eq}$ values do not include a penalty for noise that might occur at night.

- $L_{dn}$, the day-night average noise level, is a 24-hour average $L_{eq}$ with a 10 dBA “penalty” added to noise during the hours of 10:00 pm to 7:00 am to account for the greater nocturnal noise sensitivity of people.

- CNEL, Community Noise Exposure Level, is a 24-hour average with a 5 dBA penalty added to noise during the evening from 7:00 pm to 10:00 pm and a 10 dBA penalty added during the nighttime from 10:00 pm to 7:00 am. The CNEL is very similar to the $L_{dn}$, with the CNEL about 0.2 to 1 decibel greater than the $L_{dn}$.

Other noise measures give information on the range of instantaneous noise levels experienced over time. Examples include:

- $L_{max}$ is the maximum instantaneous noise level experienced during a given period of time.

- $L_n$ values indicate noise levels that were exceeded “n” percent of the time. For instance, $L_{25}$ is the noise level that was exceeded 25 percent of the time during a measurement period (e.g., 15 minutes in an hour measurement period).

- SEL is the Single Event Level of noise and is the most relevant noise measurement for nighttime land uses since a high SEL decibel level will interfere with sleep.
Community noise environments are typically represented by noise levels measured throughout the day and night, or over a 24-hour period (i.e., by $L_{dn}$); the one-hour period is especially useful for characterizing noise caused by short-term events, such as operation of construction equipment or concert noise (i.e., with $L_{eq}$). Community noise levels are generally perceived as quiet when the $L_{dn}$ is below 45 dBA, moderate in the 45 to 60 dBA range, and loud above 60 dBA. Very noisy urban residential areas are usually around 70 dBA $L_{dn}$. Along major thoroughfares, roadside noise levels are typically between 65 and 75 dBA $L_{dn}$. Noise levels above 45 dBA at night can disrupt sleep, and levels greater than 85 dBA can cause temporary or permanent hearing loss. In general, a difference of 3 dBA is a minimally perceptible change, while a 5 dBA difference is the typical threshold that would cause a change in community reaction. An increase of 10 dBA would be perceived by people as a doubling of loudness.¹

Noise Attenuation and Abatement. Noise levels diminish as distance from the source to the receptor increases. Other factors such as the weather and reflecting or shielding intensify or reduce noise levels at any given location. A commonly used rule of thumb for traffic is that for every doubling of distance from the road, the noise level is reduced by about 3 dBA. When the distance from a stationary noise source to a receptor doubles, the noise level is reduced by 6 dBA. A doubling of traffic on any given roadway would cause a noise increase of approximately 3 dBA. Noise levels may also be reduced by interrupting the “pathway” between the source and receptor. For example, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA. Generally, the most effective way to reduce noise in a development is through site planning techniques that place noise-sensitive uses or areas in less noisy area; that provides a physical separation, or buffer, between the source and receptor; and that orient buildings so that noise does not “bounce” between walls. Where this is not enough noise protection, barriers such as sound walls are often used. Sound walls that are placed improperly can in fact have a detrimental effect on noise levels. Where sound walls are used, they perform best if placed at the source of the noise rather than at the noise receptor.

Existing Noise Environment

The neighborhoods immediately adjacent to the Medical Center include a mix of light industrial, residential, and commercial uses. Several multi-story apartment buildings and a convalescent home are located to the east of the existing Medical Center campus. Noise levels along Veterans Boulevard, which runs east – west along the northern boundary of the Medical Center campus, would be characterized as typical of a major arterial with urban traffic noise sources. The surrounding neighborhoods that are not located directly adjacent to a major street have a lower ambient noise level, typical of urban neighborhoods with the major noise sources being traffic on local streets and neighborhood activity. The noise generated by the Medical Center is all but inaudible at the distant portions of the neighborhoods farthest from the Medical Center. Occasionally, however, ambulance noise can be heard and heating and cooling equipment on the roof at the Medical Center may be audible. Generally, this occurs when a new piece of equipment that has not been properly installed or there is a mechanical problem, such as a bad bearing on an existing piece of equipment. Closer to the

Medical Center, activity associated with the Medical Center is more noticeable. Noise levels in these areas are described below.

According to the *San Carlos Airport Master Plan Update Airport Modernization Project Draft Environmental Impact Report*, dated June 2002, the Medical Center is not affected by the updated noise contours for San Carlos Airport.\(^2\) However, arriving aircraft are frequently aligned for an approach for landing over the Medical Center.

**Existing Noise Levels**

Existing on-site noise levels were monitored by EIP Associates\(^3\) (see Figure 3.6-1 for measurement locations). Existing daytime noise levels on the site measured along Veterans Boulevard, approximately 300 feet east of Maple Street, (see Location 4 Figure 3.6-1) were recorded at 71.1 dBA \(_{L_{eq}}\). Noise measurements ranged from 67.2 dBA \(_{L_{eq}}\) at Marshall Street and Beech Street (east of the campus) to 73.7 dBA \(_{L_{eq}}\) at Main Street and Bradford Street, near the emergency entrance at the existing main hospital building, in the western portion of the campus.

**Mechanical Equipment Noise.** Operation of typical building mechanical equipment at the site may include air conditioning and heating units, trash pick-up, and landscaping maintenance. Typical noise generated from heating ventilation and air conditioning (HVAC) units range from 60 to 75 dBA at 50 feet.

**Emergency Vehicle Noise.** Emergency vehicle sirens are another noise sources associated with hospital activity. According to Kaiser’s revised application material,\(^4\) an average of 8-9 ambulances per day visit the main hospital building at the Medical Center. Although ambulance siren noise level is typically about 90 dBA which is considered to be loud, noise generated by emergency vehicles is not considered to be a nuisance considering the urgent and imperative nature of the operations.

**Other Noise Sources.** Loading activities, consisting of small- to medium-sized trucks, generate noise in the range of 60 to 65 dBA at 50 feet during loading activities (i.e., idling, backing, use of hydraulic liftgates, etc.), while larger trucks generate noise in the range of 70 to 75 dBA at 50 feet. Trash compaction and collection typically generate noise ranging from 70 to 75 dBA at 50 feet. Traffic circulation and parking lot noise typically ranges from 60 to 65 dBA at 50 feet.

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\(^2\) City/County Association of Governments of San Mateo County (CCAG), *CCAG Airport Land Use Committee (ALUC) Staff Comments on an Initial Study and Environmental Checklist for the Kaiser Permanente Redwood City Medical Center Master Plan*, October 10, 2002.

\(^3\) Measurement were taken using a Larson-Davis Laboratories Model 720 precision sound level meter that satisfies the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation.

\(^4\) Revised Application Material for Kaiser Redwood City Master Plan (electronic files), June 19, 2002.
Figure 3.6-1  $L_{eq}$ Noise Measurement Location
Applicable Plans and Regulations

Noise levels generated by the Medical Center are regulated by the City of Redwood City’s Noise Ordinance (Chapter 24 of the Redwood City Municipal Code). The Redwood City Noise Ordinance sets allowable noise limits for different types of receiving land uses. The noise levels allowed by the Noise Ordinance depend primarily on the background noise level in the area. For the multi-family residential developments around the Medical Center, Section 24.30 of the Noise Ordinance establishes that noise levels generated by construction are prohibited between the hours of 8:00 pm to 7:00 am weekdays, or at any time on Saturdays, Sundays or holidays. In addition, Section 24.31 of the Ordinance prohibits noise levels from exceeding 110 dBA for any item of machinery, equipment, or device used during construction in a residential district.

The City/County Association of Governments of San Mateo County strongly urge the City of Redwood City to require Kaiser to, at least, insulate the new hospital to achieve an interior noise level (due to exterior noise sources, including aircraft) of not more than 45 dBA CNEL. This noise insulation standard is mandatory for residential dwellings as presented in Title 24, part 2, of the California Code of Regulations but is not required for institutional buildings.

The Noise Element of the City of Redwood City Strategic General Plan contains noise and land use compatibility recommendations for evaluating the compatibility of new uses with the on-site noise environment. Residential noise levels are considered satisfactory with a CNEL of less than 55 dBA. Above a CNEL level of 60 dBA in residential land use area, construction or development should not be undertaken. For commercial land uses, which characterize most of the uses surrounding the Medical Center, ambient noise levels are considered satisfactory if they are less than 70 dBA CNEL, while noise environments between 70 dBA and 80 dBA CNEL are considered conditionally acceptable. Under these conditions, new development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features are included in the project design. New construction or development should not be undertaken in noise environments exceeding 80 dBA CNEL containing commercial land uses.

The following policies identified in the City’s Noise Element would apply to the proposed project:

**Policy N-2:** Limit the hours of operation at all noise generation sources wherever practicable, unless an emergency exists.

**Policy N-3:** Require all exterior noise sources (construction operations, air compressors, pumps, fans, and leaf blowers) to use available noise suppression devices and techniques to bring exterior noise down to acceptable levels compatible with adjacent land uses.

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5 City/County Association of Governments of San Mateo County (CCAG), CCAG Airport Land Use Committee (ALUC) Staff Comments on an Initial Study and Environmental Checklist for the Kaiser Permanente Redwood City Medical Center Master Plan, October 10, 2002
Impacts and Mitigation Measures

Significance Criteria

The CEQA Guidelines state that a noise impact would normally be considered to be significant if noise levels generated by the project would conflict with local goals and plans, or if noise level increases would be significant. For the purposes of this EIR, a noise or vibration impact will be considered significant if:

- Noise levels conflict with the goals and policies in the Noise Element of the General Plan;
- Noise levels would violate the limits contained in the Redwood City’s Noise Ordinance or construction noise would exceed the noise limits for construction/demolition noise in Redwood City’s Noise Ordinance. Section 24.30 of the Ordinance prohibits construction/demolition activities between weekday hours of 8:00 pm and 7:00 am or at any time on weekends or holidays if the noise level generated by any such activity exceeds the local ambient noise level measured at any point within a residential district;
- Noise levels that would exceed the Noise Ordinance limits but would, nonetheless, generate an average noise level that would exceed the existing noise level by 6 dBA or more;
- Traffic-generated noise would increase the CNEL by 3 dBA; or
- Vibration levels would exceed a peak particle velocity (PPV) of 0.5 inch per second at a sensitive receptor, thereby causing potential structural damage (including cosmetic damage like plastic cracks) and annoyance.

Environmental Analysis

As described in Section 3.1, for each impact, a level of significance is determined and is reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant effects to a less-than-significant level, the impacts are classified as “significant unavoidable effects (SU).” For this section, NO refers to Noise.

**NO-1. Construction Noise and Vibration** - Under the proposed project and the Higher Occupancy Scenario, construction of new facilities at the Kaiser Medical Center campus would temporarily generate noise and vibration levels that would exceed the limits set forth in the City of Redwood City’s Noise Ordinance for construction and demolition noise. (S)

Construction of the proposed project would occur in five phases beginning in 2003 and completing in 2025. During this period, a wide variety of construction and demolition equipment would be used and material would be transported to and from the site by truck. Table 3.6-2 shows typical noise levels generated by construction equipment.
Table 3.6-2
Typical Outdoor Construction Equipment Noise Levels

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Typical Sound Level at 50 Feet in dBA L_eq</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pile Driver:</td>
<td></td>
</tr>
<tr>
<td>Impact</td>
<td>101</td>
</tr>
<tr>
<td>Vibration</td>
<td>96</td>
</tr>
<tr>
<td>Backhoe</td>
<td>80</td>
</tr>
<tr>
<td>Bulldozer</td>
<td>85</td>
</tr>
<tr>
<td>Compactor</td>
<td>82</td>
</tr>
<tr>
<td>Compressor</td>
<td>81</td>
</tr>
<tr>
<td>Concrete Mixer</td>
<td>85</td>
</tr>
<tr>
<td>Concrete Pump</td>
<td>82</td>
</tr>
<tr>
<td>Crane, Mobile</td>
<td>83</td>
</tr>
<tr>
<td>Loader</td>
<td>85</td>
</tr>
<tr>
<td>Pavement Breaker</td>
<td>88</td>
</tr>
<tr>
<td>Paver</td>
<td>89</td>
</tr>
<tr>
<td>Pump</td>
<td>76</td>
</tr>
<tr>
<td>Roller</td>
<td>74</td>
</tr>
<tr>
<td>Truck</td>
<td>88</td>
</tr>
</tbody>
</table>

*Source:* Harris, Miller, Miller & Hanson, Inc.; *FTA, Noise and Vibration Technical Report, 1995.*

At a maximum, unattenuated noise levels at the boundary of the project site could exceed 89 dBA during construction. The nearest residence is located approximately 75 feet from the Medical Center campus. Average noise levels would vary by phase depending on the equipment used and the duration of the phase. During demolition phases, it could be expected that jackhammers, front loaders, and trucks would be the major noise sources. After this phase, excavation of the basement part of the building would occur. Bulldozers, front loaders and trucks would, again, be expected to be the major noise sources. During foundation and building construction, concrete mixers, concrete pumps, cranes, generators, pumps, and other power tools are expected to be used on the during these activities. Pile driving is anticipated and necessary during construction of the proposed project. The noise generated during each phase would vary, but it is likely that for extended periods of time during each phase, noise levels may exceed 60 dBA outside the residences within 500 feet of the project site. This would be a potentially significant impact.

Pile driving is potentially the greatest source of noise and vibration generated from construction activities. There are essentially two types of pile drivers: vibratory and impact. A vibratory pile driver, which can operate at different frequencies, vibrates the pile into the ground. The continuous motion of vibratory pile driving may increase the resonance response (sympathetic vibrations in response to ground vibrations) of building structures. The typical noise level at
50 feet from this type of source is 96 dBA. Typical PPV values at 25 feet for vibratory equipment ranges from 0.734 to 0.170.6

Impact pile drivers produce a high level of vibration for short periods (0.2 second) with sufficient time between impacts to allow a building’s resonant effects to decay before the next vibration event.7 The typical noise level at 50 feet from this type of source is 101 dBA. Typical PPV values at 25 feet for impact equipment ranges from 1.518 to 0.644.

Since much of the project area is unconsolidated soils, consisting of sand, rock, clay and mud, it is difficult to quantify the vibration impacts of pile-driving activities. However, it is possible that impacts would occur from pile-driving activities next to existing and occupied structures. These impacts would be temporary and dependent on such factors as the location of the piles relative to existing structures, the time and energy required to drive the piles, the type of pile driver and the structural design of the buildings. Any existing structure or sensitive receptor within 50 feet of the pile driving activity would be affected if appropriate mitigation measures were not implemented to reduce these noise and vibration impacts.

MITIGATION MEASURE. The following mitigation measure would reduce most of the potentially significant construction noise impacts. Although implementation of these measures would minimize the effects of construction-related noise and vibration on nearby structures and sensitive receptors, the impact would remain significant and unavoidable. (SU)

NO-1.1 Implement Best Management Practices to Reduce Construction Noise. The proposed project shall incorporate the following practices into the construction documents to be implemented by the project contractor and these practices shall be provided to the Community Development Director for approval prior to the issuance of building permits:

a. Comply with noise and vibration control measures identified in the Redwood City General Plan (i.e., Policy N-2 and Policy N-3 described in the Setting section under “Applicable Policies and Regulations”).

b. Maximize the physical separation between noise generators and noise receptors. Such separation includes, but is not limited to, the following measures:
   • Provide enclosures such as heavy-duty mufflers for stationary equipment and barriers around particularly noisy areas on the site or around the entire site;

• Use shields, impervious fences, or other physical sound barriers, to inhibit transmission of noise to sensitive receptors;

• Locate stationary equipment to minimize noise impacts on the community; and

• Minimize backing movements of equipment.

c. Use quiet construction equipment whenever possible, particularly air compressors.

d. Impact equipment (e.g., jack hammers and pavement breakers) used for project construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically-powered tools. Compressed air exhaust silencers shall be used on other equipment. Other quieter procedures shall be used such as drilling rather than impact equipment whenever feasible.

e. Prohibit unnecessary idling of internal combustion engines.

f. Schedule construction activity that produces higher noise levels during less noise-sensitive hours (normally 8:00 am to 5:00 pm on weekdays). Minimize noise intrusive impacts during the most noise-sensitive hours by planning noisier operations during times of highest ambient noise levels.

g. Select routes for movement of construction-related vehicles and equipment in conjunction with the Redwood City Community Development Services Department so that noise-sensitive areas, including residences, hotels, and outdoor recreation areas, are avoided as much as possible. Include these routes in materials submitted to the Community Development Director for approval prior to the issuance of building permits.

h. Designate a noise disturbance coordinator who will be responsible for responding to complaints about noise during construction. The telephone number of the noise disturbance coordinator shall be conspicuously posted at the construction site and shall be provided to the Community Development Services Director. Copies of the construction schedule shall also be posted at nearby noise-sensitive areas.

**NO-1.2 Reduce Pile Driving Noise and Vibration Effects on Structures.** Kaiser shall require that its geotechnical engineering contractor conduct a pre-construction assessment of existing subsurface conditions and the structural integrity of nearby buildings subject to pile driving impacts prior to receiving a building permit. If recommended by the geotechnical engineer, for structures or facilities within 50 feet of pile driving, Kaiser shall require ground-borne vibration monitoring of
nearby structures. Kaiser shall also require its construction contractor to use noise-reducing pile driving techniques if nearby structures are subject to pile driving noise and vibration. These techniques are pre-drilling pile holes (if feasible, based on soils) to the maximum feasible depth, installing intake and exhaust mufflers on pile driving equipment, vibrating piles into place when feasible, and installing shrouds around the pile driving hammer where feasible.

**NO-2. Mechanical Noise** - Under the proposed project and the Higher Occupancy Scenario, mechanical equipment associated with the new buildings may exceed the noise limits in Redwood City’s Noise Ordinance. (PS)

Noise from roof-mounted equipment typically generates noise levels from 60 to 75 dBA at 50 feet. Assuming the noise levels attenuate at 6 dBA per doubling of distance between the noise source and receptors, sound levels of about 69 dBA would be experienced approximately 100 feet from the noise source. Since these noise sources may be closer than 100 feet from the residences, noise exposure for the nearest residents could exceed the 60 dBA maximum level for residences specified in the City’s Municipal Code and expose those receptors to potentially significant noise effects.

**MITIGATION MEASURE.** The following mitigation measure would reduce potential noise impacts related to mechanical equipment to a less-than-significant level. (LTS)

**NO-2.1 Design Equipment and Their Location to Reduce Noise Levels.** Kaiser shall retain an Acoustical Engineer who will review the mechanical equipment to make sure that the limits of Redwood City’s Noise Ordinance are met, prior to issuance of a building permit. In addition, mechanical equipment (i.e., HVAC, etc.) shall be shielded to muffle noise. If shielding alone will not sufficiently reduce noise to acceptable levels, the equipment shall be sited on the rooftops of new buildings so that the equipment is located farthest from sensitive receptors. The following is a list of techniques that may be recommended by the Acoustical Engineer to sufficiently reduce mechanical noise emissions:

a. Purchasing low-level noise-producing equipment.

b. Placing a solid architectural screen about the mechanical equipment and designed per the Acoustical Engineer recommendations for the project.

c. Enclosing the HVAC system within architectural screens and using the housing to help block the noise.

d. Supplying the air handlers of the HVAC system with a noise control package.

e. Using scroll compressors with the air handler instead of reciprocating compressors.
NO-3. Loading and Trash Compaction Noise - Under the proposed project and the Higher Occupancy Scenario, noise generated by activities at the loading docks and during trash compaction and collections could potentially impact off-site receptors. (PS)

Noise generated at new loading docks would be about the same as currently exists. As mentioned above, small- to medium-sized trucks generate noise in the range of 60 to 65 dBA at 50 feet during loading activities (i.e., idling, backing, use of hydraulic liftgates, etc.), while larger trucks generate noise in the range of 70 to 75 dBA at 50 feet. In addition, trash compaction and collection typically generates noise ranging from 70 to 75 dBA at 50 feet. Currently, these facilities are located at sufficient distances (approximately 75 feet to the nearest off-site sensitive receptor) and most locations are buffered from any sensitive receptor (i.e., residential land use) by existing the Medical Center buildings. However, the location of future loading docks and trash storage facilities has not been determined and may result in noise levels above 55 dBA at nearby residences, the noise limit considered the acceptable threshold for residential areas.

Mitigation Measure. The following mitigation measure would reduce potential noise impacts related to mechanical equipment to a less-than-significant level. (LTS)

NO-3.1 Design Loading Docks and Trash Collection Facilities to Reduce Noise Levels.

When new medical buildings are proposed within 100 feet of any residential land uses, the project sponsor shall, prior to receiving a building permit, implement the following measures to reduce potential noise impacts from loading dock and trash collection operations.

a. Loading docks, trash compaction, and storage facilities and compressors shall be located so that the campus building itself serves as a noise buffer or adequate noise buffers shall be provided. These noise abatement features shall be shown on drawings submitted for the project’s building permits.

b. Auxiliary power sources shall be included and used at each loading dock so that there is no needless engine idling of delivery trucks with refrigerator units. These sources shall be shown on drawings submitted for the project’s building permits.

