

DRAFT

ENVIRONMENTAL IMPACT REPORT

**FOR THE
2 OSBORN
STERLING MEDICAL OFFICE BUILDING**

Prepared For:

CITY OF IRVINE
One Civic Center Plaza
Irvine, CA 92606
(949) 724-6316
Stacy Tran, Senior Planner
Ann Wu, Senior Planner

Prepared By:

TEMPLETON
PLANNING GROUP

20250 Acacia Street, Suite 260
Newport Beach, CA 92660
(949) 724-0640
Peter Templeton, Principal
Al Armijo, Environmental Director
Josh Cortez, Associate Planner

Rev. September, 2017

IRV-35

This page is intentionally left blank.

Table of Contents

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION.....	1-1
1.1 PURPOSE OF AN ENVIRONMENTAL IMPACT REPORT	1-1
1.2 NOTICE OF PREPARATION & INITIAL STUDY	1-2
1.3 INCORPORATION BY REFERENCE	1-5
1.4 FINAL EIR CERTIFICATION	1-5
2.0 PROJECT DESCRIPTION	2-1
2.1 PROJECT LOCATION	2-1
2.2 PROJECT CHARACTERISTICS	2-1
2.3 PROJECT APPROVALS	2-2
2.4 PROJECT SITE HISTORY/BACKGROUND.....	2-3
2.5 LEAD, RESPONSIBLE, AND TRUSTEE AGENCIES	2-3
2.6 PROJECT OBJECTIVES	2-4
3.0 ENVIRONMENTAL SETTING	3-1
3.1 INTRODUCTION	3-1
3.2 ENVIRONMENTAL SETTING	3-1
3.2.1 LOCATION & LAND USES	3-1
3.3 ASSUMPTIONS REGARDING CUMULATIVE IMPACTS	3-2
4.0 ENVIRONMENTAL IMPACTS.....	4.1-1
<u>4.1 AESTHETICS.....</u>	<u>4.1-1</u>
4.1.1 ENVIRONMENTAL SETTING	4.1-1
4.1.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.1-4
4.1.3 THRESHOLDS OF SIGNIFICANCE	4.1-5
4.1.4 ENVIRONMENTAL IMPACTS	4.1-5
4.1.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.1-13
4.1.6 PROJECT DESIGN FEATURES	4.1-13
4.1.7 MITIGATION MEASURES	4.1-13
4.1.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.1-13
4.1.9 CUMULATIVE IMPACTS.....	4.1-13
<u>4.2 AGRICULTURAL RESOURCES</u>	<u>4.2-1</u>
4.2.1 ENVIRONMENTAL SETTING	4.2-1
4.2.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.2-1
4.2.3 THRESHOLDS OF SIGNIFICANCE	4.2-1
4.2.4 ENVIRONMENTAL IMPACTS	4.2-1
4.2.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.2-2
4.2.6 PROJECT DESIGN FEATURES	4.2-2
4.2.7 MITIGATION MEASURES	4.2-2
4.2.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.2-2
4.2.9 CUMULATIVE IMPACTS.....	4.2-3

Table of Contents

<u>Section</u>	<u>Page</u>
4.3 AIR QUALITY.....	4.3-1
4.3.1 ENVIRONMENTAL SETTING	4.3-1
4.3.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.3-9
4.3.3 THRESHOLDS OF SIGNIFICANCE	4.3-12
4.3.4 ENVIRONMENTAL IMPACTS	4.3-15
4.3.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.3-22
4.3.6 PROJECT DESIGN FEATURES	4.3-22
4.3.7 MITIGATION MEASURES	4.3-22
4.3.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.3-23
4.3.9 CUMULATIVE IMPACTS.....	4.3-23
4.4 BIOLOGICAL RESOURCES.....	4.4-1
4.4.1 ENVIRONMENTAL SETTING	4.4-1
4.4.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.4-1
4.4.3 THRESHOLDS OF SIGNIFICANCE	4.4-9
4.4.4 ENVIRONMENTAL IMPACTS	4.4-9
4.4.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.4-11
4.4.6 PROJECT DESIGN FEATURES	4.4-11
4.4.7 MITIGATION MEASURES	4.4-11
4.4.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.4-12
4.4.9 CUMULATIVE IMPACTS.....	4.4-12
4.5 CULTURAL RESOURCES.....	4.5-1
4.5.1 ENVIRONMENTAL SETTING	4.5-1
4.5.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.5-3
4.5.3 THRESHOLDS OF SIGNIFICANCE	4.5-6
4.5.4 ENVIRONMENTAL IMPACTS	4.5-6
4.5.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.5-7
4.5.6 PROJECT DESIGN FEATURES	4.5-7
4.5.7 MITIGATION MEASURES	4.5-7
4.5.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.5-8
4.5.9 CUMULATIVE IMPACTS.....	4.5-8
4.6 GEOLOGY/SOILS.....	4.6-1
4.6.1 ENVIRONMENTAL SETTING	4.6-1
4.6.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.6-3
4.6.3 THRESHOLDS OF SIGNIFICANCE	4.6-4
4.6.4 ENVIRONMENTAL IMPACTS	4.6-5
4.6.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.6-9
4.6.6 PROJECT DESIGN FEATURES	4.6-9
4.6.7 MITIGATION MEASURES	4.6-9
4.6.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.6-10
4.6.9 CUMULATIVE IMPACTS.....	4.6-10

Table of Contents

<u>Section</u>	<u>Page</u>
4.7 GREENHOUSE GAS EMISSIONS.....	4.7.-1
4.7.1 ENVIRONMENTAL SETTING	4.7-1
4.7.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.7-7
4.7.3 THRESHOLDS OF SIGNIFICANCE	4.7-16
4.7.4 ENVIRONMENTAL IMPACTS	4.7-16
4.7.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.7-21
4.7.6 PROJECT DESIGN FEATURES	4.7-21
4.7.7 MITIGATION MEASURES	4.7-25
4.7.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.7-25
4.7.9 CUMULATIVE IMPACTS.....	4.7-26
4.8 HAZARDS/HAZARDOUS MATERIALS	4.8-1
4.8.1 ENVIRONMENTAL SETTING	4.8-1
4.8.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.8-2
4.8.3 THRESHOLDS OF SIGNIFICANCE	4.8-6
4.8.4 ENVIRONMENTAL IMPACTS	4.8-7
4.8.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.8-9
4.8.6 PROJECT DESIGN FEATURES	4.8-10
4.8.7 MITIGATION MEASURES	4.8-10
4.8.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.8-10
4.8.9 CUMULATIVE IMPACTS.....	4.8-10
4.9 HYDROLOGY/WATER QUALITY	4.9-1
4.9.1 ENVIRONMENTAL SETTING	4.9-1
4.9.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.9-2
4.9.3 THRESHOLDS OF SIGNIFICANCE	4.9-2
4.9.4 ENVIRONMENTAL IMPACTS	4.9-3
4.9.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.9-9
4.9.6 PROJECT DESIGN FEATURES	4.9-9
4.9.7 MITIGATION MEASURES	4.9-9
4.9.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.9-9
4.9.9 CUMULATIVE IMPACTS.....	4.9-9
4.10 LAND USE & PLANNING	4.10-1
4.10.1 ENVIRONMENTAL SETTING	4.10-1
4.10.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.10-1
4.10.3 THRESHOLDS OF SIGNIFICANCE	4.10-3
4.10.4 ENVIRONMENTAL IMPACTS	4.10-4
4.10.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.10-7
4.10.6 PROJECT DESIGN FEATURES	4.10-7
4.10.7 MITIGATION MEASURES	4.10-7
4.10.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.10-7
4.10.9 CUMULATIVE IMPACTS.....	4.10-7

Table of Contents

<u>Section</u>	<u>Page</u>
4.11 MINERAL RESOURCES	4.11-1
4.11.1 ENVIRONMENTAL SETTING	4.11-1
4.11.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.11-1
4.11.3 THRESHOLDS OF SIGNIFICANCE	4.11-1
4.11.4 ENVIRONMENTAL IMPACTS	4.11-1
4.11.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.11-1
4.11.6 PROJECT DESIGN FEATURES	4.11-2
4.11.7 MITIGATION MEASURES	4.11-2
4.11.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.11-2
4.11.9 CUMULATIVE IMPACTS.....	4.11-2
4.12 NOISE.....	4.12-1
4.12.1 ENVIRONMENTAL SETTING	4.12-2
4.12.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.12-8
4.12.3 THRESHOLDS OF SIGNIFICANCE	4.12-12
4.12.4 ENVIRONMENTAL IMPACTS	4.12-12
4.12.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.12-22
4.12.6 PROJECT DESIGN FEATURES	4.12-22
4.12.7 MITIGATION MEASURES	4.12-22
4.12.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.12-22
4.12.9 CUMULATIVE IMPACTS.....	4.12-23
4.13 POPULATION & HOUSING	4.13-1
4.13.1 ENVIRONMENTAL SETTING	4.13-1
4.13.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.13-5
4.13.3 THRESHOLDS OF SIGNIFICANCE	4.13-6
4.13.4 ENVIRONMENTAL IMPACTS	4.13-6
4.13.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.13-7
4.13.6 PROJECT DESIGN FEATURES	4.13-7
4.13.7 MITIGATION MEASURES	4.13-7
4.13.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.13-7
4.13.9 CUMULATIVE IMPACTS.....	4.13-7
4.14 PUBLIC SERVICES & UTILITIES	4.14-1
4.14.1 ENVIRONMENTAL SETTING	4.14-1
4.14.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.14-2
4.14.3 THRESHOLDS OF SIGNIFICANCE	4.14-2
4.14.4 ENVIRONMENTAL IMPACTS	4.14-3
4.14.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.14-4
4.14.6 PROJECT DESIGN FEATURES	4.14-4
4.14.7 MITIGATION MEASURES	4.14-4
4.14.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.14-4
4.14.9 CUMULATIVE IMPACTS.....	4.14-4

Table of Contents

<u>Section</u>	<u>Page</u>
4.15 RECREATION	4.15-1
4.15.1 ENVIRONMENTAL SETTING	4.15-1
4.15.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.15-4
4.15.3 THRESHOLDS OF SIGNIFICANCE	4.15-4
4.15.4 ENVIRONMENTAL IMPACTS	4.15-4
4.15.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.15-4
4.15.6 PROJECT DESIGN FEATURES	4.15-5
4.15.7 MITIGATION MEASURES	4.15-5
4.15.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.15-5
4.15.9 CUMULATIVE IMPACTS.....	4.15-5
4.16 TRANSPORTATION & TRAFFIC	4.16-1
4.16.1 ENVIRONMENTAL SETTING	4.16-1
4.16.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.16-3
4.16.3 THRESHOLDS OF SIGNIFICANCE	4.16-11
4.16.4 ENVIRONMENTAL IMPACTS	4.16-12
4.16.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.16-33
4.16.6 PROJECT DESIGN FEATURES	4.16-33
4.16.7 MITIGATION MEASURES	4.16-34
4.16.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.16-34
4.16.9 CUMULATIVE IMPACTS.....	4.16-34
4.17 TRIBAL CULTURAL RESOURCES.....	4.17-1
4.17.1 ENVIRONMENTAL SETTING	4.17-1
4.17.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.17-1
4.17.3 THRESHOLDS OF SIGNIFICANCE	4.17-6
4.17.4 ENVIRONMENTAL IMPACTS	4.17-6
4.17.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.17-7
4.17.6 PROJECT DESIGN FEATURES	4.17-7
4.17.7 MITIGATION MEASURES	4.17-7
4.17.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.17-8
4.17.9 CUMULATIVE IMPACTS.....	4.17-8
4.18 UTILITIES & SERVICE SYSTEMS.....	4.18-1
4.18.1 ENVIRONMENTAL SETTING	4.18-1
4.18.2 EXISTING REGULATIONS & STANDARD CONDITIONS	4.18-1
4.18.3 THRESHOLDS OF SIGNIFICANCE	4.18-3
4.18.4 ENVIRONMENTAL IMPACTS	4.18-4
4.18.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION	4.18-6
4.18.6 PROJECT DESIGN FEATURES	4.18-6
4.18.7 MITIGATION MEASURES	4.18-6
4.18.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION	4.18-6
4.18.9 CUMULATIVE IMPACTS.....	4.18-7

Table of Contents

<u>Section</u>	<u>Page</u>
5.0 GROWTH INDUCING IMPACTS TO THE PROPOSED PROJECT / SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS	5-1
6.0 ALTERNATIVES TO THE PROPOSED PROJECT	6-1
6.1 PURPOSE & SCOPE	6-1
6.2 PROJECT OBJECTIVES	6-2
6.3 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS.....	6-2
6.4 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS.....	6-2
6.5 IMPACT ANALYSIS.....	6-5
6.5.1 NO PROJECT ALTERNATIVE(ALT #1).....	6-5
6.5.2 PROJECT WITH TRANSFER DEVELOPMENT INTENSITY ALTERNATIVE (ALT #2)	6-9
6.5.3 REDUCED MEDICAL OFFICE BUILDING HEIGHT/REDUCED SQUARE FOOTAGE WITH TRANSFER OF DEVELOPMENT INTENSITY ALTERNATIVE(ALT #3)	6-13
6.5.4 REDUCED MEDICAL OFFICE BUILDING HEIGHT/REDUCED SQUARE FOOTAGE WITH NO TRANSFER OF DEVELOPMENT INTENSITY ALTERNATIVE(ALT #4)	6-18
6.5.5 GENERAL OFFICE/REDUCED BUILDING HEIGHT/REDUCED SQUARE FOOTAGE WITH TRANSFER OF DEVELOPMENT INTENSITY ALTERNATIVE (ALT #5)	6-22
6.5.6 GENERAL OFFICE/REDUCED BUILDING HEIGHT/REDUCED SQUARE FOOTAGE WITH NO TRANSFER OF DEVELOPMENT INTENSITY ALTERNATIVE (ALT #6)	6-26
6.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE	6-31
7.0 BIBLIOGRAPHY.....	7-1
8.0 APPENDICES.....	A-1
A. Notice of Preparation and Initial Study	
B. NOP Public Comments (Oct. 26, 2016 to Nov. 28, 2017)	
C. Aesthetics Study	
D. Light and Glare Study	
E. Air Quality and Greenhouse Gas Analysis	
F. Revised Geotechnical Foundation Investigation	
G. Phase One Environmental Site Assessment	
H. Water Quality Management Plan	
I. Noise and Vibration Impact Analysis	
J. Traffic Study	

List of Exhibits

<u>Exhibit</u>	<u>Page</u>
2-1 Regional Location Map.....	2-5
2-2 Local Vicinity Map.....	2-6
2-3 Existing Site - Aerial.....	2-7
2-4 Proposed Site Plan	2-8
4-1 Aesthetic Comparison – Baseline Data.....	4.1-15
4-2 Aesthetic Comparison – Analysis	4.1-16
4-3 Existing Viewsheds – On-Site	4.1-17
4-4 Existing Viewsheds – Off-Site.....	4.1-18
4-5 Building-to-Building Distances – Existing vs. Proposed	4.1-19
4-6 Proposed Landscape Plan	4.1-20
4-7 Lines of Sight – East & West Elevations.....	4.1-21
4-8 Rendered View – From the Northeast	4.1-22
4-9 Rendered View – From the Northwest	4.1-23
4-10 Rendered View – From the Southwest	4.1-24
4-11 Rendered View – From the Southeast	4.1-25
4-12 Study Area Intersections	4.16-9

List of Tables

<u>Table</u>	<u>Page</u>
1.2-A Public Comments Matrix	1-4
4.3-A Ambient Air Quality Standards	4.3-3
4.3-B Preliminary Health Effects of Common Air Pollutants	4.3-4
4.3-C South Coast Air Basin Attainment Status	4.3-7
4.3-D Attainment Years	4.3-11
4.3-E Construction Schedule 1	4.3-17
4.3-F Short-Term Regional Construction Emissions	4.3-18
4.3-G Construction Localized Significance Thresholds Impacts.....	4.3-19
4.3-H Opening Year Regional Operational Emissions	4.3-20
4.3-I Long-Term Operational Localized Significance Thresholds.....	4.3-21
4.7-A Global Warming Potential for Selected Greenhouse Gases	4.7-2
4.7-B Construction Greenhouse Gas Emissions	4.7-18
4.7-C Operational Greenhouse Gas Emissions.....	4.7-20
4.7-D Project Compliance with Greenhouse Gas Emission Reduction Strategies	4.7-22
4.9-A Pervious/Impervious Surface Areas.....	4.9-6
4.9-B Pre- and Post-Development Peak Flow Rates	4.9-7
4.10-A Multi-Use District Development Standards (City Zoning Ordinance)	4.10-3
4.12-A Common Noise Levels.....	4.12-3
4.12-B Land Use Noise Compatibility.....	4.12-4
4.12-C Existing Traffic Noise Levels	4.12-7
4.12-D Interior & Exterior Noise Standards Energy Average (CNEL)	4.12-9
4.12-E Ground-Borne Vibration & Ground-Borne Noise Impact Criteria For General Assessment	4.12-11
4.12-F Existing Traffic Noise Levels Without and With Project.....	4.12-12
4.12-G 2020 Traffic Noise Levels Without and With Project	4.12-12
4.12-H 2035 Traffic Noise Levels Without and With Project	4.12-13
4.12-I Post 2035 Traffic Noise Levels Without and With Project	4.12-13
4.13-A City of Irvine Population & Housing, 2000-2010 and 2014/2015.....	4.13-1
4.13-B Orange County Population & Housing, 2000-2010 and 2014/2015.....	4.13-1
4.13-C City of Irvine Demographic Projections	4.13-3
4.13-D Historic Population Growth in Irvine – 1980 to 2012	4.13-4
4.13-E Employment by Industry, 2006-2010	4.13-5
4.16-A Relationship of ICU to LOS	4.16-10
4.16-B Delay to Level of Service	4.16-10
4.16-C Daily Capacities of Study Area Roadways	4.16-11
4.16-D Trip Generation Comparison	4.16-13
4.16-E Existing Intersection LOS Summary	4.16-14
4.16-F Existing ADT Volumes and V/C Ratios.....	4.16-15
4.16-G 2020 Approved Intersection LOS Summary.....	4.16-16
4.16-H 2020 Approved ADT Volumes and V/C Ratios	4.16-17
4.16-I 2020 Pending Intersection LOS Summary	4.16-18

List of Tables

<u>Table</u>	<u>Page</u>
4.16-J 2020 Pending ADT Volumes and V/C Ratios	4.16-20
4.16-K 2035 Approved Intersection LOS Summary.....	4.16-21
4.16-L 2035 Approved ADT Volumes and V/C Ratios	4.16-22
4.16-M 2035 Pending Intersection LOS Summary	4.16-24
4.16-N 2035 Pending ADT Volumes and V/C Ratios	4.16-25
4.16-O Post-2035 Approved Intersection LOS Summary	4.16-27
4.16-P Post-2035 Approved ADT Volumes and V/C Ratios	4.16-28
4.16-Q Post-2035 Pending Intersection LOS Summary	4.16-29
4.16-R Post-2035 Pending ADT Volumes and V/C Ratios	4.16-30
6-A Summary of Development Alternatives.....	6-3

1.0 ***INTRODUCTION***

1.1 PURPOSE OF AN ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act (CEQA) became law in 1970. CEQA established a process that would provide the following and that would become the basis of any Environmental Impact Report (EIR).

- Information for the public and decisions-makers about potential environmental impacts of a proposed project
- Identification of ways environmental damage can be avoided or significantly reduced
- Prevention of significant avoidable damage to the environment by requiring changes in projects through use of alternatives or mitigation measures when the lead governmental agency finds the changes to be feasible
- Public disclosure of reasons why a governmental agency approved a project in the manner the agency chose if significant environmental effects are involved

Section 15151 of the *State CEQA Guidelines* establishes standards of adequacy for an EIR as follows.

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. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

CEQA indicates (Public Resources Code Section 21082.2[e]) that “Statements in an environmental impact report and comments with respect to an environmental impact report shall not be deemed determinative of whether the project may have a significant effect on the environment.” The decision-making body findings certifying the environmental document ultimately will determine the significant effects of the project under consideration. This EIR has been prepared in accordance with State CEQA Guidelines and City of Irvine CEQA Manual.

The overall purpose of this Draft Environmental Impact Report is to provide sufficient information about potential environmental impacts of the proposed project to allow the City of Irvine to make an informed decision regarding the project. Specific discretionary actions to be considered by the City are described in this Section.

Lead Agency and Contacts

Lead Agency: City of Irvine
Community Development Department
1 Civic Center Plaza
Irvine, California 92606
Contact: Stacy Tran, Senior Planner;
stran@cityofirvine.org; 949.724.6316

Project Applicant: Sterling America Investments, Inc.
2 Osborn
Irvine, California 92604

1.2 NOTICE OF PREPARATION & INITIAL STUDY

Based on the Initial Study (Appendix A), the City of Irvine has determined an Environmental Impact Report would be the appropriate environmental document for the project. The City of Irvine issued a Notice of Preparation (NOP) and Initial Study on October 26, 2016. The City sent the NOP and Initial Study to the California State Clearinghouse, responsible agencies, and interested parties (Appendix A). Comments received during the NOP review period (October 26, 2016 to November 28, 2016) are provided in Appendix B. The City received more than 100 comments from the public and responding agencies. Areas of concern included the following:

- Traffic impacts - particularly along project vicinity roadways and nearby intersections;
- General Plan Amendment/Zone Change – potentially cause future intensification of development on other properties in the project vicinity;
- Increased traffic, noise (short-term and long-term) air pollution, water resources, light and glare;
- Dangers to pedestrians,
- Architectural style, height, and “bulk” of the new medical office building; and
- Unnecessary increase in medical office space and additional generation of medical waste disposal.

Public Scoping Meeting

A public scoping meeting was held on November 10, 2016, to assist the City in identifying potential environmental impacts, to solicit public input about potential environmental issues associated with project development and operation, and to explain the environmental process with the public. Approximately 70 public members attended the Public Scoping Meeting. The primary areas of concern for those who attended the Public Scoping Meeting were the following.

- Building Bulk and Height –the concern was that the proposed medical office building would be an increase in height and bulk compared to the existing building, particularly along the south side of Barranca Parkway.
- Traffic Increase –members of the community asserted the concern that vehicular traffic in Woodbridge Village – particularly at the Barranca Parkway/East Yale Loop and Barranca Parkway/Jeffrey Road intersections – is and would be congested.
- Noise Increase –the concern was that construction-related noise would affect nearby sensitive uses (Mardan School and the senior residential complex) and result in higher long-term noise levels.
- General Plan Amendment/Zone Change –the concern was that the discretionary actions could establish a precedent for future intensification of development in the project vicinity.

The scope of the Draft Environmental Report was determined based on comments received in response to the Notice of Preparation/ Initial Study and community comments made at, and subsequent to, the Public Scoping Meeting conducted on November 10, 2016. The Initial Study and NOP review process identified environmental topical categories as having the potential to result in significant impacts. This Draft Environmental Impact Report discusses Potentially Significant Impacts and Less Than Significant Impacts with Mitigation. Issues considered Less Than Significant or No Impact are identified but addressed in less detail. Refer to Appendix A to review the Initial Study for the proposed project.

Table 1.2-A provides a summary of issues identified by commenting agencies and the public during the NOP period, together with a reference to sections in the Draft Environmental Impact Report where the comments are addressed.

Number of Comments Received	Topics of Primary Public Comments	Addressing Section
10	Air Pollution	Section 4.3 – Air Quality
48	Architectural Style, Building Height, Building Bulk, Square feet	Section 4.1 - Aesthetics
1	Light and Glare	Section 4.1 - Aesthetics
8	Medical Waste Disposal	Section 4.8 – Hazards/Hazardous Materials
14	Noise	Section 4.12 - Noise
4	Pedestrian Safety	Section 4.16 – Transportation & Traffic
67	Traffic Impacts	Section 4.16 – Transportation & Traffic
3	Water Resources	Section 4.14 – Public Services
44	Precedent Setting/ Against GPA & ZC	Comment is not Environmentally Related

1.3 INCORPORATION BY REFERENCE

The following documents are incorporated by reference in this Draft Environmental Impact Report in a manner consistent with State CEQA Guidelines Section 15150 and are available for review at the City of Irvine, Community Development Department.