NO-4. Traffic Noise - Under the proposed project and the Higher Occupancy Scenario, increased traffic noise levels due to implementation of the project would not increase ambient noise levels greater than 3 dBA. (LTS)

New vehicle and employee trips generated by the Medical Center would contribute to existing traffic noise levels along nearby roadways. Table 3.6-3 presents the existing and future traffic noise levels with and without the project along 11 main roadway segments in the project vicinity. Traffic noise levels are based on peak traffic counts provided by Fehr & Peers Associates and used in conjunction with Federal Highway Administration (FHWA) Highway
Noise Prediction Model (FHWA-RD-77-108). Veterans Boulevard between Main Street and Maple Street generate the greatest traffic noise within the project vicinity, ranging from 62.5 to 62.9 dBA in 2002. As shown in Table 3.6-3, the greatest increase in noise between existing traffic noise (2002) and existing plus project traffic noise (2004), when MOB-1 would be completed, is 1.0 dBA along Veterans Boulevard between Maple Street and Walnut Street. Therefore, traffic noise levels with implementation of the project would be below the 3 dBA significance threshold.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Marshall Street between Walnut Street and Main Street</td>
<td>56.0</td>
<td>56.5</td>
<td>56.9</td>
<td>57.2</td>
<td>57.9</td>
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<tr>
<td>Marshall Street between Walnut Street and Marshall Court</td>
<td>55.8</td>
<td>56.3</td>
<td>56.7</td>
<td>57.0</td>
<td>57.7</td>
</tr>
<tr>
<td>Marshall Street between Marshall Court and Maple Street</td>
<td>58.0</td>
<td>58.9</td>
<td>60.2</td>
<td>60.4</td>
<td>60.8</td>
</tr>
<tr>
<td>Marshall Street between Maple Street and Chestnut</td>
<td>58.6</td>
<td>58.8</td>
<td>59.8</td>
<td>59.9</td>
<td>60.2</td>
</tr>
<tr>
<td>Bradford between Main Street and Jefferson Avenue</td>
<td>57.6</td>
<td>57.8</td>
<td>58.9</td>
<td>59.0</td>
<td>59.2</td>
</tr>
<tr>
<td>Bradford between Main Street and Walnut Street</td>
<td>54.6</td>
<td>55.2</td>
<td>56.0</td>
<td>56.3</td>
<td>57.0</td>
</tr>
<tr>
<td>Veterans Boulevard between Main Street and Jefferson Avenue</td>
<td>63.2</td>
<td>63.6</td>
<td>64.8</td>
<td>64.9</td>
<td>65.4</td>
</tr>
<tr>
<td>Veterans Boulevard between Main Street and Walnut Street</td>
<td>62.9</td>
<td>63.6</td>
<td>64.5</td>
<td>64.8</td>
<td>65.1</td>
</tr>
<tr>
<td>Veterans Boulevard between Maple Street and Walnut Street</td>
<td>62.5</td>
<td>63.5</td>
<td>64.7</td>
<td>64.8</td>
<td>65.1</td>
</tr>
<tr>
<td>Veterans Boulevard between Hansen Way and Walnut Street</td>
<td>61.2</td>
<td>63.1</td>
<td>63.1</td>
<td>63.2</td>
<td>63.5</td>
</tr>
<tr>
<td>Veterans Boulevard between Hansen Way and Chestnut Street</td>
<td>61.6</td>
<td>61.8</td>
<td>63.5</td>
<td>63.7</td>
<td>64.0</td>
</tr>
</tbody>
</table>


Notes: Based on FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
NO-5. **Cumulative Traffic Noise** - *Traffic generated from either the proposed project or the Higher Occupancy Scenario would not have cumulative noise effects.*  

(LTS)

The traffic generated due to the project would be the major contributor to cumulative noise. Traffic noise from background growth (2004) and foreseeable development projects were added to existing traffic noise to derive “future traffic noise in 2020.” The resultant noise level increase between 2004 and 2020 ranges from 0.8 to 1.9 dBA, with the greatest increases in traffic noise levels occurring at Veterans Boulevard between Walnut Street and Chestnut Street and at Marshall Street between Marshall Court and Maple Street.

Cumulative noise conditions with the addition of the Master Plan and the Higher Occupancy Scenario are shown in the far right column of Table 3.6-3. The cumulative contribution of the project is 0.1 to 1.9 dBA. Contribution of the Master Plan or the Higher Occupancy Scenario is considered less than cumulatively considerable because the overall cumulative impact of the Master Plan or the Higher Occupancy Scenario is less than the significance threshold of 3 dBA for traffic noise. Therefore, traffic generated from the Master Plan or the Higher Occupancy Scenario would have no significant cumulative effect.
3.7 HAZARDOUS MATERIALS

Introduction

This section describes the types of hazardous materials currently handled at Kaiser’s Redwood City Medical Center, the regulatory setting applicable to such activities, Kaiser’s established health and safety policies and procedures, and the potential for the project to result in health and safety impacts as a result of increasing the use of hazardous materials associated with the project, and the generation of hazardous waste at the facility. The term “hazardous material” is defined in different ways for different regulatory programs. For purposes of this EIR, the definition of “hazardous material” is similar to that in the California Health and Safety Code, Section 25501:

Hazardous materials that, because of their quantity, concentration, or physical or chemical characteristics, pose a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.

“Hazardous waste” is a subset of hazardous materials. For the purposes of this EIR, the definition of hazardous waste is essentially the same as that in the California Health and Safety Code, Section 25517, and in the California Code of Regulations, Title 22, Section 66261.2:

Hazardous wastes are wastes that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may either cause, or significantly contribute to an increase in mortality or an increase in serious illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Hazardous materials can be categorized as hazardous non-radioactive chemical materials, radioactive materials, and biohazardous materials. For hazardous chemicals, the above definitions are typically adequate. Radioactive and biohazardous materials are further defined below.

• Radioactive materials contain atoms with unstable nuclei that spontaneously emit ionizing radiation to increase their stability.

• Radioactive wastes are radioactive materials that are discarded (including wastes in storage) or abandoned.

• Biohazardous materials include materials containing certain infectious agents (microorganisms, bacteria, molds, parasites, viruses) that normally cause or significantly contribute to increased human mortality, or organisms capable of being communicated by invading and multiplying in body tissues.

• Medical waste include both biohazardous wastes (byproducts of biohazardous materials) and sharps (i.e., devices capable of cutting or piercing, such as hypodermic needles, razor blades,
and broken glass) resulting from the diagnosis, treatment, or immunization of human beings, or research pertaining to those activities.

During the course of Kaiser’s patient care and facility maintenance operations, the facility uses various materials, some of which pose potential hazards. For example, clinical laboratories use potentially hazardous chemicals to analyze patient blood and urine samples. Radioactive materials are used to treat certain kinds of cancer. Various patient diagnosis and treatment activities involve potentially biohazardous materials (i.e., infectious agents). Hazardous materials use often results in byproducts that must be handled and disposed of as hazardous wastes. The following analysis describes the extent to which the potential for exposure to hazardous materials is controlled through the implementation of applicable laws and regulations, and Kaiser’s policies and procedures already in place at the facility.

As discussed in the Initial Study (Appendix B), the proposed project is not included on the list of hazardous materials sites (Cortese List) compiled pursuant to Government Code Section 65962.5, is not located within an airport land use plan or within the vicinity of a private airstrip, will not interfere with an adopted emergency response plan or evacuation plan, and is not located within an area that has the potential for wildland fires. Therefore, these aspects of public health and safety will not be addressed in this EIR.

Setting

Hazardous Material Use and Storage

Patient care activities involve relatively small quantities of hazardous materials, primarily in clinical offices, cleaning and sterilizing processes, nuclear medicine, and pharmacies. Types of hazardous materials found in medical facilities include chemotherapy reagents and other pharmaceuticals; chemicals used to sterilize equipment; formaldehyde for specimen preservation; and solvents, oxidizers, corrosives, and stains used in clinical laboratories. Facilities maintenance activities require various common hazardous materials, including cleaners (which may include solvents and corrosives, in addition to soaps and detergents); paints; pesticides and herbicides; fuels (e.g., diesel); and oils and lubricants. Table 3.7-1 summarizes existing hazardous materials at the Medical Center according to the California Code of Regulations (CCR), Title 22 hazard classes. Title 22 hazard classes categorize hazardous waste based on their characteristics of ignitability, corrosivity, reactivity, or toxicity. Hazardous waste with any of these characteristics is also known as Resource Conservation and Recovery Act (RCRA) waste. Hazard class examples are provided for each category.

Table 3.7-2 lists existing radioactive materials at the Medical Center. These materials are primarily used to treat certain types of cancer. Radioactive materials generally contain radioactive atoms; however, x-ray equipment (which does not involve any radioactive substances) is also regulated as radioactive material. When a radioactive atom emits radiation, it eventually becomes non-radioactive. The level of radioactivity decreases by one half after a period called a half-life. The half-lives of the radioactive atoms that the facility uses are included in Table 3.7-2. Radioactive materials with half-
### Table 3.7-1

**Maximum Amounts of Hazardous Chemicals at Kaiser’s Redwood City Medical Center**

<table>
<thead>
<tr>
<th>Type of Material</th>
<th>Examples</th>
<th>Maximum Amount On Site</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Solids (pounds)</td>
</tr>
<tr>
<td>Inert Compressed Gases and Cryogenic</td>
<td>liquid nitrogen, compressed air,</td>
<td>-</td>
</tr>
<tr>
<td>Liquids(^2)</td>
<td>helium, nitrous oxide, argon</td>
<td></td>
</tr>
<tr>
<td>Flammable Compressed Gases and Liquids(^3)</td>
<td>spray paint and other aerosols,</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>acetylene, propane</td>
<td></td>
</tr>
<tr>
<td>Flammable Liquids</td>
<td>gasoline, isopropanol, acetone,</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>ether, other solvents</td>
<td></td>
</tr>
<tr>
<td>Combustible Materials</td>
<td>oil-based paint, hydraulic oil,</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>mineral oil, diesel fuel</td>
<td></td>
</tr>
<tr>
<td>Oxidizers</td>
<td>chlorine bleach, hydrogen peroxide, nitric acid, oxygen</td>
<td>-</td>
</tr>
<tr>
<td>Corrosive Materials</td>
<td>sodium hydroxide, trisodium phosphate, calcium hypochlorite, ammonia,</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>acetic acid, hydrochloric acid</td>
<td></td>
</tr>
<tr>
<td>Toxic Materials</td>
<td>chemotherapy chemicals, phenol crystals, latex paint, mercuric</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>chloride, freon, glutaraldehyde</td>
<td></td>
</tr>
<tr>
<td>Carcinogens</td>
<td>chloroform, ethylene oxide</td>
<td>-</td>
</tr>
<tr>
<td>Irritants</td>
<td>acrylamide, sodium sulfate, sodium lauryl ether sulfate, sodium</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>dodecylbenzene sulfonate</td>
<td></td>
</tr>
<tr>
<td>Sensitizers</td>
<td>ammonium thiosulfate, hydroquinone</td>
<td>-</td>
</tr>
</tbody>
</table>

**Sources:** EIP Associates; Kaiser Permanente Medical Center, "Hazardous Materials Business Plan" filed with the County of San Mateo Health Services Agency, Environmental Health Division, January 31, 2002.

**Notes:**

1. Some chemicals fall into more than one category; therefore, the columns presented here cannot be added to derive actual totals.
2. Cryogenic liquids are extremely cold liquids.
3. Diesel storage accounts for up to 10,400 gallons of the flammable liquids at the Medical Center. The remaining 201 gallons are other materials.
Table 3.7-2
Radioactive Materials at Kaiser’s Redwood City Medical Center

<table>
<thead>
<tr>
<th>Radionuclide</th>
<th>Half-Life</th>
<th>Amount On Site (mCi)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sealed Sources for Calibration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cobalt-57</td>
<td>270 days</td>
<td>35</td>
</tr>
<tr>
<td>Barium-133</td>
<td>11 years</td>
<td>0.285</td>
</tr>
<tr>
<td>Cesium-137</td>
<td>30 years</td>
<td>0.750</td>
</tr>
<tr>
<td>Americium-241</td>
<td>458 years</td>
<td>9</td>
</tr>
<tr>
<td>Europium-152</td>
<td>127 years</td>
<td>5 x 10^{-7}</td>
</tr>
<tr>
<td><strong>Sources for Patient Use (not sealed)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cobalt-57</td>
<td>270 days</td>
<td>0</td>
</tr>
<tr>
<td>Gallium-67</td>
<td>78 hours</td>
<td>20</td>
</tr>
<tr>
<td>Technetium-99m</td>
<td>6 hours</td>
<td>1,000</td>
</tr>
<tr>
<td>Iodine-123</td>
<td>13 hours</td>
<td>2</td>
</tr>
<tr>
<td>Iodine-131</td>
<td>8.1 days</td>
<td>500</td>
</tr>
<tr>
<td>Indium-111</td>
<td>2.8 days</td>
<td>3</td>
</tr>
<tr>
<td>Thallium-201</td>
<td>73 hours</td>
<td>30</td>
</tr>
</tbody>
</table>

*Sources: EIP Associates; Kaiser Permanente, “Radionuclides on site on any given day” filed with the County of San Mateo Health Services Agency, June 24, 2002.*

Lives greater than 90 days are considered long-lived radioactive materials; those with half-lives less than 90 days are considered short-lived radioactive materials. Many of the radioactive materials at the Medical Center are short lived. Most of the long-lived radioactive materials are neither purchased nor disposed of routinely; they are essentially used as sealed, stationary sources of radiation. Cobalt-57 is the only radioactive material with a half-life longer than 90 days used for patient treatment at the Medical Center. Biohazardous materials and medical wastes (including pathological specimens, surgical specimens, human tissues, bulk blood and blood products, blood specimens, and body fluids) are handled in clinical offices, nuclear medicine, dialysis units, operating rooms, pathology, radiology, and respiratory therapy.

**Hazardous Waste Generation**

Use of hazardous materials typically produces hazardous waste. Much of the hazardous material handled at the Medical Center is consumed through use. The remaining waste is summarized in Table 3.7-3. This waste is shipped to hazardous waste treatment, storage, and disposal facilities off site in accordance with the California Hazardous Waste Control Law. Each year, in the course of patient treatment, the Medical Center generates roughly 6,555 gallons of hazardous chemical waste. All of this waste is shipped off site for disposal or recycling. No incineration of hazardous waste occurs on site.
Table 3.7-3
Hazardous Chemical Waste Generated at Kaiser’s Redwood City Medical Center

<table>
<thead>
<tr>
<th>Type of Waste</th>
<th>Annual Waste Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvents</td>
<td>0 gallons</td>
</tr>
<tr>
<td>Waste Oil/Mixed Oil</td>
<td>70 gallons</td>
</tr>
<tr>
<td>Photography Liquids</td>
<td>6485 gallons</td>
</tr>
<tr>
<td>Photography Solids</td>
<td>0 pounds</td>
</tr>
</tbody>
</table>


The Medical Center generates relatively little radioactive waste for off-site disposal. As shown in Table 3.7-2, most of the radionuclides used to treat patients have half-lives no greater than 52 days. Because the radionuclides have such short half-lives, they are stored on site until their radioactivity decays to background levels, and then they are disposed of as ordinary non-hazardous solid waste. Typically, this process requires less than two years. Kaiser uses relatively little (about 5 millicuries) of Cobalt-57 each year. Cobalt-57 is provided to patients as a pill; therefore, no residual waste is generated. All of the other radioactive materials handled at the Medical Center are encapsulated in sealed sources that are not conducive to release and are used to calibrate radiation-sensitive equipment. Because these radionuclides have long half-lives and serve long-term purposes, they are not typically discarded but are kept on site or sold to other users.

Physical Hazards

As with all work environments, various physical safety hazards exist at the Medical Center. Office and clinical activities are associated with various physical hazards from common activities such as lifting, using sharp tools, and performing repetitive motions. Some employees work with equipment that presents special hazards, such as high voltage electrical equipment, x-ray-producing instruments, lasers, and high-intensity magnetic fields. Some hazardous materials have the potential to pose physical safety hazards, like burns, if not properly managed. Classes of materials that can be associated with physical injuries include pressurized liquids and gases, cryogenic (extremely cold) liquids, flammable materials, and corrosive chemicals.

Applicable Plans and Regulations

Hazardous materials handling and hazardous waste management are subject to laws and regulations at all levels of government as summarized below. The Medical Center complies with these laws and regulations, in part, by implementing a series of in-house policies and procedures. These policies and procedures are described following the regulatory background information. A discussion of regulatory oversight then follows.
**Hazardous Materials Management and Emergency Planning.** 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. California’s Hazardous Materials Release Response Plans and Inventory Law, sometimes called the “Business Plan Act,” aims to minimize the potential for accidents involving hazardous materials and to facilitate an appropriate response to possible hazardous materials emergencies. The law requires businesses that use hazardous materials to provide inventories of those materials to designated emergency response agencies, to illustrate on a diagram where the materials are stored on site, to prepare an emergency response plan, and to train employees to use the materials safely. The Medical Center’s current Hazardous Materials Business Plan, dated January 31, 2002, is on file with the County of San Mateo Health Services Agency (CSMHSA) and the Redwood City Fire Department (RCFD). This information is to be updated when there is a substantial change in operations. Businesses that handle certain very hazardous substances must undertake a systematic analysis of their operations, study the potential consequences of possible worst-case accidents, and prepare Risk Management Plans to reduce apparent risks. The Medical Center handles such materials, but not in quantities sufficient to trigger Risk Management Plan requirements. These laws are implemented locally by CSMHSA and by RCFD, which also enforces certain fire code regulations pertaining to hazardous materials storage.

**Building and Fire Safety.** The Redwood City Community Development Services Department, Building and Inspection, enforces the 1997 California Building Code, and the RCFD enforces the 1997 Uniform Fire Code as amended. These laws specify management practices for flammable materials, including some packaging and containment requirements. They also set forth appropriate construction standards (e.g., fire separations and fire suppression systems) depending on building occupancy classifications. The Building and Safety Division reviews proposed building design plans to ensure compliance with Uniform Building Code requirements.

**Worker Safety.** Occupational safety standards exist in federal and State laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health (Cal/OSHA) is responsible for developing and enforcing workplace safety standards and assuring worker safety in the handling and use of hazardous materials. Among other requirements, Cal/OSHA obligates many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. The Hazard Communication Standard requires that workers be informed of the hazards associated with the materials they handle. For example, manufacturers are to appropriately label containers, Material Safety Data Sheets are to be available in the workplace, and employers are to properly train workers. The U.S. Occupational Safety and Health Administration’s Bloodborne Pathogens Standard requires the use of Universal Precautions (handling all human blood and certain body fluids as if they contain infectious agents) in the workplace. All of these safety standards and practices, regarding workplace safety and providing a safe a healthy environment for
patient care, are implemented by Kaiser in the Medical Center’s, *Safe Environment Management Plan*\(^1\) that is part of Kaiser’s *Environment of Care Program*.

**Hazardous Waste Handling.** The U.S. Environmental Protection Agency (EPA) has authorized the California Department of Toxic Substances Control (DTSC) to enforce hazardous waste laws and regulations in California. Requirements place “cradle-to-grave” responsibility for hazardous waste disposal on the shoulders of hazardous waste generators. Generators must ensure that their wastes are disposed of properly, and legal requirements dictate the disposal requirements for many waste streams (e.g., banning many types of hazardous wastes from landfills). Many hazardous waste generators are required to prepare Hazardous Waste Minimization Plans pursuant to the California Hazardous Waste Source Reduction and Management Review Act. However, the Medical Center does not generate sufficient quantities of hazardous waste to trigger Hazardous Waste Minimization Plan requirements. All hazardous waste generators must certify that, at a minimum, they make a good faith effort to minimize their waste and to select the best waste management method available. Hazardous waste laws and regulations are enforced locally by the CSMHSA.

**Radioactive Materials Management.** The Radiologic Health Branch of the California Department of Health Services administers the federal and State radiation safety laws that govern the storage, use, and transportation of radioactive materials and the disposal of radioactive wastes. The Radiologic Health Branch licenses institutions that use radioactive materials and radiation-producing equipment, such as x-ray equipment. To maintain a radioactive materials license, an institution must meet training and radiation safety requirements and be subject to routine inspections. These safety requirements are also presented in the Medical Center’s *Safe Environment Management Plan*.

**Medical Waste Handling.** The California Department of Health Services Medical Waste Management Program enforces the California Medical Waste Management Act and related regulations. Medical waste is generally regulated in the same manner as hazardous waste, except that special provisions apply to storage, disinfection, containment, and transportation. The law imposes a cradle-to-grave tracking system and a calibration and monitoring system for on-site treatment. Facilities that treat medical wastes must obtain permits to do so and are subject to annual audits. However, Kaiser does not treat or incinerate medical waste on site. Medical waste is to be stored in closed red bags marked “biohazard” and, when transported for disposal, placed inside hard-walled containers with lids.

**Hazardous Materials Transportation.** The U.S. Department of Transportation (DOT) has developed regulations pertaining to the transport of hazardous materials and hazardous wastes by all modes of transportation. The U.S. Postal Service (USPS) has developed additional regulations for the transport of hazardous materials by mail. DOT regulations specify packaging requirements for different types of materials. EPA has also promulgated regulations for the transport of hazardous wastes. These more stringent requirements include tracking shipments with manifests to ensure that wastes are delivered to their intended destinations. In California, the California Highway Patrol, the California DOT (Caltrans), and the DTSC play a role in enforcing hazardous materials transportation requirements.

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**Hazardous Building Components.** Structural building components sometimes contain such hazardous materials as asbestos, polychlorinated biphenyls (PCBs), lead, and mercury. During demolition or renovation of any existing Medical Center building, these hazardous material building components may be disturbed and thus exposing workers, the public and the environment to these hazards. These materials are subject to various regulatory schemes as described below.

*Asbestos.* Asbestos is regulated both as a hazardous air pollutant and as a potential worker safety hazard. Bay Area Air Quality Management District (BAAQMD) and Cal/OSHA regulations restrict asbestos emissions from demolition and renovation activities, and specify safe work practices to minimize the potential for release of asbestos fibers. These regulations prohibit emissions of asbestos from asbestos-related manufacturing, demolition, or construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos; specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos fibers; and require notice to federal and local government agencies prior to beginning renovation or demolition that could disturb asbestos. California requires licensing of contractors who conduct asbestos abatement activities.

*PCBs.* DTSC has classified PCBs as a hazardous waste when concentrations exceed 5 parts per million (ppm) in liquids or 50 ppm in nonliquids. Fluorescent light ballasts may contain PCBs, and if so, they are regulated as hazardous waste and must be transported and disposed of as hazardous waste. Ballasts manufactured after January 1, 1978, should not contain PCBs and are required to have a label clearly stating that PCBs are not present.

*Lead.* Cal/OSHA standards establish a maximum safe exposure level for types of construction work where lead exposure may occur, including demolition of structures where materials containing lead are present; removal or encapsulation of materials containing lead; and new construction, alteration, repair, or renovation of structures with materials containing lead. Inspection, testing, and removing lead-containing building materials must be performed by state-certified contractors who are required to comply with applicable health and safety and hazardous materials regulations. Typically, building materials with lead-based paint attached are not considered hazardous waste unless the paint is chemically or physically removed from the building debris. The U.S. Department of Housing and Urban Development has developed Guidelines for Evaluation and Control of Lead-Based Paint Hazards.2

*Mercury.* Spent fluorescent light tubes, thermostats, and other electrical equipment contain heavy metals that, if disposed of in landfills, can leach into soil or groundwater. Lighting tubes typically contain concentrations of mercury that may exceed regulatory thresholds for hazardous waste and, as such, must be managed in accordance with hazardous waste regulations. Elemental mercury can be found in many electrical switches, and when disposed of, such mercury is considered hazardous waste. The use of mercury in thermometers is being phased out and replaced with digital thermometers.

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Impacts and Mitigation Measures

Significance Criteria

For purposes of this EIR, the project would be considered to result in a significant hazardous materials impact if it were to:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment; or
- Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

Methodology

To assess the potential for the proposed project to involve the use, production, or disposal of materials in a manner that poses substantial hazards to people, or to animal or plant populations, the following analysis considers the pathways through which exposure to hazards could potentially occur, and evaluates the controls that would foreseeably be placed on each of these pathways. Exposure pathways that would be sufficiently controlled to pose no substantial hazards are considered less-than-significant health and safety issues.

As an acute care medical facility, the Medical Center will continue to use hazardous materials and generate hazardous waste associated with medical care with or without the project. The project, however, would increase hazardous materials use and hazardous waste generation. The existing hazardous materials found at the Medical Center probably reflect the range of hazardous materials types that could be found in the future, and the nature of the hazards associated with future materials. The increase in hazardous materials use and hazardous waste generation would be roughly proportional to the projected increase in patients (which is a function of membership) at the Medical Center. This increase could be roughly 21 percent at buildout based on project increases in membership. The actual increase in hazardous materials handling could be somewhat more or less than 21 percent since not all changes in hazardous materials use and hazardous waste generation would necessarily be proportional to the projected increase in patients. Nevertheless, this assumption is reasonable and illustrative, given available information.

Environmental Analysis

As described in Section 3.1, for each impact, a level of significance is determined and is reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant effects to a less-than-significant level, the impacts are
classified as “significant unavoidable effects (SU).” For this section, HM refers to Hazardous Materials.

The projected increases in membership would be the same under the proposed project or the Higher Occupancy Scenario described in Section 2. Therefore, this section does not include a separate analysis of the Higher Occupancy Scenario.

**HM-1. Construction-Related Hazardous Materials Disturbance**

*Under the proposed project and the Higher Occupancy Scenario, project-related demolition or renovation could disturb hazardous materials in existing building components and thereby cause adverse health or safety effects.*

(PS)

Both the proposed project and the Higher Occupancy Scenario include the demolition of some of the existing on-campus buildings. Building components in structures built prior to 1981 could contain hazardous materials, such as asbestos, PCBs, lead, and mercury.

Asbestos poses health hazards only when inhaled; therefore, friable (easily crumbled) asbestos is potentially hazardous if not encapsulated. Non-friable asbestos or encapsulated asbestos does not pose substantial health risks. Upon building renovation or demolition at the Medical Center, asbestos fibers (if any are present) could be disturbed, released into the air and inhaled by construction workers or the public unless proper precautions are taken. Existing government regulations limit asbestos emissions from asbestos-related demolition or construction activities, and specify precautions and safe work practices that must be followed to minimize the potential release of asbestos fibers.

Building components containing PCBs, lead, or mercury could also be found in areas to be demolished or renovated. PCBs are regulated under the federal Toxic Substances Control Act of 1976. In sufficient concentrations, lead and mercury are regulated as hazardous wastes. The U.S. Department of Housing and Urban Development has prepared Guidelines for Evaluation and Control of Lead-Based Paint Hazards. Applicable health and safety requirements would minimize any risks from handling these materials, unless they fail to be identified adequately prior to demolition or renovation.

If any unidentified hazardous materials were to remain in the existing buildings when demolition or renovation occurred, these hazardous materials could create worker health hazards or result in environmental release (or inappropriate disposal) of these hazardous materials. For this reason, the proposed project could involve handling materials in a manner that poses a hazard to people, or to animal or plant populations, if appropriate hazardous materials surveys and safety precautions are not undertaken. This exposure could constitute a potentially significant impact.

To the extent that the proposed project could involve removing hazardous materials within existing buildings, it could be beneficial over the long term. The removal of such materials could reduce potential health threats and prevent individuals on and off site from encountering
such materials in the future. Properly handling and disposing of contaminated materials would protect the environment and prevent potential future adverse health, safety, or environmental effects related to them.

**MITIGATION MEASURE.** The following mitigation measure would reduce this potentially significant impact to a less-than-significant level. (LTS)

**HM-1.1 Perform Pre-Construction Hazardous Materials Surveys and Manage Properly if Hazardous Materials are Identified.** Under the proposed project and the Higher Occupancy Scenario, Kaiser shall retain a qualified environmental specialist (e.g., a Registered Environmental Assessor or similarly qualified individual) to inspect existing building areas subject to demolition or renovation for the presence of as yet unidentified asbestos, PCBs, mercury, lead, or other hazardous materials. If found at levels that require special handling, Kaiser shall manage these materials as required by law and according to federal and state regulations and guidelines, including those of DTSC, BAAQMD, Cal/OSHA, CSMHSA, and any other agency with jurisdiction over these hazardous materials.

**HM-2. Exposure to Contaminated Soil and/or Groundwater - Under the proposed project and the Higher Occupancy Scenario, excavation and construction of proposed basement and building foundations could expose construction personnel and the public to existing contaminated soil and/or groundwater (PS)**

In April 1987, former gasoline underground storage tanks (USTs) located at the Medical Center were discovered to have leaks. The tanks were removed and remediation of contaminated soils was conducted in 1988. The site was granted site closure for these leaking USTs in 1993. However, residual contaminated areas may be encountered during site grading and excavation activities in the vicinity of the former USTs. Although the site was granted closure for the leaking USTs, site closure only means that contaminant levels at the site are below levels established by the local regulatory agency and that exposure pathways to the public and the environment have been eliminated. However, residual contamination may be encountered by construction workers in the area of the former USTs. The proposed project would involve basement and foundation excavation, where excavation could be sufficiently deep to encounter residual contaminated soil or groundwater. On the basis of existing information, the most likely contaminants encountered during earth-moving activities would be petroleum hydrocarbons. During excavation, construction, and dewatering activities, construction workers and members of the public could be at risk for exposure to soil and groundwater contaminated with Total Petroleum Hydrocarbons as gasoline (TPHg).

Exposure to hazardous materials could cause various short-term or long-term health effects specific to each chemical present if of sufficient concentration and duration. Acute effects,

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3 County of San Mateo Health Services Agency, Local Oversight Program, Case #330041, closed September 8, 1993.
often resulting from a single exposure, could range from major to minor effects, such as nausea, vomiting, headache, or dizziness. Chronic exposure to hazardous materials could result in systemic damage or damage to specific organs, such as lungs, liver, or kidneys (related to benzene exposure, a known carcinogen and a common additive to TPHg).

Construction workers would be at the greatest risk of exposure to contaminated soil or groundwater, particularly if not all hazardous materials in the soil or groundwater are adequately identified. Steps to characterize potential contaminants in soil and groundwater to be disturbed as part of the project need to be implemented to ensure that the project would not create a substantial human health hazard to workers or individuals near the site during earth-moving activities.

Site remediation itself could also have adverse impacts. If site remediation were conducted without appropriate safeguards, workers, and possibly the public, could potentially be exposed to chemical compounds in soils, soil gases (gases or vapors, mostly air, trapped within soil), or groundwater, or to airborne chemicals. Workers directly engaged in on-site activity would face the greatest potential for exposure. The public could be exposed to contaminants if access to the project site were insufficiently controlled.

Worker and public health/safety requirements would apply during remediation activities. Potential adverse impacts of remediation would be mitigated almost entirely by legally required safety and hazardous waste handling precautions. For hazardous waste workers, Cal/OSHA regulations mandate an initial 40-hour training course and subsequent annual training review. Additionally, site-specific training would be required for some workers. These measures, along with application of cleanup standards subject to review by responsible agencies, would serve to protect human health and the environment during site remediation, thus minimizing impacts. Unless these plans are adequately prepared and implemented, the project could pose a significant impact by creating a substantial human health hazard or involving the disposal of materials in a manner that poses substantial hazards to people or to animal or plant populations.

On the basis of the proposed use of the project site as an acute care medical facility, the population that would be present at project completion would include workers employed at the site, patients and visitors at the Medical Center, and off-site residents. In the future, potential health effects could occur if any of these individuals were exposed to elevated levels of contaminants in the soil or groundwater. Exposure could occur through inhalation of soil and groundwater vapors that have migrated to the surface. Direct contact with soil or groundwater would be unlikely because the site is and would remain mostly paved. Because existing soil and groundwater contaminants could, in the future, pose substantial human health hazards to project occupants and adjacent neighbors, the project could result in a potentially significant impact.

MITIGATION MEASURE. The following mitigation measure would be required to reduce impacts from exposure to hazardous materials to a less-than-significant level. (LTS)
HM-2.1 Prepare Site Health and Safety Plan. Because the site was a former leaking UST site and in the event that contaminated soil or groundwater is encountered, Kaiser shall comply with the *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* regulatory requirements for hazardous materials/waste health and safety plans. The *Site Health and Safety Plan* shall establish policies and procedures to protect workers and the public from potential hazards posed by residual contamination issues at the site. The Plan shall include items applicable to site conditions, such as identification of contaminants, potential hazards, material handling procedures, dust suppression measures, personal protection clothing and devices, controlled access to the site, health and safety training requirements, monitoring equipment used during construction to verify health and safety of workers and the public, measures to protect public health and safety, and emergency response procedures. If petroleum hydrocarbons are present in the soil and/or groundwater proposed for the use of backfill or disposal, the handling and disposal of the contaminated soil and groundwater would be governed by the applicable local and federal hazardous materials regulations.

HM-3. Hazardous Materials Storage and Handling - Both the proposed project and the Higher Occupancy Scenario would increase hazardous materials storage and handling at the Medical Center, thereby increasing risks of human and environmental exposure to hazardous materials. However, existing health and safety programs limit the potential for exposure to hazardous materials by workers, other individuals on site, the community, and the environment. (LTS)

The proposed project and the Higher Occupancy Scenario both would increase hazardous materials storage and use by about 21 percent (i.e., roughly proportionally to the increase in members (and patients) served by the Medical Center). As discussed in the Setting section, the hazards posed by chemicals, radioactive materials, and infectious agents vary. Some chemicals can pose physical hazards (e.g., chemical burns) or health hazards (e.g., poisoning), including potential acute or chronic illnesses. The properties and health effects of different chemicals are unique to each chemical and depend on the extent to which an individual is exposed. Exposure to excessive levels of radiation, whether from radiation-producing equipment or radioactive materials, can result in headaches, skin burns, or chronic illness, including cancer. Exposure to biohazardous materials can cause a range of illnesses, depending on the infectious agent encountered. Some infections can result in short-term discomfort (e.g., mild symptoms that can easily be treated or go away by themselves), while others can result in serious acute effects (e.g., dangerous disruptions of life functions). Some chronic diseases may or may not be curable or treatable. Some diseases may be communicable. In all these cases, the risks posed by the hazardous materials depend on the potential for exposure.

Workers and Other Individuals Onsite. The project-related effects of hazardous materials handling and storage would generally be limited to the immediate areas where the materials would be located because this is where exposure would be most likely. (Exposure at more
distant locations would require some mechanism to transport the material to the location.) For this reason, the individuals most at risk would be the Medical Center employees or others in the immediate vicinity of the hazardous materials. The routes through which these individuals could be exposed include inhalation, ingestion, contact, injection, and other accidents.

As described under the Setting section, Kaiser is required to comply with health and safety and environmental protection laws and regulations. To accomplish this, and to otherwise provide a safe and healthy environment, Kaiser implements health and safety policies and procedures with its *Environment of Care Program* and *Safe Environment Management Plan*. With the proposed project, Kaiser would be expected to implement policies and procedures similar in nature to those that exist now. Table 3.7-4 lists some of the primary means through which Kaiser protects workers and other individuals on site from exposure to hazardous materials.

**Community and Environment.** For the most part, the health and safety procedures that protect workers and other individuals in the immediate vicinity of hazardous materials would also protect the more distant community and environment. The pathways through which the community or the environment (e.g., local air quality and biota) could be exposed to hazardous materials include air emissions, transport of hazardous materials to or from the site, waste disposal, human contact, and accidents. Table 3.7-5 lists some of the primary means Kaiser uses to protect the community and the environment from exposure to hazardous materials.

With either the proposed project or the Higher Occupancy Scenario, there would be an increase in storage, but the materials would generally be stored in small, individual containers of about five gallons or less except for fuel storage tanks and compressed gas cylinders. Therefore, the probability of a major hazardous materials incident would be relatively low (none has occurred within the last 5 years). Minor incidents would be more likely, but the consequences of such accidents would probably not be severe due to the typically small quantities of materials handled at any particular time and the equipment and training provided to Kaiser staff. The Medical Center presently handles some acutely hazardous materials (materials that can potentially pose serious risks to areas off site, if handled in sufficient quantities), and the quantities of these materials on site would be expected to increase by about 21 percent like most other hazardous materials. However, the quantities of these materials currently at the Medical Center are sufficiently small that they fall well below the thresholds that would trigger the requirements for a *Risk Management Plan*, and the project would not be expected to increase the use of these materials to the point that would trigger these requirements.
## Table 3.7-4

### Exposure Pathways and Controls — Workers and Other Individuals on Site

<table>
<thead>
<tr>
<th>Exposure Pathway</th>
<th>Examples of Control Measures</th>
</tr>
</thead>
</table>
| Inhalation (breathing a hazardous substance) | • Working with volatile materials in fume hoods¹  
• Working with potentially aerosol-suspended biohazardous materials in biosafety cabinets²  
• Keeping containers closed when not in use  
• Wearing face masks or respirators, as necessary                                                                                                                                 |
| Ingestion (swallowing a hazardous substance) | • Not eating or drinking near hazardous materials  
• Not storing food in refrigerators used for hazardous materials  
• Not smoking near hazardous materials  
• Washing hands and work areas                                                                                                                                                           |
| Contact (absorbing a hazardous substance through the skin or eyes) | • Wearing protective clothing and shoes, as necessary  
• Wearing eye protection (glasses or goggles), as necessary  
• Wearing gloves, as necessary  
• Washing hands and work areas  
• Working with radioactive materials behind shields                                                                                                                                 |
| Injection (puncturing or cutting the skin with a contaminated object) | • Participating in awareness training  
• Keeping sharps (i.e., needles, knifes, scissors, etc.) in puncture-resistant containers                                                                                                                                 |
| Other Accidents | • Participating in emergency response training  
• Purchasing and handing most hazardous materials in containers of no more than one gallon³  
• Maintaining emergency equipment (e.g., safety showers, emergency eye washes, first aid kits)  
• Providing appropriate lips on shelves where hazardous materials are stored and other restraints where necessary³  
• Segregating incompatible hazardous materials and storing flammable materials in fire-rated cabinets  
• Providing secondary containment for hazardous materials that are not in use³  
• Calling the Redwood City Fire Department and its Hazardous Materials Emergency Response Team, if necessary |

**Sources:** EIP Associates; Kaiser Permanente, Redwood City Medical Center, Environment of Care Program, Safe Environment Management, May, 2002.

**Notes:**

1. Fume hoods are cabinets with front-opening (usually sliding) glass doors connected to overhead exhaust fans that draw air from the room through the cabinet and expel it into the atmosphere through rooftop stacks.
2. 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.
3. The Medical Center purchases hazardous materials in the smallest containers feasible. Only water treatment chemicals, hydraulic oil, and diesel fuel are purchased in containers greater than one gallon. All containers are to be stored using restraining wire or cord, or restraining edges, when open shelving is used. Secondary containment is monitored by the Medical Center Safety Committee.
Table 3.7-5
Exposure Pathways and Controls — Community and Environment

<table>
<thead>
<tr>
<th>Exposure Pathway</th>
<th>Examples of Control Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Emissions</td>
<td>• Using fume hood ventilation or alternative exhaust systems to dilute and subsequently disperse emissions to the atmosphere¹</td>
</tr>
<tr>
<td>Transport to and from the Site</td>
<td>• 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</td>
</tr>
<tr>
<td></td>
<td>• Identifying container contents with appropriate labels</td>
</tr>
<tr>
<td></td>
<td>• Using licensed hazardous waste haulers</td>
</tr>
<tr>
<td></td>
<td>• Documenting hazardous waste shipments</td>
</tr>
<tr>
<td>Waste Disposal</td>
<td>• Training workers</td>
</tr>
<tr>
<td></td>
<td>• Segregating wastes</td>
</tr>
<tr>
<td></td>
<td>• Collecting hazardous waste for appropriate disposal</td>
</tr>
<tr>
<td></td>
<td>• Diluting and treating wastewater from the site</td>
</tr>
<tr>
<td></td>
<td>• Labeling trash cans</td>
</tr>
<tr>
<td></td>
<td>• Following federal and state hazardous waste disposal regulations and procedures, including those for hazardous waste manifest documentation</td>
</tr>
<tr>
<td>Human Contact</td>
<td>• Identifying container contents with appropriate labels</td>
</tr>
<tr>
<td></td>
<td>• Training workers</td>
</tr>
<tr>
<td></td>
<td>• Implementing standard hygiene practices (e.g., wearing protective clothing and gloves when necessary, leaving protective clothing at work, and washing hands and work areas)</td>
</tr>
<tr>
<td></td>
<td>• Implementing medical surveillance programs to monitor the health of those who work with certain biohazardous materials</td>
</tr>
<tr>
<td></td>
<td>• Monitoring the exposure of those who work with radioactive materials</td>
</tr>
<tr>
<td>Accidents</td>
<td>• Providing emergency response training</td>
</tr>
<tr>
<td></td>
<td>• Maintaining emergency equipment (e.g., safety showers, emergency eye washes, first aid kits)</td>
</tr>
<tr>
<td></td>
<td>• Calling the Redwood City Fire Department and its Hazardous Materials Emergency Response Team, if necessary</td>
</tr>
<tr>
<td></td>
<td>• Plugging floor drains or providing sumps in areas where relatively large quantities of hazardous waste may be handled²</td>
</tr>
<tr>
<td></td>
<td>• Conducting facility inspections and preventative maintenance</td>
</tr>
</tbody>
</table>

Sources: EIP Associates; Kaiser Permanente, Redwood City Medical Center, Environment of Care Program, Safe Environment Management, May, 2002.

Notes:
1. 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.
2. Floor drains in generator rooms are equipped with removable plugs to prevent spills from entering the wastewater sewer. A sump located at the loading dock minimizes the potential for a hazardous materials release to the storm sewers.
The Medical Center maintains an Emergency Response Plan to ensure that staff can respond to possible hazardous materials emergencies. In addition, RCFD provides “first response” capabilities to identify and secure access to hazardous materials incidents. Other jurisdictions are available, if necessary, to support Redwood City through mutual aid agreements. The increase in demand for hazardous materials emergency services at the Medical Center would be about 21 percent, proportional to the projected membership/patient increase. This increase would not substantially affect the demand for hazardous materials emergency response services in Redwood City and would not substantially affect the availability or response times of emergency responders because the types of hazardous materials used would not change, only amounts kept at the Medical Center.

Aside from accidents possibly occurring on site, accidents during hazardous waste transport to and from the site could expose individuals and the environment to risks at some distance from the project site. However, transportation accidents are infrequent. According to Caltrans, less than 3.7 vehicle accidents occur for every million vehicle miles traveled on major undivided urban highways. The frequency is substantially less on other types of urban highways. Moreover, DOT, USPS, and the California Department of Health Services Radiologic Health Branch and Medical Waste Program (CDHSRHB) all specify packaging requirements for hazardous materials and wastes that limit the potential for packages to fail on impact. These requirements reduce the potential for hazardous materials releases to occur in the unlikely event of an accident.

**Hazardous Materials Use and Storage Summary.** Although the project would increase the storage and use of hazardous materials at the Medical Center, the controls summarized in Tables 3.7-4 and 3.7-5 would continue to be implemented. These mechanisms would be expected to minimize the potential for exposure to adverse health or safety effects. Therefore, the proposed project would not involve the use of materials in a manner that poses any substantial hazards to people, or to animal or plant populations. Furthermore, the Medical Center would continue to implement its Emergency Response Plan and Redwood City would continue to provide emergency response services. Therefore, the project would not interfere with emergency response plans or emergency evacuation plans relating to hazardous materials. For these reasons, the project would not result in a significant environmental impact related to the increased storage and use of hazardous materials by the Medical Center and would not require mitigation.

**HM-4. Hazardous Waste Generation** - *Both the proposed project and the Higher Occupancy Scenario would increase hazardous waste generation by the Medical Center, but, by itself, would not substantially increase risks of environmental exposure. (LTS)*

Kaiser membership in the Redwood City area is projected to increase by 21 percent by 2025 with either the proposed project or the Higher Occupancy Scenario. This increase would be expected to increase hazardous materials use at the Medical Center proportionately. The increased use of hazardous materials would, in turn, result in increased hazardous waste...
generation, including hazardous chemical, radioactive, and medical waste generation. Proper hazardous waste disposal, regardless of the method selected, often affects the environment. Hazardous waste landfills generally leak at some point and occasionally fail. Waste incinerators release toxic air contaminants to the atmosphere and result in ash that contains unburnable hazardous constituents (such as metals). Most other treatment and recycling methods also result in hazardous residuals that must be disposed of as hazardous waste. These residuals are usually either incinerated or landfilled. For this reason, the generation and disposal of hazardous waste is considered to be a form of pollution, and current hazardous waste management policies designate hazardous waste disposal as the least desirable management approach. Waste management strategies that seek to prevent pollution by reducing waste generation at its source are considered the most desirable approach. Pollution prevention is a national objective established by the Pollution Prevention Act of 1990. This priority is reflected in San Mateo County’s Hazardous Waste Management Plan.

**Hazardous Chemical Waste.** The proposed project, as well as the Higher Occupancy Scenario, would incrementally contribute to the volume of hazardous chemical waste generated in Redwood City. The increased hazardous chemical waste generation would increase the volume of waste managed at hazardous waste facilities inside and outside California. The increased demand for waste treatment and disposal would incrementally contribute to the demand for new hazardous waste treatment, recycling, and disposal facilities. The likely effects of hazardous waste disposal would probably occur far from the project site (i.e., no hazardous chemical waste landfills or incinerators are located in the Redwood City vicinity).

California's hazardous chemical waste generators rely heavily on out-of-state treatment and disposal facilities to meet their disposal needs. For example, no hazardous chemical waste incinerators in California accept waste from third-party generators, such as the Medical Center. Out-of-state facilities may not receive environmental supervision equivalent to that of California. Therefore, the possibility exists that some hazardous waste generated as a result of the project could be managed at facilities that do not comply with some standards deemed appropriate by California.