- City of Irvine General Plan (as amended)
- City of Irvine Municipal Code (as amended)
- City of Irvine Zoning Ordinance (as amended)
- City of Irvine CEQA Manual (as amended)

In addition, this Draft Environmental Impact Report relies upon previously adopted regional and Statewide plans and programs such as the South Coast Air Quality Management District Management Plan and the Orange County Central-Coastal Natural Communities Conservation Plan/Habitat Conservation Plan. Whenever existing environmental documentation or previously-prepared documents and studies are used in preparation of this Draft Environmental Impact Report, the information is summarized for the reader's convenience and incorporated by reference. Section 10 (References) contains a complete listing of references utilized in preparation of this Draft Environmental Impact Report.

1.4 FINAL EIR CERTIFICATION

This Draft Environmental Impact Report (DEIR) is being circulated for public review for a 45-day period. The City of Irvine will review all written comments upon completion of the 45-day review period and prepare written responses for each comment. Thereafter, a Final

Environmental Impact Report will be prepared that incorporates all comments received, responses to those comments, a Mitigation Monitoring and Reporting Program, and any changes to the DEIR that result from the comments received. The Final Environmental Impact Report will be presented to the City of Irvine Planning Commission for a potential recommendation of certification as the environmental document for the Project and to the City Council for potential certification as the environmental document for the project. The City will notify all persons who commented on the DEIR about the availability of the Final Environmental Impact Report and the Planning Commission and City Council public hearings dates.

This DEIR is available to the general public for review at the following locations:

Irvine City Hall Community Development Department One Civic Center Plaza Irvine, CA 92606	Heritage Park Library 14361 Yale Avenue Irvine, CA 92604
University Park Library 4512 Sandburg Way Irvine, CA 92612	Katie Wheeler Library 13109 Old Myford Road Irvine, CA 92602
Irvine Lakeview Senior Center 20 Lake Road Irvine, CA 92604	Woodbridge Village Association 31 Creek Road Irvine, CA 92604

The DEIR is also posted on the City of Irvine Web site – www.cityofirvine.org/2osborn

All comments received from agencies and individuals about the DEIR will be accepted during the 45-day public review period, which will start on September 8, 2017 and end on October 23, 2017. All comments should be sent to:

Stacy Tran, Senior Planner
Community Development Department
City of Irvine
One Civic Center Plaza
P. O. Box 19575
Irvine, CA 92623-9575
Telephone: 949.724.6316
Fax: 949.724.6440
stran@cityofirvine.org

Responses to all public comments received during the public-review period of the DEIR will be provided at least 10 days prior to final action on the project. The City Council will make findings regarding the extent and nature of the impacts as presented in the Final Environmental Impact Report. The Final Environmental Impact Report will require certification by the City of Irvine City Council prior to approval or denial of the project. Public input is encouraged at all public hearings before the City.

Type of EIR and Level of Environmental Review

CEQA provides flexibility for a lead agency in regard to preparation of different types of Environmental Impact Reports (EIR[s]) (i.e., Program EIR or Project EIR). In addition, a lead agency may focus environmental analyses on issues appropriate for decision at each level of environmental review (Public Resources Code Section 21093{a}). CEQA provides that the “degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR” (*State CEQA Guidelines*, Section 15146). CEQA Guidelines Section 15161 states that a “Project EIR,” “should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation.” This EIR is a “Project EIR.”

Pursuant to State CEQA Guidelines (Sections 15126.2 and 15126.4), the DEIR should identify any potentially significant adverse impacts and recommend mitigation that would reduce these impacts to levels of insignificance or eliminate the impacts entirely.

Information contained in the Project Description establishes the basis for analyzing project-related environmental impacts.

Impacts Considered Less than Significant

The following environmental impact categories are not considered to be affected significantly by proposed project development or operation. Therefore, the impact analyses related to the topics is not discussed in detail in this DEIR.

- Agricultural Resources
- Biological Resources
- Energy Resources (addressed in Section 4.7 – Greenhouse Gas Emissions)
- Hydrology and Water Quality
- Mineral Resources
- Population and Housing
- Recreation
- Public Services
- Utilities and Service Systems

Potentially Significant Adverse Impacts

Project development and operation would result in potentially significant impacts to the following environmental impact categories.

- Aesthetics
- Air Quality

- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise
- Transportation and Traffic

Unavoidable Significant Adverse Impacts

The DEIR identifies significant and unavoidable adverse impacts, as defined by CEQA that would result from development and/or operation of the proposed project. Unavoidable adverse impacts may be considered significant on a project specific basis or cumulative basis. If the City, as Lead Agency, determines unavoidable significant adverse impacts would result from project development or operation, it must prepare a Statement of Overriding Considerations before it can approve the project. A Statement of Overriding Considerations is a finding that the decision-making body has balanced the benefits of the proposed project against its unavoidable significant environmental effects and has determined the benefits of the project outweigh the adverse effects and, therefore, the adverse effects are considered to be acceptable. The DEIR did not find any project-related impacts to be significant and unavoidable.

Lead, Responsible, and Trustee Agencies:

This Draft Environmental Impact Report has been prepared in accordance with the California Environmental Quality Act of 1970 (CEQA), as amended (Public Resources Code Section 21000, et seq.), the California CEQA Guidelines, and the City of Irvine CEQA Guidelines, regulations and procedures.

The City of Irvine is the Lead Agency in that it is responsible for project discretionary and ministerial approvals and supervision. There are no other public agencies with jurisdiction over approvals for the project.

Discretionary and Ministerial Project Approvals

The project requires the following discretionary approvals from the City of Irvine:

- General Plan Amendment – The General Plan Amendment would increase the total square footage allotted to Multi-Use in Planning Area 15 by 30,785 square feet; from 440,158 square feet to 470,943 square feet. Table A-1 Maximum Square Footage for Planning Area 15 would be commensurately increased from 2,158,966 square feet to 2,189,751 square feet.
- Zone Change – The Zone Change would allow square footages as indicated in the General Plan Amendment paragraph above in the 3.1 Multi-Use area within Planning Area 15.

- Master Plan – The Master Plan would establish design of the proposed medical office building relative to building bulk (area), height, setbacks, elevations, parking and landscaping.
- Ministerial Permits – Project development would require ministerial permits that would include but not be limited to demolition, grading, building, and landscaping permits subject to City requirements.

2.0 ***PROJECT DESCRIPTION***

The Project Applicant, Sterling America Investments, Inc., is requesting a General Plan Amendment, Zone Change and Master Plan approvals to demolish an existing single-story (16,015 square foot) medical office building with 122 parking spaces and construct a two-story medical office building (46,800 square feet) with 260 parking spaces on a 2.86-acre site located at 2 Osborn. The General Plan Amendment and Zone Change applications would increase development intensities allowed in the Multi-Use planning designation by amending applicable maximum square footage tables and exhibits within the Woodbridge Village (Planning Area 15) to allow for the proposed development. The Master Plan establishes design relative to building size, height, and setbacks; floor plans; architectural elevations; parking; and landscaping.

2.1 PROJECT LOCATION

The project site is directly bordered by streets – to the north is Barranca Parkway and one- and two-story single-family residences beyond; to the south are Osborn and the Mardan School (private) beyond; to the east are Willard and the Kaiser Permanente Health Care facility beyond; and, to the west are Lyon and the Irvine Unified School District administrative offices. Barranca Parkway is a four-lane roadway with a left turn lane proceeding from west-bound Barranca Parkway south to Lyon at the northwest corner of the project site. The other three bordering streets are two lane roadways. See Exhibits 2-1 to 2-3 that include the regional and local vicinity map along with an existing aerial map.

2.2 PROJECT CHARACTERISTICS

The proposed two-story 46,800 square foot medical office building is designed above an open, ground level parking garage (Exhibit 2-4, proposed site plan). The building footprint would measure 220 feet by 105 feet and thereby cover 37.6 percent of the 124,494 square foot property. The building would extend to a height of 43 feet, 8 inches to its parapet plus five additional feet to the top of the mechanical screen on the roof for a maximum height of 48 feet, 8 inches. Building materials would consist of brick, metal and glass. The project would be accessible from Osborn, as it is now, but with one fewer entrance, and with the entrance moving to the east slightly to be offset with the Mardan School driveway. Building setbacks are proposed as follows: from Barranca Parkway – 76 feet (minimum City requirement is 45 feet); from Lyon – 88 feet (minimum City requirement is 25 feet); from Osborn – 57 feet (minimum City requirement is 25 feet); and, from Willard – 161 feet (minimum City requirement is 25 feet).

A total of 260 parking spaces are proposed. The ground level parking garage would contain 44 full-size spaces, 10 clean air/electric spaces and three accessible spaces. Uncovered surface parking would include 129 full-size spaces, 59 long-term spaces, 11 clean air/electric spaces and four accessible spaces. Vehicular access to the surface parking lot is proposed via Osborn in the southeastern portion of the property.

Minimum six foot public sidewalks are proposed along the entire project perimeter on Barranca Parkway, Lyon, Willard and Osborn. The main entrance to the proposed building would be provided via an entry on the easterly side of the structure. An accessible path of travel connects an Orange County Transportation Authority (OCTA) bus stop fronting the project on Barranca Parkway to the main entrance.

Landscaping on the project site would occupy 30,876 square feet (approximately 25 percent of the project site) that include trees and surface planting along the perimeter of the site and within the surface parking lot. Eighteen existing trees would be retained and be supplemented with other tree/shrub plantings.

The landscape plan, Exhibit 4-5, Proposed Landscape Plan, proposes to preserve 23 existing trees and plant 10 proposed liquid amber trees, 5 proposed crape myrtle trees, 12 tipu trees, 8 Afghan pines, and 21 California sycamore trees. The California sycamore trees are interior to the site and spread throughout the parking lot. The remaining 58 trees are spread around the perimeter of the site. Along Barranca Parkway, to the north, there would be 12 preserved trees, 6 liquid ambers and 6 Afghan pines proposed in 36-inch boxes. Liquid amber trees are fast growing and should grow two to three feet each year for the first five years. They are deciduous and will lose their leaves for about 3 months of the year in winter. The leaves in the autumn will change from green to yellow to orange to red then purple as they begin to fall. When the canopy is grown and full of green leaves the tree is an effective screen, capable of blocking the sunlight. Liquid ambers can grow to 60 to 75 feet high and have a canopy at maturity of 40 to 50 feet wide. The proposed landscape plan shows the trees planted about 25 feet apart. The north, east, and west edges of the site include an existing berm (which will be retained as part of project development) that fluctuates in height, approximately one to three feet high along Barranca Parkway, Lyon, and Osborn; and approximately five feet high along Willard, to the east. This berm will aid in the screening of the project from vehicles, pedestrians, and bicycle riders along Barranca Parkway.

2.3 PROJECT APPROVALS

The major components and discretionary actions to be considered as part of the project by the City based upon applications pending before the City are as follows:

- General Plan Amendment (00600172-PGA)
- Zone Change (00600175-PZA)
- Master Plan (00645299-PMP)

For purposes of environmental analysis in the DEIR, the focus of the environmental impact analysis is on those areas in which physical changes to the existing environment are proposed that may result in environmental impacts.

General Plan Amendment

The current General Plan designation of the project site is Multi-Use and is not proposed to change. A General Plan Amendment application (00600172-PGA) has been filed to implement the following amendments:

- To increase the total square footage allotted to Multi-Use in Planning Area 15 by 30,785 square feet; from 440,158 square feet to 470,943 square feet.
- Table A-1 Maximum Square Footage for Planning Area 15 would be commensurately increased from 2,158,966 square feet to 2,189,751 square feet.

Zone Change

The current Zoning designation of the project site is Multi-Use and is not proposed to change. The proposed Zone Change application (00600175-PZA) has been filed to implement the following:

- To allow square footages as indicated in the General Plan Amendment paragraph above in the 3.1 Multi-Use area within Planning Area 15.

Master Plan

The proposed Master Plan application (00645299-PMP) has been filed to allow the following:

- To establish design guidelines of the proposed medical office building relative to building bulk (area), height, setbacks, elevations, parking and landscaping.

Ministerial Permits

The proposed project development would also require ministerial permits that would include but not be limited to demolition, grading, building, and landscaping permits subject to City requirements.

2.4 PROJECT SITE HISTORY/BACKGROUND

In 1989, the State Farm Automobile Insurance Company purchased the 2.86-acre proposed project site at 2 Osborn from the Irvine Company. Grading for the existing building was completed in 1991 operating as a general office building. Sterling America Investments, Inc. acquired the property from the State Farm Automobile Insurance Company in January, 2002, and has operated the existing 16,015 square foot building as a medical office facility since that time.

2.5 LEAD, RESPONSIBLE, AND TRUSTEE AGENCIES

This Draft Environmental Impact Report has been prepared in accordance with the California Environmental Quality Act of 1970 (CEQA), as amended (Public Resources Code Section 21000, et seq.), the California CEQA Guidelines, and the City of Irvine CEQA Guidelines, regulations and procedures.

The City of Irvine is the Lead Agency, responsible for project discretionary and ministerial

approvals and supervision. There are no Responsible or Trustee agencies for this Project.

2.6 PROJECT OBJECTIVES

The following are the primary Project Objectives:

- To provide additional local medical services to Irvine residents.
- To concentrate jobs near residential areas and regional transportation systems.
- To provide a sustainably designed building that is not only energy conscious but also a healthy work environment and that is designed to attain LEED certification from the United States Green Building Council

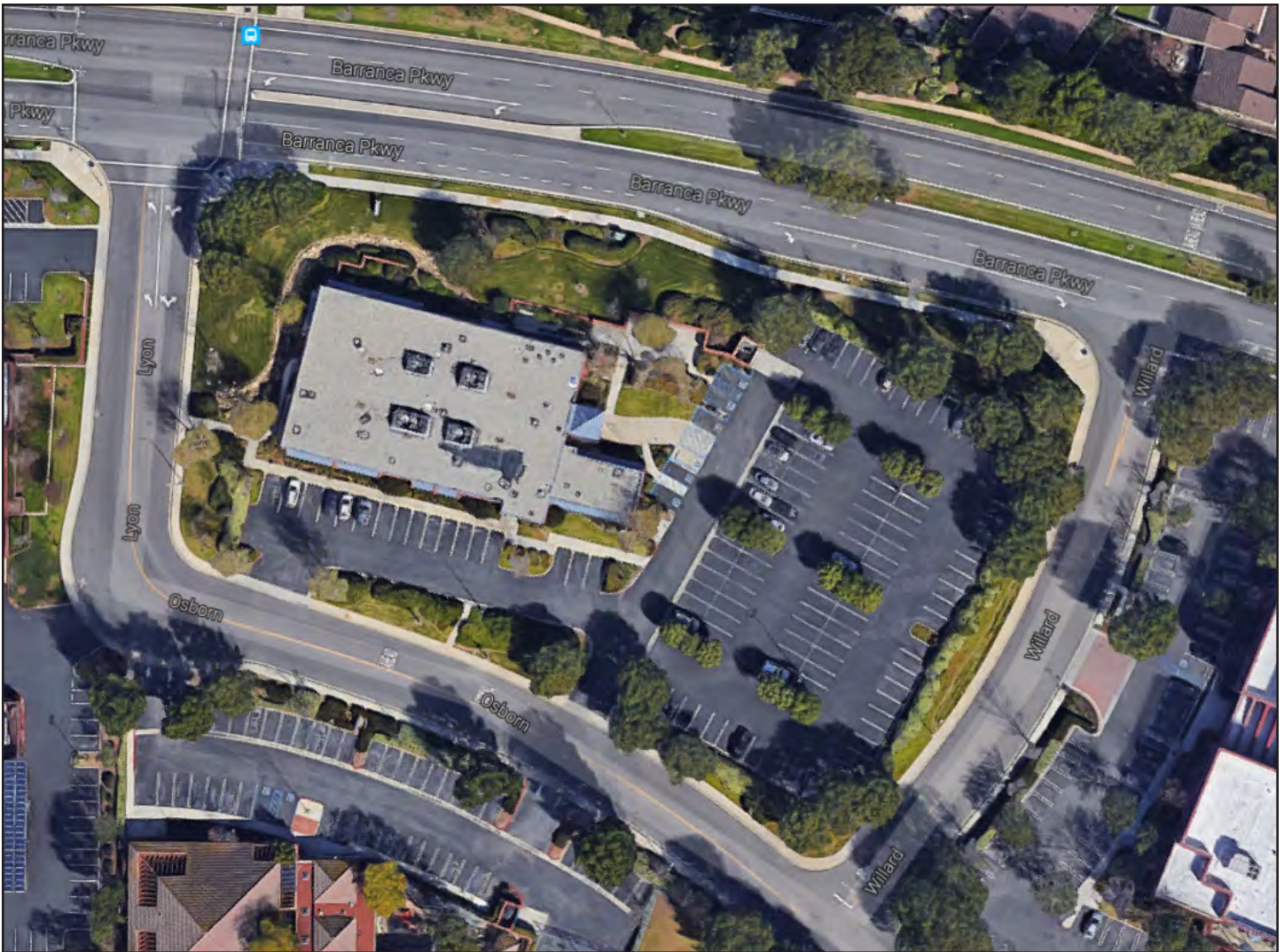


LOCAL VICINITY MAP



EXH 2-3

EXISTING SITE - AERIAL



PROPOSED SITE PLAN



3.0 ENVIRONMENTAL SETTING

3.1 INTRODUCTION

In accordance with California Environmental Quality Act Section 15125, this section provides a description of overall existing physical environmental conditions on the project site and in the project vicinity from a local and regional perspective at the time the Notice of Preparation was published. Specific existing conditions also are discussed within each individual resource section.

Each sub-section in Section 4.0 of the EIR includes a discussion of existing conditions and an assessment of potential impacts of the proposed project. In addition, each sub-section includes a discussion of cumulative impacts associated with the proposed project. The cumulative impacts discussion in each sub-section is based on the environmental impacts of the proposed medical office project combined with the related environmental impacts of projects planned in the project vicinity. The sole application approved for future development or redevelopment within the vicinity of the Project site at the time of publication of the Notice of Preparation is the 18-acre (162,444 square foot) Woodbridge Village Center, which is located approximately one-half mile west of the Project site along Barranca Parkway, as described in Section 3.3 below.

3.2 ENVIRONMENTAL SETTING

3.2.1 LOCATION & LAND USES

The project site is located at the southeast corner of Barranca Parkway and Lyon within Planning Area 15 of the Village of Woodbridge in the City of Irvine, California. Woodbridge is located generally within the central area of Irvine. Woodbridge occupies 1,745 acres generally north of Interstate 405, south of Irvine Center Drive, east of Culver Drive, and west of Jeffrey Road (Exhibit 2-1, Regional Location Map and Exhibit 2-2, Local Vicinity Map).

At least six additional medical/dental office buildings are located on the south side of Barranca Parkway, between East Yale Loop (east of the project site) and Creek (west of the project site). In the vicinity of the project site bordering Barranca Parkway are also Irvine Unified School District administrative offices, Woodbridge Community Church, and Carl's Jr. Restaurant.

The project site occupies 2.86 acres north of Osborn, south of Barranca Parkway, east of Lyon, and west of Willard with a project site address of 2 Osborn. The project site is bordered by the following land uses beyond the four roadways: residential to the north; Mardan Private School and The Inn at Woodbridge (senior residential) to the south; Kaiser Permanente medical facility to the east; and, the Irvine Unified School District Administrative Center to the west. The project site slopes gently from the west to the southeast; elevations range from approximately 106-113 feet above sea level. Engineered fill soils occupy the project site and range in thickness from 3-9 feet.

The project site currently is developed with a one-story, 16,015 square foot medical office building, surface parking lot, and landscaping within the parking lot and along each perimeter boundary. Large, mature trees provide landscape relief at each corner of the quasi-rectangular project site. A landscaped earthen berm from 1-5 feet in height surrounds the project site. There is one monument sign positioned in the landscape berm along Barranca Parkway which advertises “Sterling Dental Plaza.” Four light standards are in the parking lot. There are two vehicular access driveways to the project parking lot – each from Osborn.

3.3 ASSUMPTIONS REGARDING CUMULATIVE IMPACTS

CEQA Guidelines Section 15130 states that “cumulatively considerable” impacts, which are two or more individual impacts that, when considered together, compound individual project impacts, must be discussed in an EIR. It further states that this discussion need not be in as great a level of detail as that necessary for the project alone. Section 15355 of the CEQA Guidelines defines cumulative impacts as “...two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Cumulative impacts represent the change caused by the incremental impact of a project when added to other proposed or committed projects in the vicinity. CEQA Guidelines Section 15130(b)(I) states that the information used in an analysis of cumulative impacts should originate from one of the following two sources:

- A list of past, present and probable future projects producing related cumulative impacts, including, if necessary, those projects outside the control of the agency; or,
- A summary of projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions

The cumulative impact analysis contained in this Draft Environmental Impact Report uses the former method.

The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation publication is the 18-acre (162,444 square foot) Woodbridge Village Center located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway.

The City of Irvine Planning Commission granted approvals on July 21, 2016 for the modernization of the Woodbridge Village Retail Center through the following applications: Master Plan Modification to re-image the existing center and expand outdoor spaces; a Conditional Use Permit modification for a gas station, drive-thru car wash and convenience store; and a Conditional Use Permit for a new fast food restaurant with drive-thru. After accounting for the modifications and various demolition activities, the redeveloped retail center would be decreased by 25,246 square feet – from 162,444 to 137,198 square feet.

Major renovations of the Woodbridge Village Center are underway with estimated construction completion in September 2017.

4.0 ENVIRONMENTAL IMPACTS

4.1 AESTHETICS

The purpose of this section is to describe the existing aesthetic environment at and near the proposed project site and to analyze the potential effects of project development and operation to the aesthetic character of the project site and nearby surroundings. The information in this section was compiled from the site and aerial photographs, Applicant-prepared graphics, “Aesthetics Study,” and “Light and Glare Study”, which are included as Appendix C and Appendix D, respectively to this EIR.

4.1.1 ENVIRONMENTAL SETTING

The Woodbridge Village is predominantly residential in character. The proposed project site is directly bordered by streets – to the north by Barranca Parkway and one- and two-story single-family residences beyond; to the south by Osborn and the Mardan School (private) beyond; to the east by Willard and the Kaiser Permanente Health Care facility beyond; and, to the west by Lyon and the Irvine Unified School District Administrative Center beyond.

An “Aesthetics Study” was prepared to analyze the existing aesthetic environment on-site and in the vicinity of the project site. The Aesthetics Study considered scenic vistas, existing views, visual character of the project site and its surroundings, light and glare, and public concerns made in response to the Notice of Preparation/Initial Study. The Templeton Planning Group (TPG) analyzed 19 inventoried buildings bound by Barranca Parkway to the north, East Yale Loop to the east, Creek Road to the west, and San Diego Creek to the south. These 19 buildings were chosen because they are all located within the same City block, bound by Barranca Pkwy to the north, E Yale Loop to the east, Creek Road to the west, and the San Diego Creek to the south. All 19 buildings are also within the 3.1 Multi-Use zoning designation. TPG studied building heights; building setback distance from the south curb of Barranca Parkway; and building length along Barranca Parkway. An overlay of the existing and proposed building footprints was used to compare the building-to-building distances using images from Google Maps. Measurements were taken from Applicant-prepared documents and Google Maps. The “Aesthetics Study” was focused on project impacts from Barranca Parkway and sensitive receptors, including residential areas north of Barranca Parkway, Mardan Private School south of the project site across Osborn, and The Inn at Woodbridge – a senior apartment community southeast of the project site across Osborn.

Refer to exhibit 4-1 for Aesthetic Comparison with Baseline Data. Building heights immediately adjacent to the project site include:

- Building 18, private school - Mardan School, main building is 40-feet tall with an adjacent primary-grade children’s play yard and a field and basketball courts for older students.
- Building 2, medical offices - Kaiser Permanente Health Care facility is a two-story, 40-foot

tall structure.

- Building 4, office - Irvine Unified School District Administrative Center is a two-story, 36-foot tall structure.

Other adjacent building heights include:

- Building 1, medical office) is 35.4 feet in height.
- Building 5 (church) - Woodbridge Community Church is 51 feet in height.
- Building 6 (medical offices) - Woodbridge Square Medical at 4980 Barranca Parkway is 39 feet in height.
- Buildings 7, 8, and 9 (fast food, medical offices) -Carl's Jr. Restaurant and Hoag Urgent Care- are all 20 feet in height.
- Building 10 (business office) - Wells Fargo Bank is 28.3 feet in height.
- Building 11 (medical offices) at 19 feet in height.
- Building 12 (senior living) - Atria Golden Creek is 42 feet in height.
- Building 13 (medical offices) - Woodbridge Hoag Health Center is 50 feet in height.
- Building 14 (medical offices) at 46 feet in height.
- Building 15 (medical offices) - Hoag Health Center) is 44 feet in height.
- Building 16 (church) - Chabad is 39 feet in height.
- Building 17 (self storage) – Woodbridge Self Storage is 14 feet in height.
- Building 19 (senior living) - The Inn at Woodbridge is 31 feet in height.

Exhibit 4-2, Aesthetic Comparison - Analysis, ranks these 19 buildings (bound by Barranca Parkway, East Yale Loop, Creek Road, and San Diego Creek) by building height, setback, and length based on the baseline data.

Existing Viewshed

The primary public view of the project site is from Barranca Parkway, as shown on Exhibit 4-3, Existing Viewsheds – On-Site, view location 1. Views from Osborn and Lyon are partially blocked by a 1-3 foot landscaped berm and mature trees (view locations 2 and 3). The view of the project site from Willard (view 4) is blocked by an existing, approximately 5-foot tall, landscaped berm and mature landscaping and trees on the project site.

Residents north of Barranca Parkway have obstructed views of the existing medical office building due to mature landscaping, residential 6-foot tall fences along the north side of Barranca Parkway, and second-story windows that do not face directly toward the project site (as shown on Exhibit 4-4, Existing Viewsheds – Off-Site, view locations 1 and 2).

Existing Light and Glare

The primary sources of light on the project site are a lighted monument sign, interior building lights that pass through windows; landscape lighting; two double-head parking lot lighting standards; two single-head light standards; and vehicle headlights. Off-site lighting includes

street lights, vehicle headlights, neighboring building interior lighting, parking lot lighting, and landscape lighting. Due to the nature of the existing medical office use, interior building lights generally are not used after business hours.

The primary sources of glare are reflective building materials, cars in the parking lot, and windows on the building.

Light

Light has the potential to interfere with or disrupt certain basic human functions and needs that include vision, sleep patterns, internal cycles, privacy, and general enjoyment of the natural nighttime condition such as evening views.

Nighttime lighting in the vicinity of the project site comes from three primary on-site and off-site sources - light from building interiors; light from mobile sources (vehicles); and light from exterior sources (parking lot lighting; traffic signals; street lighting; security lighting; landscape lighting; building lighting; etc.). Lighting on-site is generated by the existing building interior, vehicles in the parking lot, parking lot light standards, landscape lighting, building security lighting, and building signage.

All parking lots on properties adjacent to the project site to the east, west and south have parking lot light standards are sources of light. Kaiser Permanente Health Care facility to the east uses nighttime security lighting and illuminated building signage facing Barranca Parkway and Osborn. The Irvine Unified School District offices to the west also use nighttime security lighting and parking lot illumination comprised of light standards and lighting beneath covered solar parking canopies near the Lyon/Osborn intersection.

Glare

Glare is primarily a daytime occurrence caused by reflection of sunlight or artificial light by highly reflective surfaces such as window glass and, to a lesser degree, by large light-colored surfaces. Nighttime glare can be caused by reflection of artificial light sources (e.g. automobile headlights, special event lighting) off reflective surfaces at night.

The existing medical office building on the project site has a brick masonry exterior finish. Adjacent buildings to the east, west and south also are constructed of a brick masonry finish with varying amounts of reflective glazing. In particular, the Kaiser Permanente Barranca Medical office building has long expanses of reflective glazing with tinting. This glazing on the ground and second floor levels reflects lights from passing vehicles but also is partially shielded from view by vegetation and existing trees. The existing building on the project site and other buildings within the vicinity of the project site are common materials for buildings and are not highly reflective such that they would be considered either a hazard or a visual nuisance.

4.1.2 EXISTING REGULATIONS & STANDARD CONDITIONS

The goal of the Land Use Element of the General Plan is to “Promote land use patterns which maintain safe residential neighborhoods, bolster economic prosperity, preserve open space, and enhance the overall quality of life in Irvine.” This Element also identifies scenic highways, shown as Figure A-4 within the Land Use Element. Jeffrey Road to the east is the nearest scenic highway and a major view is located at the intersection of Jeffrey Road and Barranca Parkway. There are no scenic highways or views within the viewshed of the project. This overarching Land Use Element goal is further refined into Objectives with pertinent policies. Below are the Objectives and Policies which pertain to aesthetics.

Objective A-1: City Identity – Preserve and strengthen Irvine’s identity as a diverse and innovative community.

Policy (b): Use building masses and landscaping to create a sense of unity for the various components throughout the City.

Policy (g): Distinguish individual planning areas in character and physical appearance by considering the following characteristics during design and development.

- Physical and visual separation
- Architectural style
- Planning area edge

Objective A-7: Urban Design – Create a visually attractive and efficiently organized City.

Policy (e): Distinguish planning areas in character and physical appearance from each other, considering the following during design and development

- Physical, visual separation, and differentiation
- Physical compatibility with the local environment including topography
- Mixture of housing types and densities
- Range of age and income groups
- Variety of public and private facilities
- Activity nodes
- Varied “skyline”
- Functional relationship among the components of the community
- Interface with adjacent planning areas

CITY ZONING ORDINANCE – The City Zoning Ordinance contains the following regulations pertaining to the aesthetics in the city.

- **Section 5-7-410 (Tree Removal)** directly addresses tree protection, removal, and replacement.

- **Section 3-16-1 (Lighting)** pertains to outdoor lighting and glare, stating “that all direct rays are confined to the site and adjacent properties are protected from glare.” This Section also states adjacent properties shall be protected from glare.
- **Division 7 (Signs)** – The intent of Division 7 of the City of Irvine Zoning Ordinance is to promote and protect the public health, safety and welfare by regulating existing and proposed signs of all types within the City. This Division includes standards and requirements for signage including lighting.

CITY ZONING ORDINANCE, TITLE 5 (Planning), Division 9 (Building Regulations), Chapter 5 (Uniform Security Code) – The Irvine Municipal Code (Title 5, Division 9) includes standards and requirements for lighting and glare in the City, including heights of lighting fixtures; design, installation and maintenance of lighting fixtures; standards for new development of multi-family and non-residential development; lighting for parking areas; and sign illumination. The Uniform Security Code is designed, in part, to limit light and glare to the extent feasible while providing sufficient light in a safe manner.

4.1.3 THRESHOLDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines contains the Initial Study Environmental Checklist form used during preparation of the Initial Study contained in Appendix A of this EIR. Pursuant to Appendix G of the CEQA Guidelines, the proposed project may create a significant impact if it would:

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

4.1.4 ENVIRONMENTAL IMPACTS

- A) **LESS THAN SIGNIFICANT IMPACT.** The project site is located within the urbanized Woodbridge Village community. The project site and surrounding streets such as Barranca Parkway, Osborn, Willard and Lyon are not designated as scenic highways or as scenic resources within the City of Irvine General Plan (Figure A-1 Scenic Highways). Project development would not alter any scenic vistas because there are no scenic vistas in the Project site vicinity. The closest General Plan-designated major view is at the Jeffrey Road/Barranca Parkway intersection (0.3 miles from the project site). The San Joaquin

Hills are 3 miles south of the project site. Southward views from residences north of Barranca Parkway toward and beyond the project site from existing residences to the north are already impacted due to the distance, intervening mature trees, intervening structures, and second-story windows that face southeast/northwest rather than directly toward the project site. Project design and articulated building features, perimeter and parking lot landscaping, and increased building setbacks exceeding City requirements will soften the potential adverse effect on any scenic vista beyond the project site. Impacts on scenic vistas will be less than significant. No Mitigation Measures are required.

B) NO IMPACT. The project site is located within the urbanized Woodbridge Village community. None of the streets bordering the project site or near the project site are designated a State scenic highway. No rock outcroppings or historic buildings are located on or near the Project site and 18 existing trees would be retained on the site, with additional trees planted to supplement the vegetation currently on the site. In addition, Barranca Parkway, Osborn, Willard and Lyon are not designated State scenic highways. Furthermore, views of the project site cannot be seen from Jeffrey Road, which is the closest scenic highway located 0.35 miles away. Therefore, Project development will not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a State scenic highway. No impact will result and no Mitigation Measures are required.

C) LESS THAN SIGNIFICANT IMPACT. The project site is located within the urbanized Woodbridge Village community. The proposed 46,800 square foot, two-story medical office building would be constructed above a 57-space open parking garage. The proposed structure would replace an existing single-story, 16,015 square foot medical office building. The building footprint of 22,470 square feet would cover 18 percent of the 2.86-acre site. The proposed building would be 43 feet, 8 inches tall to its parapet and 48 feet, 8 inches tall to the top of its mechanical screen. This represents an increase in height of approximately 31 feet over the height of the existing single-story medical office building, which is approximately 18 feet tall. The main entry is proposed to be on the easterly side of the new building. Building materials would consist of brick, metal and glass. Landscaping would occupy 24.8 percent (30,876 square feet) of the site; 18 existing trees would be retained and supplemented by additional trees, shrubs and plants.

Short-distance views of the proposed project will be of a new structure with a footprint measuring 220 feet by 105 feet that covers 18 percent of the 124,494 square foot property. Elevations are comprised of concrete tilt-up panels with brick veneer overlay and bronze glass.

Some residents living north of the proposed project site across Barranca Parkway will have views of the proposed medical office building where no such views of the existing medical office building now exist (refer to Exhibit 4-5 to see existing and proposed building footprint comparison). However, project design, perimeter and parking lot landscaping (which occupy 30,876 square feet and include various species and sizes of trees and surface

plantings and include retention of 18 existing trees), and building setbacks exceeding City requirements will soften potential adverse effects on any visual character of the project site.

Short-Term (Construction) Aesthetic Impacts

Construction activities would result in short-term visual impacts pertaining to the visual character and quality of the project site and surroundings. Project construction activities would alter views across the project site from surrounding land uses, primarily from the Mardan School south of the project site, Irvine Unified School District Administration Center west of the project site, and the Kaiser medical office building east of the project site. To the north, some existing residents may be able to view construction activities from second-story windows, particularly as the building reaches full height. Demolition activities, grading operations, construction materials, construction equipment, and construction traffic would be most visible from existing uses to the south, east and west of the project site. However, the residential views would be partially screened due to second-story windows that face southeast/northwest rather than directly toward the project site, as well as intervening mature trees, and the distance from the residences to the project site. In addition, construction would be temporary.

Long-Term (Operational) Impacts

The project would replace an existing 16,015 square foot, one-story medical office building with a 46,800 square foot, two-story medical office building. The project would be accessed from Osborn, as it is now but with one fewer entrance, and with the entrance moving to the east slightly to be offset with the Mardan School driveway. The project site is surrounded by 2.2 Low-Density and 2.3 Medium-Density residential zoning designations to the north, and 3.1 Multi-Use on the south, east, and west.

To analyze whether the project would maintain the character and quality of the area, TPG analyzed ten existing buildings along Barranca Parkway and nine buildings along the southerly side of Barranca in the vicinity of the project site. These buildings are bounded by Barranca Parkway to the north, East Yale Loop to the east, and Creek Road to the west, and the San Diego Creek to the south; as shown on Exhibit 4-1, Aesthetic Comparison – Baseline Data. To determine the visual character of the study area, TPG quantified the building height (including screening), the building setback from the south curb of Barranca Parkway, and the length of building frontage along Barranca Parkway. To analyze the baseline data, each of the three quantified categories were ranked from most impactful to least impactful: building height (tallest to shortest), building setback (closest to farthest), and building length (longest to shortest). The results are shown on Exhibit 4-2, Aesthetic Comparison – Analysis. Each category includes the top three and/or the proposed building's (building 3) rank.

Building Height: Per the City Zoning Ordinance, the project site has a maximum allowable building height of 70 feet. The project would reach 48 feet 8 inches to the top of mechanical screening. In comparison to the surrounding buildings, the proposed building would be the third tallest building in the project vicinity. The Woodbridge Community Church (building 5) and the Hoag Health Center (building 13) would exceed the proposed building in height, which are 51 feet and 50 feet, respectively. Furthermore, the height of the proposed building would not be substantially taller than the three immediately surrounding buildings: the Irvine Unified School District Administration Center (building 4; 36 feet) to the west across Lyon, the Mardan School (building 18; 40 feet) to the south across Osborn, and Kaiser Permanente (building 2; 40 feet) to the east across Willard. Therefore, the proposed building height would be within a 12 foot range of surrounding buildings and consistent with buildings in the project vicinity.

Building Setbacks from Barranca: Per the City Zoning Ordinance, minimum building setback from Barranca Parkway is 45 feet. In comparison to the surrounding building setbacks along Barranca Parkway, the project ranks eighth closest with an 80-foot setback, meaning there are seven other buildings that are closer to Barranca Parkway

Furthermore, the proposed setbacks for the project exceed City requirements as shown below:

Setback From	Minimum City Requirement	Proposed
Barranca Parkway	45'	76'-4"
Lyon	25'	88'-5"
Osborn	25'	57'-4"
Willard	25'	161'-8"

Building Length along Barranca: In regard to building length along Barranca Parkway, the project ranks first as the longest building with a length of 220 feet. The project site is a uniquely shaped lot in that it is surrounded by four streets and the frontage forms the longer side of the rectangular-shaped lot along Barranca Parkway. Even though this is the longest building, contextually the project maintains the character of its surroundings. The second and third longest buildings are the medical offices (building 1; 210 feet) and the Irvine Unified School District (building 4; 207 feet) which is immediately to the west of the project across Lyon. These building's lengths are within 13 feet of each other, which are not significant as it maintains the context and character of the surrounding area.

Building Distances: A comparison between existing to proposed project building distances in relation to surrounding buildings was also measured as shown on Exhibit 4-5, Building-to-Building Distances - Existing vs. Proposed. To the north across Barranca Parkway are existing residences. Two measurements were taken, one from each building corner. The northeast corner of the proposed building is 40 feet closer to the residential homes at approximately 240 feet than the existing building footprint. Furthermore, the

northwest corner is 10 feet closer which is approximately 215 feet away. On the west the proposed building would be 20 feet further away from the Irvine Unified School District Administrative Center building (175 feet away) when compared to the existing building. To the south across Osborn, the building will be 20 feet closer to Mardan School at a distance of 200 feet. To the southeast the proposed building would be 50 feet closer to the Inn at Woodbridge at a distance of 385 feet, than the existing building. To the east the proposed building would be 65 feet closer to the Kaiser Permanente medical office building at 290 feet than the existing building. The project mainly will move farther from the western side of the property and closer to the eastern side to allow for an expanded building footprint; however the project continues to comply with and exceed all City building setback development standards. Based on the increased setbacks in excess of City standards, there would be no significant impacts regarding setbacks and distances to surrounding buildings.

Landscaping: The project proposes 24.8 percent landscape coverage, exceeding the City's minimum 15 percent requirement. The landscape plan, Exhibit 4-6, Proposed Landscape Plan includes preservation of 18 existing trees, along with 10 proposed liquid amber trees, 5 proposed crape myrtle trees, 12 tipu trees, 8 Afghan pines, and 21 California sycamore trees. The 21 California sycamore trees are interior to the site and spread throughout the parking lot. The remaining trees are spread around the perimeter of the site. The north, east, and west edges of the site include an existing berm (which will be retained as part of project development) that vary in height between one to three feet high along Barranca Parkway, Lyon, and Osborn, and approximately five feet high along Willard, to the east. This berm will aid in the screening of the project from vehicles, pedestrians, and bicycle riders along Barranca Parkway.

Landscaping along Barranca Parkway would consist of 8 preserved trees, 6 proposed liquid ambers and 6 proposed Afghan pines. The liquid amber trees proposed are in 36 inch boxes and will stand approximately eight to thirteen feet tall when installed. Liquid amber trees are fast growing and should grow two to three feet each year for the first five years. They are deciduous and will lose their leaves for about 3 months of the year in winter. The leaves in the autumn will change from green to yellow to orange to red then purple as they begin to fall. When the canopy is grown and full of green leaves the tree is an effective screen, capable of blocking the sunlight. Liquid ambers can grow to 60 to 75 feet high and have a canopy at maturity of 40 to 50 feet wide. The trees would be planted about 25 feet apart allowing adequate room for full growth. The Afghan pines are proposed in 36 inch boxes as well and will stand 10 to 12 feet in high at installation.

Along Lyon, to the west, there would be two preserved existing trees and five proposed crape myrtle trees in 24 inch boxes. The proposed crape myrtle trees will be approximately seven to nine feet tall when installed. Crape myrtle trees can grow in varying sizes. The proposed species will grow to about 20 feet high and have a canopy spread of about 20 feet as well. Crape myrtles bloom bright colored flowers, colors vary by tree, and are to be a great accent tree where space is at a premium. Locating crape

myrtles along Lyon provides a colorful entry for entering westbound Barranca Parkway vehicles and provides screening for the Irvine Unified School District Administrative Center building.

Along Osborn, to the south, there are four existing trees that will be preserved and 12 proposed tipu trees in 24 inch boxes. When installed the tipu trees should be seven to nine feet in height. These trees would form an effective screen for the Mardan School to the south across Osborn. The tipu tree typically grows 20 to 30 feet high and can have a canopy of 20 to 30 feet wide at full growth. The tree is briefly deciduous and sheds its leaves and drops seeds from January to May annually. The tipu is moderately fast growing and provides quick shade and screening.

Along Willard, to the east, there would be four preserved trees, four proposed liquid amber trees and two proposed Afghan pine trees. The proposed trees, both in 24 inch boxes, will range from seven to nine feet tall when installed. The Afghan pine species (*pinus eldarica*) will grow to approximately 30-60 feet high and with a canopy spread of 25-40 feet. Liquid ambers can grow to 60 to 75 feet high and have a canopy at maturity of 40 to 50 feet wide. These trees will provide screening from the neighboring Kaiser Permanente building (building 2). Both buildings 1 and 2 take access from Willard directly facing the proposed building entrance. The proposed trees will effectively screen the project from vehicles exiting via building 1 and 2 driveways. The existing five foot high berm along Willard (which will be retained as part of project development) will also provide screening and add height to the proposed liquid ambers and Afghan pines. Shrubs will surround the perimeter of the site as well, ranging from two to four feet in height, to add screening from ground level, as currently exists. Proposed landscaping surrounding the site would be consistent with the area and would sufficiently screen the building. Growth of the landscaping over the years would screen the project to an even greater extent. Therefore, impacts would be less than significant.

Building Materials: The project proposes to use similar materials as the existing building. Brick, glass, metal accents, and a darker accent brick are proposed. The reflective properties of the exterior finish materials are similar to those properties in the existing building. The proposed colors very closely match the existing building's palette. Additionally, the Project will use exterior finish materials similar to materials used in adjacent buildings. Therefore, there are no significant visual material impacts that would occur.

Views: The applicant prepared two lines of site renderings; see Exhibit 4-7, Lines of Sight – East & West Elevations. These renderings show the lines of sight, from nearby properties, including existing residents to the north, the Mardan School to the south, and residents of The Inn at Woodbridge to the southeast. Rendered views of the project from its surroundings are shown on Exhibit 4-8 (Rendered View – From the Northeast); Exhibit 4-9 (Rendered View – From the Northwest); Exhibit 4-10 (Rendered View – From the Southwest); Exhibit 4-11 (Rendered View – From the Southeast). Based on these

rendered views and the lines of sight, mature landscaping will screen the building from nearby properties and impacts will be less than significant.

Between completion of construction, when landscaping is new, and the time of full landscape maturity, more of the proposed building will be visible. However, as discussed above, the proposed building would have similar building materials and colors as the existing building and surrounding buildings. In addition, it will be consistent with the height and massing of other buildings along Barranca Parkway. Therefore, the project will not substantially degrade the existing visual character or quality of the site and its surroundings. Project impacts will be less than significant. No mitigation measures are required.

D) LESS THAN SIGNIFICANT IMPACT WITH MITIGATION. The project site is located within the urbanized 1,745-acre Woodbridge Village community and includes an existing building with light and glare sources. Existing ambient lighting within and surrounding the project site primarily occurs from lighting for buildings, walkways, street lights, and parking lots. The project would involve introduction of new light sources on the project site associated with the proposed use (e.g. building, parking lots, etc.). A Light and Glare Study was prepared to address exposures of sensitive receptors to light and glare. The study considers lighting effects associated with use of artificial light during the evening and nighttime hours. Project light sources may increase ambient nighttime illumination and glare levels in the immediate vicinity of the project site. All parking lot lighting will be confined to the project site as required by the City's Zoning Ordinance. Nonetheless, impacts are potentially significant. Although the proposed medical office building will include new sources of light and glare, the resultant impact will be less than significant with appropriate mitigation (MM AES-1 through MM AES-3) and with compliance with City General Plan Objectives listed below.

Short-Term (Construction) Impacts

The City Municipal Code, Chapter 6-8-2 allows construction activities to occur between 7:00 am and 7:00 pm, Monday through Friday, and 9:00 am to 6:00 pm on Saturdays. As short-term construction activities are occurring, light and glare may occur as trucks, equipment and materials move around. Light and glare impacts associated with short-term construction are less than significant in level. Light and glare impacts associated with short-term construction are less than significant because construction would be temporary and would not occur in the evening. No mitigation measures are required.

Long-Term (Operational) Impacts

Due to the increased building size of the project, there will be more interior lights and exterior lights than the existing condition. The higher elevation of windows and interior lighting on the second level may emit some excess light and glare not associated with the

site currently. City Zoning Ordinance, Section 3-16-1, Lighting, states “that all direct rays are confined to the site and adjacent properties are protected from glare.”

Interior lighting associated with the proposed project would contribute to increased lighting levels surrounding the project site during early evening hours. For aesthetic and energy conservation reasons, the project includes sensors and timers that will automatically control interior lights to reduce usage after normal business hours.

Residential neighborhoods to the north of the project site across Barranca Parkway are protected from lighting impacts due to the distance between the project site and residences (which includes the four travel lanes and median along the Barranca Parkway roadway adjacent to the project site), to intervening landscaped berms on the north side of the project site, and to extensive mature vegetation between Barranca Parkway and the residential neighborhoods.

The proposed vehicle circulation for on-site surface parking maintains the approximate location of the existing driveway. Therefore, vehicles exiting the parking lot will not direct light onto adjacent sidewalks and Osborn in a substantially different manner from the current condition. The proposed parking lot, due to its expansion, will introduce vehicle circulation within the Project boundary that is closer to adjacent roadways than the current parking lot layout. However, preservation of the existing berms that surround the project site together with provision of new landscaping and additional trees on the berms will screen vehicle lights from adjacent properties and roadways. As the Light and Glare Study indicates, “this combination of berms and improved landscaping is a condition not matched in adjacent properties to the east, west, and south – all of which include surface parking lots located directly adjacent to surrounding roadways.

The Project will be constructed using exterior finish materials similar to materials used in adjacent buildings. The reflective properties of the exterior finish materials are similar to those properties in the existing building. All proposed building exterior materials are low-reflectivity and include painted concrete tilt-up panel, concrete tilt-up panel with cast for-liner pattern, and brick veneer. The proposed glazing will be bronze-tinted to reduce reflectivity and will be placed at locations raised above the ground plane with the exception of a limited amount of glazing at the ground floor at the building entry facing Willard. The Light and Glare Study concludes as follows: “Given that the Proposed Project will use non-mirrored tinted glazing, and low-reflective exterior finish materials, no significant glare-induced impact on adjacent properties and uses is anticipated.”