**Radioactive Waste.** As the number of Kaiser’s membership increases, its demand for low-level, typically short-lived radioactive materials (radioactive materials whose half-lives are less than 90 days) for therapeutic purposes would also increase. The need for sealed sources with longer half-lives (greater than 90 days) would not necessarily increase because sealed sources serve long-term uses and are not routinely discarded as radioactive waste.

The Radiologic Health Branch of the California Department of Health Services issues permits that allow radioactive materials users to hold short-lived radioactive waste for decay. Dry long-lived radioactive waste is to be disposed of at a low-level radioactive waste landfill. The availability of radioactive waste landfills to serve California's low-level radioactive waste generators is unreliable. California belongs to the Southwestern Low-Level Radioactive Waste Disposal Compact, a group of four states that, together, are responsible for disposing of their
low-level radioactive waste. Since the early 1980s, California has attempted to construct a low-level radioactive waste disposal facility at Ward Valley, California, to serve the compact. At this time, the project is delayed pending transfer of the disposal site property from the federal government to State control. For this reason, California must rely on one out-of-state disposal facility, located in Barnwell, South Carolina, to accept its low-level radioactive waste. South Carolina decides each year whether it will accept out-of-state radioactive wastes.

As shown in Table 3.7-2, the radioactive materials the Medical Center uses in the course of patient treatment all have half-lives less than 90 days. Therefore, their radioactivity disappears within a relatively short period (no longer than a couple years), during which the radioactive waste can be safely stored on site. Cobalt-57 has a half-life of 270 days, and the Medical Center handles no more than about 35 millicuries of it each year. The Cobalt-57 is a sealed source used for calibration and marking, resulting in no radioactive waste for the Medical Center disposal. Cobalt-57’s half-life is relatively short (compared to many years for some radioactive materials); therefore, its radioactivity does not persist for long periods.

Medical Waste. Project-related medical waste would be shipped off site for disposal by an authorized hauler. Medical waste treatment facilities have been sited regionally with success. As with most hazardous waste disposal technologies, incineration involves potentially hazardous air emissions, including dioxins, and residuals that must be landfilled. Project-related medical waste would continue to be shipped to off-site disposal facilities, unless other arrangements are made.

Hazardous Waste Summary. The project would increase the Medical Center’s generation of hazardous waste and, therefore, its demand for hazardous waste disposal services. This increase in demand would, by itself, have little observable effect on the levels of existing hazards that waste disposal poses to people, or to animal or plant populations, either near the Medical Center or elsewhere. Therefore, the impact of the project would be less than significant, and no mitigation would be necessary.

HM-5. Hazardous Materials Exposure - Both the proposed project and the Higher Occupancy Scenario would increase the number of individuals exposed to, but not the nature of, physical safety hazards at the Medical Center. Existing safety programs minimize the potential for physical hazards to pose significant impacts. (LTS)

With the proposed project, as well as the Higher Occupancy Scenario, potential physical safety hazards would exist at the Medical Center, just as they do now. These hazards would include, among others, electrical shock hazards from high voltage equipment, safety risks posed by compressed gas cylinders (including those filled with inert gases), radiation hazards from x-ray equipment (regulated as radioactive material), and exposure to magnetic fields, intense light, or lasers. Other more common hazards would include slips, falls, and overexertion. Workers engaged in activities that present special hazards, such as those mentioned above, are to be adequately trained in accordance with Kaiser’s Injury and Illness Prevention Plan (as required under California State law). Although more individuals would be exposed to physical safety
hazards with the project, compliance with occupational safety regulatory requirements would minimize the potential risks that physical hazards could pose to people. Accordingly, this potential impact would be considered less than significant, and mitigation would be unnecessary.

**HM-6. Cumulative Hazardous Waste and Disposal** - Project-related hazardous materials use under the proposed project or the Higher Occupancy Scenario would not contribute to cumulative human and environmental health and safety issues, including hazardous waste generation and disposal. (LTS)

The health and safety hazards posed by most hazardous materials are typically local in nature. They generally do not combine in any cumulative sense with the hazards of other projects. Possible exceptions, however, include potential toxic air contaminant emissions, transportation of hazardous materials, and waste disposal. The need to respond to hazardous materials emergencies could also increase as a result of cumulative development.

**Toxic Air Contaminant Emissions.** Cumulative development could increase the overall concentrations of toxic air contaminants in the San Francisco Bay Area, and project-related stationary and mobile emissions sources could contribute to this increase. Cumulative issues related to toxic air emissions are discussed in Section 3.5 – Air Quality.

**Transportation.** Hazardous materials are transported on virtually all public roads, particularly since all motor vehicles contain hazardous materials (e.g., fuel) in addition to any hazardous cargo that may be on board. The project would contribute little to cumulative transportation hazards. The cumulative effects of transporting hazardous materials would continue to be addressed by regulatory requirements. Packaging requirements for hazardous materials and wastes established by DOT, USPS, and EPA minimize the potential consequences of possible accidents during transport. Also, the vehicle accident rate in California is relatively low compared to other states and not all accidents release hazardous materials.⁴ For these reasons, the cumulative impact of potential transportation-related accidents would be less than significant.

**Emergency Response.** The project and future development in Redwood City could cumulatively increase demands for hazardous materials emergency response services. The increase would not be sufficiently large that two major hazardous materials incidents would be substantially more likely to occur simultaneously. Furthermore, cumulative development would not be expected to interfere with emergency response plans or emergency evacuation plans. Hazardous materials emergency response times would be unchanged.

With or without cumulative development, a major catastrophe could generate demand for emergency response services in excess of available resources, and in Redwood City, a major

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⁴ California Department of Transportation, *1996 Accident Data on California State Highways (Road Miles, Travel, Accidents, Accident Rates)*, 1997.
earthquake is a catastrophe posing realistic concerns. During an earthquake, structures containing hazardous materials could be damaged. Non-structural seismic safety (e.g., the potential for falling containers and shelves holding hazardous materials) would be of particular concern. Chemical spills and splashes could harm individuals working in the vicinity of the hazardous materials. Safety requirements enforced by the CSMHSA (e.g., securing certain types of containers and installing lips on shelves where hazardous materials are stored) would serve to minimize such risks. Isolated hazardous materials incidents would likely pose limited threats because the Medical Center operations typically involve relatively small quantities of materials. New construction proposed as part of the project, built to current code requirements, would be expected to perform at least as well as, or better than, existing hospital facilities in the San Francisco Bay Area. In this way, the proposed project would likely be an asset to the community following a catastrophe; therefore, this cumulative impact would be less than significant.

Hazardous Waste Disposal. As cumulative development occurs in Redwood City and at the State and regional levels, more hazardous wastes will be generated. Project-related hazardous waste generation would contribute to cumulative increases in hazardous waste generation (although most of the Medical Center’s radioactive waste would decay on site). The incremental environmental effects of expected increases in hazardous waste generation and off-site hazardous waste recycling, treatment, and disposal would also contribute to cumulative effects. Hazardous waste disposal affects the environment by releasing contaminants to land, air and/or water. Cumulative increases in waste generation could also contribute to the potential for some wastes to be mismanaged at any point in the disposal process in a manner that poses potential hazards to people, or to animal and plant populations. Since the project’s contribution to this cumulative impact would be a small increment, the project’s contribution would be less than cumulatively considerable, and, thus less than significant.5

5 CEQA Guidelines. Section 15130(a)(3).
3.8 POPULATION AND HOUSING

Introduction

This section of the EIR provides background information on existing and projected population and housing conditions in Redwood City. For this discussion, employment resulting from the proposed project takes into account the Master Plan, and includes buildout of the project in five phases through 2025. Also, this discussion will analyze the employment and housing impacts of the Master Plan resulting from the proposed project and the Higher Occupancy Scenario (see Section 2, Project Description). Consequently, this section examines how employment increases resulting from the Master Plan may impact housing demand in Redwood City, San Mateo County, and other Bay Area counties. A population and housing assessment typically examines whether a proposed project would:

- result in substantial population growth in an area;
- result in displacement of people or housing; and
- affect the housing demand in the city and the larger housing market.

As discussed in the Initial Study (Appendix B), Kaiser Redwood City employment would not lead to the displacement of people or housing. Therefore, this topic is not addressed in the EIR. The proposed project would not involve construction of housing, and therefore would not directly increase the Redwood City’s resident population. The balance of jobs and housing within Redwood City and San Mateo County is evaluated through analysis of the jobs/employed residents ratio over the duration of the proposed project. For the purposes of this discussion, changes resulting from present and future development at the Medical Center will be referred to as “Kaiser Redwood City.”

While changes in employment and housing demand are important to understanding the effects of a project, CEQA distinguishes between socio-economic effects and physical environmental effects. Changes to the demographics of an area from a housing or employment project (such as increased population or employment) are not, in and of themselves considered physical environmental impacts under CEQA. However, population and employment changes may indirectly cause environmental impacts such as impacts resulting from extension of infrastructure or public services. The demographic changes caused by the project are presented in this section in order to provide background information for the EIR reviewer and a context for the “population driven” effects described in this EIR in terms of increased traffic, and increased demands on public services and utilities. This EIR fully considers the environmental effects of additional employees, patients, and visitors associated with the proposed project. These effects are described in Sections 3.4, Transportation; 3.9, Public Services; and 3.10, Utilities and Service Systems in this EIR.
Setting

Population

According to the Association of Bay Area Governments (ABAG), San Mateo County had a population of 707,161 in 2000. Population in 2000 within Redwood City’s jurisdictional boundary was 75,402 and within its sphere of influence, 99,210. ABAG projects that San Mateo County’s population will increase by about 15 percent and Redwood City’s population will increase by 13 percent from 2000 to 2025. Table 3.8-1 shows the projected population for Redwood City, San Mateo County, and other Bay Area counties from 2000 to 2025.

Table 3.8-1

| Population of Redwood City, San Mateo County and Other Bay Area Counties, 2000 to 2025 |
|----------------------------------------|--------|--------|--------|--------|--------|--------|
| Redwood City                           |        |        |        |        |        |        |
| (Jurisdictional Boundary)              | 75,402 | 78,600 | 80,600 | 82,600 | 83,800 | 85,300 |
| Redwood City                           |        |        |        |        |        |        |
| (Sphere of Influence)                  | 99,210 | 103,100| 105,200| 108,300| 110,100| 112,600|
| San Mateo County                       |        |        |        |        |        |        |
|                                        | 707,161| 734,100| 754,600| 775,900| 795,100| 813,300|
| Santa Clara County                     |        |        |        |        |        |        |
|                                        | 1,682,585| 1,788,300| 1,879,700| 1,949,500| 2,007,500| 2,064,200|
| Alameda County                         |        |        |        |        |        |        |
|                                        | 1,443,741| 1,534,400| 1,588,900| 1,628,800| 1,669,400| 1,714,200|
| San Francisco County                   |        |        |        |        |        |        |
|                                        | 776,733| 798,600| 809,200| 810,500| 811,100| 815,200|


Employment

Table 3.8-2 shows the number of jobs available in San Mateo County and Redwood City. Employment for 2000 to 2025 was analyzed by decades with the exception of 2020 to 2025 (buildout of the Master Plan). Key observations from the table are noted below.

- San Mateo County employment is projected to grow from approximately 395,900 jobs in 2000 to about 433,800 jobs in Year 2010, a ten percent increase. ABAG projects continued employment growth of 47,150 jobs between 2010 and 2020 for total countywide employment of about 11 percent or 481,000 by 2020. Overall, employment in San Mateo County will increase by about 27 percent from 2000 to 2025.

- Redwood City provided about 16 percent of San Mateo County’s jobs in 2000. This level is expected to remain consistent in 2010 and 2020. ABAG projects an increase of 6,210 jobs from 68,210 jobs in Year 2010 to 74,990 in Year 2020, an increase of about ten percent. Overall, employment in Redwood City will increase by about 25 percent from 2000 to 2025.
Table 3.8-2
Employment Trends in San Mateo County and Redwood City, 2000-2025 (Number of Jobs)

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2010</th>
<th>2020</th>
<th>2025</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2000-2010</td>
</tr>
<tr>
<td>San Mateo County</td>
<td>395,890</td>
<td>433,820</td>
<td>480,970</td>
<td>501,990</td>
<td>37,930</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(9.58%)</td>
</tr>
<tr>
<td>Redwood City</td>
<td>62,000</td>
<td>68,210</td>
<td>74,990</td>
<td>77,650</td>
<td>6,210</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(10.02%)</td>
</tr>
</tbody>
</table>


Note: Redwood City employment is based upon the City and the city sphere of influence. This total includes 1,527 FTE employees at the existing Kaiser facility in Redwood City.

Although the decline in dot-com industry during 2000-2001 and the events of September 11, 2001 have affected the Bay Area and the nation’s economic growth, long-term prospects for the Bay Area’s economy are positive. The region already has an unusually high concentration of computer electronics, telecommunications, and computer software, and is one of the leading regions for biomedical research and development. Other industries within the varied economy include finance, tourism, and government. While the Bay Area remains one of the costliest places to live in the United States, it also retains the characteristics that cause many to choose to bear those costs. A wide variety of cultural institutions and the natural setting of the Bay Area attract a talented pool of people that in turn attract jobs. As a result, ABAG expects that the Bay Area will add approximately 1,180,000 jobs during the next twenty-five years.

Santa Clara County will see the largest increase in jobs over ABAG’s forecast period with an additional 303,500 jobs. Alameda County will see the second largest increase, adding over 262,500 jobs during the next 25 years. As a city, San Francisco will add the most jobs over the next 25 years, more than 162,000, San Jose will add 132,000 jobs, and the North Bay city of Santa Rosa will add more than 50,500 during the same period.

Currently, approximately 39 percent of the region’s jobs can be described as being part of the service sector. About 19 percent are in manufacturing or wholesale activities; 16 percent are in retail; and 26 percent are in other categories including government, construction, finance, and agriculture. While some economic activities are concentrated in particular parts of the Bay Area, the economies in each county have generally become more diverse.
Housing

Table 3.8-3 presents housing data for San Mateo County and Redwood City. Housing for 2000 to 2025 was analyzed by decades with the exception of 2020 to 2025 (buildout of the Master Plan). Highlights are presented below.

- The number of occupied housing units in San Mateo County is projected to grow from approximately 254,000 units in 2000 to 267,000 units in 2010 or about nine percent and is projected to grow another five percent in the 2010 to 2020 period to total 281,670 units. Overall, housing in San Mateo County will increase by about 14 percent from 2000 to 2025.

- Redwood City’s share of countywide housing was about 14 percent at about 35,250 units in 2000, and is projected to be about 14 percent of countywide units in year 2010 at 36,690 occupied housing units. ABAG projections indicate growth of Redwood City housing to 38,170 units by 2020 with a constant share of about 14 percent of countywide units. The city household growth rate is less than the countywide rates, reflecting the City’s limited land availability for new housing and built out conditions.

Throughout the San Francisco Bay Area, the job growth from 2000 to 2025 is expected to outpace household growth. This trend points out that there will be a limited supply of housing in the Bay Area region. Housing demand and housing prices continue to increase as the market attempts to allocate this scarce resource. Available and affordable housing are key issues in the Bay Area, and in San Mateo County and Redwood City in particular because housing supply is not sufficient to meet demands.

<table>
<thead>
<tr>
<th>Table 3.8-3</th>
<th>Housing Trends in San Mateo County and Redwood City 2000-2025 (Occupied Dwelling Units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Mateo County</td>
<td>254,103</td>
</tr>
<tr>
<td>Redwood City</td>
<td>35,247</td>
</tr>
</tbody>
</table>


Note: Redwood City households are based upon the City and the city sphere of influence. This total includes 244 households for existing employees at the Kaiser facility in Redwood City.

To understand how the demand for housing for Kaiser Redwood City employees is met, it is necessary to understand the wider housing market within which Kaiser Redwood City employees seek residence. The housing market for Kaiser Redwood City employees mainly covers the counties of San Mateo, Alameda, Santa Clara, and San Francisco. Approximately 16 percent of Kaiser Redwood City employees live in Redwood City. Table 3.8-4 summarizes the residence patterns of Kaiser Redwood City employees.
City employees. More than half (56 percent) of the employees live in San Mateo County, and most of the remaining (40 percent) live in Alameda, Santa Clara, and San Francisco Counties. Table 3.8-5 shows the number of current and projected households in the primary housing market for Kaiser Redwood City employees. Notably, about 94 percent of Kaiser Redwood City employees live within a 25-mile radius of the Medical Center. Table 3.8-6 compares projected demand for housing with the housing unit development potential between the years 2000-2025. The projections for the counties of San Mateo, Santa Clara, and Alameda indicate that presently zoned residential land is insufficient to meet demand by 2025 thereby further exacerbating the market’s inability to keep pace with demand for housing. Overall, there would be an insufficient potential supply of housing relative to demand in the housing market area by 7,320 units (see Table 3.8-6). San Francisco County is the only county projected to have a surplus in housing supply.

<table>
<thead>
<tr>
<th>Table 3.8-4</th>
<th>Kaiser Redwood City Employee Residence Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place</td>
<td>Percent</td>
</tr>
<tr>
<td>San Mateo County</td>
<td>56.33%</td>
</tr>
<tr>
<td>Redwood City</td>
<td>15.89%</td>
</tr>
<tr>
<td>San Mateo, Foster City</td>
<td>14.15%</td>
</tr>
<tr>
<td>San Carlos</td>
<td>3.86%</td>
</tr>
<tr>
<td>Menlo Park</td>
<td>3.79%</td>
</tr>
<tr>
<td>Hillsborough</td>
<td>2.70%</td>
</tr>
<tr>
<td>Belmont</td>
<td>2.64%</td>
</tr>
<tr>
<td>Daly City</td>
<td>2.44%</td>
</tr>
<tr>
<td>San Bruno</td>
<td>2.32%</td>
</tr>
<tr>
<td>Remaining Cities in San Mateo County</td>
<td>8.54%</td>
</tr>
<tr>
<td>Alameda County</td>
<td>18.20%</td>
</tr>
<tr>
<td>Santa Clara County</td>
<td>17.68%</td>
</tr>
<tr>
<td>San Francisco County</td>
<td>4.18%</td>
</tr>
<tr>
<td>Other Bay Area Counties(^1)</td>
<td>1.16%</td>
</tr>
<tr>
<td>Central Valley Counties(^2)</td>
<td>1.59%</td>
</tr>
<tr>
<td>Remaining Counties in California(^3)</td>
<td>1.63%</td>
</tr>
<tr>
<td>Out of State(^4)</td>
<td>0.19%</td>
</tr>
</tbody>
</table>


Notes:
1. Other Bay Area Counties include Contra Costa, Marin, Solano, and Sonoma.
2. Central Valley Counties include San Joaquin, Sacramento, Stanislaus, San Benito, Tuolumne, Madera, and Butte.
3. Remaining Counties in California include Santa Cruz, Shasta, Santa Barbara, and Riverside.
4. Other States include Maryland, New York, and Washington.
### Table 3.8-5
Kaiser Redwood City Housing Market Area
Housing Trends, 2000-2025 (Occupied Households)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>San Mateo County</td>
<td>254,103</td>
<td>267,110</td>
<td>281,670</td>
<td>288,920</td>
<td>(5.11%)</td>
<td>(5.45%)</td>
<td>(2.57%)</td>
</tr>
<tr>
<td>Santa Clara County</td>
<td>565,863</td>
<td>626,730</td>
<td>674,410</td>
<td>695,170</td>
<td>(10.76%)</td>
<td>(7.61%)</td>
<td>(3.08%)</td>
</tr>
<tr>
<td>Alameda County</td>
<td>523,366</td>
<td>562,010</td>
<td>595,400</td>
<td>611,680</td>
<td>(7.38%)</td>
<td>(5.94%)</td>
<td>(2.73%)</td>
</tr>
<tr>
<td>San Francisco County</td>
<td>329,700</td>
<td>342,730</td>
<td>347,180</td>
<td>348,990</td>
<td>(3.95%)</td>
<td>(1.30%)</td>
<td>(0.52%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,673,032</td>
<td>1,798,580</td>
<td>1,898,660</td>
<td>1,944,760</td>
<td>7.50%</td>
<td>5.56%</td>
<td>5.06%</td>
</tr>
</tbody>
</table>

*Sources: Association of Bay Area Governments, Projections 2002, December 2001; and EIP Associates, 2002.*

### Table 3.8-6
Housing Market Area
Comparison of Household Growth with Housing Supply, 2000-2025

<table>
<thead>
<tr>
<th></th>
<th>Potential Units (Supply)</th>
<th>Projected Demand (Household Growth)</th>
<th>Deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Mateo County</td>
<td>24,560</td>
<td>34,810</td>
<td>-10,250</td>
</tr>
<tr>
<td>Santa Clara County</td>
<td>102,830</td>
<td>129,310</td>
<td>-26,480</td>
</tr>
<tr>
<td>Alameda County</td>
<td>82,860</td>
<td>88,310</td>
<td>-5,450</td>
</tr>
<tr>
<td>San Francisco County</td>
<td>54,150</td>
<td>19,290</td>
<td>+34,860</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>264,400</td>
<td>271,720</td>
<td>-7,320</td>
</tr>
</tbody>
</table>

*Source: Association of Bay Area Governments, Projections 2002, December 2001.*
**Jobs/Housing Ratio**

Table 3.8-7 shows the projected jobs/housing ratio for San Mateo County and Redwood City. The jobs housing ratio is intended to compare at an equivalent level the availability of housing for those employed in an area. A ratio of more than one (>$1$) indicates a surplus of jobs in the area. This would show that the majority of employees are commuting into the area. A ratio of less than one (<$1$) indicates that the community has fewer jobs than workers. Generally, a ratio of 0.9 to 1.1 is considered fairly balanced. San Mateo County and Redwood City have a ratio of more than one. More jobs are in the area than the number of employed residents. Although the jobs/housing ratio for San Mateo County is expected to slightly decline from 1.76:1 to 1.60:1 from 2000 to 2025, the area would still have a surplus of jobs in the County but to a lesser degree. Redwood City’s jobs/housing ratio from 2000 to 2025 is expected to increase from 1.76:1 to 2.00:1. This shows that the surplus in Redwood City jobs is expected to increase.

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2010</th>
<th>2020</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>San Mateo County</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td>696,711</td>
<td>743,600</td>
<td>783,000</td>
<td>801,200</td>
</tr>
<tr>
<td>Jobs</td>
<td>395,890</td>
<td>433,820</td>
<td>480,970</td>
<td>501,990</td>
</tr>
<tr>
<td>Jobs/Housing Ratio</td>
<td>1.76:1</td>
<td>1.71:1</td>
<td>1.63:1</td>
<td>1.60:1</td>
</tr>
<tr>
<td><strong>Redwood City</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td>35,247</td>
<td>36,690</td>
<td>38,170</td>
<td>38,860</td>
</tr>
<tr>
<td>Jobs</td>
<td>62,000</td>
<td>68,210</td>
<td>74,990</td>
<td>77,650</td>
</tr>
<tr>
<td>Jobs/Housing Ratio</td>
<td>1.76:1</td>
<td>1.86:1</td>
<td>1.96:1</td>
<td>2.00:1</td>
</tr>
</tbody>
</table>


*Note*: Data for the jobs/housing ratio was rounded to the nearest hundredths place.

**Impacts and Mitigation Measures**

**Significance Criteria**

According to Appendix G of the CEQA Guidelines, the proposed project would result in significant population and housing impacts if the proposed project individually or cumulatively would:

- Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extensions of roads or other infrastructure);
• Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or

• Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

As discussed in the Initial Study (Appendix B), the proposed project would not result in displacement of housing or people that would require the construction or replacement housing. Consequently, the focus of this analysis is on inducing growth into the area and the project’s effect on the jobs/employed residents ratio.

**Environmental Analysis**

As described in Section 3.1, for each impact, a level of significance is determined and is reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant effects to a less-than-significant level, the impacts are classified as “significant unavoidable effects (SU).” For this section, PH refers to Population and Housing.

**PH-1. Employment Growth – Under either the proposed project or the Higher Occupancy Scenario, the Master Plan would not significantly increase overall employment in Redwood City or San Mateo County. (LTS)**

The existing Medical Center in Redwood City employs 1,387 providers and staff. Under the proposed project, Kaiser estimates that the replacement of the hospital, and the construction of MOBs, administrative buildings, and additional parking structures would result in a total employment of 1,521 providers and staff by 2025 at the Medical Center, an increase of 134 employees, or about 9.7 percent. From 2000 to 2025, total employment in Redwood City is expected to increase by 15,650 jobs. On-campus Kaiser Redwood City facilities would account for a small proportion (about 0.85 percent) of the City’s total employment growth between 2000 and 2025. The Master Plan at buildout by 2025 is not expected to significantly increase the number of jobs in Redwood City or San Mateo County. Therefore, under the proposed project, impacts resulting from employment growth would be less than significant.

According to the Higher Occupancy Scenario, the Master Plan would result in a total employment of 2,013 providers and staff by 2025 in Redwood City, an increase of 626 employees, or about 45 percent. As stated above, total employment in Redwood City is expected to increase by 15,650 jobs from 2000 to 2025. Kaiser Redwood City would account for a small proportion (about four percent) of this employment growth between 2000 and 2025. Under this scenario, the Master Plan at buildout by 2025 is not expected to significantly increase the number of jobs in Redwood City or San Mateo County. Therefore under the Higher Occupancy Scenario, impacts resulting from employment growth would be less than significant.
PH-2. **Housing Demand** – Under either the proposed project or the Higher Occupancy Scenario, the Master Plan would not significantly increase overall housing demand (less than one percent) in Redwood City or in the primary housing market. (LTS)

Within the primary housing market area for Kaiser Redwood City employees, i.e., the counties of San Mateo, Alameda, Santa Clara, and San Francisco, housing demand is expected to outpace the absolute supply of presently planned and zoned residential development potential by 2020. Under the proposed project, the increase in the number of Kaiser Redwood City staff due to the Master Plan would be part of that forecast demand for housing. Existing employment residence patterns show that over half of Kaiser Redwood City employees reside in San Mateo County (see Table 3.8-4).

According to proposed project, Kaiser estimates the addition of 134 new employees at buildout in 2025. About 16 percent of current Kaiser Redwood City employees live in Redwood City. Assuming this residential pattern applied to new employees, about 21 of the 134 new employees under the Master Plan could live in Redwood City. The increased number or Kaiser Redwood City employees would account for a small proportion (about 0.58 percent) of the total projected increase in Redwood City housing.

Since not all Kaiser Redwood City employees would choose to live in Redwood City, nor could they all afford to live there, they would be expected to choose residences within the primary housing market area. The remaining 113 new employees would seek residence in the primary housing market or beyond. The project-related increase in the demand of 113 units for housing by the year 2025 would have an insignificant percentage (less than one percent) of the projected growth of 268,428 households in the housing market area. Therefore, impacts resulting from increased housing would be less than significant.

The Higher Occupancy Scenario would follow the same residential pattern as the proposed project. Based on the residential locations of existing Kaiser Redwood City employees, an estimated 16 percent of the new employees would reside in Redwood City. Consequently, 16 percent of the total housing demand for 626 units, or about 100 units, would occur in Redwood City. Because no new residential development is proposed as part of the project, it is assumed that these new employees would be either existing residents (who have accepted new jobs created by the project) or new residents who would move into existing housing in Redwood City. The Master Plan at buildout by 2025 is not expected to significantly increase housing demand in Redwood City or in the primary housing market. In addition, the increase in housing demand due to increased employment would not significantly affect population driven effects (see Section 3.9, Public Services).

Since not all Kaiser Redwood City employees would choose to live in Redwood City, nor could they all afford to live there, they would be expected to choose residences within the primary housing market area. The remaining 526 new employees under the Higher Occupancy Scenario would seek residence in the primary housing market or beyond. The project-related increase in the demand of 526 units for housing by the year 2025 would have an insignificant
percentage (less than one percent) of the projected growth of 268,428 households in the housing market area. Therefore, impacts resulting from increased housing would be less than significant.

**PH-3. Jobs/Employed Residents Ratio** – Under either the proposed project or the Higher Occupancy Scenario, the Master Plan would not significantly affect the Redwood City and San Mateo County jobs/employed residents ratios. (LTS)

As shown in Table 3.8-8, the jobs/employed residents ratio for Redwood City and San Mateo County with the proposed project would be constant with the City’s jobs/employed residents ratio without the proposed project from 2000 to 2025. Similarly with the Higher Occupancy Scenario, the jobs/employed residents ratio at buildout in 2025 for Redwood City and San Mateo County would be constant. Because the proposed project’s new employment and increased demand for Redwood City housing would be minimal, impacts resulting from an imbalance in employment to housing would be less than significant.

<table>
<thead>
<tr>
<th>Table 3.8-8</th>
<th>Jobs/Employed Residents for San Mateo County and Redwood City with the Proposed Project, 2000-2025</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2000</td>
</tr>
<tr>
<td><strong>San Mateo County</strong></td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td>254,103</td>
</tr>
<tr>
<td>Jobs without the Proposed Project</td>
<td>395,890</td>
</tr>
<tr>
<td>Jobs with the Proposed Project</td>
<td>395,890</td>
</tr>
<tr>
<td>Jobs with the Higher Occupancy Scenario</td>
<td></td>
</tr>
<tr>
<td>Ratio without the Proposed Project</td>
<td>1.56:1</td>
</tr>
<tr>
<td>Ratio with the Proposed Project</td>
<td>1.56:1</td>
</tr>
<tr>
<td>Ratio with the Higher Occupancy Scenario</td>
<td></td>
</tr>
<tr>
<td><strong>Redwood City</strong></td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td>35,247</td>
</tr>
<tr>
<td>Jobs without the Proposed Project</td>
<td>62,000</td>
</tr>
<tr>
<td>Jobs with the Proposed Project</td>
<td>62,000</td>
</tr>
<tr>
<td>Jobs with the Higher Occupancy Scenario</td>
<td></td>
</tr>
<tr>
<td>Ratio without the Proposed Project</td>
<td>1.76:1</td>
</tr>
<tr>
<td>Ratio with the Proposed Project</td>
<td>1.76:1</td>
</tr>
<tr>
<td>Ratio with the Higher Occupancy Scenario</td>
<td></td>
</tr>
</tbody>
</table>


*Note:* Data for the jobs/housing ratio was rounded to the nearest hundredths place.
3.9 PUBLIC SERVICES

Introduction

This section addresses the potential environmental effects of the proposed project on police and fire protection, schools, and recreation services and facilities. Public service impacts are assessed in the context of the 1995 appellate court decision Goleta Union School District v. The Regents of the University of California. This decision holds that an increase in demand for public services could lead to potentially significant environmental impacts only if constructing or expanding a new facility was required, and the construction or operation of the facility might adversely affect the air, water, noise, or other aspects of the physical environment. Further, the court held that the agency responsible for service provision would be responsible for selecting the method of responding to increased demand, for constructing the facility if that were the chosen method, and for implementing any needed environmental impact mitigation measures associated with constructing or operating a new facility.

The public services section in an EIR typically examines the project’s potential impacts on acceptable service delivery (e.g., response times or other performance objectives of the public services) for fire protection, police protection, schools and parks. The Initial Study (Appendix B) analyzes these issues and concludes:

- The proposed project could have a potentially significant impact on the demand for fire and police protection services;
- The proposed project could have a potentially significant impact on Redwood City schools because of an increase in enrollment due to additional employees that could reside in the City; and
- The proposed project could have a potentially significant impact on Redwood City parks because of an increase in residents resulting from additional employees at the Medical Center.

In light of the above assessment, this section discusses employment figures associated with the proposed project and the potential for additional employees that would reside in Redwood City to impact the Redwood City Fire Department, the Redwood City Police Department, public schools and parks during operation of the proposed project.

Setting

Fire Protection Services

The Redwood City Fire Department (RCFD) provides fire protection services to the Medical Center and would continue to provide service to an expanded medical complex. The Department maintains five fire stations (Station numbers 9, 10, 11, 12, and 20) throughout the City. Station #9, the
Department’s headquarters, located at 755 Marshall Street about a block away from the project site, would be the first responding station for any calls for service from the Medical Center. This station is currently equipped with one fire engine, one fire truck, and one ambulance. Station #11, located at 910 Second Avenue (Bay Road and Second Avenue), would be the second-responding station. The Department maintains a citywide response time of four minutes.

The RCFD has 42 firefighters, 18 paramedic firefighters, 18 fire captains, three shift battalion chiefs, one training battalion chief, one Administrative Chief/Fire Marshall, one Fire Chief, three Fire Prevention Officers, and four administrative support staff. The Department maintains a current service ratio of approximately 0.9 firefighting staff/1,000 residents.¹

The RCFD also provides hazardous materials incidents’ response services in conjunction with the San Mateo County Hazmat Response Team. The Department has firefighting staff, who are also part of the County’s Hazmat Response Team, trained to handle hazardous materials incidents.

**Police Protection Services**

The Redwood City Police Department (RCPD), located at 1301 Maple Street (on the east side of U.S. 101 near the Medical Center), deploys mobile patrol officers, traffic enforcement officers, and community service officers in the project area. The Department has 100 sworn officers, and maintains a service standard of 1.3 full-time sworn officers and 0.55 full-time civilian employees per 1,000 residents.² Officers patrol the project area on foot, bicycle, or in motor vehicles. The number of officers assigned to the Medical Center area is dependent on the time of day, and the day of the week, but typically varies from one to four officers. Total calls for service from Kaiser Hospital, medical office buildings, and administration offices throughout Redwood City for calendar year 2001 was 230.

**Schools**

The project area is within the service boundaries of the Redwood City Elementary School District (K-8) and Sequoia Union High School District (9-12). There are 16 elementary schools in the Redwood City Elementary School District, and five high schools (four comprehensive and one continuation) in the Sequoia Union High School District.

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¹ The Redwood City Fire Department serves the City of Redwood City and some unincorporated areas of the city. Therefore, the population used to calculate the current service ratio was 99,000, which is the population for year 2000 for Redwood City and its sphere of influence (from ABAG Projections 2002).

² The Redwood City Police Department only serves the City of Redwood City. Unincorporated areas are served by the San Mateo County Sheriff and the California Highway Patrol. Therefore, the population used to calculate the current service ratios was 75,402, which is the population for year 2000 for the City of Redwood City (from Census 2000 and ABAG Projections 2002).
The Redwood City Elementary School District is currently at capacity with the student enrollment at approximately 8,800. The capacity of the Sequoia Union High School District is 6,817, while student enrollment is 7,462.

Parks

The Redwood City Parks, Recreation, and Community Services Department operates 23 parks in the City, covering a total of approximately 146 acres. The park area available per 1,000 residents of Redwood City averages about 1.94 acres. The largest parks in Redwood City are Stulsaft Park, Red Morton Community Park, Sandpiper Park, Marlin Park, and Hoover Park, each of which occupy over 10 acres.

Impacts and Mitigation Measures

Significance Criteria

The significance criteria used in analyzing impacts to public services are based upon the State CEQA Guidelines. According to CEQA, a proposed project would result in significant public services impacts if the proposed project would:

- substantially result in adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain performance objectives for fire and police protection services, schools and parks.

Environmental Analysis

As described in Section 3.1, for each impact, a level of significance is determined and is reported in the impact statement. Conclusions of significance are defined as follows: significant (S), potentially significant (PS), less than significant (LTS), and no impact (NI). If the mitigation measures would not diminish potentially significant or significant effects to a less-than-significant level, the impacts are classified as “significant unavoidable effects (SU).” For this section, PS refers to Public Services.

PS-1. Fire and Police Services: Population

- New Kaiser employees associated with either the proposed project or the Higher Occupancy Scenario would not result in a significant increase in demand for services from the RCFD or the RCPD. (LTS)

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4 Sandy Rick, Assistant to Carl Thompson, Assistant Superintendent, Sequoia Union High School District, written communication with EIP Associates, June 19, 2002.

5 The Redwood City Parks, Recreation, and Community Services Department has jurisdiction over parks in the incorporated areas of Redwood City. Therefore, the population used to calculate the ratio of park acreage/1,000 residents was 75,402, which is the population for year 2000 for the City of Redwood City (from Census 2000 and ABAG Projections 2002).
As discussed in Section 3.8, Population and Housing, the proposed project has the potential to increase the number of Medical Center employees by approximately 134 at buildout in 2025. About 16 percent of current Kaiser Redwood City employees also live in Redwood City. Assuming this residential pattern applied to new employees, about 21 of the 134 new employees under the Master Plan could live in Redwood City. The current service ratio for the RCFD is 0.9 firefighting staff/1,000 residents, and the current service ratio for the RCPD is 1.3 full-time sworn officers and 0.55 full-time civilian employees per 1,000 residents. Using these figures, the 21 new employees that could reside in Redwood City would create a demand for 0.02 new firefighting staff, 0.03 new police officers, and 0.01 new civilian police employees.

The Higher Occupancy Scenario, also discussed in Section 3.8, Population and Housing, has the potential to increase the number of Medical Center employees by approximately 626 at buildout in 2025. Assuming the 16 percent residential pattern applied to new employees, about 100 of the 626 new employees under the Higher Occupancy Scenario could live in Redwood City. Using the above mentioned service ratios for the RCFD and RCPD, the 100 new employees that could reside in Redwood City would create a demand for 0.09 new firefighting staff, 0.13 new police officers, and 0.06 new civilian police employees.

Because no new residential development is proposed as part of the project or the Higher Occupancy Scenario, it is assumed that these employees would be either existing residents (who have accepted new jobs created by the project) or new residents who would move into existing housing in Redwood City. If all 21 (or 100, under the Higher Occupancy Scenario) employees were new residents to Redwood City, the construction of new fire or police facilities or the expansion of existing ones would not be necessary because the demand for personnel (using the above ratios) would not be great enough to warrant it. In addition, new residents would conceivably find housing in different areas of the City, not in one concentrated area where one fire or police station could be impacted. Existing fire and police facilities would be sufficient to employ and house new fire and police personnel, if any, required by the project and these facilities would continue to serve the City. Therefore, the 21 (or 100, under the Higher Occupancy Scenario) employees who could be expected to reside in Redwood City would not result in the need for the construction of new fire or police facilities or the expansion of existing ones and would have a less-than-significant impact on police, fire and emergency services.

The number of new Medical Center employees is expected to reach 134 (or 626, under the Higher Occupancy Scenario) over a period of 23 years and it is expected that over this period the population of Redwood City will increase as well. ABAG Projections indicate that the population of Redwood City and its sphere of influence will increase approximately 13 percent by 2025. Therefore, regardless of the proposed project or Higher Occupancy Scenario, the number of police and fire personnel will increase to accommodate citywide growth. Therefore, new employees associated with either the proposed project or Higher Occupancy Scenario would have a less-than-significant impact on police, fire and emergency services.
PS-2. **Fire and Police Services: Square Footage** - An increase of approximately 628,450 GSF of developed space at the Kaiser facilities under either the proposed project or the Higher Occupancy Scenario would not result in a significant increase in demand for services from the RCFD and the RCPD. Existing fire and police facilities would be sufficient to serve the new Medical Center. (LTS)

The proposed project includes the replacement of the seven-story Hospital and most existing ancillary administrative and outpatient clinical facilities located at the Medical Center. The proposed project would also allow for the consolidation of the various Kaiser Permanente functions currently dispersed in leased facilities in several Redwood City locations. The net increase in square footage at the Medical Center, exclusive of the parking garages, would be approximately 628,450 GSF. The Higher Occupancy Scenario would result in the same increase of GSF as the proposed project, and would therefore not represent a change as compared to the proposed project. As discussed in Section 2, Project Description, although the proposed project would create more developed space, this would result in a “decompression” of the functions of the Medical Center and would not significantly increase the number of patients or visitors. The proposed project by itself would not result in an increase in membership but would instead accommodate it. Kaiser projections indicate that area membership will increase by 21 percent between 2002 and 2025, which would occur with or without the proposed project. It can be expected that calls for police and fire services would also increase by 21 percent. The number of calls for service from Kaiser received by the police department in 2001 was 230 (out of approximately 60,000 total calls for the department in 2001)\(^6\) and the number received by the fire department was 24 (out of 6,413 total calls for the department in 2001).\(^7\) Assuming a 21 percent increase in service calls by 2025, the proposed project could generate approximately 48 more calls to the police department and approximately five more calls to the fire department. Although an increase in calls could require an increase in police and fire staff, it would not require the construction of new police or fire facilities. Existing facilities and staffing should be able to handle new calls from the Medical Center.

The proposed project includes four new parking structures with a total of 2,227 spaces. An existing eight-level parking structure and a single-level parking lot would remain, bringing the total number of parking spaces to 3,006. The increase in structured parking could result in increased potential for crime and traffic accidents. Currently, Kaiser employs on-site security staff for the campus 24 hours a day, seven days a week. On weekdays, there are seven security personnel on the day shifts, five on the evening shifts, and two on the night shifts. On

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\(^6\) Ward Hayter, Redwood City Police Department, verbal communication with EIP Associates, November 5, 2002.

\(^7\) Louis Vella, Administrative Chief/Fire Marshal, Redwood City Fire Department, written communication with EIP Associates, January 31, 2003.
weekends, there are two security personnel on each shift. These numbers would increase to accommodate the expansion of square footage on the campus as well as the new parking structures. Security measures in the proposed parking structures would include video monitoring and on-site security staff. These measures would reduce the number of calls to the RCPD for police protection. Therefore, Kaiser’s on-site security measures would lessen the impact of the proposed campus’s size and new parking structures on the RCPD.

**PS-3. School and Park Demand** — Implementation of either the proposed project or the Higher Occupancy Scenario would have a less-than-significant effect on local public schools and parks. (LTS)

The proposed project could increase the number of Kaiser employees by approximately 134 at buildout in 2025. As discussed above, about 16 percent of the employee increase could be Redwood City residents with children in the Redwood City School District and the Sequoia Union High School District. Because no new residential development is proposed as part of the project, it is assumed that these employees would be either existing residents (who have accepted new jobs created by the project) or new residents who would move into existing housing in Redwood City. School-age children of employees who are existing residents would already be included in current enrollment figures. The student population resulting from employees who move into existing residences in Redwood City would likewise be represented in current enrollment figures, to the extent that those employees with school-age children displace other existing residents with school-age children. There may be a slight increase in enrollment to the extent that new families move in and occupy homes vacated by “empty nesters” or households without children.

Although unlikely, it is conceivable that all 21 new employees who could be expected to reside in Redwood City could occupy newly constructed homes or homes that had no school-aged children within the districts’ service boundaries. Under such an assumption, the proposed project could add new students to these two districts, both of which are at capacity. Based on current student generation factors of 0.5 elementary and middle school students per household and 0.357 high school students per household, the 21 employees of the project who could live in Redwood City could generate 11 elementary and middle school students and seven high school students, for a total of 18 students. To help offset this increased burden on local schools, Kaiser would be required to pay school impact fees to the districts. Commercial impact fees for the Redwood City School District and the Sequoia Union High School District are $0.20/square foot. The Redwood City School District would receive 60 percent of fees and the Sequoia Union High School District would receive 40 percent. Given the unlikely scenario that the project would result in 18 net new students and that all would attend public schools in

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8 Ariane H. Zand, AIA, ACHA, Senior Project Manager, Kaiser Permanente, written communication with EIP Associates, November 7, 2002.

Redwood City, the enrollment effects of the project would be considered potentially significant but mitigated through payment of the school impact fees.

The Higher Occupancy Scenario could increase the number of Kaiser employees by 626 at buildout in 2025. About 100 employees (16 percent) could be Redwood City residents with children in the Redwood City School District and the Sequoia Union High School District. Like the proposed project, it is conceivable that all 100 employees who could be expected to reside in Redwood City could occupy newly constructed homes or homes that had no school-aged children within the districts’ service boundaries. Under such an assumption, the Higher Occupancy Scenario could generate 50 elementary and middle school students and 36 high school students, for a total of 86 students. As described above, Kaiser would be required to pay commercial impact fees to the districts. However, the number of new Kaiser employees, whether under the proposed project or the Higher Occupancy Scenario, is expected to gradually reach 134 or 626 over a period of 23 years and it is expected that over this period the population of Redwood City will increase as well. ABAG Projections indicate that the population of Redwood City and its sphere of influence will increase approximately 13 percent by 2025. Therefore, regardless of the proposed project or Higher Occupancy Scenario, it is expected that both the Redwood City School District and the Sequoia Union High School District will expand existing schools and construct new ones over this time period to accommodate citywide growth. The enrollment effects of the project would be considered potentially significant but mitigated through payment of the school impact fees.