The Light and Glare Study prepared for the proposed project indicates “...that the Project will have no effect on nighttime illumination levels outside of the Project property line” (Appendix D). The preliminary conceptual lighting analysis in the Study accounts for light spillage from interior illumination of the proposed medical office building as well as on-site exterior lighting and parking lighting required in accordance with City regulations.

Therefore, the Study concludes “...there is no potential for adjacent properties to be adversely affected by changes in nighttime illumination ...” due to project development and operation.

Although project-induced light and glare impacts will be less than significant, implementation of Mitigation Measures AES-2, and AES-3 below would reduce impacts from project light and glare. Specifically, implementation of Mitigation Measure AES-1 would result in windows (i.e.: anti-glare coating, different type of window, tinting, etc.) that will decrease the light and glare associated with higher elevation windows that will prevent unwanted light and glare.

4.1.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Due to partially obstructed views of the project site from residences to the north, distances from the proposed building to existing buildings on surrounding properties, the Project’s exceedance of setback standards, building materials design (window types), and proposed landscaping, project impacts on aesthetics are potentially significant.

4.1.6 PROJECT DESIGN FEATURES

Project Design Features

PDF AEQ-1: The project shall include sensors and timers that will automatically control interior lights to reduce usage after normal business hours.

4.1.7 MITIGATION MEASURES

The following Mitigation Measures are required.

AES-1: To minimize nuisance light and glare associated with typical windows, the Applicant shall use anti-glare coating and tinting on all building windows.

AES-2: The proposed building shall be designed of non-reflective materials such as high-performance tinted non-mirrored glass, pre-cast concrete, and brick masonry.

4.1.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The project design and mitigation measures would reduce project impacts to aesthetics to a less than significant level.

4.1.9 CUMULATIVE IMPACTS

The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation publication pertained to the 18-acre (162,444 square foot)

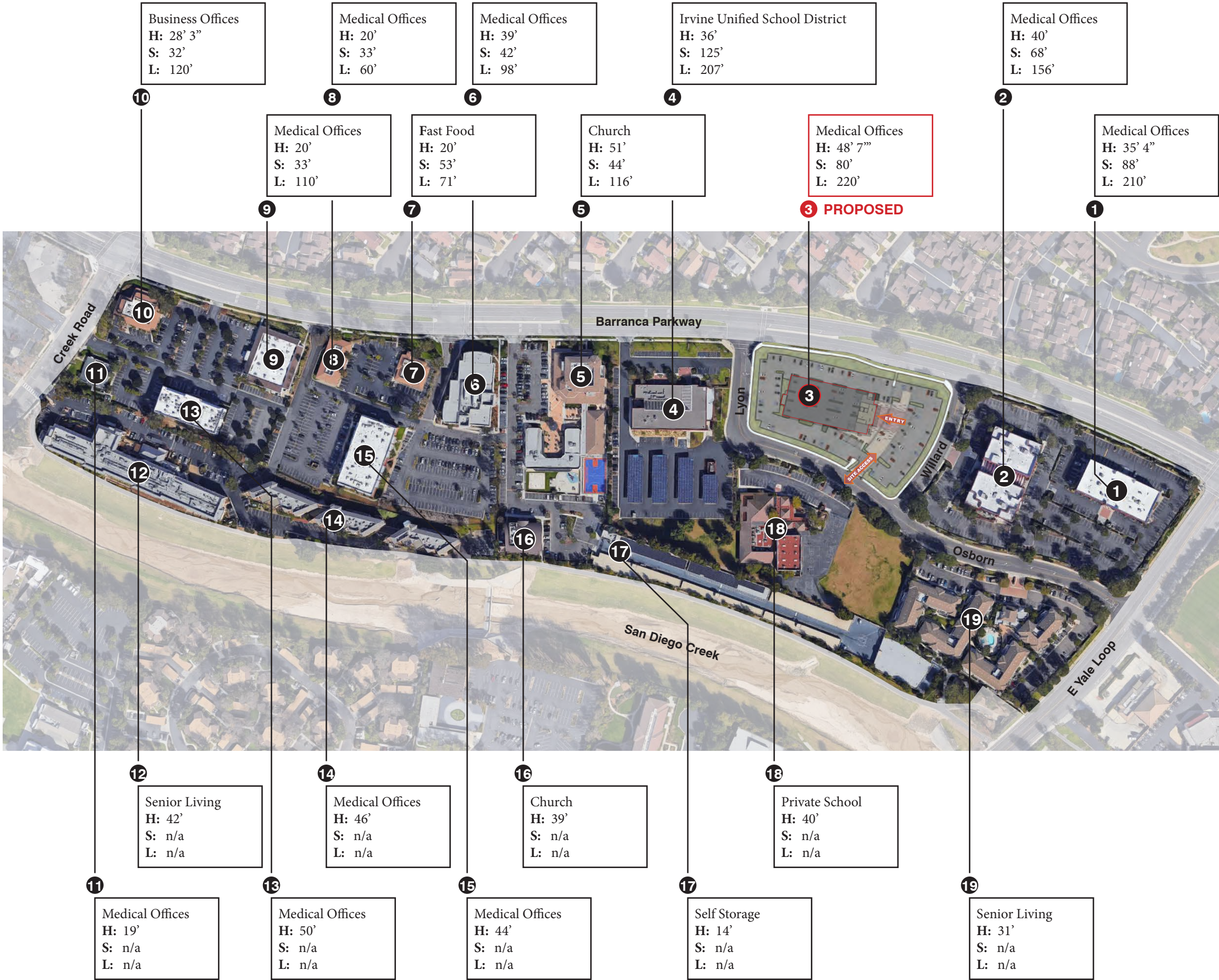
Woodbridge Village Center, located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway. The Woodbridge Village Center involves modernization of the center along with the additions of a gas station, car wash, convenience store, and fast food restaurant.

Woodbridge Village Center did not identify significant scenic resources. No significant adverse cumulative impacts to Aesthetics would result from development of Woodbridge Village Center in conjunction with the proposed Project. The proposed Project would not alter the visual character of the site or its surroundings with implementation of AES-1 and AES-2, and compliance with all City, state, and federal regulations. The Project has provided setbacks that exceed minimum requirements, building height below the maximum height limits, and exceeds minimum landscaping requirements. All Project impacts related to light and glare would be mitigated. Therefore, the cumulative Aesthetic impacts are less than significant.

AESTHETIC COMPARISON BASELINE DATA

This is a baseline study for quantifying the visual impacts of the proposed Sterling medical office building in the context of the surrounding buildings.

Buildings 1 through 10 are located along Barranca Parkway.



LEGEND

- H: Height (including screening)
- S: Setback from curb of Barranca Parkway
- L: Length of building facing Barranca Parkway

Buildings 1-10 are located along Barranca Parkway				
Building #	Building	Height	Setback from Barranca	Building Length Facing Barranca
1	Medical Offices	35' 4"	88'	210'
2	Medical Offices	40'	68'	156'
3	Medical Offices	48' 7"	80'	220'
4	IUSD	36'	125'	207'
5	Church	51'	44'	116'
6	Medical Offices	39'	42'	98'
7	Fast Food	20'	53'	71'
8	Medical Offices	20'	33'	60'
9	Medical Offices	20'	33'	110'
10	Bank/Office	28' 3"	32'	120'

Buildings 11-19 are Interior Corridor Buildings				
11	Medical Offices	19'	n/a	n/a
12	Senior Living	42'	n/a	n/a
13	Medical Offices	50'	n/a	n/a
14	Medical Offices	46'	n/a	n/a
15	Medical Offices	44'	n/a	n/a
16	Church	39'	n/a	n/a
17	Storage	14'	n/a	n/a
18	Private School	40'	n/a	n/a
19	Senior Living	31'	n/a	n/a

Rank #1 represents the worst case scenario.

Building #	Building	Height	Rank
5	Church	51'	1
13	Medical Offices	50'	2
3	Medical Offices	48' 7"	3

Building #	Building	Setback from Barranca	Rank
10	Bank/Office	32'	1
9	Medical Offices	33'	2
8	Medical Offices	33'	
6	Medical Offices	42'	4
5	Church	44'	5
7	Fast Food	53'	6
2	Medical Offices	68'	7
3	Medical Offices	80'	8

Building #	Building	Building Length Facing Barranca	Rank
3	Medical Offices	220'	1
1	Medical Offices	210'	2
4	IUSD	207'	3

EXH 4-2

AESTHETIC COMPARISON ANALYSIS

The proposed Sterling medical office building ranking against surrounding buildings (#1 Rank being the worst case):

Height:
The proposed building ranks 3rd tallest within the surrounding buildings.

Setback from Barranca:
The proposed building is the 8th closest building from Barranca.

Building Length Facing Barranca:
The proposed building would be the longest length of building along Barranca Parkway.

EXISTING VIEWSHEDS ON-SITE



① Looking southeast from Barranca Parkway



② Looking east from Lyon



③ Looking north from Osborn



④ Looking west from Willard

Key Map





1 Looking north from Barranca Parkway at existing residences



2 Looking north from Barranca Parkway at existing residences



3 Looking west from Lyon at Irvine Unified School District



4 Looking south from Osborn at Mardan School



5 Looking east from Willard at Kaiser medical offices

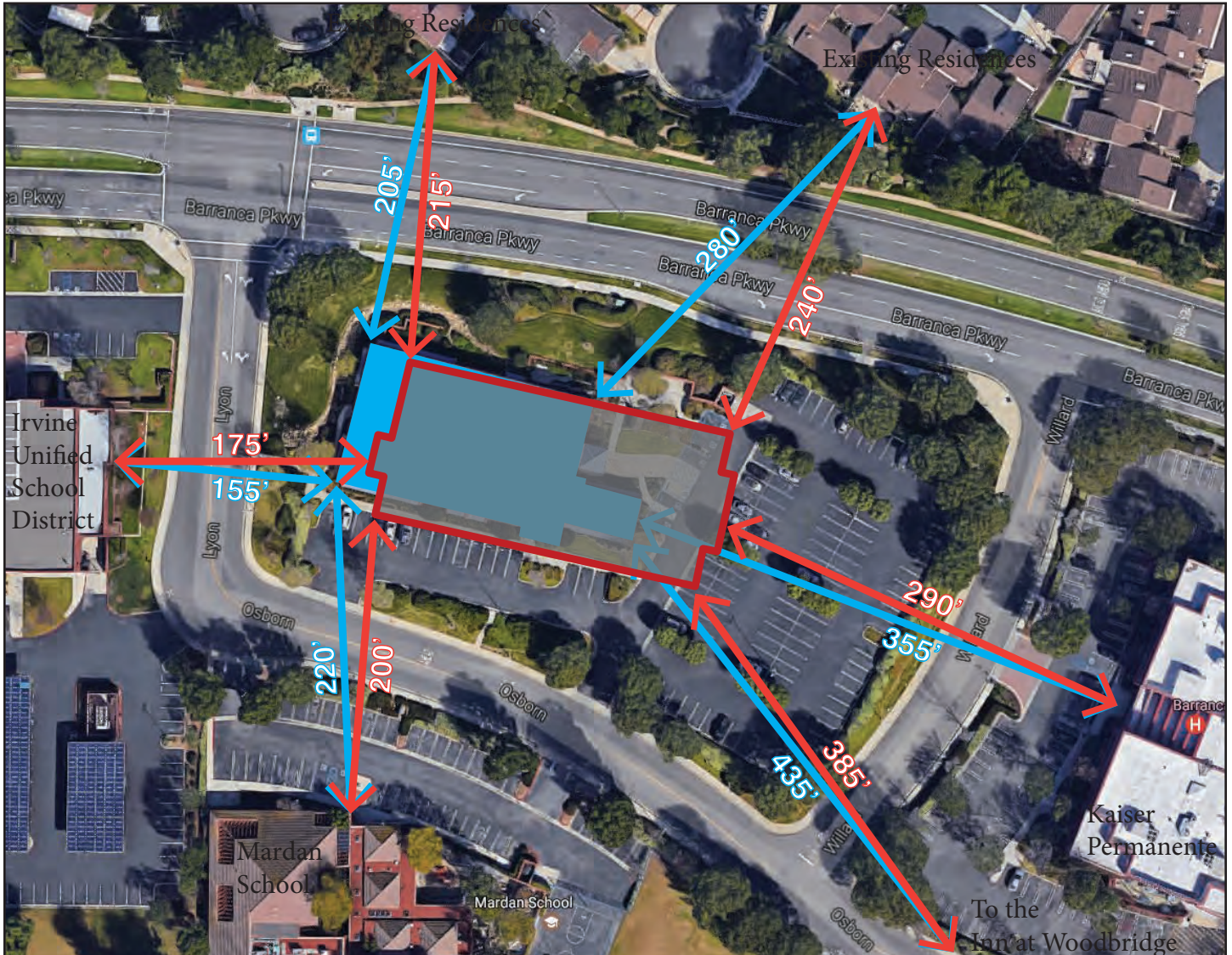
EXH 4-4

EXISTING VIEWSHEDS OFF-SITE

Key Map

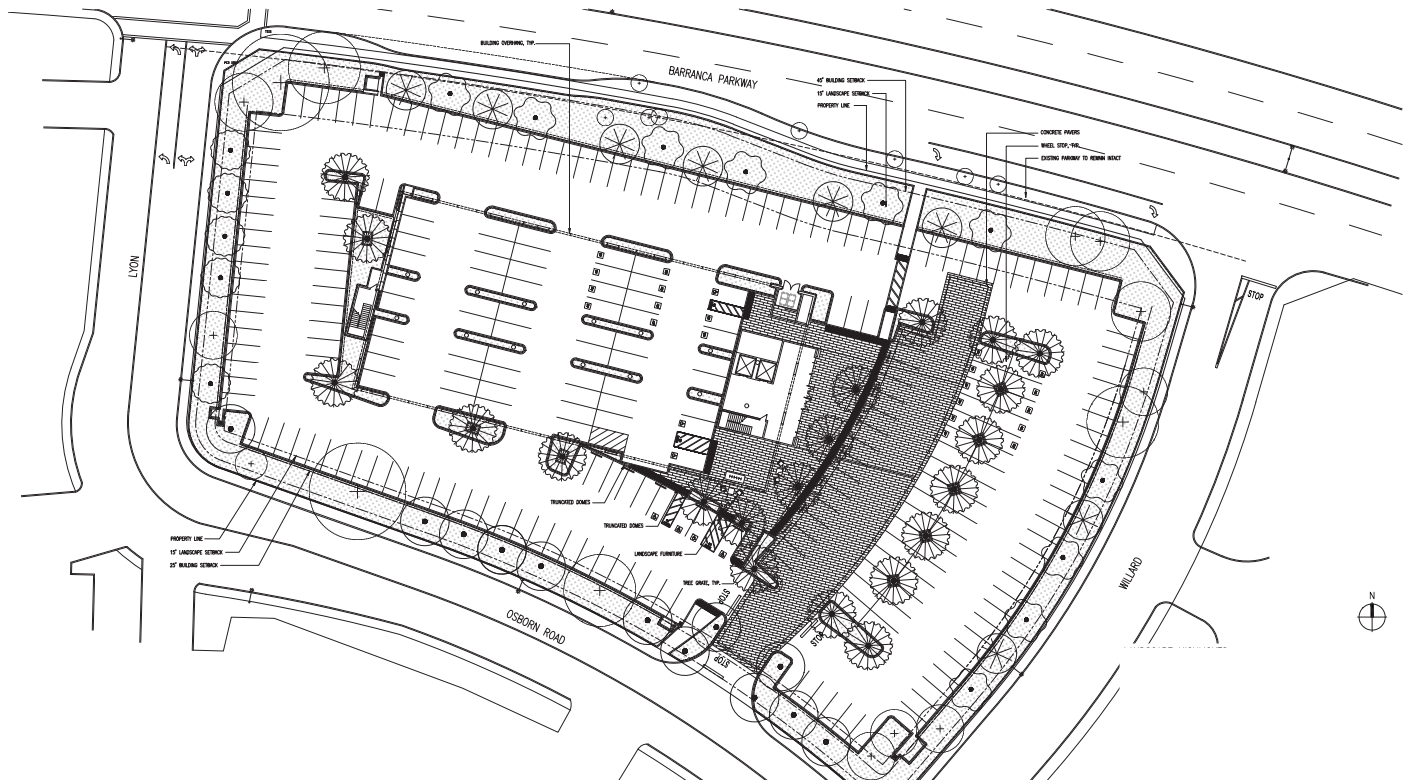


BUILDING-TO-BUILDING DISTANCES EXISTING VS. PROPOSED



	Existing Building	Proposed Building	Difference
Existing Residences - Northeast corner	280'	240'	40' Closer
Existing Residences - Northwest corner	205'	215'	10' Further
Irvine Unified School District	155'	175'	20' Further
Mardan School	220'	200'	20' Closer
To the Inn at Woodbridge	435'	385'	50' Closer
Kaiser Permanente	355'	290'	65' Closer

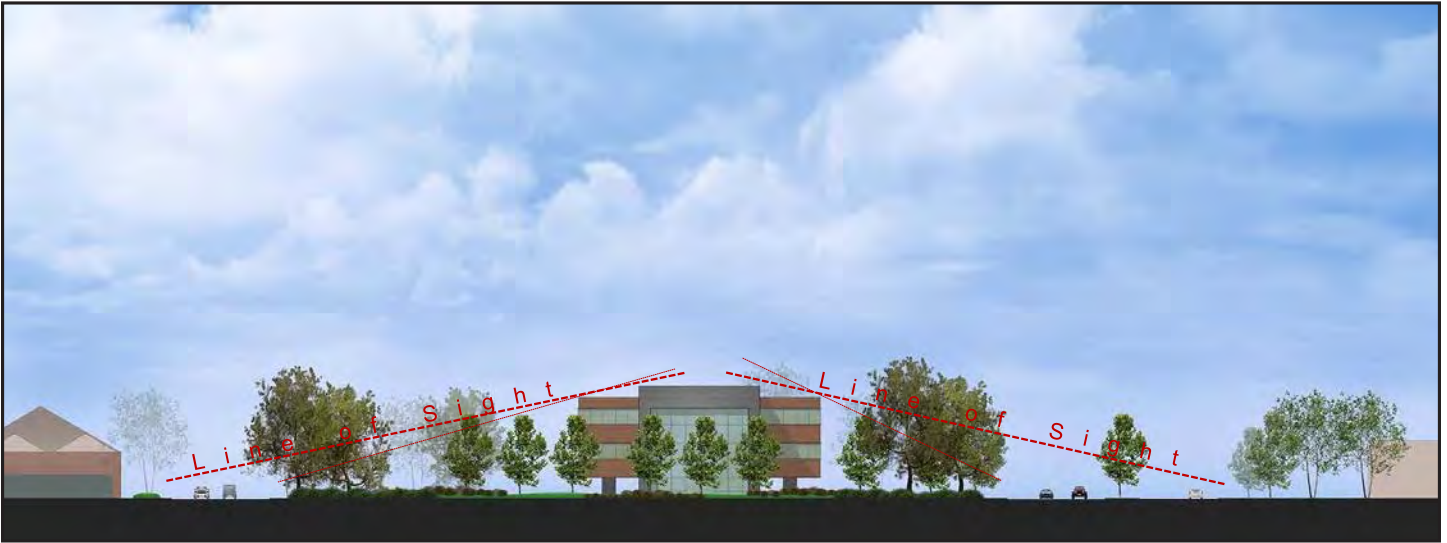
PROPOSED LANDSCAPE PLAN



TREE LIST

(NCN.)- NO COMMON NAME		(*)- UNLESS NOTED ON PLAN		
REF.	SYMBOL	BOTANICAL NAME/ COMMON NAME	SIZE/ SPACING	QTY.
LOCAL STREET TREE		LIQUIDAMBAR STYRACIFLUA/ LIQUIDAMBER TREE	24" BOX 36" BOX ALONG BARRANCA/ PER PLAN	
		LAGERSTROEMIA INDICA/ CRAPE MYRTLE	24" BOX/ PER PLAN	
		TIPUANA TIPU TIPU TREE	24" BOX/ PER PLAN	
		PINUS ELDARICA AFGHAN PINE	24" BOX 36" BOX ALONG BARRANCA/ PER PLAN	
PARKING LOT TREE		PLATANUS RACEMOSA CALIFORNIA SYCAMORE	24" BOX/ PER PLAN	
EXISTING TREE		TO REMAIN PROTECT IN PLACE		

LINES OF SIGHT EAST & WEST ELEVATIONS



East Elevation - Lines of Sight drawn from pedestrian eye level on all four sidewalk locations.



West Elevation - Lines of Sight drawn from pedestrian eye level on all four sidewalk locations.

EXH 4-8

RENDERED VIEW FROM THE NORTHEAST



VIEW 2 FROM BARRANCA



KEY PLAN

EXH 4-9

RENDERED VIEW FROM THE NORTHWEST



VIEW 3 FROM BARRANCA



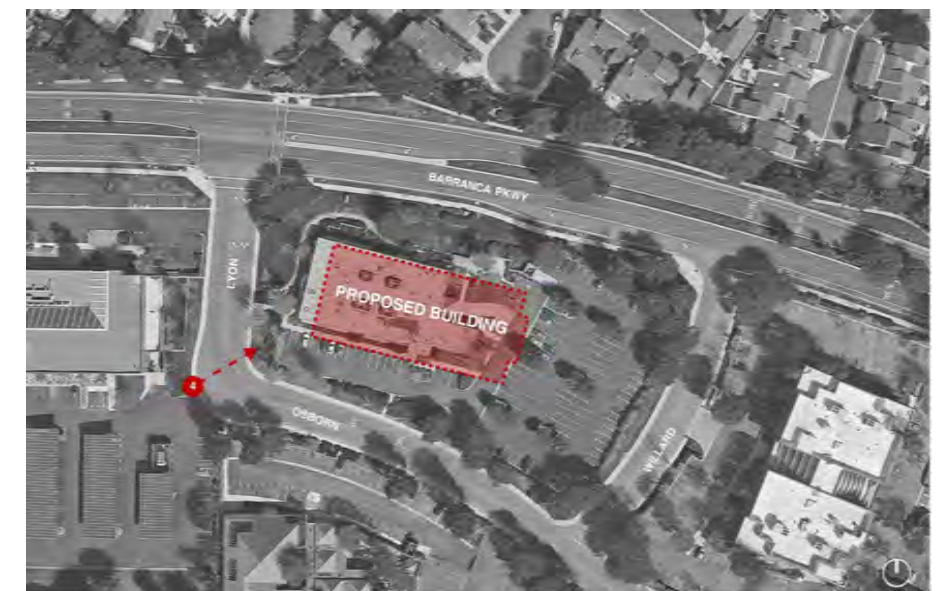
KEY PLAN

EXH 4-10

RENDERED VIEW FROM THE SOUTHWEST



VIEW 4 FROM LYON



KEY PLAN

EXH 4-11

RENDERED VIEW FROM THE SOUTHEAST



VIEW 5 FROM OSBORN



KEY PLAN

Section 4 Environmental Impacts - Agricultural Resources

4.2 AGRICULTURAL RESOURCES

4.2.1 ENVIRONMENTAL SETTING

No agricultural land (designated or cultivated) is located on the project site or in its vicinity.

4.2.2 EXISTING REGULATIONS & STANDARD CONDITIONS

No existing regional regulations or City of Irvine standard conditions pertaining to agriculture or agricultural resources apply to the project site or to the proposed project, since the site is not designated or zoned for agricultural resources uses and the Project would not involve a change in land use on the site.

4.2.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines, the proposed project would create a significant impact to Agricultural Resources if it would:

- A) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- B) Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- C) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).
- D) Result in the loss of forest land or conversion of forest land to non-forest use.
- E) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or conversion of forest land to non-forest use.

4.2.4 ENVIRONMENTAL IMPACTS

- A) **NO IMPACT.** The project site is not utilized for farmland purposes and is not zoned for agricultural uses. Therefore, project development would not result in conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use. No impact will result and no mitigation measures are required.