Like schools, the demand for parks is directly linked to the residential population in cities. It is not expected that the 21 new employees (or 100 in the Higher Occupancy Scenario), new residents of the City or otherwise, would create a significant impact to existing public parks. Regardless of the proposed project, it is expected that the Redwood City Parks, Recreation, and Community Services Department will improve existing parks and develop new ones over the period between 2002 and 2025 to accommodate citywide growth. Therefore, the project would have a less-than-significant impact on parks in Redwood City.
Section 4
Other CEQA Considerations

4.1 Significant Unavoidable Environmental Effects

Section 21100(b)(2)(A) of CEQA requires that an EIR identify any significant environmental effects that cannot be avoided if the project is implemented. All impacts of the proposed project would either be less than significant or could be mitigated to less than significant, with the exception of possible noise impacts that would occur from construction and demolition activities next to existing and occupied structures; project and cumulative intersection, US 101 mixed-flow lanes, and US 101 off-ramp impacts; and potential project and cumulative water supply shortages due to the project’s projected demand for water. Although mitigation measures would minimize the effects of construction-related noise and vibration on nearby structures and sensitive receptors, the impact would remain significant and unavoidable. Although mitigation measures, such as contributions to intersection lane improvements, would also reduce the project’s transportation-related impacts, the impacts would remain significant and unavoidable. If the City does not approve a Recycled Water Program prior to implementation of Phase 1 of the Master Plan, the proposed project would have a significant and unavoidable impact on water supply. The project would also result in a cumulative significant and unavoidable impact on water supply, wastewater, and storm drain systems.

As identified for the proposed project, the following impacts would be significant and unavoidable:

- noise impacts from construction and demolition activities next to existing and occupied structures;
- project and cumulative water supply shortages due to the project’s projected demand for water prior to City approval of a Recycled Water Program;
- cumulative wastewater and storm drain system impacts; and
- cumulative transportation impact on the Whipple Avenue/Veterans Boulevard, Hansen Way/Veterans Boulevard, and Woodside Road/Veterans Boulevard intersections during various peak periods.

In addition, the following impacts would be significant and unavoidable with the Higher Occupancy Scenario:

- cumulative impact on the Maple Street/ Marshall Street, Whipple Avenue/Veterans Boulevard, Hansen Way/Veterans Boulevard, and Woodside Road/Veterans Boulevard intersections;
- cumulative impact on the southbound US 101 mixed-flow lanes from SR 92 to Whipple Avenue and from Woodside Road to Marsh Road;
• cumulative impact on the northbound US 101 Off-Ramp to Woodside Road during the PM peak hour;
• noise impacts from construction and demolition activities next to existing and occupied structures;
• project and cumulative water supply shortages due to the project’s projected demand for water prior to City approval of a Recycled Water Program; and
• cumulative wastewater and storm drain system impacts.

Because of these significant unavoidable environmental effects, approval of the proposed project would require the adoption of a Statement of Overriding Consideration.

4.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 21100(b)(2)(B) of CEQA requires that an EIR identify any significant effect on the environment that would be irreversible if the project were implemented. Section 15126.2(c) of the CEQA Guidelines identifies irreversible environmental changes as those involving a large commitment of nonrenewable resources or irreversible damage resulting from environmental accidents.

The proposed project would lead to construction and extension of on-site infrastructure. In both the short term and long term, the project would involve a commitment of non-renewable resources, including building materials and fossil fuels. However, when measured against the availability of these resources, the commitment would be minimal. Approximately 15.3 acres of land, which was already developed in medical uses, would be committed to more extensive development of this type. Because of the level of investment involved in constructing the Medical Center and the demand for healthcare, subsequent less intense use of the site is unlikely. However, the decision to commit the site to heavy commercial use which includes medical facilities, was made earlier in the City’s General Plan process when the Strategic General Plan was adopted in 1990. Therefore, the project is implementing the commitment to heavy commercial development including medical uses heretofore made by the City.

Accidents, such as the release of hazardous materials, may trigger irreversible environmental damage. The proposed project would include a Central Utility Plant and hospital waste. Consequently, there exists a potential for an accidental release that could affect the surrounding environment, although it is unlikely any damage would be irreversible. State safety requirements and the goals and policies adopted in the General Plan would reduce the public health and safety risks to reasonably prudent levels, so that significant irreversible changes from accidental releases would not be anticipated.

4.3 GROWTH-INDUCING IMPACTS

Section 15126.2(d) of the CEQA Guidelines states that an 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.” Growth can be induced in a number of ways, including through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through precedent setting action. CEQA requires a discussion of how a project could increase population, employment, or housing in the areas surrounding the project as well as analysis of the infrastructure and planning changes that would be necessary to implement the project. Section 3.8 of this EIR includes a discussion of the projects overall effects on population and housing. This section of the EIR discusses the manner in which the proposed project could affect growth in Redwood City.

In discussing growth inducement, it is useful to distinguish between direct and indirect growth. Direct growth occurs on a project site as a result of new facilities (buildings) being constructed. Indirect growth occurs beyond the project site, but is stimulated by the proposed project’s direct growth. Indirect growth is tied to increased direct and indirect investment and spending associated with the new direct growth. When CEQA refers to induced growth, CEQA means all growth — direct, indirect, or otherwise defined. For clarity, the discussion below distinguishes between direct growth from the construction and use of project facilities, and all other induced or secondary growth, labeled as indirect growth.

The proposed project is a Medical Center campus. The Master Plan would result in direct growth by adding about 134 new employees to the site. This includes approximately 23 additional providers and 111 staff by 2025. ABAG employment data projects a total of 77,650 jobs in the City of Redwood City and 501,990 jobs in San Mateo County by 2025. Therefore, the increase in jobs at the Medical Center would directly contribute a total of 0.17 percent to overall employment in Redwood City and 0.03 percent in San Mateo County by 2025.

Under the High Occupancy Scenario, the Master Plan would result in direct growth by adding about 626 new employees to the site. This includes approximately 105 providers and 521 staff by 2025. The increase in jobs at the Medical Center, under this scenario, would directly contribute a total of 0.8 percent to overall employment in Redwood City and 0.1 percent in San Mateo County by 2025.

The direct effects of the project would create two types of secondary effects or indirect growth. First, the direct spending associated with the increased retail activity would stimulate production of associated products and services in the economy. Although this secondary impact would not be substantial in terms of the local economy, existing firms throughout the Bay Area, and in some cases beyond, would increase production. They would increase their purchases for materials and supplies, and at some point, they would hire new workers. Second, the new employees would form households. These new households, through spending, would increase demand for housing and a range of related services. Thus, the direct employment increase would, in turn, increase indirect employment, households, and population.

To estimate the potential multiplier effect associated with project-related jobs, the Association of Bay Area Governments has developed local (Type I) and regional (Type II) economic multipliers for the

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1 Association of Bay Area Governments, “Projections 2002.”
San Francisco Bay Region based on an input-output model. The economic multipliers measure the direct, indirect, and induced employment caused by a project. The jobs that would be generated by the project can be classified as Health Services with a Type I multiplier of 1.17 and Type II multiplier of 2.99. This means that for every retail job created, there would be 0.17 indirect and induced jobs created locally and 1.99 jobs created regionally. Applying the local and regional economic multipliers to the 134 jobs under the Master Plan, the project would result in about 23 local and 267 regional indirect and induced jobs. Therefore, the combined total local employment growth (direct and indirect employment) with the proposed project would be about 157 new jobs and the combined regional employment growth would be about 401 new jobs. The combined total local employment and the regional employment would be 558 jobs. The increase in employment at the project site would, therefore, result in approximately 558 jobs including direct growth, indirect growth, and induced value added by the year 2025.

With the Higher Occupancy Scenario, the project would result in about 106 local and 1,246 regional indirect and induced jobs. Therefore, the combined total local employment growth (direct and indirect employment) with the Higher Occupancy Scenario would be about 732 new jobs and the combined regional employment growth would be about 1,872 new jobs. The combined total local employment and the regional employment under the Higher Occupancy Scenario would be 2,604 jobs. The increase in employment at the project site with the Higher Occupancy Scenario would, therefore, result in approximately 2,604 jobs including direct growth, indirect growth, and induced value added by the year 2025.

Construction of the proposed project would directly, but temporarily, increase construction employment. Given the relatively limited and standard nature of the construction anticipated, it is to be expected that the demand for construction employment would be met within the existing and future labor market in Redwood City and/or San Mateo County. Neither a substantial quantity of specialized labor nor construction workers from outside the City or County would be expected to be induced to relocate temporarily or to commute long distances.

The proposed project does not call for the construction of major new roadways or utility systems in undeveloped areas that would stimulate development in those undeveloped areas, although the infrastructure in the portion of the Medical Center area would be improved. Thus, the project would not induce growth by removing infrastructural barriers, by providing new infrastructure, and/or creating new transportation access to a previously inaccessible area. In addition, the project would not result in any precedent setting action such as a General Plan Amendment.

In conclusion, growth and the rate of growth shape both the physical and social structure of communities. As indicated above, the proposed project would facilitate and contribute to growth in Redwood City and San Mateo County. The increase in jobs would be minimal and would be consistent with the City’s Strategic General Plan that seeks to significantly increase the number of jobs in

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Redwood City. In accordance with the CEQA Guidelines, Section 15126.2, this discussion of growth inducement is not intended to be characterized as necessarily beneficial, detrimental, or of little significance to the environment. The growth inducement section is provided for information purposes so that the public and local decision-makers have an appreciation of the potential long-term growth implications of the project.

4.4 CUMULATIVE IMPACTS

CEQA Guidelines (Section 15355) define “cumulative impacts” as “…two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” The combination of the proposed project (or the Higher Occupancy Scenario) with other City approved projects defines the cumulative scenario. Cumulative effects could be significant for environmental issues that are associated directly with increases in population or consumption of resources, including land. The project’s potentially considerable contributions to significant cumulative impacts are fully addressed in Sections 3.2 through 3.10. These sections identify feasible mitigation measures that would reduce all of the project’s potential contributions to cumulative impacts to less-than-significant levels, except for the project’s contribution to transportation impacts, construction-related noise impacts, and water supply. The reader is referred to Sections 3.2 through 3.10 for thorough analysis and discussion of cumulative impacts. The following summary is provided for the convenience of the reader.

Proposed Project

Land Use

No significant cumulative land use impacts are expected in the downtown area, since the proposed project generally conforms to the Strategic Plan and future buildout of the Kaiser campus in combination with other foreseeable development in the vicinity would be expected to conform to the Downtown Area Plan when it is adopted in 2003. Because the proposed project is consistent with the Strategic General Plan and is expected for the draft Downtown Area Plan, Kaiser’s development would not be expected to create nor contribute to significant cumulative land use impacts.

Visual Quality

In regards to the proposed project, areas of concern would be views of the coastal mountains, visual impacts on the surrounding neighborhood, and views from major travel corridors or gateways. Although project development in the area would create a substantial increase in mass and scale compared to current conditions, views of the coastal mountains would be maintained. Views from major travel corridors would be altered, but not adversely changed. In addition, the Master Plan would intensify development on the campus, but visual impacts to the campus and on the surrounding neighborhood would be less than significant. The phased construction associated with the proposed project would have potentially significant cumulative impacts on visual quality; however,
implementation of a construction demolition phasing plan would reduce cumulative visual quality degradation to a less-than-significant level. For those reasons, the project would not contribute to significant cumulative impacts to visual quality.

**Transportation**

The traffic and traffic-related impacts arising from the project would contribute to the cumulative increase in traffic locally and regionally. The cumulative traffic analysis, reported in Section 3.4 of this document, shows that the intersection of Whipple Avenue/Veterans Boulevard intersection is expected to operate at an unacceptable LOS F during the AM and PM peak hours; the Hansen Way/Veterans Boulevard intersection is expected to operate at an unacceptable LOS E during the AM peak hour and LOS F during the PM peak hour (this intersection does not meet the Caltrans Peak Hour Volume Warrant; the Woodside Road/Veterans Boulevard intersection is expected to maintain acceptable operations during the AM peak hour but is expected to operate at LOS F, an unacceptable level, during the PM peak hour. The proposed project could also contribute to cumulative bus-related traffic flow, bus and shuttle access, site access, and on-site circulation impacts. Potential improvements are identified that, if built, could mitigate these impacts.

**Air Quality**

The air quality analysis for the project indicates that the proposed project would not cause potentially significant regional impacts of criteria air pollutants from motor vehicle trips and stationary source operation when the first phase of the project is completed in 2004 or when the buildout of the Medical Center is completed in 2025. Also, localized CO concentrations in the long-term cumulative conditions would be less than the ambient air quality standards. Therefore, the cumulative impacts to regional air quality would not be significant impact.

**Noise**

Traffic generated due to the project would be the major contributor to cumulative noise. Cumulative noise from traffic on 11 main roadway segments was analyzed for 2020 conditions and the future noise with and without the project at 50 feet from the centerline of these roads would not result in a significant increase (i.e., 3 dBA or more) in traffic noise when compared to existing conditions. Therefore, the proposed project would not result in a cumulative traffic noise impact. Cumulative noise from construction activities that would occur over a 20-year period would be considered significant and unavoidable, even with implementation of mitigation measures to reduce construction noise and vibration.

**Hazardous Materials**

The health and safety hazards posed by most hazardous materials are typically local in nature and generally do not combine in any cumulative sense with the hazards of other projects. Cumulative increases in waste generation could contribute to the potential for some wastes to be mismanaged at any point in the disposal process in a manner that poses potential hazards to people, or to animal and plant.
populations. Since the project’s contribution to this cumulative impact would be a small increment, the project’s contribution would be less than cumulatively considerable, and, thus less than significant.

Cumulative development including the project would not be expected to interfere with emergency response plans or emergency evacuation plans and may even improve the efficiency of the Hospital. The proposed project has the potential to contribute to cumulative construction-related hazardous materials disturbance that would occur during the various phases of demolition and renovation.

**Population and Housing**

The Master Plan is not expected to significantly increase the number of jobs or the overall housing demand in Redwood City or San Mateo County at buildout in 2025. The project’s contribution to cumulative impacts resulting from employment growth and housing demand would be minimal in comparison to Redwood City’s and San Mateo County’s projected growth. Therefore, cumulative impacts to population and housing would be considered less than significant.

**Public Services**

Implementation of the proposed project in conjunction with various cumulative projects would further increase demand for police and fire protection services. The increased demand for such services could result in the need for additional staff, equipment, and facilities. The project could also result in an increased demand for schools or parks in Redwood City. However, ABAG Projections indicate that the population of Redwood City and its sphere of influence will increase approximately 13 percent by 2025. Therefore, regardless of the proposed project, the number of police and fire personnel will increase to accommodate citywide growth. Therefore, cumulative impacts of the project on police and fire services, school, and parks would be less than significant.

**Utilities and Service Systems**

*Water Supply.* The WSA prepared by the Redwood City Public Works Service Department has determined that the City does not have a sufficient water supply to meet the projected demands of the proposed Master Plan in addition to existing customers as well as the demand of other planned development. The proposed project could also have potentially significant cumulative impacts to water distribution and the emergency storage system around the Medical Center, but this would be reduced to a less-than-significant level with construction of new pipes, a new water tank, and pump station. Therefore, cumulative impacts to water supply could be significant. Water conservation measures and a recycled water program could reduce these impacts, although not to less than significant.

*Wastewater Treatment.* Future development in the City in combination with the proposed project could require the purchase of additional wastewater treatment rights and upgrades of the sewer transmission facilities to the SBSA treatment plant.

*Storm Drains.* Although the project’s effects on stormwater volumes are expected to be less than significant, the storm drains may already be at capacity. Cumulative development may therefore
adversely affect the piping system and the pump stations at Maple Street and at Steinberger Creek. Cumulative impacts to the water supply would be significant and unavoidable. Cumulative impacts to storm drain capacity and on wastewater flows would be reduced to less-than-significant levels with implementation of mitigation measures included in Section 3.10.

Higher Occupancy Scenario

Land Use

The Higher Occupancy Scenario could result in increased traffic, air quality and noise effects, and those impacts are addressed in those sections. With regard to cumulative land use impacts, the Higher Occupancy Scenario generally conforms to the Strategic Plan and therefore would not result in cumulative land use impacts. In addition, future buildout of the Kaiser campus, in combination with other foreseeable development in the vicinity, would be expected to conform to the Downtown Area Plan when it is adopted in 2003. Because the Higher Occupancy Scenario is consistent with the Strategic General Plan and is expected for the draft Downtown Area Plan, the proposed project would not be expected to create nor contribute to significant cumulative land use impacts.

Visual Quality

No change to building mass or site layout would occur under the Higher Occupancy Scenario. Similar to the proposed project, areas of concern would be views of the coastal mountains, visual impacts on the surrounding neighborhood, and views from major travel corridors or gateways. Although project development in the area would create a substantial increase in mass and scale compared to current conditions, views of the coastal mountains would be maintained. Views from major travel corridors would be altered, but not adversely changed. In addition, the Master Plan would intensify development on the campus, but visual impacts to the campus and on the surrounding neighborhood would be less than significant. The phased construction associated with the project would have a potentially significant cumulative impact on visual quality; however, implementation of a construction demolition phasing plan would reduce cumulative visual quality degradation to a less-than-significant level. For those reasons, the project under the Higher Occupancy Scenario would not contribute to significant cumulative impacts to visual quality.

Transportation

The Higher Occupancy Scenario would significantly exacerbate operations at four locations by increasing average delay by five or more seconds. The Maple Street/ Marshall Street intersection is expected to operate at an unacceptable level (LOS E) during the PM peak hour under this scenario. The Whipple Avenue/ Veterans Boulevard intersection is expected to operate at an unacceptable LOS F during the AM and PM peak hours. The Hansen Way/ Veterans Boulevard intersection is expected to operate at an unacceptable LOS F during the AM and PM peak hours (this does not meet Caltrans Peak Hour Volume Warrant). The Woodside Road/ Veterans Boulevard intersection is expected to operate at an unacceptable LOS E during the AM peak hour and an unacceptable LOS F during the PM peak hour.
with the addition of traffic from the Higher Occupancy Alternative. Potential improvements are identified that, if built, could mitigate these service levels to acceptable intersection services levels. Note that the improvements to Whipple/Veterans have been identified as likely infeasible. Improvements to Woodside/Veterans would not reduce impacts to less than significant, and impacts would remain significant and unavoidable. The Freeway Segment Capacity Analysis identifies a significant and unavoidable cumulative impact on the southbound US 101 mixed-flow lanes SR 92 to Whipple Avenue and Woodside Road to Marsh Road during the AM peak hour, and a significant cumulative impact on the southbound US 101 mixed-flow lanes Woodside Road to Marsh Road during the PM peak hour. The Freeway Ramp Capacity Analysis identifies a significant and unavoidable cumulative impact on the northbound US 101 Off-Ramp to Woodside Road during the PM peak hour.

**Air Quality**

The air quality analysis for the project indicates that the Higher Occupancy Scenario would not cause potentially significant regional impacts of criteria air pollutants from motor vehicle trips and stationary source operation when the first phase of the project is completed in 2004 or when the buildout of the Medical Center is completed in 2025. Also, localized CO concentrations in the long-term cumulative conditions would be less than the ambient air quality standards. Therefore, the cumulative impacts to regional air quality would not be significant impact.

**Noise**

The Higher Occupancy Scenario would generate higher noise levels than the proposed project. However, cumulative noise from traffic on 11 main roadway segments was analyzed for 2020 conditions and the future noise with and without the Higher Occupancy Scenario at 50 feet from the centerline of these roads would not result in a significant increase (i.e., 3 dBA or more) in traffic noise when compared to existing conditions. Therefore, although the noise levels would increase, the Higher Occupancy Scenario would not result in a cumulative traffic noise impact. Cumulative noise from construction activities that would occur over a 20-year period would be considered significant and unavoidable, even with implementation of mitigation measures to reduce construction noise and vibration.

**Hazardous Materials**

The Higher Occupancy Scenario would represent a negligible increase over the hazardous waste handling and disposal resulting from the proposed project. The health and safety hazards posed by most hazardous materials are typically local in nature and generally do not combine in any cumulative sense with the hazards of other projects. Cumulative increases in waste generation could contribute to the potential for some wastes to be mismanaged at any point in the disposal process in a manner that poses potential hazards to people, or to animal and plant populations. Since the project’s contribution to this cumulative impact would be a small increment, the Higher Occupancy Scenario project’s contribution would be less than cumulatively considerable, and, thus less than significant. Cumulative issues related to toxic air emissions are discussed in Section 3.5, Air Quality. Cumulative development including the Higher Occupancy Scenario project would not be expected to interfere with emergency response plans.
or emergency evacuation plans and may even improve the efficiency of the Hospital. The Higher Occupancy Scenario project has the potential to contribute to cumulative construction-related hazardous materials disturbance that would occur during the various phases of demolition and renovation.

**Population and Housing**

The Higher Occupancy Scenario would result in more jobs and more demand for housing than the proposed project. However, the Higher Occupancy Scenario is not expected to significantly increase the number of jobs (four percent of City job growth) or the overall housing demand (less than one percent of housing demand growth) in Redwood City or San Mateo County at buildout in 2025. With the Higher Occupancy Scenario, the project’s contribution to cumulative impacts resulting from employment growth and housing demand would be minimal in comparison to Redwood City’s and San Mateo County’s projected growth. Therefore, cumulative impacts to population and housing would be considered less than significant.

**Public Services**

The Higher Occupancy Scenario would result in more employees and a greater demand for services than the proposed project. Implementation of the Higher Occupancy Scenario in conjunction with various cumulative projects would further increase demand for police and fire protection services. The increased demand for such services could result in the need for additional staff, equipment, and facilities. The project, under the Higher Occupancy Scenario, could also result in an increased demand for schools or parks in Redwood City. However, ABAG Projections indicate that the population of Redwood City and its sphere of influence will increase approximately 13 percent by 2025. Therefore, regardless of the Higher Occupancy Scenario, the number of police and fire personnel will increase to accommodate citywide growth. Therefore, cumulative impacts of the project under the Higher Occupancy Scenario on police and fire services, school, and parks would be less than significant.

**Utilities and Service Systems**

The Higher Occupancy Scenario would increase the use of the site relative to the proposed project since more employees would be present.

**Water Supply.** As with the proposed project, under the Higher Occupancy Scenario, the City does not have a sufficient water supply to meet the projected demands of the proposed project in addition to existing customers as well as the demand of other planned development. The proposed project could also have potentially significant cumulative impacts to water distribution and the emergency storage system around the Medical Center, but this would be reduced to a less-than-significant level with construction of new pipes, new water tank, and pump station. Therefore, cumulative impacts to water supply could be significant. Water conservation measures and a recycled water program could reduce these impacts, although not to less than significant.
Wastewater Treatment. Future development in the City in combination with the Higher Occupancy Scenario could require the purchase of additional wastewater treatment rights and upgrades of sewer transmission facilities to the SBSA treatment plant.