Section 4 Environmental Impacts - Agricultural Resources

- B) NO IMPACT.** The Project site is not zoned for agricultural uses and is not subject to a Williamson Act contract. Therefore, project development would not conflict with existing zoning for agricultural uses, or a Williamson Act contract. No impact would result and no mitigation measures are required.
- C) NO IMPACT.** The project site is not utilized for forest land or timberland and is not zoned Timberland Product. Therefore, Project development would not conflict with existing zoning for or cause rezoning of forest land (as defined in the Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)). No impact would result and no mitigation measures are required.
- D) NO IMPACT.** The project site is not utilized for forest use and is not zoned for forest uses. The project site currently is developed with a medical office building with no change in use proposed. Therefore, project development would not result in loss of forest land or conversion of forest land to non-forest use. No impact will result and no mitigation measures are required.
- E) NO IMPACT.** The project site is not utilized for farmland purposes, is not zoned for agricultural use, or utilized for forest use. The Project site currently is developed with a medical building, surface parking lot and imported landscaping. The surrounding areas are developed with medical offices, administrative offices, residences and Mardan School, and have no farmland. Therefore, project development would not involve changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. No impact would result and no mitigation measures are required.

4.2.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Development and operation of the proposed project would not result in any impacts to Agricultural Resources.

4.2.6 PROJECT DESIGN FEATURES

No Project Design Features are required.

4.2.7 MITIGATION MEASURES

No Mitigation Measures are required as impacts are less than significant without mitigation.

4.2.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

No mitigation measures are required; impacts to Agricultural Resources would be less than significant.

Section 4 Environmental Impacts - Agricultural Resources

4.2.9 CUMULATIVE IMPACTS

The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation publication pertained to the 18-acre (162,444 square foot) Woodbridge Village Center, located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway. The Woodbridge Village Center involves modernization of the center along with the additions of a gas station, car wash, convenience store, and fast food restaurant. Thus, the Project combined with Woodbridge Village Center project would not result in any cumulative impacts to Agricultural Resources.

4.3 AIR QUALITY

Information for this section was derived from the “Air Quality and Greenhouse Analysis”, which is included as Appendix E in this EIR and the South Coast Air Quality Management District, “2016 Air Quality Management Plan – Appendix 1 – Health Effects,” (March 2017).

4.3.1 ENVIRONMENTAL SETTING

The receptors closest to the project site – measured from edges of the project site property line to the surrounding property lines are as follows.

- To the north (single-family residences) – 130 feet (40 meters)
- To the south (Mardan School) – 82 feet (25 meters)
- To the east (Kaiser Permanente) – 180 feet (55 meters)
- To the west (Irvine Unified School District Administrative Offices) – 130 feet (40 meters)
- To the southeast (The Inn at Woodbridge Senior Residences) – 160 feet

The closest buildings to the proposed medical office building are as follows.

- To the north (single-family residences) – 160 feet
- To the south (Mardan School) – 165 feet
- To the east (Kaiser Permanente medical buildings) – 180 feet
- To the west (Irvine Unified School District Administrative Offices) – 130 feet
- To the southeast (The Inn at Woodbridge Senior Residences) – 400 feet

Regional Air Quality

The federal government and the State of California have established primary and secondary health-based ambient air quality standards for the following seven air pollutants: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter less than 10 microns in size (PM₁₀), particulate matter less than 2.5 microns in size (PM_{2.5}), and lead. In addition, the State of California has established standards for sulfates, hydrogen sulfide (H₂S), vinyl chloride, and visibility-reducing particles. The standards are established to protect the health and welfare of the populace with a reasonable margin of safety.

The State of California also has established ambient air quality standards through a set of episode-based criteria for O₂, CO, NO₂, SO₂, and PM₁₀. These criteria refer to episode levels that represent periods of short-term exposure to air pollutants that actually threaten public health. Health effects become progressively more severe as pollutant levels increase from Stage One to Stage Three. An “alert level” refers to the concentration of pollutants at which initial stage control actions are to commence. An alert will be declared when any one of pollutant levels is reached at any monitoring site and when meteorological conditions are such that the pollutant concentrations can be expected to remain at these levels for 12 or more hours or to increase; or, in the case of oxidants, the situation would be likely to recur within the ensuing 24 hours unless control actions are taken.

Pollutant alert levels are as follows.

- Ozone – 392 micrograms per cubic meter, 1-hour average
- Carbon Monoxide – 17 milligrams per cubic meter, 8-hour average
- Nitrogen Dioxide – 1,130 micrograms per cubic meter, 24-hour average
- Sulfur Dioxide – 800 micrograms per cubic meter, 24-hour average
- Particulate Matter less than 10 microns in size, 24-hour average

Ambient air quality standards (State and National) are contained in the Air Quality and Greenhouse Gas Analysis in the Appendices to this document and are noted in the following Table 4.3-A.

TABLE 4.3-A
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Ozone (O ₃)	1-Hour	0.09 ppm	----	Same as Primary
	8-Hour	0.070 ppm	0.070 ppm	
Respirable Particulate Matter (PM ₁₀)	24-Hour	50 ug/m ³	150 ug/m ³	Same as Primary
	Annual Arithmetic Mean	20 ug/m ³	----	
Fine Particulate Matter (PM _{2.5})	24-Hour	----	35 ug/m ³	Same as Primary
	Annual Arithmetic Mean	12 ug/m ³	12 ug/m ³	15 ug/m ³
Carbon Monoxide (CO)	1-Hour	20 ppm	35 ppm	----
	8-Hour	9 ppm	9 ppm	----
	8-Hour (Lake Tahoe)	6 ppm	----	----
Nitrogen Dioxide (NO ₂)	1-Hour	0.18 ppm	100 ppb	
	Annual Arithmetic Mean	0.030 ppm	53 ppb	----
				Same as Primary
Sulfur Dioxide (SO ₂)	1-Hour	0.25 ppm	75 ppb	----
	3-Hour	----	----	0.5 ppm
	24-Hour	0.04 ppm	0.14 ppm	----
	Annual Arithmetic Mean	----	0.030 ppm	----
Lead	30-Day Average	1.5 ug/m ³	----	----
	Calendar Quarter	----	1.5 ug/m ³ (for certain areas)	Same as Primary
	Rolling 3-Month Average	----	0.15 ug/m ³	
Visibility-Reducing Particles	8-Hour	See footnote 1	No National Standards	
Sulfates	24-Hour	25 ug/m ³	No National Standards	
Hydrogen Sulfide	1-Hour	0.03 ppm	No National Standards	
Vinyl Chloride	24-Hour	0.01 ppm	No National Standards	

Sources: California Air Resources Board, 2016 and LSA, "Air Quality and Greenhouse Gas Analysis," (January, 2017)

1. In 1989, the Air Resources Board converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively

The following Table 4.3-B provides a summary of primary health effects and sources of common air pollutants. The United States Environmental Protection Agency established the concentration standards at a level that protects public health with an adequate margin of safety. State of California ambient air quality standards are more stringent than federal ambient air quality standards. The standards consider Ozone and Particulate Matter Less Than 2.5 Microns as pollutants with regional effects while other pollutants are deemed to have more localized effects.

TABLE 4.3-B		
Preliminary Health Effects of Common Air Pollutants		
Pollutant	Health Effects	Examples of Sources
Particulate Matter (PM_{2.5}) (PM₁₀)	Hospitalizations for worsened heart diseases Emergency room visits for asthma Premature death	Cars and trucks (especially diesel) Fireplaces, woodstoves Windblown dust from roadways, agriculture, and construction
Ozone (O₃)	Cough, chest tightness Difficulty taking a deep breath Worsened asthma symptoms Lung inflammation	Precursor sources ¹ : motor vehicles, industrial emissions, and consumer products
Carbon monoxide (CO)	Chest pain in heart patients ² Headaches, nausea ² Reduced mental alertness ² Death at very high levels ²	Any source that burns fuel, such as automobiles, trucks, construction and farm equipment Residential heaters and stoves
Nitrogen dioxide (NO₂)	Increased response to allergens	Refer to CO sources
Toxic air contaminants	Cancer Chronic eye, lung or skin irritation Neurological and reproductive disorders	Automobiles and trucks (especially diesels) Industrial sources Neighborhood businesses such as dry cleaners and service stations Building materials and products
Source: California Air Resources Fact Sheet: Air Pollution and Health		
¹ Ozone is not generated directly by these sources. Rather, chemicals emitted by these precursor sources react with sunlight to form ozone in the atmosphere.		
² Health effects from CO exposures occur at levels considerably higher than ambient.		

The California Clean Air Act provides the South Coast Air Quality Management District (SCAQMD) and other air districts with authority to manage transportation activities at indirect sources of pollution. The indirect sources include any facility, building, structure or installation, or combination thereof, that attracts or generates mobile-source activity that results in emissions of any pollutant. In addition, area sources generated when minor sources collectively emit a substantial amount of pollution also are managed by the local air districts. SCAQMD also regulates stationary sources of pollution throughout its jurisdictional area. The California Air Resources Board regulates direct emissions from motor vehicles.

Climate and Meteorology

Air quality in Irvine is affected by atmospheric conditions such as wind speed and direction, air temperature and amount of rainfall. The Southern California Air Basin air quality can vary according to season and the combination of topography, low mixing height, wind patterns, abundant sunshine and various emissions.

Air Basin average temperature varies little; coastal areas show less variability than inland areas. The climatological station closest to the project site is the Tustin Irvine Ranch Station (which ceased operations in 2003). The next closest weather monitoring station is the Santa Ana Fire Station, which provides weather data monitored between 1906-2015. Annual average maximum temperature at this station in 2015 was 75.8 degrees Fahrenheit; monthly average maximum temperatures range from 68.1 degrees Fahrenheit in January to 84.7 degrees Fahrenheit in August.

The majority of annual rainfall in the Basin occurs between November and April. Between April 1906 and January 2015, average monthly rainfall at the Santa Ana Fire Station varied from 3.05 inches in February to 0.49 inch or less between May and October. The average annual total rainfall was 13.69 inches.

The Air Basin persistently experiences a temperature inversion (increasing temperature with increasing altitude) that limits vertical dispersion of air contaminants. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks and thereby allows vertical mixing with the lower layer. This occurs in mid-afternoon to late afternoon on hot summer days; winter inversions frequently break by midmorning.

Winds in the vicinity of the project site blow predominantly from the south/southwest at relatively low velocities (average 5 miles per hour). Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, in combination with a persistent temperature inversion, limit vertical dispersion of air pollutants throughout the Air Basin. Santa Ana winds (strong, dry, north/northeasterly winds) occur during fall and winter months and disperse air contaminants for several days at a time.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. Ambient air pollutant concentrations are the lowest on days of no inversion or high wind speeds. Air pollutants generated in urbanized areas are transported predominantly on shore into Riverside and San Bernardino Counties during periods of low inversions and low wind speeds. In winter, the greatest pollution problems are Carbon Monoxide and Nitrogen Oxides because of extremely low inversions and air stagnation during night and early morning hours. In summer, longer daylight hours and brighter sunshine combine to cause a reaction between hydrocarbons and nitrogen oxides to form photochemical smog.

Air Pollution Constituents and Attainment Status

The Air Resources Board (ARB) coordinates and oversees State and federal air pollution control programs in California. The ARB oversees the activities of local air quality management agencies and maintains air quality monitoring stations throughout California in conjunction with the United States Environmental Protection Agency (EPA) and local air districts. The ARB has divided California into 15 air basins based on meteorological and topographical factors of air pollution. The ARB and EPA collect data at the air stations and use the data to classify air basins as “attainment,” “nonattainment,” “nonattainment-transitional,” or “unclassified” based on air quality data for the most recent three calendar years.

Attainment areas may be as follows:

- Attainment/unclassified – those which have never violated the air quality standard of interest or do not have enough monitoring data to establish attainment or nonattainment status;
- Attainment/maintenance (National Ambient Air Quality Standards [NAAQS] only) – those which violated a NAAQS currently in use (was nonattainment) in or after 1990, but now attains the standard and is officially re-designated as attainment by the Environmental Protection Agency with a maintenance State Implementation Plan (SIP);
- Attainment (usually only for California Ambient Air Quality Standards [CAAQS], but sometimes for NAAQS) – those which have adequate monitoring data to demonstrate attainment, have never been non-attainment, or for NAAQS, have completed the official maintenance period;
- Nonattainment – areas for which additional restrictions are required by the EPA. The air quality data for nonattainment areas are used to monitor progress in attaining air quality standards.

The following Table 4.3-C lists Attainment Status for criteria pollutants in the South Coast Air Basin. Information in the Table is taken from the “Air Quality and Greenhouse Gas Analysis” prepared for the proposed project.

TABLE 4.3-C
South Coast Air Basin Attainment Status

POLLUTANT	STATE	FEDERAL
Ozone, 1-hour	Nonattainment	N/A
Ozone, 8-hour	Nonattainment	Extreme Nonattainment
Particulate Matter Less Than 10 Microns in Size	Nonattainment	Attainment/Maintenance
Particulate Matter Less than 2.5 Microns in Size	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Attainment/Maintenance
Nitrogen Dioxide	Nonattainment	Attainment/Maintenance
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment, except in Los Angeles County	Attainment, except in Los Angeles County
All others	Attainment/Unclassified	N/A

Source: California Air Resources Board, Air Quality Standards and Area Designations, 2016.

Ozone (O₃) – Smog is formed by photochemical reactions between Nitrogen Dioxide and reactive organic gases (ROG) rather than being directly emitted. Ozone is a pungent, colorless gas typical of Southern California smog that typically peaks during summer and early fall months. Elevated Ozone concentrations result in reduced lung function, particularly during vigorous physical activity and especially affecting sensitive receptors such as the sick, the elderly, and young children. The entire South Coast Air Basin is designated as a nonattainment area for the California 1-hour and 8-hour standards. The EPA has officially designated the status for most of the South Coast Air Basin regarding the 8-hour Ozone standard as “extreme nonattainment.” This means the South Coast Air Basin must attain the federal 8-hour Ozone standard by 2024.

Carbon Monoxide (CO) – Carbon Monoxide is formed by incomplete combustion of fossil fuels – almost entirely from automobile use. Carbon Monoxide is a colorless gas that can cause dizziness, fatigue and impairments to central nervous system functions. The entire South Coast Air Basin is in attainment for California State standards for Carbon Monoxide. The South Coast Air Basin is designated as an “attainment/maintenance” area under federal standards for Carbon Monoxide.

Nitrogen Oxides – Nitrogen Oxides (NO₂) is a reddish brown gas and Nitrous Oxide (NO) is a colorless, odorless gas. Both are formed from fuel combustion under high temperature or pressure. These compounds are referred to as Nitrogen Oxides (NO_x), which are primary components of the photochemical smog reaction. Nitrogen Oxides also contribute to other pollution problems including a high concentration of fine particulate matter, poor visibility and acid deposition (acid rain). Nitrogen Oxides decrease lung function and may reduce resistance to infection. The entire South Coast Air Basin is designated as nonattainment for the California Nitrogen Oxides standard and as an “attainment/maintenance” area under the federal Nitrogen Oxides standard.

Hydrogen Sulfide (H₂S) – Hydrogen Sulfide is a colorless gas with the odor of rotten eggs formed during bacterial decomposition of sulfur-containing organic substances. Hydrogen Sulfide can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation. The entire South Coast Air Basin is unclassified for the California standard for Hydrogen Sulfide.

Visibility-Reducing Particles – Visibility-Reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The particles vary greatly in shape, size and chemical composition, and can be made up of many different materials, such as metals, soot, soil, dust and salt. The California standard is intended to limit frequency and severity of visibility impairment due to regional haze. The entire South Coast Air Basin is unclassified for the State standard for Visibility-Reducing particles.

Hazardous Air Pollutants

Public exposure to toxic air contaminants (TAC) is a significant environmental health issue in California. The Health and Safety Code defines TAC as “an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health.” The State Legislature in 1983 enacted a program to identify health effects of TAC and to reduce exposure to these contaminants to protect the public health. A substance listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the Federal Act (42 United States Code Section 7412[b]) is a TAC. Under California State law, the California Environmental Protection Agency (CalEPA), acting through the Air Resources Board is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or that may pose a present or potential hazard to human health.

Primary California State legislation that regulates TAC are Assembly Bill 18076 (Tanner Air Toxics Act) and Assembly Bill 2588 (Air Toxics “Hot Spot” Information and Assessment Act of 1987). The Tanner Toxics Act establishes a formal procedure for the Air Resources Board to designate substances as TAC. Once a TAC is identified, the Air Resources Board adopts an “airborne toxics control measure” for sources that emit designated TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

The Air Toxics “Hot Spot” Information and Assessment Act of 1987 provides that emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High-priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings.

The Air Resources Board has designated nearly 200 compounds as Toxic Air Contaminants and

has implemented control measures for a number of compounds that pose high risks and demonstrate potential for effective control. The majority of estimated health risks from Toxic Air Contaminants can be attributed to relatively few compounds.

Local Air Quality

The South Coast Air Quality Management District in concert with the Air Resources Board maintains ambient air quality monitoring stations in the South Coast Basin. The closest station to the project site that monitors air quality is the Mission Viejo station. The Mission Viejo station monitors most air pollutant data (except Nitrous Oxide and SO₂, which were obtained from the Costa Mesa station). Air quality trends from the two stations were used to represent ambient air quality in the project vicinity. Pollutants monitored are the following: Carbon Monoxide; Ozone; Nitrous Oxide; and Particulate Matter 2.5 and 10. No recent data for SO₂ is available because of the overall low level of concentrations for this pollutant in all of Orange County. Ambient air quality data (reference Table E – Ambient Air Quality Monitored in the Project Vicinity – in the “Air Quality and Greenhouse Gas Analysis” in the Appendices) show NO₂, SO₂, 24-hour annual average PM₁₀, annual average PM_{2.5}, and CO levels are below applicable California State and federal standards.’

The California State 1-hour Ozone standard was exceeded up to four times annually in the past 3 years. The federal 8-hour Ozone standard was exceeded 1 – 5 days annually in the past 3 years, and the California State 8-hour Ozone standard was exceeded 5-10 times annually in the past 3 years.

4.3.2 EXISTING REGULATIONS & STANDARD CONDITIONS

Federal Regulations and Standards

The federal Clean Air Act (CAA) of 1970 mandates the Environmental Protection Agency to establish the National Ambient Air Quality Standards (NAAQS) for six major pollutants (“criteria pollutants”). In addition, the CAA requires areas not attaining national ambient air quality standards to develop and implement an emission reduction strategy that will bring the area into attainment in a timely manner. Criteria pollutants are defined as those pollutants for which the federal and state governments have established AAQS, or criteria, for outdoor concentrations to protect public health.

The Environmental Protection Agency uses data collected at permanent monitoring stations to classify regions as “attainment” or “nonattainment,” depending whether the regions met requirements stated in the primary NAAQS. Nonattainment areas are imposed with additional restrictions as required by the Environmental Protection Agency. The Environmental Protection Agency has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with requirements of the CAA for the Air Basin.

State Regulations and Standards

The California State Legislature passed the Mulford-Carrell Act in 1967. This Act combined two Department of Health bureaus – the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board – to establish the Air Resources Board. Since that time, the Air Resources Board has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems.

California adopted the California Clean Air Act (CCAA) in 1988. The Air Resources Board administers CAAQS for the ten air pollutants designated in the CCAA. The ten State air pollutants are the six criteria pollutants designated by the federal CAA as well as visibility-reducing particulates, H₂S, sulfates, and vinyl chloride.

The Air Resources Board identified particulate emissions from DPM as TAC in August 1998. The Air Resources Board then was required by law to determine whether there would be a need for further control. In September 2000, the Air Resources Board adopted the Diesel Risk Reduction Plan, which recommends many control measures to reduce risks associated with DPM and to achieve goals of 75 percent DPM reduction by 2010 and 85 percent DPM reduction by 2020.

Regional Air Quality Planning Framework

The 1976 Lewis Air Quality Management Act established the South Coast Air Quality Management District and other air districts throughout California. Federal CAA Amendments in 1977 required each state to adopt an implementation plan outlining pollution control measures to attain federal standards in nonattainment areas of the state.

The Air Resources Board is responsible for incorporating air quality management plans for local air basins into a SIP for EPA approval. Significant authority for air quality control within local air basins has been given to local air districts that regulate stationary-source emissions and develop local nonattainment plans.

Regional Air Quality Management Plan

The South Coast Air Quality Management District and Southern California Association of Governments are responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the South Coast Air Basin, an area that includes Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties. South Coast Air Basin air quality has improved substantially over time, but still exceeds federal public health standards for ozone and particulate matter. The most significant air quality challenge in the South Coast Air Basin is to reduce nitrogen oxide (NO_x) emissions sufficiently to meet upcoming ozone standard deadlines.

The primary purpose of the AQMP is to bring the South Coast Air Basin into compliance with

federal and State air quality standards. The South Coast Air Quality Management District prepares a new AQMP every three years to update previous plans and the 20-year horizon. The South Coast Air Quality Management District adopted the 2016 Air Quality Management Plan in March 2017. The Air Resources Board approved the Plan and forwarded the Plan to the Environmental Protection Agency.

The 2016 Air Quality Management Plan (2016 AQMP) contains a thorough analysis of existing and potential regulatory control options, includes available, proven and cost effective strategies, and seeks to achieve multiple goals in partnership with other entities to promote reductions in greenhouse gases and toxic risk. The 2016 AQMP also promotes efficiencies in energy use, transportation and movement of goods.

Air Quality Standards

The 2016 AQMP evaluates five national ambient air quality standards (NAAQS). The following three standards are required to have new attainment demonstration in the 2016 AQMP: the 8-hour ozone NAAQS established in 2008 (2008 8-hour Ozone); the annual PM_{2.5} NAAQS established in 2012 (2012 annual PM_{2.5}; and, the 24-hour PM_{2.5} NAAQS established in 2006 (2006 24-hour PM_{2.5}). The 2016 AQMP also includes revisions to attainment demonstrations for two other standards: the 1997 8-hour ozone NAAQS and the 1979 1-hour ozone NAAQS. The following Table 4.3-D indicates the attainment years for these five NAAQS.

TABLE 4.3-D Attainment Years			
STANDARD	CONCENTRATION	CLASSIFICATION	LATEST ATTAINMENT YEAR
2008 8-hour Ozone	75 ppb	Extreme	2031
2012 Annual PM_{2.5}	12ug/m ³	Moderate Serious	2021 2025
2006 24-hour PM_{2.5}	35 ug/m ³	Serious	2019
1997 8-hour Ozone	80 ppb	Extreme	2023
1979 1-hour Ozone	120 ppb	Extreme	2022

The 2016 AQMP stipulates seven priority Policy Objectives, as follows.

- Eliminate reliance on future technologies measures to the maximum extent feasible by providing specific control measures that have quantifiable emission reductions and associated costs;
- Calculate and take credit for co-benefits from other planning efforts (e.g. greenhouse gas emissions reduction targets; energy efficiency; transportation);
- Develop a strategy with fair-share emission reductions at the federal, State and local levels;
- Invest in strategies and technologies meeting multiple objectives regarding air quality,

climate change, air toxics exposure, energy and transportation; prioritize strategies that meet fast approaching deadlines and assist impacted areas;

- Seek and identify significant secured funding for incentives to implement early deployment and commercialization of known zero and near-zero technologies, particularly in the mobile source sector;
- Enhance the socioeconomic analysis and select the most efficient and cost-effective path to achieve multi-pollutant and multi-deadline targets;
- Prioritize non-regulatory, innovative and “win-win” approaches for emission reductions.

4.3.3 THRESHOLDS OF SIGNIFICANCE

STATE OF CALIFORNIA

Appendix G of the CEQA Guidelines contains threshold questions pertaining to air quality and provides that where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Project development and/or operation may result in a significant impact to air quality if the project 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 pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- D) Expose sensitive receptors to substantial pollutant concentrations;
- E) Create objectionable odor affecting a substantial number of people.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

The South Coast Air Quality Management District has established daily emissions thresholds for construction and operation of a proposed project in the South Coast Air Basin. The emissions thresholds are based on the attainment status of the South Coast Air Basin with regard to air quality standards for specific criteria pollutants. Concentration levels were established at a level that protects public health with an adequate margin of safety; therefore, the emissions levels are regarded as conservative and would overstate an individual project’s contribution to health risks.