Storm Drains. Although the Higher Occupancy Scenario’s effects on storm water volumes is expected to be less than significant, the storm drains may already be at capacity. Cumulative development may therefore adversely affect the piping system and the pump stations at Maple Street and at Steinberger Creek.

Cumulative impacts to the water supply would be significant and unavoidable. Cumulative impacts to storm drain capacity and on wastewater flows would be reduced to less-than-significant levels with implementation of mitigation measures included in Section 3.10.

4.5 EFFECTS NOT FOUND TO BE SIGNIFICANT

This EIR was prepared with the Initial Study attached in Appendix B. The Initial Study identifies all impacts of the project not found to be significant.
5.1 INTRODUCTION

The California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) (CEQA) and the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.) require that an EIR “describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives” (CEQA Guidelines Section 15126.6(a)). If a project alternative would substantially lessen the significant environmental effects of a proposed project, the decision maker should not approve the proposed project unless it determines that specific technological, economic, social, or other considerations make the project alternative infeasible (PRC Section 21002, CEQA Guidelines Section 15091(a)(3)). The EIR must also identify alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and should briefly explain the reasons underlying the lead agency’s determination (CEQA Guidelines Section 15126.6(c)).

One of the alternatives that must be analyzed is the “no project” alternative. The “no project” analysis must discuss the existing conditions, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved and development continued to occur in accordance with existing plans and consistent with available infrastructure and community services (CEQA Guidelines, Section 15126.6(e)(3)(C)).

Potential impacts associated with the project alternatives are evaluated against the potential impacts of the proposed project. The potential impacts of the project alternatives with the Higher Occupancy Scenario are not evaluated because each alternative would provide the same amount of floor area as the proposed project. As such, the Higher Occupancy Scenario could occur with any of the project alternatives and is not evaluated separately.

5.2 DESCRIPTION OF ALTERNATIVES

This section of the EIR analyzes the following four alternatives, which are described in detail below:

- No Project Alternative
- Walnut Street Closure Alternative
- Redwood City Preferred Alternative
- Marshall Street Hospital Alternative
Photo simulations are provided within this chapter for the proposed project and for the four alternatives to the project outlined above.

**No Project Alternative**

Under the No Project Alternative, no new development would occur at the project site. None of the campus buildings would be developed. The existing outdated inpatient and outpatient facilities would continue to operate at the Medical Center campus. The consolidation of existing medical offices from elsewhere in Redwood City to the Medical Center would not take place and Kaiser would be unable to provide additional inpatient and outpatient services at the campus. The projected increase in Kaiser members in the Redwood City area would occur with or without the proposed project. However, Kaiser would not be able to meet the increase in demand for services at the existing Medical Center. Per SB1953, the Hospital would need to close by 2013.

**Walnut Street Closure Alternative**

The Walnut Street Closure Alternative (Figure 5-1) includes many features similar to the proposed project. The major difference between this alternative and the proposed project is a larger footprint for the replacement Hospital that would span Walnut Street requiring its closure. Under this alternative, the Hospital would be located further west on Veterans Boulevard, and Walnut Street would be closed between Veterans Boulevard and Bradford Street. The replacement Hospital would be constructed adjacent to Parking Structure B resulting in an uninterrupted building length of approximately 570 feet (approximately the length of two full city blocks). The height of the replacement Hospital would be reduced from ten stories under the proposed project to six stories under this alternative. With the exception of the enlarged configuration (massing and bulk) of the replacement Hospital, the phasing, siting, and overall square footage of proposed buildings and parking structures are similar to the proposed project.

**Redwood City Preferred Alternative**

The general layout of the Medical Center campus under the Redwood City Preferred Alternative (see Figure 5-2) is similar to that of the proposed project. However, the campus buildings would be sited and designed to more closely adhere to the goals of the draft Downtown Area Plan. Major differences between this alternative and the proposed project include the size of the campus plaza area, the location of Parking Structure B, and the use of the site currently proposed for Parking Structure B. Under this alternative, Parking Structure B would be located to the west of the replacement Hospital where the proposed project would include an expanded plaza area along Veterans Boulevard. This plaza is also an area for potential future expansion of the replacement Hospital with the proposed project. The Redwood City Preferred Alternative proposes a mixed-use building at the Main Street gateway site. The mixed-use building would be designed to create a sense of entry into the downtown and would complement similar retail/office-type buildings located along downtown Main Street. Under the Redwood City Preferred Alternative, buildings proposed for Main Street would be designed to
Slipsheet for Figure 5-1

Walnut Street Closure Alternative
Slipsheet For Figure 5-2

Redwood City Preferred Alternative
reinforce Main Street’s designation as a downtown gateway. While the proposed project places a 30,700+ sq.ft. plaza space adjacent to the six-lane Veterans thoroughfare, which has views of a commercial strip center across Veterans Boulevard, this Alternative would provide an enclosed plaza area central to buildings at the Medical Center campus.

The replacement Hospital and MOBs would contain the same amount of floor space under this alternative as under the proposed project. The Redwood City Preferred Alternative would not have exact footprint or building width requirements for any buildings at the campus. However, parking structures would not be constructed taller than the adjacent MOB or Hospital and could require partial undergrounding. Active building space would occupy prominent corner parcels and parking structures would be located mid-block behind active building space.

**Marshall Street Hospital Alternative**

The Marshall Street Hospital Alternative represents a site plan developed jointly by Kaiser and the City of Redwood City early in the planning phase for the proposed Medical Center. As shown on Figure 5-3, the major difference between this alternative and the proposed project is the location of the replacement Hospital. Rather than constructing the replacement Hospital on Veterans Boulevard as under the proposed project, the Hospital would be constructed on the northwest corner of Marshall Street and Maple Street. The replacement Hospital would be seven stories, rather than ten under the proposed project.

The Marshall Street Hospital Alternative also includes an MOB at the southeast corner of Veterans Boulevard and Walnut Street. The MOBs to be located along Veterans Boulevard would be five stories tall, similar to the proposed project. However, the MOB to be located at the northeast corner of Marshall Street and Maple Street would be five stories tall, rather than the four-story MOB included in the proposed project. Like the Redwood City Preferred Alternative, this alternative places the plaza area within the center of the campus.

Under this alternative, a portion of the existing surface parking lot located at the northwest corner of Main Street and Bradford Street would remain. Parking structure C would contain nine parking levels as opposed to six levels for Parking Structure D under the proposed project.

Parking Structure B would contain six levels as opposed to five under the proposed project. However, this option would contain only three parking structures rather than the five parking structures under the proposed project. This alternative does not provide underground parking.

Phasing for the Marshall Street Hospital Alternative differs slightly from the proposed project. Rather than construct the replacement Hospital in Phase 2, MOB 2 and Parking Structure B would be constructed in Phase 2. The replacement Hospital would be constructed during Phase 3.
Slipsheet for Figure 5-3
5.3 IMPACT ASSESSMENT

The purpose of this impact assessment is to identify whether the above-described alternatives would reduce potentially significant impacts of the proposed project or would generate other impacts different from those identified for the proposed project.

No Project Alternative

**Land Use.** The No Project Alternative would result in less-than-significant land use impacts, like the proposed project. This alternative would maintain current uses at the project site and would not conflict with *Strategic General Plan*, the *Redevelopment Plan for Redevelopment Project #2*, or the *Redwood City Zoning Ordinance*. Also, it would not conflict with the draft *Downtown Area Plan* as it is finalized. On the other hand, the No Project Alternative would not support or help fulfill the many land use policies that the proposed Master Plan would achieve. For example, the No Project Alternative would not improve the Medical Center’s ability to foster transit through site planning, promote commercial development as envisioned by the Redevelopment Plan, improve linkages through the Redevelopment Project area, nor enhance the downtown. In other words, the No Project Alternative would be a missed opportunity to support the City’s land use and downtown gateway policies.

**Visual Quality.** The No Project Alternative would maintain the existing visual setting of the Medical Center. This alternative would preserve the mass and scale of campus buildings and avoid the less-than-significant, but noticeable intensification of floor area at the campus. Under the No Project Alternative, the five (one existing) multi-level parking structures, the ten-story replacement hospital, and the four- and five-story MOBs would not be constructed. Notably, the No Project Alternative would not alter the fragmented appearance and weak streetscape that characterize the existing Medical Center, nor would it support the City’s desires to enhance the gateways into the downtown core. Figure 5-4A presents the existing view of the Medical Center from Veterans Boulevard at Main Street. Figure 5-4D presents the existing view of the Medical Center from Veterans Boulevard at Walnut Street looking south.

This alternative would be inconsistent with many of the policies that promote beautification and revitalization of the Downtown Area identified in the *Strategic General Plan*, the *Redevelopment Plan for Redevelopment Project #2*. It could also be inconsistent with the draft *Kaiser Master Plan Urban Design Guidelines* and the draft *Downtown Area Plan* once these draft documents are adopted. However, this alternative would avoid the potential unsightliness that could result from years of construction activity.

**Transportation.** Under the No Project Alternative, no new development would occur at the Kaiser Redwood City campus. Therefore, no new traffic (over that which is currently generated by the
facility) would be expected. Because no new project traffic is expected, no transportation impacts would be expected under the No Project Alternative.

**Air Quality.** The No Project Alternative would avoid construction activities that would have potentially significant air quality impacts under the proposed project. The No Project Alternative would also avoid the proposed project’s less-than-significant impacts related to regional air emissions, carbon monoxide concentrations, sources of objectionable odors and toxic air contaminants, and cumulative regional air emissions.

**Noise.** The No Project Alternative would avoid the proposed Master Plan’s significant and unavoidable noise impact related to construction noise and vibration. Potentially significant impacts described for the proposed project (i.e., noise associated with new mechanical equipment, loading docks, and trash compactors) would not occur under the No Project Alternative and the less-than-significant impact related to increased traffic noise would also not occur under the No Project Alternative.

**Hazardous Materials.** The No Project Alternative would avoid project-related building demolition or renovation. Therefore, there would be no potential to disturb any possible hazardous materials in existing building components, such as asbestos or fluorescent lighting. While the No Project Alternative would also not increase the Medical Center building space, it is expected that hazardous materials storage, handling or waste generation at the Medical Center would continue to increase since membership would continue to climb in the Kaiser Redwood City service area, as it would with the proposed project. The increase in hazardous materials or wastes, however, is not expected to result in significant public health and safety effects because of in-place regulations and safety procedures.

**Population and Housing.** The No Project Alternative would maintain existing employment numbers and would avoid the proposed project’s less-than-significant impacts to population and housing. This alternative would not result in the increase in employment that would occur at buildout under the proposed project.

**Public Services.** The No Project Alternative would maintain public services at existing levels of service. Presently, there are no deficiencies in public services. This alternative would avoid the increases in service demand associated with the proposed project and would avoid the project’s less-than-significant impacts.

**Utilities and Service Systems.** The No Project Alternative would maintain utilities at existing levels of service. No new square footage is proposed under this alternative, and therefore, the upgrade of the water distribution system around the campus that would be necessary under the proposed project would not be required. This alternative would avoid the significant water supply and cumulative water supply, wastewater, and storm drain impacts; potentially significant water distribution, emergency storage system and wastewater collection impacts; and less-than-significant storm drain system impacts associated with the proposed project.
Walnut Street Closure Alternative

**Land Use.** The Walnut Street Closure Alternative would not have the same less-than-significant impacts on land use as the proposed project. This alternative would be consistent with the heavy commercial designation of the *Strategic General Plan*, but would conflict with the *Redevelopment Plan for Redevelopment Project #2* policies relevant to improving circulation within the redevelopment and linking together circulation within the RDA with the city street system. In addition, findings could likely not be made by the City Council to justify the closure of Walnut Street since the City's downtown street systems serves the larger public good and are not customarily closed to benefit a private development. The primary difference between this alternative and the proposed project is the bulk and height of the hospital. Land uses at the project site would be the same as under the proposed project.

**Visual Quality.** The Walnut Street Closure Alternative would expand the hospital across Walnut Street further west on Veterans Boulevard to connect to the adjacent Parking Structure B on Main Street. While reducing its height to six stories, compared to ten stories under the proposed project, the siting, massing, bulk, and overall length of the hospital and adjacent Parking Structure B would significantly increase. Plaza areas, landscaping and overall square footage of buildings would be the same as the proposed project.

As seen from a vantage point on Veterans Boulevard at Main Street, the proposed project would replace existing open views (see Figure 5-4A) with the replacement Hospital, (which includes the nursing tower), Parking Structure B, the Cancer Care Center, and the administration building (see Figure 5-4B). The Walnut Street Closure Alternative from this vantage point would replace the open view to the south, with the large-scale replacement Hospital, but with a lower height (see Figure 5-4C). As seen from a vantage point on Walnut Street north of Veterans Boulevard, the proposed project replaces the existing open view with the large-scale replacement Hospital (see Figure 5-4D). The nursing tower is particularly dominant, but the low-rise (four stories) hospital base preserves much of the sky plane, and the pedestrian bridge between the Hospital on the left and the parking structure on the right allows distant views of the ridgeline for motorists and pedestrians (see Figure 5-4E). The Walnut Street Closure Alternative would also affect views along Walnut Street. Figure 5-4F presents a computer-generated visual simulation of the Walnut Street Closure Alternative as seen from a vantage point on Walnut Street north of Veterans Boulevard. The Walnut Street Closure Alternative eliminates the distant views of the western hills, reduces the sky plane, and introduces a large-scale structure that is particularly visually dominant because of the lengthy northern façade (see Figure 5-4F).

Phasing impacts resulting in potentially significant degradation of the visual quality of the campus would be similar to the proposed project, with the exception of construction of the Hospital, which is not dependent on demolition of existing buildings. Mitigation measures specified for Impact VQ-5 would reduce phasing impacts to less than significant.

**Transportation.** Although project development associated with the Walnut Street Closure Alternative is consistent with that analyzed as part of the proposed project, the closure of Walnut Street under this
alternative would alter existing and future traffic patterns in the area. Project Conditions and 2020 With Project Conditions peak hour volumes were redistributed on the roadway network to estimate intersection volumes if Walnut Street were closed. The expected intersection volumes and lane configurations were used as inputs and levels of service (LOS) were calculated at the affected intersections. The results of the LOS analysis are presented in Table 5-1.

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Project Conditions</th>
<th>2020 With Project Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AM</td>
<td>PM</td>
</tr>
<tr>
<td>#1 Walnut Street/Marshall Street (U)</td>
<td>11.2 B</td>
<td>12.6 B</td>
</tr>
<tr>
<td>#2 Marshall Court/Marshall Street (U)</td>
<td>10.0 A</td>
<td>10.7 B</td>
</tr>
<tr>
<td>#3 Maple Street/Marshall Street (U)</td>
<td>10.8 B</td>
<td>17.1 C</td>
</tr>
<tr>
<td>#5 Main Street/Bradford Street (U)</td>
<td>15.0 B</td>
<td>23.2 C</td>
</tr>
<tr>
<td>#6 Walnut Street/Bradford Street (U)</td>
<td>7.2 A</td>
<td>7.3 A</td>
</tr>
<tr>
<td>#9 Main Street/Veterans Boulevard</td>
<td>20.9 C</td>
<td>25.3 C</td>
</tr>
<tr>
<td>#10 Walnut Street/Veterans Boulevard</td>
<td>12.4 B</td>
<td>12.4 B</td>
</tr>
<tr>
<td>#11 Maple Street/Veterans Boulevard</td>
<td>26.3 C</td>
<td>32.2 C</td>
</tr>
</tbody>
</table>


Notes:
1. Reported intersections are those affected by the Walnut Street Closure.
2. Signalized intersection LOS based on average control delay expressed in seconds per vehicle. Unsignalized intersection LOS based on average control delay expressed in seconds per vehicle. Signalized and unsignalized analysis methodologies obtained from the 2000 Highway Capacity Manual, Transportation Research Board.
3. Level of service.
   “Change in Average Delay” is the change in the average delay between Background and Project Conditions.
   (U) = Unsignalized intersection.

The results of the analysis indicate that, with Walnut Street being closed, all of the affected intersections are expected to operate acceptably (LOS D or better) during the AM and PM peak hours under near-term Project Conditions.
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5-4A Veterans Boulevard at Main Street looking Southeast: Existing .................................................
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Slipsheet for Figure 5-4B, (side 1), (COLOR), must start on odd Page, no text on back of page

5-4B Veterans Boulevard at Main Street looking Southeast: Proposed Project .............................
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Slipsheet for Figure 5-4C, (side 1), (COLOR), must start on odd Page, no text on back of page

5-4C   Veterans Boulevard at Main Street looking Southeast: Walnut Street Closure Alternative……….
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Slipsheet for Figure 5-4D, (side 1), (COLOR), must start on odd Page, no text on back of page

5-4D  Veterans Boulevard at Walnut Street looking South: Existing ..................................................
Slipsheet for Figure 5-4D, (side 2), (COLOR), must start on odd Page, no text on back of page
Slipsheet for Figure 5-4E, (side 1), (COLOR), must start on odd Page, no text on back of page

5-4E Veterans Boulevard at Walnut Street looking South: Proposed Project.................................
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Slipsheet for Figure 5-4F, (side 1), (COLOR), must start on odd Page, no text on back of page

5-4F  Veterans Boulevard at Walnut Street looking South: Walnut Street Closure Alternative............
Slipsheet for Figure 5-4F, (side 2), (COLOR), must start on odd Page, no text on back of page
Under the proposed project, significant cumulative project impacts are not expected to occur at the Maple Street/Marshall Street intersection or the Main Street/Bradford Street intersection. However, under Cumulative With Project Conditions for the Walnut Street Closure Alternative, the Maple Street/Marshall Street intersection is expected to operate at an acceptable LOS C during the AM peak hour and an unacceptable LOS F during the PM peak hour. The Main Street/Bradford Street intersection is expected to operate at an acceptable LOS C during the AM peak hour and an unacceptable LOS E during the PM peak hour. All other affected intersections are expected to operate acceptably (LOS D or better) during the AM and PM peak hours. However, Redwood City desires to keep this street open for the larger community vs. allowing a public street to be used for private purposes. By maintaining this street as a public street, the City’s Downtown street circulation network would be preserved and eventually enhanced for ease of travel into the Downtown retail core for the larger Redwood City community.

The approach volumes at the Maple Street/Marshall Street intersection under cumulative conditions are expected to satisfy the Caltrans Peak Hour Volume Warrant for traffic signal installation. Signalization of the intersection would provide acceptable operations (LOS B) during the PM peak hour under Cumulative With Project Conditions.

Similarly, the approach volumes at the Main Street/Bradford Street intersection are expected to meet the Caltrans Peak Hour Volume Warrant for traffic signal installation. Signalization of the intersection would provide acceptable operations (LOS B) during the PM peak hour under Cumulative With Project Conditions.

**Air Quality.** The Walnut Street Closure Alternative’s less-than-significant impact related to regional air emissions would be the same as the proposed project. This alternative’s less-than-significant impacts related to localized carbon monoxide concentrations, sources of objectionable odors and toxic air contaminants and cumulative regional air emissions would also be the same as the proposed project. The same mitigation measure proposed for the project (Mitigation Measure TR-3.4) would also apply to this alternative and would reduce project-related motor vehicle emissions to a less-than-significant level.

**Noise.** The Walnut Street Closure Alternative’s significant and unavoidable impact related to construction noise and vibration would be the same as under the proposed project. This alternative’s potentially significant impacts related to noise generated from mechanical equipment, loading docks, and trash facilities would also be the same as the proposed project. The less-than-significant impact related to an increase in traffic noise would also be the same as the proposed project. Mitigation measures proposed for the project (Mitigation Measures NO-1.1, NO-1.2, NO-2.1 and NO-3.1) would also apply to this alternative and would reduce project-related noise generated from mechanical equipment, loading docks, and trash facilities to a less-than-significant level.

**Hazardous Materials.** The Walnut Street Closure Alternative’s potentially significant impacts related to hazardous materials exposure as a result of demolition, construction and excavation would be the same as the proposed project. This alternative’s less-than-significant impacts related to adverse health
or safety effects associated with hazardous materials storage, handling, generation, usage and physical safety hazards would also be the same as the proposed project. Mitigation measures proposed for the project (Mitigation Measures HM-1.1 and HM-2.1) would also apply to this alternative and would reduce project-related health or safety effects to a less-than-significant level. The projected 21 percent increase in Kaiser membership and patients in the Redwood City area, which is roughly proportional to projected increases in hazardous materials use and hazardous waste generation, would be the same as the proposed project under this alternative.

**Population and Housing.** The Walnut Street Closure Alternative would result in the same increase in employment as the proposed project, and as such, the proposed project’s less-than-significant impacts to population and housing would remain under this alternative. The main difference between this alternative and the proposed project is the location and height of the hospital. Employment figures would be the same.

**Public Services.** The number of new employees would be the same for the Walnut Street Closure Alternative as it would be for the proposed project. As such, this alternative would have the same public services demand as the proposed project. All of the proposed project’s public service impacts would be less than significant, and they would remain so under this alternative. Existing service capacities would satisfy the demands associated with this alternative.

**Utilities and Service Systems.** The Walnut Street Closure Alternative proposes approximately the same amount of net new square footage as the proposed project. Therefore, the proposed project’s significant water supply and cumulative water supply, wastewater and storm drain impacts; potentially significant water distribution, emergency storage system and wastewater collection system impacts; and less-than-significant storm drain system impacts would apply to this alternative as well. Mitigation measures proposed for the project (Mitigation Measures UT-1.1, UT-1.2, UT-2.1, UT-2.2, UT-3.1, UT-5.1, and UT-5.2) would pertain to this alternative and would reduce project-related utility impacts to less-than-significant levels (except for water supply impacts which would remain potentially significant and unavoidable after mitigation).

**Redwood City Preferred Alternative**

**Redwood City Preferred Alternative**

**Land Use.** The Redwood City Preferred Alternative (see Figure 5-2) would have the same less than significant impacts on land uses as the proposed project (see Figure 2-3). As illustrated in Figure 5-2, the Redwood City Preferred Alternative does not recommend exact building footprints; rather it provides general building envelopes for the locations of the proposed replacement Hospital, four MOBs, two administrative buildings, four parking structures, Main Central Plaza and other uses identified in the proposed project. The purpose of providing building envelopes rather than exact building footprints is to allow a certain degree of flexibility for future changes in medical technologies, practices and facility needs. This alternative would be consistent with the same Strategic General Plan policies and Redevelopment Plan for Redevelopment Project Area #2 policies identified in this EIR.
The Redwood City Preferred Alternative is also evaluated here with similar building square footages and similar variations from current Zoning Ordinance standards relevant to the number of parking spaces and to the height of the replacement hospital, not to exceed a maximum height of 160 square feet, as requested under the proposed project.

Land uses for the Redwood City Preferred Alternative would also be similar to those of the proposed project with one notable exception. The Redwood City Preferred Alternative would not place Parking Structure B on the Main Street/Veterans Boulevard downtown gateway parcel. Instead, this alternative would replace Parking Structure B with a three to four-story mixed-use building, a use that would be more consistent with existing retail/office-type development located along Main Street. The Redwood City Preferred Alternative would relocate Parking Structure B from this downtown gateway parcel to the east side of the replacement hospital within the proposed project’s plaza (potential future hospital expansion) area fronting on Veterans Boulevard.

This land use change would eliminate the need for a pedestrian bridge that in the proposed project would span Walnut Street between the Hospital and Parking Structure B. With the Redwood City Preferred Alternative, Parking Structure B would not be separated from the Hospital by a public street (Walnut Street), rather it would lie immediately adjacent to the Hospital along Veteran Boulevard, which would facilitate pedestrian travel between these two structures. This alternative would also eliminate the potential for mid-block Walnut Street pedestrian crossings between the Hospital and Parking Structure B. Although, as noted in the Traffic Section of this EIR, the proposed project’s pedestrian bridge and Parking Structure B design would help to reduce the occurrence of mid-block Walnut Street pedestrian crossings to a less than significant impact.

In addition, under the Redwood City Preferred Alternative, all regional hospital traffic would enter Parking Structure B from Veterans Boulevard rather than from local city streets (Main and Bradford Streets) and Veterans Boulevard as provided under the proposed project. The Main Central Plaza area under this alternative would also be central to the Medical Center campus buildings, rather than fronting onto Veterans Boulevard.

While the Redwood City Preferred Alternative (Figure 5-2) would be entirely consistent with draft Downtown Area Plan policies, the proposed project (Figure 2-3) would be mostly consistent with these policies. Again, the exception would revolve primarily around the location of Parking Structure B if it were to be placed with the Main Street/Veterans Boulevard gateway parcel as proposed under the proposed project.

Placement of Parking Structure B on the Main Street downtown gateway parcel may conflict with the intent of draft Downtown Area Plan Policy 4.41, which recognizes the Main Street/Veterans Boulevard intersection as an important secondary gateway to the downtown and recommends high-quality development and landscaping at this entry to improve the image of downtown. While the proposed project would be required to provide high quality development and landscaping improvements at this entry/important downtown gateway parcel, a parking structure may not be the highest and best use for or the most appropriate land use alternative to enhance the City’s downtown image. Policy 4.22 also emphasizes the importance of Main Street as a primary pedestrian corridor and spine/linkage to the...
downtown. Under the proposed project, regional hospital traffic would use Main Street to access Parking Structure B and, with the exception of the 20,000 square foot Cancer Care Center, this gateway parcel would be used primarily to house cars rather than as people-occupied building space. The mixed-use building, recommended under the Redwood City Preferred Alternative, would also be more consistent with the draft Downtown Area Plan Policies 4.34 and 4.25 that recommend that visually appealing storefronts define the edge behind sidewalks to provide visual interest to pedestrians and with Policies 3.2 and 4.39 that emphasize the importance of high quality development and mixed use in close proximity to the downtown core as a means of creating a vibrant downtown neighborhood.

**Visual Quality.** The draft Kaiser Master Plan Urban Design Guidelines (Appendix C), developed by City and Kaiser staff with the assistance of Terry Bottomley, urban design consultant, (and reviewed by the Redwood City Planning Commission and Architectural Review Committee at two Joint Study Sessions), were developed as a tool to further the vision, goals and policies of the draft Downtown Area Plan while focusing more specifically on the urban design characteristics of the 15-acre downtown Kaiser Medical Center campus.

The Redwood City Preferred Alternative (Figure 5-2) graphically represents/summarizes the policies contained in the draft Kaiser Master Plan Urban Design Guidelines (Appendix C). The Redwood City Preferred Alternative recommends, among other things, that the Medical Center have a strong campus image along Veterans Boulevard, special gateway architectural features, building orientations toward the downtown, prominent corner building entrances, underground parking (when parking structure heights would otherwise exceed the height of adjacent occupied buildings), a network of internal pedestrian ways, including an accessible pedestrian way along Redwood Creek, pedestrian-oriented streetscapes, crossings and transit stop linkages.

While the Redwood CityPreferred Alternative (Figure 5-2) would be entirely consistent with the draft Kaiser Master Plan Urban Design Guidelines (Appendix C), the proposed project (Figure 2-3) would be mostly consistent with these Guidelines.

As previously described, the Redwood City Preferred Alternative land uses would generally be similar to those of the proposed project, except that active/occupied building space, rather than a parking structure, would be placed within significant downtown gateway parcels and along significant downtown street frontages (Urban Design Policy 3). Draft Kaiser Master Plan Urban Design Guideline Policies 19 and 32, similar to draft Downtown Area Plan policies, recommend that the Main Street/Veterans Boulevard site be visually enhanced through use of active building spaces, prominent architectural features and enhanced landscaping care. These Urban Design policies recommend similar care of the Maple Street/Veterans Boulevard gateway intersection sites. Urban Design Policy 21 also recognizes that the eastern Main Street parcel offers a significant development opportunity due to its high visibility and size. This policy recommends that this site be developed with a high-value, activity-generating form of development that supports downtown revitalization – e.g., office or infill residential above first floor commercial. In addition, draft Kaiser Master Plan Design Guideline Policy 15 recommends that parking structures be lower in height than adjacent buildings. Under the proposed project, Parking Structure B would be taller (five-levels) than the adjacent Cancer Care Center (two-stories).
The potential significant impacts of construction phasing described for the proposed project would be reduced to a less-than-significant impact with Mitigation Measures VQ-5 recommended for the proposed project.

The Redwood City Preferred Alternative, like the proposed project (if developed as proposed), would provide greater overall cohesiveness among campus buildings than currently exists (see Figure 5-5A for existing views.) The Redwood City Preferred Alternative, like the proposed project, would also alter existing views along travel corridors, but would compensate for this through enhancement of the overall character of the Medical Center through thoughtful site planning and urban design standards that seek to enhance/improve the image, visual quality, pedestrian friendliness and economic vitality of the Downtown District.

Figures 5-5B (proposed project) and 5-5C (Redwood City Preferred Alternative) provide computer-generated visual simulations to illustrate the differences between the City Preferred Alternative and the proposed project as viewed from a vantage point west of the Main Street/Veterans Boulevard intersection. From this vantage point, on the eastern Main Street gateway parcel, the proposed project’s two-story, 20,000 GSF Cancer Care Center is visible in the foreground, backed by the larger, four-story, five-level Parking Structure B. The most prominent building, located behind Parking Structure B, is the proposed project’s two and four-story hospital and 10-story nursing tower. A two-story, 20,000 GSF administrative building, complimentary in design to the Cancer Care Center, is also visible in the foreground across Main Street (west side).

Figure 5-5C illustrates the Redwood City Preferred Project Alternative from the same vantage point. From this vantage point, on the eastern Main Street gateway parcel, a three-story mixed-use building is visible in the foreground (which would replace the proposed project’s two-story Cancer Care Center and five-level parking structure). The replacement Hospital and nursing tower, visible behind the three-story mixed-use building, are illustrated here with the same height and massing as the proposed project. A two-story, administrative building, complimentary in design to the mixed-use building, is also visible in the foreground across Main Street (west side).

**Transportation.** The Redwood City Preferred Alternative focuses on building layout and use rather than project size. This alternative is expected to have similar trip generation characteristics as the proposed project. Therefore, no new significant project impacts would be associated with this alternative compared to the proposed project.

Due to an altered site layout associated with the Redwood City Preferred Alternative, it is possible that the location and accessibility of the site driveways would be different than those associated with the proposed project. This alternative could change project-related vehicle circulation in the immediate vicinity of the project area. Since the surrounding intersections are projected to operate at acceptable levels, alternate access points to parking facilities are not expected to result in any additional significant intersection impacts. It is recommended that, if the Redwood City Preferred Alternative becomes the proposed project, a detailed intersection analysis be conducted at the intersections immediately surrounding the proposed campus to assess operational details (e.g., intersection geometrics and on-site queuing characteristics) as would be required of the proposed project and all other project alternatives.
Air Quality. The Redwood City Preferred Alternative’s less-than-significant impacts related to regional air emissions would be the same as the proposed project. This alternative’s less-than-significant impacts related to localized carbon monoxide concentrations, sources of objectionable odors and toxic air contaminants, and cumulative regional air emissions would also be the same as the proposed project. The same mitigation measure proposed for the project (Mitigation Measure TR-3.4) would also apply to this alternative and would reduce project-related motor vehicle emissions to a less-than-significant level.

Noise. The Redwood City Preferred Alternative’s significant and unavoidable impact related to construction noise and vibration would be the same as under the proposed project. This alternative’s potentially significant impacts related to noise generated from mechanical equipment, loading docks, and trash facilities would also be the same as the proposed project. The less-than-significant impact related to an increase in traffic noise would also be the same as the proposed project. Mitigation measures proposed for the project (Mitigation Measures NO-1.1, NO-1.2, NO-2.1 and NO-3.1) would also apply to this alternative and would reduce project-related noise generated from mechanical equipment, loading docks, and trash facilities to a less-than-significant level.

Hazardous Materials. The Redwood City Preferred Alternative’s potentially significant impacts related to hazardous materials exposure as a result of demolition, construction and excavation would be the same as under the proposed project. This alternative’s less-than-significant impacts related to adverse health or safety effects associated with hazardous materials storage, handling, generation, usage and physical safety hazards would also be the same as the proposed project. Mitigation measures proposed for the project (Mitigation Measures HM-1.1 and HM-2.1) would also apply to this alternative and would reduce project-related health or safety effects to a less-than-significant level. The projected 21 percent increase in Kaiser membership and patients in the Redwood City area, which is roughly proportional to projected increases in hazardous materials use and hazardous waste generation, would be the same as the proposed project under this alternative.

Population and Housing. The Redwood City Preferred Alternative would result in the same increase in employment as the proposed project, and as such, the proposed project’s less-than-significant impacts to population and housing would remain under this alternative. The main difference between this alternative and the proposed project is the location of campus plazas, the location of Parking Structure B, and the design and orientation of campus buildings. Employment figures would be the same.

Public Services. The number of new employees would be the same for the Redwood City Preferred Alternative as it would be for the proposed project. As such, this alternative would have the same public services demand as the proposed project. All of the proposed project’s public service impacts would be less than significant, and they would remain so under this alternative. Existing service capacities would satisfy the demands associated with this alternative.
Slipsheet for Figure 5-5A, (side 1), (COLOR), must start on odd Page, no text on back of page

Veterans Boulevard at Main Street looking South: Existing……………………………………………………………………
Slipsheet for Figure 5-5A, (side 2), (COLOR), must start on odd Page, no text on back of page
Slipsheet for **Figure 5-5B, (side 1), (COLOR)**, must start on odd Page, no text on back of page

Veterans Boulevard at Main Street looking South: Proposed Project with Sample Facade .................
Slipsheet for Figure 5-5B, (side 2), (COLOR), must start on odd Page, no text on back of page
Slipsheet for **Figure 5-5C, (side 1), (COLOR)**, must start on odd Page, no text on back of page

Veterans Boulevard at Main Street looking South: Redwood City Preferred Alternative with Facade ....
Slipsheet for Figure 5-5C, (side 2), (COLOR),
Utilities and Service Systems. The Redwood City Preferred Alternative proposes approximately the same amount of net new square footage as the proposed project. Therefore, the proposed project’s significant water supply and cumulative water supply, wastewater and storm drain impacts; potentially significant water distribution, emergency storage system and wastewater collection system impacts; and less-than-significant storm drain system impacts would apply to this alternative as well. Mitigation measures proposed for the project (Mitigation Measures UT-1.1, UT-1.2, UT-2.1, UT-2.2, UT-3.1, UT-5.1, and UT-5.2) would pertain to this alternative and would reduce project-related utility impacts to less-than-significant levels (except for water supply impacts which would remain potentially significant and unavoidable after mitigation).

Marshall Street Hospital Alternative

Land Use. The Marshall Street Hospital Alternative would have the same less-than-significant impacts on land use as the proposed project. This alternative would be consistent with the same Strategic General Plan and Redevelopment Plan for Redevelopment Project #2 policies and Zoning Ordinance regulations as the proposed project. The policies from the draft Downtown Area Plan that may be applicable to the proposed project once the Downtown Area Plan is adopted would also be applicable to this alternative. The primary difference between this alternative and the proposed project is the location and height of the hospital and MOB 3. Land uses at the project site would be the same as under the proposed project.

Visual Quality. The Marshall Street Hospital Alternative would reconstruct the hospital on the northwest corner of Marshall Street and Maple Street and would be seven stories tall, rather than ten stories under the proposed project. Similar to the proposed project, MOBs would be located on the southwest and southeast corners of Veterans Boulevard and Maple Street and on the northeast corner of Maple Street and Marshall Street. However, the Marshall Street Hospital Alternative includes an MOB to be located at the southeast corner of Veterans Boulevard and Walnut Street. The MOBs to be located along Veterans Boulevard would be five stories tall, similar to the proposed project. However, the MOB to be located at the northeast corner of Marshall Street and Maple Street would be five stories tall, rather than the four-story MOB included in the proposed project.

This alternative would slightly reduce the impacts related to the increase of mass and scale at the Medical Center campus in comparison to the proposed project.

This alternative includes a plaza to be located along Maple Street. However, the plaza to be located along Veterans Boulevard under the proposed project is not included in the Marshall Street Hospital Alternative. This alternative would be similar to the proposed project in that it would create a more visually cohesive campus and would eliminate the fragmented and visually incoherent appearance of the existing campus.

Views from major travel corridors would be affected by placement of the Hospital on Marshall Street. The replacement Hospital may no longer be visible along Veterans Boulevard, but may affect views along Marshall and Maple Streets. This alternative is not consistent with a few policies of the draft
Kaiser Master Plan Urban Design Guidelines, and policies of the draft Downtown Area Plan once these draft documents are adopted. For example, this alternative includes a surface parking lot at the Main Street/Bradford Street gateway parcel and contains surface parking behind an administrative clinic at the Main Street/Veterans Boulevard gateway parcel.

Construction phasing impacts would be similar to the proposed project.

**Transportation.** Although the location and height of the buildings differ under this alternative compared to the proposed project, the trip generation characteristics of this alternative are expected to be similar to those under the proposed project. Therefore, no new significant project impacts are expected under the Marshall Street Hospital Alternative compared to the proposed project.

Due to an altered site layout under the Marshall Street Hospital Alternative, it is possible that the location and accessibility of the site driveways would be different than those of the proposed project. This difference could change project-related vehicle circulation in the immediate vicinity of the project area. Since the surrounding intersections are projected to operate at acceptable levels, alternate access points to parking facilities are not expected to result in any additional significant intersection impacts. As with all the alternatives, it is recommended that, if the Marshall Street Hospital Alternative becomes the proposed project, a detailed intersection analysis be conducted at the intersections immediately surrounding the proposed campus to assess operational details (e.g., intersection geometrics and on-site queuing characteristics).

**Air Quality.** The Marshall Street Hospital Alternative’s less-than-significant impacts related to regional air emissions would be the same as the proposed project. This alternative’s less-than-significant impacts related to localized carbon monoxide concentrations, sources of objectionable odors and toxic air contaminants, and cumulative regional air emissions would also be the same as the proposed project. The same mitigation measure proposed for the project (Mitigation Measure TR-3.4) would also apply to this alternative and would reduce project-related motor vehicle emissions to a less-than-significant level.

**Noise.** The Marshall Street Hospital Alternative’s significant and unavoidable impact related to construction noise and vibration would be the same as under the proposed project. This alternative’s potentially significant impacts related to noise generated from mechanical equipment, loading docks, and trash facilities would also be the same as the proposed project. The less-than-significant impact related to an increase in traffic noise would also be the same as the proposed project. Mitigation measures proposed for the project (Mitigation Measures NO-1.1, NO-1.2, NO-2.1 and NO-3.1) would also apply to this alternative and would reduce project-related noise generated from mechanical equipment, loading docks, and trash facilities to a less-than-significant level.

**Hazardous Materials.** The Marshall Street Hospital Alternative’s potentially significant impacts related to hazardous materials exposure as a result of demolition, construction and excavation would be the same as the proposed project. This alternative’s less-than-significant impacts related to adverse health or safety effects associated with hazardous materials storage, handling, generation, usage and physical safety hazards would also be the same as the proposed project. Mitigation measures proposed
for the project (Mitigation Measures HM-1.1 and HM-2.1) would also apply to this alternative and would reduce project-related health or safety effects to a less-than-significant level. The projected 21 percent increase in Kaiser membership and patients in the Redwood City area, which is roughly proportional to projected increases in hazardous materials use and hazardous waste generation, would be the same as the proposed project under this alternative.

**Population and Housing.** The Marshall Street Hospital Alternative would result in the same increase in employment as the proposed project, and as such, the proposed project’s less-than-significant impacts to population and housing would remain under this alternative. The main difference between this alternative and the proposed project is the location of the hospital, MOBs, and parking structures. Employment figures would be the same.

**Public Services.** The Marshall Street Hospital Alternative would have the same public services demand as the proposed project. The number of new employees would be the same as with the proposed project, as would the estimate of new employees choosing to live in Redwood City. All of the proposed project’s public service impacts would be less than significant, and they would remain so under this alternative. Existing service capacities would satisfy the demands associated with this alternative.

**Utilities and Service Systems.** The Walnut Street Closure Alternative proposes approximately the same amount of net new square footage as the proposed project. Therefore, the proposed project’s significant water supply and cumulative water supply, wastewater and storm drain impacts; potentially significant water distribution, emergency storage system and wastewater collection system impacts; and less-than-significant storm drain system impacts would apply to this alternative as well. Mitigation measures proposed for the project (Mitigation Measures UT-1.1, UT-1.2, UT-2.1, UT-2.2, UT-3.1, UT-5.1, and UT-5.2) would pertain to this alternative and would reduce project-related utility impacts to less-than-significant levels (except for water supply impacts which would remain potentially significant and unavoidable after mitigation).

### 5.4 Environmentally Superior Alternative

Sections 21002 and 21081 of CEQA require lead agencies to adopt feasible mitigation measures or feasible environmentally superior alternatives in order to substantially lessen or avoid otherwise significant adverse environmental effects of proposed projects, unless specific social or other conditions make such mitigation measures or alternatives infeasible. Where the environmentally superior alternative also is the No Project Alternative, CEQA Guidelines Section 15126.6(e)(2) requires the EIR to identify an environmentally superior alternative from among the other alternatives. The California Court of Appeals has upheld the requirement to examine an environmentally superior alternative when the adoption of all feasible mitigation measures would leave an unmitigated significant impact (Citizens for Quality Growth vs. City of Mount Shasta (3d Dist. 1988) 198 Cal.App.3d 433 [243 Cal.Rptr. 727]).
The significant unavoidable effects of the proposed project are related to cumulative transportation, construction noise, and water consumption. Implementation of any of the project alternatives would result in the same use of the project site. In addition, staffing levels and patient visits would be similar to the proposed project. Therefore, all of the project build alternatives would result in similar significant unavoidable effects and none would be considered environmentally superior to any of the other build alternatives.

### 5.5 Alternatives Considered but Rejected as Infeasible

The focus and objectives of the proposed project are such that full or partial relocation of the hospital and MOBs would be cost-prohibitive and inconsistent with functional design criteria outlined by Kaiser. The range of possible feasible alternatives that can realistically achieve the project’s objectives is therefore limited. Thus, two alternatives were considered but rejected in the development of the proposed project.

Both of these alternatives entailed the use of other sites in Redwood City, such as a site across Veterans Boulevard that currently houses a Kmart. The first alternative included the relocation of the entire campus to a different site and the second included locating some uses at a different site and maintaining the existing site for the remaining uses. Both of these alternatives would be cost-prohibitive in that they would require the acquisition of a new site. It would also be difficult to find another site that would fit the campus-style layout that Kaiser desires. It would be even more difficult to find such a site within Redwood City, where Kaiser would need to remain in order to serve its membership. The first alternative would fail to accomplish Kaiser’s objectives of maintaining the Redwood City Hospital at its present location to continue to serve the Redwood City community.

Problems with the second alternative included inconsistencies with Kaiser’s functional design criteria. Kaiser requires that walking distances between member/patient/visitor parking and building destinations are as short as possible for safety and convenience; that outpatient diagnostic and treatment and support functions of the hospital are located immediately adjacent to the main access routes and the main parking facility; that inpatient and outpatient components of services (ambulatory surgery area, imaging departments, etc.) are adjacent to one another; that patients do not have to cross roads and have easy drop-off and pick-up access; and that patient/visitor parking is within 200 feet or less of the main building entrances. The second alternative would be inconsistent with these functional design criteria because it would divide the campus uses in two. Instead of fostering a compact, efficient campus with adjacent uses, it would create sprawling, disjunctive uses. This alternative would also prevent Kaiser from fully accomplishing the following project objectives: consolidation of treatment and support functions at a single Medical Center location, creation of functional and operational relationships based on collaboration and coordination of multiple teams of specialists, and creation of a campus environment that is easy to negotiate for both pedestrians and vehicles.
Section 6
List of Preparers

6.1 LEAD AGENCY

Michael Church, Manager of Community Services Department, City of Redwood City
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6.2 EIR CONSULTANTS

EIP Associates. Responsible for EIR project management and document production and technical analysis of aesthetics, air quality, hazardous materials, land use, noise, population and housing, public services, and utilities and service systems.

   Rodney Jeung, AICP, M.R.P., Urban and Regional Planning: Project Director
   Michael K. Kay, B.A., Geography: Project Manager
   Dorney Burgdorf, B.A., Environmental Studies: Project Description, Visual Quality, Air Quality, Noise, Other CEQA Considerations
   Clifford Nale, B.S., Engineering Geology: Air Quality, Noise, Hazardous Materials
   Katie Morange, B.A., Geography/Environmental Studies: Public Services, Alternatives Analysis
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   Sohrab Rashid, B.S., Mechanical Engineering: Project Manager
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   Angela Lin, B.A., Liberal Arts: Visual Simulations

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