Regional Thresholds for Construction Emissions

The following thresholds for construction emissions have been established for the South Coast Air Basin:

- 75 pounds/day of Volatile Organic Compounds (VOC)
- 100 pounds/day of NO_x

- 550 pounds/day of CO
- 150 pounds/day of PM₁₀
- 55 pounds/day of PM_{2.5}
- 150 pounds/day of Sulfur Oxides (SO_x)

Projects in the South Coast Air Basin with construction-related emissions that exceed any of these above emission thresholds are considered to be significant under South Coast Air Quality Management District guidelines.

Regional Thresholds for Operational Emissions

The following CEQA significance thresholds for operational emissions have been established for the South Coast Air Basin:

- 55 pounds/day of VOC
- 55 pounds/day of NO_x
- 550 pounds/day of CO
- 150 pounds/day of PM₁₀
- 55 pounds /day of PM_{2.5}
- 150 pounds/day of SO_x

Projects in the South Coast Air Basin with operational emissions that exceed any of the above emission thresholds are considered significant under South Coast Air Quality guidelines.

Carbon Monoxide - Local Microscale Concentration Standards

SCAQMD does not have significance thresholds for Carbon Monoxide. Therefore, California State and federal Carbon Monoxide standards are used to determine project impacts. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of the following standards:

- California State 1-hour Carbon Monoxide standard of 20 parts per million
- California State 8-hour Carbon Monoxide standard of 9 parts per million

If ambient levels already exceed a State or federal standard, project emissions are considered significant if they increase 1-hour Carbon Monoxide concentrations by 1 part per million (ppm) or more, or 8-hour Carbon Monoxide concentrations by 0.45 parts per million or more.

THRESHOLDS FOR LOCALIZED IMPACTS ANALYSIS

The 2008 South Coast Air Quality Management District *Final Localized Significance Threshold Methodology* recommended all air quality analyses include an assessment of both construction and operational impacts on air quality of nearby sensitive receptors. Localized significance thresholds (LSTs) represent the maximum emissions from a project site that is not expected to result in an exceedance of the NAAQS or CAAQS. The localized significance thresholds are

based on ambient concentrations of that pollutant within the project Source Receptor Area and the distance to the nearest sensitive receptor. For the proposed project, the appropriate Air Monitoring Station/Source Receptor Area for localized significance thresholds is the Saddleback Valley area. This Station is located in Mission Viejo and is assigned monitoring duties for inland central Orange County.

In cases pertaining to Carbon Monoxide, NO_2 , PM_{10} and $\text{PM}_{2.5}$, if ambient levels are below the standards, a project is considered to have a significant impact if project emissions would result in an exceedance of one or more of the standards. If ambient levels already exceed a State or federal standard, project emissions are considered significant if they would increase ambient concentrations by a measurable amount.

To avoid the need for every air quality analysis to perform air dispersion modeling, the South Coast Air Quality Management District performed air dispersion modeling for a range of construction sites less than or equal to 5 acres in area and created reference tables that correlate pollutant emissions rates with project size to gauge whether projects would likely generate sufficient emissions to result in a locally significant concentration of any criteria pollutant.

The localized significance thresholds for a project smaller than 5 acres in area can be determined by performing the screening-level analysis before using the dispersion modeling because the screening-level analysis is conservative. Thus, if exceedance of screening-level thresholds is not identified, then the project need not use a dispersion model. Because the proposed project site is 2.86 acres in area, the localized significance thresholds for 2 acres were used for this project in order to provide a conservative estimate of impacts.

Sensitive receptors are off-site locations such as schools, residences, work places and hospitals, where people may be exposed to emissions from project activities. However, for the purposes of this air quality analysis, SCAQMD considers a “sensitive receptor” to be a location such as residence, hospital, or convalescent facility where it is possible that an individual could remain for 24 hours. The closest “sensitive receptor” would be the residential homes located approximately 130 ft (40 m) from the project site and the medical (hospital or convalescent) facilities at 180 ft (55m). Therefore, the 40 m threshold for $\text{PM}_{2.5}$ and PM_{10} was used. Additionally, LSTs based on shorter averaging periods (e.g., the NO_x and Carbon Monoxide LSTs) could also be applied to receptors (e.g., office or commercial facilities) because its workers are present for periods of 1 to 8 hours. The closest workers would be in the adjacent Mardan School to the south approximately 82 ft (or 25 m) from the project site. Using the LST thresholds for receptors at 25 m for 1-hour NO_x and Carbon Monoxide exposure and 40 m for 24-hour PM_{10} and $\text{PM}_{2.5}$ exposure from a 2-acre site for this project would result in a conservative analysis. The following emissions thresholds apply to the project.

- Construction Localized Significance Thresholds for the Saddleback Valley Area
 - 131 pound/day of NO_x at 25 m
 - 993 pounds/day of Carbon Monoxide at 25 m
 - 13.2 pounds/day of PM_{10} at 40 m
 - 5.2 pounds/day of $\text{PM}_{2.5}$ at 40 m

- Operation Localized Significance Thresholds for the Saddleback Valley Area
 - 131 pounds/day of NO_x at 25 m
 - 993 pounds/day of Carbon Monoxide at 25 m
 - 3.8 pound/day of PM₁₀ at 40 m
 - 1.6 pounds/day of PM_{2.5} at 40 m

4.3.4 ENVIRONMENTAL IMPACTS

Air pollutant emissions associated with the project would occur over the short-term from construction activities (e.g. fugitive dust from building demolition, site preparation and grading, and emissions from equipment exhaust). Long-term regional emissions would be associated with project-related vehicular trips and energy consumption (e.g. electricity usage) by the proposed medical office building.

A) LESS THAN SIGNIFICANT IMPACT.

Air Quality Management Plan Consistency

The project site is within the SCAQMD Air Quality Management Plan area. The Air Quality Management Plan is based on regional population growth projections developed by the Southern California Association of Governments (SCAG).

Pursuant to methodology provided in Chapter 12 of the 1993 South Coast Air Quality Management District *CEQA Air Quality Handbook*, consistency with the SCAQMD 2016 Air Quality Management Plan is affirmed when a project (1) does not increase frequency or severity of an air quality standards violation or cause a new violation; and, (2) is consistent with growth assumptions in the Air Quality Management Plan. The project is consistent with the AQMP for the following reasons.

- (1) The proposed project “would result in short-term construction or long-term pollutant emissions in exceedance of CEQA significance thresholds established by SCAQMD with mitigation incorporated (Mitigation Measure AQ-1) therefore, the project would not result in an increase in the frequency or severity of any air quality standards violation and would not cause a new air quality standard violation.”
- (2) Pursuant to the *CEQA Air Quality Handbook*, consistency with Air Quality Management Plan growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and “significant projects.” Significant projects include the following: airports; electrical generating facilities; petroleum and gas refineries; designation of oil drilling districts; water ports; solid waste disposal sites; and, off-shore drilling facilities. The proposed project is not defined as a “significant project” under the SCAQMD Air Quality Handbook and therefore does not require growth assumptions to be analyzed.

- (3) A project would conflict with the AQMP if it would exceed growth projections in the City's General Plan, which are provided to SCAG to develop regional growth forecasts, which are used to determine AQMP air quality forecasts. The Project would involve expanding a current medical office use. Therefore, it would not substantially increase the population in the City, as it does not involve a residential component and is not anticipate to generate substantial jobs such that future employees will relocate to the City.

Based on the above consistency analysis, the proposed project development and operation is consistent with the SCAQMD Air Quality Management Plan.

B) LESS THAN SIGNIFICANT IMPACT.

Short-Term Construction Emissions

Construction emissions would not exceed SCAQMD thresholds and impacts would be less than significant. Construction emissions, including emissions from construction equipment, fugitive dust, and architectural coatings were modeled using CalEEMod. Fugitive dust emissions will be generated during land clearing and exposure of soils to air and wind. Architectural coatings from paint contain Volatile Organic Compounds, which would also be emitted during construction of the Project.

Use of diesel-powered construction equipment on the project site would result in localized exhaust emissions. Construction equipment to be used during demolition and construction phases may include the following:

- Concrete industrial saws, excavators and rubber tired dozers during demolition
- Graders, scrapers, tractors, loaders and backhoes during site preparation
- Graders, rubber tired dozers, tractors, loaders and backhoes during grading
- Cranes, forklifts, generator sets, tractors, loaders, backhoes and welders during building construction
- Air compressors during architectural coating
- Cement and mortar mixers, pavers, paving equipment, rollers, tractors, loaders and backhoes during paving

Exhaust emissions from construction activities would vary daily as construction activity levels change.

The following Table 4.3-E indicates the tentative project construction schedule for the proposed project. The schedule is based on a planned completion date of 2018 and an assumption that architectural coatings would be applied during the latter portion of the building construction phase.

TABLE 4.3-E Construction Schedule 1		
Phase	Number of Days Per Week	Number of Days
Demolition	5	20
Site Preparation	5	3
Grading	5	6
Building Construction	5	220
Architectural Coating	5	114
Paving	5	10

The Project would be required to comply with all applicable law regarding air quality. South Coast Air Quality Management District Rule 403 requires that fugitive dust be controlled with best-available control measures so the presence of such dust does not remain visible in the atmosphere beyond the project site property line of the source. Also, South Coast Air Quality Management District Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce fugitive dust generation (and thus PM₁₀ component).

The following Table 4.3-F lists total anticipated construction emissions based on the CalEEMod model (i.e. fugitive dust emissions and construction equipment exhausts) and compares anticipated emissions to SCAQMD thresholds. The emissions indicated in the table reflect the total combined offsite and onsite emissions. The emissions in Table 4.3-F reflect the CalEEMod “mitigated construction” model scenario, which is the scenario that includes standard required construction emissions control measures (fugitive dust control as required by California law, for example). As shown in Table 4.3-F, all emissions would be below thresholds.

¹ The modeled construction schedule is based on the proposed construction schedule as indicated by the project applicant. The duration of the construction schedule was modeled to occur in 2017; however, the analysis of construction emissions impacts is independent of the modeled dates because construction thresholds of significance are determined based on pounds of emissions per day and the only factor that determines peak daily emissions is the duration of the each construction phase. Thus, the modeled analysis would be applicable regardless of whether construction occurs in 2017 or thereafter. Additionally, since equipment emissions are anticipated to be reduced in the future due to increased emissions controls, specifying 2017 rather than 2018 or later results in a conservative analysis of impacts.

TABLE 4.3-F Short-Term Regional Construction Emissions								
Construction Phase	Total Regional Pollutant Emissions, pounds/day							
	VOC	NO _x	CO	SO _x	FUGITIVE PM ₁₀	EXHAUST PM ₁₀	FUGITIVE PM _{2.5}	EXHAUST PM _{2.5}
Demolition	2.8	28	22	0.03	0.52	1.6	0.10	1.5
Site Preparation	2.6	29	18	0.02	0.71	1.4	0.09	1.3
Grading	2.7	28	19	0.02	2.7	1.6	1.3	1.4
Building Construction	3.4	24	18	0.03	0.22	1.5	0.06	1.4
Architectural Coatings	9.9	2.2	2	0.00	0.03	0.17	0.01	0.17
Paving	2.0	17	13	0.02	0.17	1.0	0.04	0.94
Total Peak Daily Emissions	1.3	29	22	0.03	4.2		2.8	
SCAQMD Thresholds	75	100	550	150	150		55	
Significant?	NO	NO	NO	NO	NO	NO	NO	NO
Source: Compiled by LSA, January, 2017 Note: Peak daily emissions occur during overlap of Building Construction and Architectural Coatings Phases CO = Carbon Monoxide NO _x = Nitrogen Oxides PM _{2.5} = Particulate matter less than 2.5 microns in size PM ₁₀ = Particulate matter less than 10 microns in size SCAQMD = South Coast Air Quality Management District SO _x = Sulfur Oxides VOC = Volatile Organic Compounds								

Localized Impacts Analysis

The South Coast Air Quality Management District has issued guidance about application of CalEEMod results to localized impacts analyses (reference SCAQMD, “Fact Sheet for Applying CalEEMod to Localized Significance Thresholds”). Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. The following Table 4.3-G indicates construction emission rates would not exceed the PM₁₀ and PM_{2.5} Localized Significance Thresholds for existing sensitive receptors more than 40 meters from the project site (the approximate distance between Mardan School buildings/outdoor play areas and the Project property line, or the Nitrogen Oxides and Carbon Monoxide Localized Significance Thresholds for workers in adjacent businesses within the 40-meter minimum distance for Localized Thresholds Significance analyses).

TABLE 4.3-G Construction Localized Significance Thresholds Impacts				
EMISSIONS SOURCES	NITROGEN OXIDES	CARBON MONOXIDE	PM ₁₀	PM _{2.5}
ON-SITE EMISSIONS (pounds per day)	29	21	4.1	2.7
LST THRESHOLDS	131	993	13.2	5.2
SIGNIFICANT?	NO	NO	NO	NO
Note: Only onsite construction emissions are shown here because, as explained above in “Thresholds for Localized Impacts Analysis,” LSTs represent the maximum emissions from a <u>project site</u> that are not expected to exceed NAAQS or CAAQS. Source: LSA, January 2017 Source Receptor Area: Saddleback Valley Area, 2 acres, receptors at 40-meter distance				

Naturally Occurring Asbestos

Orange County is not among the counties that are found to have serpentine and ultramafic rock in their soils. Therefore, according to the California State Department of Conservation, potential risk for naturally occurring asbestos during project development (construction) is small and considered to be less than significant. (California State Department of Conservation, Asbestos – www.conservation.ca.gov/cgs/minerals/hazardous_minerals/asbestos/Pages/index.aspx).

Construction Health Risk Impacts

Project development (demolition and construction) would include use of diesel-powered equipment that releases DPM – a toxic air contaminant with known carcinogenic and chronic health effects. There is not a threshold for DPM; therefore, the Air Quality Analysis conducted for the Project modeled DPM emissions in the exhaust PM₁₀ emissions. Exhaust PM₁₀ emissions from construction would vary from 1.6 pounds per day to 0.17 pounds per day during different development phases. To determine the carcinogenic and chronic health risk levels, this emissions rate would be spread over a 30-year exposure period. The low DPM emissions rate, combined with the fact that the nearest sensitive receptors are 25-40 meters from the project site leads to the conclusion that construction health risk levels for DPM are negligible and below SCAQMD Thresholds of Significance (the peak daily emissions rate of total PM₁₀, which includes DPM, is less than 1% of the SCAQMD threshold, which is designed to be protective of human health).

C) LESS THAN SIGNIFICANT IMPACT.

Long-Term Project Operational Emissions

Long-term air pollutant emission impacts are those impacts associated with stationary sources (area and energy) and mobile sources (vehicles). Proposed project development and operation would result in net increases in both stationary-source and mobile-source emissions. Stationary-source emissions would be generated from many sources, including use of architectural coatings, consumer products, landscape equipment, general energy used in the building, and solid waste.

The project-generated daily vehicle trips (as contained in the *Traffic Impact Analysis* for the proposed project and discussed in the Transportation and Traffic Section of this environmental document) were entered into CalEEMod. Long-term operational emissions associated with existing conditions, project conditions, and the delta between existing emissions and project emissions are indicated in the following Table 4.3-H.

Table 4.3-H shows the net increase of all criterial pollutants from project development and operation would not exceed the corresponding South Coast Air Quality Management District daily emission thresholds for any criteria pollutants.

South Coast Air Quality Management District emission thresholds for criterial pollutants would not be exceeded by project-related increases. Therefore, project-related long-term air quality impacts would be less than significant.

TABLE 4.3-H						
Opening Year Regional Operational Emissions						
SOURCE	POLLUTANT EMISSIONS, POUNDS PER DAY					
	VOC	NO_x	CO	SO_x	PM₁₀	PM_{2.5}
EXISTING SCENARIO						
Area	0.42	<0.01	<0.01	0	<0.01	<0.01
Energy	<0.01	0.04	0.03	<0.01	<0.01	<0.01
Mobile	1.4	1.4	1.3	0.04	3.2	0.85
TOTAL EXISTING EMISSIONS	1.8	1.4	1.3	0.04	3.2	0.85
PROPOSED SCENARIO						
Area	1.2	<0.01	<0.01	0	<0.01	<0.01
Energy	<0.01	0.07	0.06	<0.01	<0.01	<0.01
Mobile	3.9	4.1	37	0.12	9.2	2.5
TOTAL PROJECT EMISSIONS	5.2	4.1	37	0.12	9.2	2.5
NET NEW EMISSIONS	3.4	2.7	24	0.08	6	1.7
SCAQMD THRESHOLDS	55	55	550	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

Source: LSA, January, 2017

Operational Localized Significance Threshold Impacts Analysis

The following Table 4.3-I indicates operational emission rates would not exceed the PM₁₀ and PM_{2.5} Localized Significance Thresholds for existing sensitive receptors located more than 25 meters from the proposed project site or the Nitrogen Oxides and Carbon Monoxide Localized Significance Thresholds for workers in adjacent businesses within the 40-meter minimum distance for Localized Significance Thresholds analyses. This assessment recognizes that the distance between property lines from the project site to the Mardan School is 25 meters. Therefore, project operation would not result in a locally significant air quality impact.

TABLE 4.3-I				
Long-Term Operational Localized Significance Thresholds				
EMISSIONS SOURCES	NO_x	CO	PM₁₀	PM_{2.5}
ON-SITE EMISSIONS (pounds per day)	0.2	1.9	0.5	0.1
LST THRESHOLDS	131	993	3.8	1.6
SIGNIFICANT EMISSIONS?	NO	NO	NO	NO
Source: LSA, January, 2017 Source Receptor Area: Saddleback Valley Area, 2 acres, receptors at 40-meter distance; note – Mardan School property line is 25 meters from project site property line Note: A distance of 40 meters is used for the long term operational LST analysis because SCAQMD guidelines state that “sensitive receptors” are locations where a person could be located for 24 hours; the closest “sensitive receptor” is residential homes located approximately 130 ft (40 m) from the project site and medical (hospital or convalescent) facilities 180 ft (55m) from the project site. Therefore, use of the 40 m threshold for PM _{2.5} and PM ₁₀ is appropriate.				

Toxic Air Contaminants from Emergency Generators

Emergency power generators only have the potential to emit Toxic Air Contaminants when in operation; however, there are no emergency power generators currently on-site and no emergency generators proposed as part of the project. Therefore, impacts related to toxic air contaminants from emergency generators would be less than significant.

D) LESS THAN SIGNIFICANT IMPACT.**Long-Term Microscale (Carbon Monoxide Hot Spot)**

Localized air quality impacts typically occur near severely congested roadways and intersections due to idle vehicles and slow traffic flow. Carbon Monoxide is the primary mobile-source pollutant of local concern. Under extreme meteorological conditions, Carbon Monoxide concentrations near a congested roadway or intersection may reach unhealthful levels and affect local sensitive receptors, such as residents, school children, the elderly, and hospital patients. Typically, high Carbon Monoxide concentrations are associated with roadways or intersections that operate at unacceptable levels of service (LOS) or at extremely high traffic volumes.

Existing Carbon Monoxide concentrations in the immediate vicinity of the proposed project are not available; however, the Mission Viejo Station (the station closest to the proposed project site with complete monitored Carbon Monoxide data) indicated the highest recorded 1-hour carbon monoxide concentration of 1.6 ppm and the highest 8-hour concentration of carbon monoxide of 0.81 ppm during the past three years. The State standards are, respectively, 20 ppm and 9 ppm.

All study area intersections currently operate at satisfactory Levels of Service. Addition of proposed project traffic would not cause intersection Levels of Service to be unsatisfactory. Therefore, given the extremely low level of CO concentrations in the project area and the lack of traffic impacts at any intersections, project-related vehicles are not expected to contribute significantly to CO concentrations exceeding the State or federal CO standards. Because no CO hot spot would occur, there would be not project-related impacts on CO concentrations.”

E) LESS THAN SIGNIFICANT.

Odors During Construction and Operation.

Heavy-duty construction equipment used for project development would emit odors, primarily from equipment exhaust. Once construction activity stops, such odor generation would stop. Construction impacts would be temporary in nature and therefore impacts would be less than significant.

South Coast Air Quality Management District Rule 402 regarding nuisance states that “A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.” The proposed medical office building use is not anticipated to emit any objectionable odors. Therefore, objectionable odors affecting a substantial number of people would not occur as a result of project development or operation.

4.3.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Impacts would be less than significant without mitigation.

4.2.6 PROJECT DESIGN FEATURES

No Project Design Features are required.

4.3.7 MITIGATION MEASURES

No Mitigation Measures are required.

4.3.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts are less than significant without mitigation.

4.3.9 CUMULATIVE IMPACTS

The cumulative impacts analysis is based on projections in the regional Air Quality Management Plan. The proposed project is consistent with growth assumptions in the City General Plan, the 2012 Regional Transportation Plan/Sustainable Communities Strategy, and the regional Air Quality Management Plan. In addition, the proposed project would not increase frequency or severity of an air quality standards violation or causes a new violation. The *Traffic Impact Analysis* (LSA, 2016) for the proposed project indicates the cumulative analysis includes projects in the City of Irvine and in adjacent cities (Santa Ana, Tustin, and Newport Beach). This study area is considered appropriate in scope to evaluate cumulative air quality impacts for this Project.

The Woodbridge Village Development/Redevelopment project (Woodbridge Village Center) is the only other cumulative project in the Project vicinity. SCAQMD's policy for addressing cumulative projects is to use the same thresholds for cumulative impacts as those used for Project impacts. As discussed above, the Project would not exceed SCAQMD thresholds for regional emissions or localized criteria pollutant emissions. Therefore, the Project would not be cumulatively considerable under CEQA. Impacts would be less than significant.

Section 4 Environmental Impacts – Biological Resources

4.4 BIOLOGICAL RESOURCES

Information for this section was derived from the City of Irvine General Plan – Open Space and Conservation Element and the Orange County Natural Communities Conservation Plan/Habitat Conservation Plan.

4.4.1 ENVIRONMENTAL SETTING

The project site contains a 16,015 square foot medical office building, surface parking and introduced landscaping that includes mature trees, shrubs and surface planting. The City of Irvine General Plan – Open Space and Conservation Element does not identify any significant biotic resources within the project site.

4.4.2 EXISTING REGULATIONS & STANDARD CONDITIONS

State and Federal Regulatory Framework

Natural Communities Conservation Plan/Habitat Conservation Plan

The Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) was prepared in cooperation with the California Department of Fish and Game (now California Department of Fish and Wildlife) and the United States Fish and Wildlife Service, both of which are responsible for implementing the State and federal Endangered Species Acts. The Orange County Environmental Management Agency was the lead agency responsible for preparing the NCCP/HCP and its attendant Environmental Impact Report. The United States Fish and Wildlife Service was the lead agency responsible for managing preparation of the Environmental Impact Statement.

The regulatory framework within which the NCCP/HCP and Joint EIR/EIS were prepared includes the following:

- The NCCP Act of 1991¹, which was intended to facilitate long-term regional protection of natural vegetation and wildlife diversity while allowing compatible land uses and appropriate development and growth
- The March 30, 1993, listing of the coastal California gnatcatcher as a “threatened” species and the September 29, 1994, listing of the Pacific pocket mouse and December 16, 1994, listing of the southwestern arroyo toad as “endangered” species under the provisions of the federal Endangered Species Act
- The Special 4(d) Rule enacted by the United States Department of the Interior to encourage preparation of Natural Community Conservation Plans by establishing the NCCP Act as a primary program for addressing the federal listing of the gnatcatcher

A natural community conservation plan is the state equivalent of the federal Habitat Conservation Plan. It provides a means of complying with the Natural Community Conservation Planning Act and securing take authorization at the California State level. The Natural

Section 4 Environmental Impacts – Biological Resources

Community Conservation Planning Act is broader than ESA and the California Endangered Species Act. The primary objective of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land uses.

The Implementation programs for the Plan will allow conservation of large, diverse areas of natural habitat for the California gnatcatcher and 41 other “identified species” and their habitats. In May, 1996, the City of Irvine entered into an agreement to place certain lands within the NCCP Reserve and commit to certain responsibilities under the Plan. As part of that agreement, the City of Irvine committed to considering General Plan amendments and ordinances to implement the Plan, reviewing project proposals to ensure consistency with the NCCP, making efforts to acquire conservation easement from landowners not participating in the NCCP, and formally committing City-owned lands to the reserve system.

Natural Community Conservation Plans are different from Habitat Conservation Plans because the Natural Community Conservation Act requires that conservation actions improve the overall condition of a species, whereas a Habitat Conservation Plan typically only requires avoidance of a net adverse impact on a species. In addition, while a Habitat Conservation Plan can be applied at a project or regional scale, a Natural Community Conservation Plan must be applied at the regional scale to promote the long-term recovery of species, protection of habitat and natural communities, and diversity of species at the landscape level. Therefore, California State requirements exceed federal mitigation requirements.

Orange County Central-Coastal NCCP/HCP

The NCCP/HCP is a program of the California State Department of Fish and Wildlife that assumes a broad-based ecosystem approach to planning for protection and perpetuation of biological diversity throughout California. A regional or sub-regional NCCP Implementation Plan identifies and provides for regional protection of plants, animals, and their habitats and allows for compatible and appropriate economic activity that would include development and recreation. Each NCCP Plan is more comprehensive in its orientation and objectives than the California Endangered Species Act or Federal Endangered Species Act because it is designed to protect individual endangered species through broad-based ecosystem preservation and restoration rather than relying on reactive occurrence-based species protection and relocation projects. NCCPs often are combined with a federal habitat Conservation Plan (the mechanism used by the United States Fish and Wildlife Service to protect federally-endangered species on an ecosystem level).

There are 24 active NCCP Implementation Plans in California that cover more than 9 million acres. Each is governed by a local governmental or non-profit agency working in collaboration with landowners, environmental organizations and other interested parties. The City of Irvine is a signatory to the NCCP/HCP Implementation Agreement of the Central and Coastal Sub-region, together with the County of Orange, Orange County Fire Authority, University of California Irvine, Orange County Transportation Corridor Agency, and various other municipal agencies and agencies.

Section 4 Environmental Impacts – Biological Resources

In 1996, the Irvine City Council approved the Agreement, which requires Irvine to commit to a number of habitat protection and management activities including General Plan and zoning amendments, fuel modification standards, conservation easements, and development of an adaptive management plan to balance habitat protection with development and public access.

Oversight of the Central and Coastal Sub-region NCCP/HCP reserve system is administered by a non-profit corporation, the Natural Communities Coalition. Its board is comprised of the public and private owners of protected open space land, wildlife agencies, local governments and community representatives. This Coalition is responsible for coordination and monitoring of various protection, restoration, education and recreation projects and programs implemented by each landowner. The Coalition does not have enforcement powers or authority over individual jurisdictions or landowners. Rather, its purpose is to facilitate development and implementation of the land management policies and programs required of landowners under terms of the NCCP/HCP Agreement.

The City of Irvine is accountable for day-to-day management of the Irvine Open Space Preserve in a manner consistent with terms of the NCCP/HCP and its associated Environmental Impact Report. The City was required to develop policies and programs for activities on the land that are based on an “adaptive management” context. Adaptive management is defined as the “flexible, iterative approach to long-term management of biotic resources that is directed over time by the results of ongoing monitoring activities and other information. Under this approach, biological management techniques and specific objectives are regularly evaluated in light of monitoring results and other new information. These periodic evaluations are used over time to adapt both the management objectives and techniques to better achieve overall management goals.”

The overall objective of adaptive management of the Irvine Open Space Preserve is to provide for a continuous adaptation of policies, programs and infrastructure that are designed to ensure a sustainable balance between habitat conservation and public enjoyment of the land. The City developed Resource Management Plans for the southern and northern portion of the Irvine Open Space Preserve that include a detailed description of localized biotic resources, a detailed discussion of City procedures for operations, public recreation programs, public access infrastructure, and restoration and enhancement projects.

The City must annually submit to the Coalition, California State Department of Fish and Wildlife, and United States Department of Fish and Wildlife an Annual Work Plan and Progress Report that demonstrates City land management activities are consistent with both the approved Recreation and Resource Management Plans and the NCCP/HCP. The Annual Report includes a discussion of the observed impact of public access and infrastructure on target species and habitats in the Irvine Open Space Preserve and contains specific recommendations for modification to existing practices designed to minimize adverse impacts to those biologic resources.

The Orange County Central-Coastal NCCP/HCP is one of the first regional Habitat Conservation

Section 4 Environmental Impacts – Biological Resources

Plans developed in the United States. The NCCP/HCP was approved by the City of Irvine, six other cities, The Irvine Company, Metropolitan Water District, County of Orange University of California, Irvine, and the Orange County Transportation Corridor Agency in 1996 with a 75-year permit life. The NCCP/HCP represents a voluntary, collaborative planning effort among a variety of partnerships having both conservation and development interests. The purpose of the Orange County Central-Coastal NCCP/HCP is to provide regional protection and recovery of multiple species and habitat while allowing compatible land use and appropriate development. Its planning area covers 208,000 acres (nearly 325 square miles), creates a preservation area of 37,378 acres, and covers 39 species that include 6 federally listed species.

The Orange County Central-Coastal NCCP/HCP is one of eleven NCCP sub-regions within the five county southern California area identified by the State of California Southern California Coastal Sage Scrub NCCP program. This program focuses on protection of coastal sage scrub habitat and adjacent habitats and attempts to address long-term biological protection and management of multiple species at a sub-regional level

The NCCP approach is focused to conserving natural communities rather than individual species, providing protection of species listed under the California Endangered Species Act (CESA) and the federal Endangered Species Act (FESA), and accommodating compatible land uses. The NCCP program is designed to provide incentives that attract landowners, government agencies and public interests to become stakeholders in a collaborative partnership. Conservation principles are applied at the natural community level, rather than focusing on new listings and regulating individual species. The shift toward protection of a mosaic of natural communities enhances the ability of local, State and federal agencies to provide long-term protection for a broad range of species that are dependent on natural communities. Reducing need for future listings also reduces public/private costs and land use conflicts related to the endangered species regulatory process. This will lead to increased local control and streamlined regulatory processes by providing certainty for local governments and landowners involved in planning future infrastructure and other economic uses.

Specific purposes of the NCCP/HCP for the Central and Coastal Sub-region include the following:

- Planning for the protection of multiple-species and multiple-habitats within the coastal sage scrub habitat mosaic by creating a habitat Reserve System that contains substantial coastal sage scrub, chaparral, grasslands, riparian, oak woodlands, cliff and rock, forest and other habitats
- Developing a conservation program that shifts away from the current focus on project-by-project, single species protection to conservation and management of many species and multiple habitats on a sub-regional level
- Allowing social and economic uses within the sub-region that are compatible with protection of Identified Species and habitats
- Protecting the federally-listed coastal California gnatcatcher in a manner consistent with Section 10(a) of the Federal Endangered Species Act and the Special 4(d) Rule for the gnatcatcher while providing for future Incidental Take of the species

Section 4 Environmental Impacts – Biological Resources

- Protecting the coastal cactus wren and orange-throated whiptail lizard by treating them as if they were listed under Section 10(a) of the Federal Endangered Species Act and allowing Incidental Take of these species
- Protecting non-coastal sage scrub habitat within the coastal sage scrub habitat mosaic at a level comparable to protection provided for coastal sage scrub and thereby contributing to protection of a broader range of species than just the target species or coastal sage scrub species
- Addressing habitat needs of non-target species within the sub-region and non-coastal sage scrub habitats, including protecting six other federally-listed species consistent with Federal Endangered Species Act Section 10(a) and treating 30 other “identified” species “as if they were listed” under Section 10(a) of the Federal Endangered Species Act
- Addressing conservation of sensitive species located on the Dana Point Headlands site, other Identified Species and five designated plant species
- Building upon prior regional open space planning that has occurred in Orange County and integrating that open space planning into creation of the habitat Reserve System and sub-regional conservation strategy
- Addressing impacts to coastal sage scrub and non-coastal sage scrub habitats and related NCCP/HCP species addressed in the Joint EIR/EIS in a manner that will be used and relied upon in conjunction with future environmental reviews and documents

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA) was first enacted in 1916 to implement the convention for the protection of migratory birds. The MBTA makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except the terms of a valid permit issued pursuant to Federal regulations. A species qualifies for protection under the MBTA by meeting one or more of the following criteria:

- It is covered by the Canadian Convention of 1916, as amended in 1996
- It is covered by the Mexican Convention of 1936, as amended in 1972
- It is listed in the annex to the Japanese Convention of 1972, as amended
- It is listed in the appendix to the Russian Convention of 1976

Some of these conventions stipulate protections not only for the birds themselves, but also for habitats and environs necessary for survival of the listed birds. Migratory birds may seek respite within trees or on buildings considered private property. The MBTA prohibits removal of all listed species (of which there are more than one thousand) or their parts (feathers, eggs, nests, etc.) from such property. However, in extreme circumstances a Federal permit might be obtained for relocation of a listed species.

City of Irvine General Plan Conservation and Open Space Element

The City of Irvine General Plan Conservation and Open Space Element provides long-term guidance for preservation of significant natural resources and open space areas. The Element

Section 4 Environmental Impacts – Biological Resources

serves three purposes, as follows:

- The Element provides mechanisms for ensuring a balance between the urban and natural environments within the City
- The Element recognizes natural and man-made hazards that might potentially affect the community if development were to occur
- The Element provides specific policies and a program for preserving, managing and using natural and man-made resources

Conservation is considered the wise use, management and preservation of natural resources to assure their continued availability and viability. Open space is defined as lands that provide for the preservation of natural resources such as plant and animal habitat, managed production of resources, outdoor recreation, or public health and safety.

The City of Irvine is located within the coastal and foothill region of central Orange County and is characterized by four major landforms: Santiago Hills; Northern Flatlands; Central Flatlands; and, San Joaquin Hills. The proposed project site is located within the Central Flatlands portion of Irvine, an area between the Santa Ana Freeway (Interstate 5) and the San Diego Freeway (Interstate 405). The natural biotic communities (the primary of which are farmland/rural, urban and riparian) within this area have largely been altered by urban development. The Central Flatlands contain Irvine's core development area.

City of Irvine Urban Forestry Ordinance

The City of Irvine Urban Forestry Ordinance (Municipal Code Section 5-7-401) purpose is to protect and enhance the existing urban forest resource by application of sustainability in landscaping policies and through provision of professional management. This purpose is based on several findings in the Ordinance that, among other considerations, indicate the following:

- More than 20% of the total urban forest resource in the City is comprised of 30,000+ trees on public landscapes
- These trees provide shade that reduces use of fossil fuels for cooling buildings
- These trees absorb and store carbon dioxide (the most pervasive air pollutant)
- These trees provide beauty to the Irvine community, which increases property values

The following are goals of the Urban Forestry Ordinance:

- To protect trees for their historical, biological, or aesthetic value including, but not limited to, native oaks, native sycamores and eucalyptus windbreaks
- To sustain and improve the integrity of the design character of the Irvine villages
- To ensure tree management decisions are made with assistance from qualified professionals
- To encourage long-range planning for urban and community forest management
- To encourage proper tree selection where consideration is given to available growing space, soil suitability and desired effect
- To encourage tree species diversity at the City and village levels

Section 4 Environmental Impacts – Biological Resources

The Urban Forestry Ordinance establishes its jurisdiction as applying to the following:

- Public trees in public streets rights-of-way
- Public trees in/around public parks and other public facilities
- Trees in common areas in village edges and landscape or parking lot setbacks on arterial streets
- Private trees on non-residential properties to the extent the Zoning Ordinance requirements are effective. The Zoning Ordinance does not restrict tree removal but does imply tree replacement to maintain specific ratios of trees to parking stalls and linear boundaries
- Significant trees (refer to definition below)

The Urban Forestry Ordinance provides the following key definitions:

City Arborist – The Director of Public Works or his/her authorized representative;

Significant Tree – All trees located within public or private landscapes (public street rights-of-way; public parks and other public facilities; common areas in village edges and landscape or parking lot setbacks on arterial streets; private trees on non-residential properties to the extent Zoning Ordinance requirements are effective); all trees in eucalyptus windbreaks or any tree included in a remnant of a eucalyptus windbreak (a remnant of a eucalyptus windbreak is any tree or trees of the species *Eucalyptus globulus* that are approximately the same age as other known windbreak trees in the City);

Topping – Any pruning cut that removes a branch to a stub, a bud, or a lateral branch not large enough to assume the terminal role; a lateral branch is large enough to assume the terminal role when it is at least one-half the diameter of the branch that is removed;

Tree – Any wood plant species that can typically grow with a single trunk and a distinguishable crown and have a height of 15 feet or more at maturity;

Urban Forest – A natural resource comprised of all trees on public and private property within the City limit and sphere of influence.

Urban Forestry Ordinance requirements are as follows:

- Topping (refer to definition above) is prohibited except in cases where the City has issued a tree removal permit or in cases of emergency where immediate threat to persons or property is posed;
- Tree Removal
 - A Permit for Tree Removal is required to remove any significant tree on public or private property applicable to the Ordinance
 - The City Arborist may grant a Tree Removal Permit for the following:
 - Trees that are dead or in significant and irreversible decline (dead limbs composing more than one-third of the tree crown)
 - Trees that have a potentially hazardous and non-correctible structure

Section 4 Environmental Impacts – Biological Resources

- Trees that are stunted or malformed due to crowding from adjacent trees or structures
- Trees that have an insect or disease infestation that is not treatable and could cause tree mortality
- Trees that are causing damage to sidewalks, curbs, drives, buildings and other structures, sewer, gas, electrical, water and other utilities
- Trees that have yet to cause damage to structures but are determined to be incompatible with the growing space available
- Trees that are significantly inhibiting utilization of the property and removal can be determined to provide public benefits
- Trees on non-residential property shall only be subject to replacement criteria (indicated below)
- Tree Replacement
 - Trees removed shall be replace at a one-for-one ratio on-site or in a similar location, on-site in a different location, or off-site (based on the determination of the City Arborist)
 - Trees removed on non-residential property shall be replaced at a one-for-one ratio in conformance with the most current landscape plan approved by the City based on the determination of the City Arborist. Trees removed on non-residential property where existing tree density does not comply with that specified in the most current landscape plan shall be replaced at a ratio not to exceed the tree density specified in that plan based on the determination of the City Arborist. In either case, trees may be replaced on-site in a similar location, on-site in a different location, or off-site (based on the determination of the City Arborist)

Relevant City of Irvine General Plan Conservation and Open Space Element Objectives and Policies

The Conservation and Open Space Element of the City of Irvine General Plan delineates Objectives and Policies pertaining to the following: implementation of actions that would protect permanently designated conservation and open space areas; biotic resources maintenance and preservation; participation in the NCCP/HCP program; minimization of dangers from geophysical hazards; geophysical resources use and preservation; minimization of danger to life and property from man-made hazards; use and maintenance of societal resources including cultural resources; maintenance and preservation of large contiguous areas that contain significant multiple hazards and resources; development and maintenance of a network of recreational areas that provide a variety of recreational opportunities and that link and integrate conservation and open space areas within the City; encouragement of maintenance of agricultural activities in undeveloped areas of the City; coordination of landfill planning efforts with appropriate federal, State and local agencies and landowners; and, coordination of land planning efforts with appropriate federal, State and local agencies and landowners to encourage integration of existing and future water sources into development.

Section 4 Environmental Impacts – Biological Resources

The Objectives and Policies in the Conservation and Open Space Element do not pertain directly to the proposed project because the site is fully developed with a medical office building and surface parking. No open space, recreational, agricultural or conservation areas exist on the proposed project site or adjacent to the proposed project site. In addition, no geophysical or cultural resources occupy the proposed site.

4.4.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines, the proposed project may create a significant impact to biological resources if it would:

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

4.4.4 ENVIRONMENTAL IMPACTS

The proposed project site is located within an identified “Development Area” of NCCP/HCP Implementation District.

- A) **LESS THAN SIGNIFICANT IMPACT WITH MITIGATION:** The project site is currently developed with a 16,015 square foot medical office building, 122 surface parking spaces and landscaping within an urbanized setting and does not provide habitat for candidate, sensitive or special status species. All landscaping has been introduced

Section 4 Environmental Impacts – Biological Resources

and is non-native. Several mature trees exist at each corner of the project site as well as along the north side of Barranca Parkway. Some of the trees may provide habitat for migrating or native birds. Although the proposed demolition and construction activities associated with project development would not change the use of the project site as a medical office building, these activities may disturb migrating bird species. Impacts are therefore potentially significant. Implementation of Mitigation Measure B-2, which would require a preconstruction survey to determine location of any active birds nests in the project vicinity, would ensure any adverse effect, either, directly or through habitat modifications on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service would be reduced to a less than significant level.

- B) LESS THAN SIGNIFICANT IMPACT WITH MITIGATION.** Site grading activities and/or construction activities (including generated noise) that may occur between March 15 and September 15 would result in disturbance to or removal of existing perimeter landscaping. In turn, these activities could disturb active bird nests on site or in the vicinity of the project site. Impacts are potentially significant. However, implementation of Mitigation Measure MM B-2 will ensure any potential impacts to nesting birds will be reduced to a less than significant level.
- C) NO IMPACT:** The project site is located in an urbanized area and is currently developed with a medical office building that will be replaced with a 46,800 square foot two-story medical office building over an open parking garage, surface parking, and perimeter and project site landscaping. No federally protected wetlands exist on or adjacent to the project site. Therefore, project development and operation will not result in a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption or other means. No impact will result and no mitigation measures are required.
- D) NO IMPACT:** The project site is located in an urban area and is surrounded by developed professional office, administrative office, residential properties, senior housing and a private educational facility. The movement of migratory wildlife species does not occur on the project site. The proposed project involves demolition of a 16,015 square foot single-story medical office building and surface parking lot and replacement of such with a 46,800 square foot two-story medical office building over an open parking garage, surface parking and perimeter and project site landscaping. No migratory fish or wildlife movement occurs through the project site. The City of Irvine General Plan – Open Space and Conservation Element (Figure L-4, Biotic Resources) does not identify any significant biotic resources within the project site. Project development and operation will not interfere with the movement of a native or migratory species or with established native resident or migratory wildlife corridors, or impede use of native wildlife nursery sites and no related impact will occur from development and implementation of the proposed project.

Section 4 Environmental Impacts – Biological Resources

E) LESS THAN SIGNIFICANT: The project site is located in an urban area and is surrounded by developed professional office, administrative office, senior housing, residential properties, and a private school. No mature eucalyptus windrow trees are located on the proposed project site; rather, only introduced landscaping associated with the existing use on the project site exists. The City of Irvine Urban Forestry Manual provides guidance on replacement of “significant trees,” which are defined as “all trees located within public or private landscapes.” This includes trees in public rights-of-way on public streets or in landscape/parking lot setbacks, which applies to the proposed project. Replacement of removed trees is a component of the proposed project. Therefore, project development will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance and impacts will be less than significant.

F) NO IMPACT: The project site is located in an urban area and is surrounded by developed professional office, administrative office, residential properties, senior housing and a private educational facility. No habitat identified for conservation exists on the project site. Only introduced landscaping associated with the existing use on the project site exists. Although lands within the City of Irvine are included in the Central and Coastal Sub-Region of the Orange County Natural Community Conservation Plan (NCCP), the project site is not included within an area subject to an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP) or other similar local, regional or state HCP. The proposed project involves demolition of a 16,015 square foot single-story medical office building and surface parking lot and replacement of such with a 46,800 square foot two-story medical office building over an open parking garage, surface parking and perimeter and project site landscaping. Therefore, project development and operation will not conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. No impact will result and no mitigation measures are required.

4.4.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Project development and operational impacts to Biological Resources before Mitigation are potentially significant.

4.4.6 PROJECT DESIGN FEATURES

No Project Design Features are required.

4.4.7 MITIGATION MEASURES

The following mitigation measures are required to ensure project compliance with requirements of the City of Irvine Urban Forestry Ordinance and protection of any birds that may be nesting

Section 4 Environmental Impacts – Biological Resources

on site or in the vicinity of the project site.

MM B-1: Prior to issuance of permits that include removal of trees, the Applicant shall provide evidence of compliance with tree replacement requirements specified in the City Urban Forestry Ordinance and obtain a Tree Removal Permit to the satisfaction of the City Arborist and Director of Community Development for their review and approval.

MM B-2: Should site grading activities occur between March 15 and September 15, including any activities that would result in disturbance to or removal of existing perimeter landscaping, a qualified biologist shall conduct a pre-construction survey to determine the location of any active bird nests in the area, including but not limited to raptors and least Bell's vireo. The survey should begin not more than three days prior to the beginning of construction activities. The wildlife agencies shall be notified if any nesting least Bell's vireo is found. During construction, active nesting sites shall be monitored by a qualified biologist to ensure that construction levels do not exceed 60 dBA L_{eq} . Should these noise levels be exceeded, the applicant shall implement noise attenuation measures, potentially including the erection of temporary noise curtains sufficient to reduce noise levels at occupied nesting sites to acceptable levels. Nest monitoring should continue until fledglings have dispersed or the nest has been determined to be a failure, as approved by the wildlife agencies.

4.4.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

All project-specific and cumulative impacts to Biological Resources will be less than significant with mitigation.

4.4.9 CUMULATIVE IMPACTS

The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation is the 18-acre (162,444 square foot) Woodbridge Village Center, located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway.

The City of Irvine Planning Commission granted approvals on July 21, 2016 for the modernization of the Woodbridge Village Retail Center through the following applications: Master Plan Modification to re-image the existing center and expand outdoor spaces; a Conditional Use Permit modification for a gas station, drive-thru car wash and convenience store; and a Conditional Use Permit for a new 4,226 square foot fast food restaurant with drive-thru. With various demolition activities, the redeveloped retail center would be decreased by 25,246 square feet – from 162,444 to 137,198 square feet.

The project involves introduction of new landscaping, for an overall increase in landscaping compared to existing conditions. With implementation of mitigation, the project's impacts to biological resources would be less than significant and therefore, the project's cumulative impacts would not be cumulatively considerable.

Section 4 Environmental Impacts – Cultural Resources

4.5 CULTURAL RESOURCES

Information for this section was derived from the City of Irvine General Plan – Cultural Resources Element and from Perkins Coie, “California Land Use & Development Law Report.” This section provides an evaluation of the potential impacts to cultural resources that could result from development of the project.

4.5.1 ENVIRONMENTAL SETTING

Cultural resources are comprised of places, objects, structures and settlements that reflect individual or group archaeological, paleontological, architectural or historic activities.

Cultural Setting

Prehistory

California prehistory can be divided into three major periods, beginning in 6000 B.C. and extending to 1771 A.D. The period between 6000 to 1000 B.C. has been described as the Millingstone Horizon by Wallace (1955, 1987) and is typified by an abundance of milling stones and relatively few projectile points, which reflects a primary emphasis on collection of seeds. This earliest period is followed by Intermediate Period Cultures after approximately 1000 B.C. (Wallace 1955, 1978), which was a period that witnessed important technological changes that may be associated with increasing population levels and the beginnings of resource intensification. The appearance of the mortar and pestle is believed to reflect the increasing importance of acorns in the diet; the transition from dart to arrow points by the end of the period indicates the appearance of the bow and arrow. The Late Prehistoric Period (Wallace’s [1955] Horizon IV and Warren’s [1968] Shoshonean Tradition) appears in Orange County at approximately A.D. 600 and extends to A.D. 1771 (Koerper 1981); Mason 1991). Shell beads, small arrow points and, more recently, ceramics are common at these sites.

History

European explorers made short visits to the California coast in the 16th and 17th centuries. However, the Portola expedition (1769) began the period of Spanish colonization of California and included founding of permanent Spanish settlements along the California coast north from the Mexican border to the San Francisco Bay area. The first permanent settlement in what is today Orange County was the Mission San Juan Capistrano (1776).

Only one settlement – San Juan Capistrano – existed in what is today Orange County when California became a state. Anaheim was established in 1857 as a German Colony purchased from Rancho San Juan Cajon de Santa Ana (Cleland 1941: 157). The Great Drought of the 1860s changed California history by forcing many cattlemen to sell their land to settlers. Communities in what are today Santa Ana, Tustin, Westminster, Orange and Garden Grove were founded in years after the Great Drought. The 1890s were boom years for Southern California. Railroad extension to the region linked Southern California to much of the rest of the North

Section 4 Environmental Impacts – Cultural Resources

American continent. Fullerton, Buena Park, Olive and El Modena were settled and were followed by Laguna Beach, Huntington Beach, San Clemente and Newport Beach. Subdivision of former ranch lands continued.

Several land transactions occurred that resulted in formation of the historic Irvine Ranch. William Wolfskill acquired the Yorba family's vast land holdings and six years later sold the land to James Irvine, Llewellyn Bixby, and Benjamin and Thomas Flint. In 1868, title was confirmed and patented for 47,226 acres. In 1862, The Irvine-Bixby-Flint group purchased Rancho San Joaquin, which was comprised of 50,000 acres formerly owned by the Sepulveda family. The group then owned 101,077 total acres (Robinson 1963: 8-9)

After the Great Drought, wool production became very profitable and the Irvine-Bixby-Flint group began to raise sheep on its property. Additional small parcels were added to the landholdings. In 1876, James Irvine bought out his partners and increased the size of his holdings to almost 115,000 acres (Robinson 1963: 8-9). The property was re-named "Irvine Ranch." The Irvine Ranch occupied a strip of land approximately eight miles wide along the coast. In the late 1880s as sheep and wool became less valuable much of the Irvine Ranch was leased for agricultural purposes. In short time, there occurred a complete conversion from livestock raising to agriculture.

By 1895, the most productive crop was barley that was used for brewing beer and for feeding livestock. By 1905, other crops (alfalfa, celery, rhubarb, artichokes, peanuts, flax, sugar beets) were raised. James Irvine sold a few thousand acres of his Ranch between 1902 and 1906 (Cleland 1941). At about this time, he began to plant citrus orchards on Ranch property. Citrus crops became so profitable that by 1913 citrus became the principal product on the Ranch and livestock grazing lands were reduced. Other crops grown were avocados and persimmons. During World War I agriculture on the Ranch intensified to the point that by 1918, 60,000 acres of lima beans were grown on the Irvine Ranch. During World War II, two Marine Corps air facilities were built on land sold to the United States government. In 1959, the Irvine Company agreed to donate 1,000 acres to the University of California for a new campus. After the University purchased an additional 500 acres, William Pereira (the University's consulting architect) and Irvine Company planners drew master plans for a city of 50,000 people surrounding the University campus. The new area would include residential areas, recreation areas, commercial centers, industrial zones, and greenbelts. The Irvine Industrial Complex (Irvine Business Complex) and the villages of Turtle Rock, University Park, Culverdale, the Ranch and Walnut were completed by 1970. On December 28, 1971, residents of the communities voted to incorporate a substantially larger city that originally envisioned to control the future of the area and protect its tax base.

In 1989, the State Farm Automobile Insurance Company purchased the 2.86-acre project site at 2 Osborn from the Irvine Company. Grading for the existing building was completed in 1991, and it has since operated as a general office building. Sterling America Investments, Inc. acquired the property in January 2002, and has since operated the existing 16,015 square foot building as a medical office facility.

Section 4 Environmental Impacts – Cultural Resources

4.5.2 EXISTING REGULATIONS & STANDARD CONDITIONS

Regulatory Background

California State Public Resources Code

California State Public Resources Code policies and regulations protect archaeological, paleontological and historical sites. Public Resources Code protections are as follows:

- Sections 5020-5029.5 – provides for continuation of the former Historical Landmarks Advisory Committee as the State Historical Resources Commission, which is in charge of overseeing the administration of the California Register of Historical Resources and is responsible for designation of State Historical Landmarks and Historical Points of Interest
- Sections 5079-5079.65 – provides definitions of the functions and duties of the Office of Historic Preservation, which is responsible for administration of federally and state-mandated historic preservation programs in California and the California Heritage Fund
- Sections 5097.9-5097.998 – provides protection to Native American historical and cultural resources and sacred sites and identifies powers and duties of the Native American Heritage Commission; requires notification to descendants of discoveries of Native American human remains and provides for treatment and disposition of human remains and associated grave materials.

California Senate Bill 18

California State law provides for limited protection of Native American prehistoric, archaeological, cultural, spiritual and ceremonial places, such as the following: sanctified cemeteries, religious, ceremonial sites, shrines, burial grounds, prehistoric ruins, archaeological sites; and, sacred sites.

California Senate Bill 18 placed new requirements on local governments for developments in or near a Traditional Tribal Cultural Place (TTCP). Local jurisdictions must provide opportunities for involvement of California Native American tribes in the land planning process to preserve traditional tribal cultural places. The Final Tribal Guidelines recommends the Native American Heritage Commission provide written information within 30 days to inform the Lead Agency if a proposed project is determined to be near a TTCP and another 90 days for tribes to respond to a local government if the tribes want to consult to determine whether the project would have an adverse impact on the TTCP.

SB 18 also amended California Civil Code Section 815.3 to add California Native American tribes to the list of entities that can acquire and hold conservation easements to protect their cultural places.

Section 4 Environmental Impacts – Cultural Resources

California Assembly Bill 52

Governor Brown signed Assembly Bill Number 52 on September 25, 2014. California Assembly Bill 52 became effective on July 1, 2015. The legislation imposes new requirements for consultation regarding projects that may affect a tribal cultural resource, includes a broad definition of what may be considered to be a tribal cultural resource, and includes a list of recommended mitigation measures.

Assembly Bill 52 added “tribal cultural resources” to categories of cultural resources that are specifically required to be protected under CEQA. “Tribal resources” are defined as either (1) sites, features, places cultural landscapes, sacred places and objects with cultural value to a California Native American tribe” that are included in the State register of historical resources or a local register of historical resources, or that are determined to be eligible for inclusion in the State register; or, (2) resources determined by the lead agency, in its discretion, to be significant based on the criteria for listing in the State register. Under this legislation, a project that may cause a substantial adverse change in the significance of a tribal cultural resource is defined as a project that may have a significant effect on the environment. Where a project may have a significant impact on a tribal cultural resource, the lead agency’s environmental document must discuss the impact and whether feasible alternatives or mitigation measures could avoid or substantially lessen the impact.

Assembly Bill 52 further requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a proposed project if they have requested notice of projects proposed within that area. If a tribe requests consultation within 30 days upon receipt of the notice, the lead agency must consult with the tribe. Consultation may include discussing type of environmental review necessary, significance of tribal cultural resources, significance of project impacts on tribal cultural resources, and alternatives and mitigation measures recommended by the tribe. The parties must consult in good faith, and consultation is considered concluded when either the parties agree to measures to mitigate or avoid a significant effect on a tribal cultural resource (if such a significant effect exists) or when a party concludes mutual agreement cannot be attained.

The legislation also identifies mitigation measures that may be considered to avoid significant impacts if there is no agreement on appropriate mitigation. Recommended measures include the following:

- Preservation in place
- Protecting the cultural character and integrity of the resource
- Protecting the traditional use of the resource
- Protecting the confidentiality of the resource
- Permanent conservation easements with culturally appropriate management criteria

City of Irvine General Plan

The City of Irvine General Plan – Cultural Resources Element “recognizes the importance of

Section 4 Environmental Impacts – Cultural Resources

historical, archaeological, and paleontological resources in the City of Irvine and establishes a process for their early identification, consideration, and where appropriate, preservation.” Archaeological resources include any location. European contact with California began in 1542. Archaeological resources included any location that contains evidence of human activities that occurred prior to 1750; historical sites established prior to 1750 also are archaeological sites. Paleontological resources include any location that contains a trace of plants or animals from past ages.

Paleontological investigations in Irvine have demonstrated the region previously was a marine environment. Several historic and archaeological sites in Irvine have been recorded by previous surveys (reference Cultural Resources Element, Figure E-1, Historical/Archaeological Landmarks). Two of those sites (Barton’s Mound; Portola Campsite at Tomato Springs) are noted in the California Inventory of Historic Resources. Paleontological investigations of the region and area within Irvine have demonstrated the area (primarily Santiago Hills and San Joaquin Hills) is rich in scientifically important resources that include numerous fossil deposits formed in a marine environment. The Cultural Resources Element divides the City into zones according to the likelihood of the presence of important paleontological resources. Figure E-2 of the General Plan depicts such zones and indicates the proposed project site is located in a “Low” Sensitivity Zone. This zone classification is assigned to areas that typically have altered or geologically young rocks exposed at the surface.

Cultural Resources Element Goals and Policies relevant to the proposed project include the following.

Objective E-2: Ensure the proper disposition of historical, archaeological, and paleontological resources to minimize adverse impacts, and to develop an increased understanding and appreciation for the community’s historic and prehistoric heritage, and that of the region.

Policy (g) – Ensure that adverse impacts of a proposed project on cultural resources are mitigated in accordance with CEQA, as well as other appropriate City policies and procedures, where preservation of a significant site is not practical.

City of Irvine Standard Condition 2.5 – Archaeologist/Paleontologist

Prior to the issuance of the first preliminary or precise grading permit for a project that is located on land that includes potentially significant archaeological and/or paleontological sites, and for any subsequent permit involving excavation to increased depth, the applicant shall provide letters from an archaeologist and/or a paleontologist. The letters shall state that the applicant has retained these individuals, and that the consultant(s) will be on call during all grading and other significant ground disturbing activities. Determination of the need for these consultants shall be based on the environmental analysis for the project. These consultants shall be selected from the roll of qualified archaeologists and paleontologists maintained by the County of Orange (OC Public Works/OC Planning). The archaeologist and/or paleontologist shall meet with Community Development staff, and shall submit written recommendations specifying procedures

Section 4 Environmental Impacts – Cultural Resources

for cultural/scientific resource surveillance. These recommendations shall be reviewed and approved by the Director of Community Development prior to issuance of the grading permit and prior to any surface disturbance on the project site. Should any cultural/scientific resources be discovered during grading, no further grading shall occur in the area of the discovery until the Director of Community Development is satisfied that adequate provisions are in place to protect these resources. This condition and the approved recommendations shall be incorporated on the cover sheet of the grading plan under the general heading: “Conditions of Approval.”

4.5.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines, the proposed project would create a significant impact to cultural resources if it would:

- A) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5;
- B) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5;
- C) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature;
- D) Disturb any human remains, including those interred outside of formal cemeteries.

4.5.4 ENVIRONMENTAL IMPACTS

- A) **NO IMPACT.** The project site is developed with a 16,015 square foot medical office building and associated surface parking lot. The building has no historic value in that the structure was not designed by a nationally-renowned architect, is less than 50 years in age, and is not an example of a significant architectural style. The City of Irvine General Plan Cultural Resources Element does not identify any historical or archaeological landmarks in the project vicinity, which is developed with professional office buildings, administrative office buildings, residential uses, and a private school. The proposed project involves demolition of the 16,015 square foot single-story medical office building and surface parking lot and replacement of such with a 46,800 square foot two-story medical office building over an open parking garage, surface parking and perimeter and project site landscaping. Therefore, project development and operation would not cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5. No impact would result and no mitigation measures are required.
- B) **Less Than Significant Impact.** The entire project site has been developed and has a low likelihood of archaeological remains according to the General Plan. In addition, City Standard Condition 2.5 requires monitoring for excavations at increased depths. Increased depth excavation will be part of construction activities; therefore, City Standard Condition 2.5 will be required during construction. Impacts would be less than significant.
- C) **Less Than Significant Impact.** The entire project site has been developed and has a low likelihood of archaeological remains according to the General Plan, and the project

Section 4 Environmental Impacts – Cultural Resources

would incorporate City Standard Condition 2.5, which requires monitoring for excavations at increased depths. Impacts would be less than significant.

D) Less Than Significant Impact with Mitigation. In the unlikely event human remains are encountered during the project grading or other construction activities, Mitigation Measure CR-1 would be required. Pursuant to Mitigation Measure CR-1, if human remains were encountered, the proper authorities would be notified, and standard procedures for the respectful handling of human remains in compliance with State Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98 would be implemented. With implementation of mitigation, impacts would be less than significant.

4.5.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

The project site is fully developed with a medical office building, surface parking lot, and introduced landscaping. Some grading will be necessary to prepare the property for accommodating the proposed larger medical office building and parking. However, no cultural resources (historical; archaeological; paleontological) or human remains are known to exist on the project site or were identified prior to development of the existing medical office building. The project would retain, but expand the medical office use of the property and accommodate a parking garage in addition to a surface parking lot. There may be a possibility of discovery of paleontological resources or human remains associated with Native American settlement beneath the surface that were not discovered during original grading activity. However, with incorporation of standard City requirements, Project development and operational impacts to historical and archaeological resources would be less than significant.

Project development could potentially result in discovery of human remains not discovered during surface grading for the existing medical office building because additional sub-surface grading would need to be made to accommodate the proposed larger medical office building and surface parking garage. Therefore, potential project development impacts to human remains are potentially significant.

4.2.6 PROJECT DESIGN FEATURES

No Project Design Features are required.

4.5.7 MITIGATION MEASURES

MM CR-1: Prior to the issuance of the first preliminary or precise grading permit, the following note shall be placed on the plans:

In the event human remains are encountered during construction, the following steps shall be taken:

- There shall be no further excavation or disturbance of the project site until the Orange County Coroner is contacted to determine if the remains are prehistoric and that no investigation of the cause of death is required. If the coroner determines the remains to

Section 4 Environmental Impacts – Cultural Resources

be Native American, then the coroner shall contact the Native American Heritage Commission within 24 hours, and the Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. The most likely descendant may make recommendations to the applicant or City for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, which shall be considered and implemented by the applicant, as appropriate, in coordination with the City.

- Where the following conditions occur, the landowner of his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with recommendations of the most likely descendant or on the property in a location not subject to further subsurface disturbance:
 - The Native American Heritage Commission is unable to identify a most likely descendant or the most likely descendant failed to make a recommendation within 24 hours after being notified by the Commission;
 - The descendant identified fails to make a recommendation; or,
 - The applicant rejects the recommendation of the descendant and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

4.5.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Adherence to the City of Irvine Standard Condition and Mitigation Measure noted above will reduce any potential project impacts to Cultural Resources to a level of insignificance.

4.5.9 CUMULATIVE IMPACTS

The project site and vicinity are located within the developed Woodbridge Village community. Woodbridge contains single-family and multi-family residential units, commercial uses, general professional and medical offices, and recreation uses. The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation publication pertained to the 18-acre (162,444 square foot) Woodbridge Village Center, located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway.

The City of Irvine Planning Commission granted approvals on July 21, 2016 for the modernization of the Woodbridge Village Retail Center through the following applications: Master Plan Modification to re-image the existing center and expand outdoor spaces; a Conditional Use Permit modification for a gas station, drive-thru car wash and convenience store; and a Conditional Use Permit for a new 4,226 square foot fast food restaurant with drive-thru. With various demolition activities, the redeveloped retail center would be decreased by 25,246 square feet – from 162,444 to 137,198 square feet.

Any potential for significant impacts to cultural resources, Mitigation Measure CR-1 will be required to determine the nature and extent of the resources and related impacts. Neither the

Section 4 Environmental Impacts – Cultural Resources

project nor other cumulative developments are expected to result in significant impacts to cultural resources. Implementation of the identified and appropriate Standard Condition 2.5 and Mitigation Measure CR-1 as part of project development would ensure cumulative impacts related to cultural resources would remain at a less than significant level.

4.6 GEOLOGY/SOILS

Information in this section was derived from the City of Irvine General Plan – Seismic Element and the GMU Geotechnical, Inc. document entitled “Revised Geotechnical Foundation Investigation, Proposed 3-Level Office Building, 2 Osborn” which is included as Appendix F to this EIR.

4.6.1 ENVIRONMENTAL SETTING

The GMU Investigation (Geotechnical Report) was based on a subsurface exploration program consisting of 10 combined exploratory borings, soundings, and subsequent laboratory testing of bulk and relatively undisturbed samples collected. The focus was to evaluate soils conditions below the proposed medical office building, parking lot and drive areas.

Regional Geologic Setting

The project site is located in the southeastern portion of the Central Block of the Los Angeles Basin on a series of coalescing alluvial fans on the northern flank of the San Joaquin Hills. The site is underlain predominantly by engineered fill to depths of between 3 and 9 feet and younger alluvial deposits (consisting principally of stiff to medium dense dark brown, below the engineered fills. The site is located within a “Liquefaction Hazard Zone” as designated by the California Geologic Survey. The fills were placed as part of previous grading activities.

Testing conducted on the project site revealed Quaternary Younger Alluvial Deposits below engineered fills. The alluvial deposits are comprised of materials generally “suitable for structural support.” (“Revised Geotechnical Foundation Investigation . . .”, page 5)

Groundwater***Regional Groundwater***

The project site is located in the Irvine Groundwater Sub-Basin. Regional groundwater within the Irvine Sub-Basin generally flows in a westerly direction toward the Pacific Ocean. Regional groundwater is first encountered at depths ranging from ten feet below ground surface to approximately 230 feet below ground surface. The total saturated thickness of the first water-bearing unit ranges from approximately 70 to 140 feet thick. The principal aquifer is the main water-production zone in the Irvine area. The saturated thickness of the principal aquifer ranges from less than 50 feet to 1,000 feet.

Local Groundwater

Local groundwater depths and elevations range approximately from 22 feet below surface to 89 feet below surface. Seasonal fluctuations in groundwater levels might occur. The California Geological Survey (CDMG, 2001) report indicates the depth of the high groundwater table at the project site is 20 feet.

The “Revised Geotechnical Foundation Investigation,” page 6 states as follows: “Given the depths to groundwater encountered for this investigation and those determined previously, it is anticipated that present and/or future groundwater is not expected to have an impact on the grading and development ... [and] it is possible that perched groundwater and localized wet soils may be encountered in some of the below grade level excavations for the elevator pits.”

Seismic Conditions

Faulting and Seismicity

The “Revised Geotechnical Foundation Investigation” indicates “no known active or potentially active faults are shown on current available geologic maps as crossing the [project] site [and] the [project] site is not within a designated Alquist-Priolo Earthquake Fault Zone.” However, the project site is located within close proximity of several surface active and potentially active faults pursuant to the California Geological Survey. The surface fault closest to the project site is the San Joaquin Hills Blind Thrust Fault, which is located approximately 0.2 miles from the project site. The strike-slip Newport-Inglewood fault zone trends northwest-southeast and is located approximately 9.1 miles southwest of the project site. The Newport-Inglewood Fault is the nearest regional active fault to the City. It originates north of Inglewood, passes below Newport Bay and Balboa Island and continues south off the coast possibly to San Diego. This fault is capable of generating an earthquake up to a magnitude of 7.5 on the Richter Scale.

Other fault zones in the vicinity of the project site are the following: Whittier-Elsinore Fault (10 miles northeast of the City); San Jacinto Fault (30 miles northeast of the City); and, San Andreas Fault (35 miles from the City). The Norwalk Fault is a local fault on which there has been some recorded activity north of Irvine. The Whittier-Elsinore Fault is considered potentially active, as there is evidence of large movements in the recent geologic past (10,000 years) and is considered capable of generating earthquakes up to a magnitude of 7.5 on the Richter Scale. The San Jacinto Fault is capable of generating earthquakes of 8.0 on the Richter Scale. The San Jacinto Fault extends parallel to the San Andreas Fault and has been more active than the San Andreas Fault in the last 100 years. It is capable of generating earthquakes up to 7.5 on the Richter Scale.

The General Plan Seismic Element (Figure D-2) indicates inactive fault locations in Irvine, as shown in Exhibit 4-17, Inactive Fault Locations. The majority of these Faults are located in the southeastern portion of Irvine, approximately one mile from the project site at the nearest points, and extend generally in a north-south direction.

Most of southern California is subject to some level of ground shaking due to movement along active and potentially active fault zones in the region. In fact, several large earthquakes have occurred in southern California. Given the proximity of the project site to several active and potentially active faults, the project site likely will be subject to earthquake ground motions in the future. The degree of ground motion resulting from an earthquake is a function of several factors such as the following: earthquake magnitude; type of faulting; rupture propagation path; distance from the quake epicenter; earthquake depth; duration of shaking; site topography; and, site geology.

Seismic Hazard Zones

The project site is located within an area mapped as having the potential for seismically induced liquefaction, as depicted on the Seismic Hazard Zone Map for the Tustin Quadrangle. The Project site is also within Seismic Response Area 1 on Exhibit 4-18, Seismic Response Areas, of the City's General Plan Seismic Element. Predominant characteristics of Seismic Response Area 1 are as follows.

- Potential soft or loose soils and high ground water. This is one of two areas considered to have a greater potential for ground failure in the form of liquefaction, in comparison to other seismic response areas. Liquefaction is not expected to occur for all earthquakes, or over the entire of Seismic Response Area 1.

4.6.2 EXISTING REGULATIONS & STANDARD CONDITIONS*City of Irvine General Plan Seismic Element*

Following are General Plan Seismic Element Objectives and Policies relevant to the project.

Objective D-2: Response to Hazards – Require appropriate measures to protect public health and safety and to respond to seismic hazards in all public and private developments

Policy (a) in part – For development in Seismic Response Areas 1, 2, 3, and 4: Concurrent with submittal of applications for concept plans and zone changes, as well as the preparation of environmental impact reports, preliminary geotechnical reports are required for the following uses:

- 1) All planning area level proposals
- 2) Community/regional level shopping centers
- 3) Major commercial/office centers
- 4) Major public facilities
- 5) Major public utilities
- 6) Major transportation linkages
- 7) Any facility critical to emergency response (i.e. hospitals, police and fire stations, municipal government centers, transportation linkages, and designated emergency centers)
- 8) Major industrial development (for Seismic Response Area 1 only)

If a detailed geotechnical report confirms the existence of a seismic hazard, the City has the option to require special earthquake resistant design features or use limitations as appropriate to the specific case

Policy (h) – Continue to require structures to conform to the seismic design requirements found in the Uniform Building Code.

*Standard Condition***Standard Condition 2.6 (Site Specific Geotechnical Study)**

Prior to the issuance of grading permits, the applicant shall provide to the Chief Building Official a site-specific geotechnical study for each proposed structure. The geotechnical report shall be prepared by a registered civil engineer or certified engineering geologist, having competence in the field of seismic hazard evaluation and mitigation. The geotechnical report shall contain site-specific evaluations of the seismic hazard affecting the project, and shall identify portions of the project site containing seismic hazards. The report shall also identify any known off-site seismic hazards that could adversely affect the site in the event of an earthquake. The contents of the geotechnical report shall include, but shall not be limited to, the following:

- a. Project description.
- b. A description of the geologic and geotechnical conditions at the site, including an appropriate site location map.
- c. Evaluation of site-specific seismic hazards based on geological and geotechnical and conditions, in accordance with current industry standards of practice.
- d. Recommendations for earthwork and construction.
- e. Name of report preparer(s), and signature(s) of a certified engineering geologist and/or registered civil engineer, having competence in the field of seismic hazard evaluation and mitigation.
- f. Include the official professional registration or certification number and license expiration date of each report preparer in the signature block of the report.

4.6.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines the Project would have geology/soils impacts if it would:

- A) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
 - ii) Strong ground shaking;
 - iii) Seismic-related ground failure, including liquefaction;
 - iv) Landslides.
- B) Result in substantial soil erosion or the loss of topsoil;
- C) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or of-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- D) Be located on expansive soil, as defined in Table 18-1-B of the California Building Code (2001), creating substantial risks to life or property;
- E) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

4.6.4 ENVIRONMENTAL IMPACTS

- A) i) ii) iii) iv) **LESS THAN SIGNIFICANT IMPACT:** The project site is not located within a designated Alquist-Priolo Earthquake Fault Zone and there are no known faults that cross the Project site. Therefore, the project site is not likely to expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault.

The primary seismic hazard is ground shaking due to a large earthquake on any of major active regional faults identified above. Accordingly, as with most locations within Southern California, there is potential that within the project lifetime the project structure would experience strong ground shaking as a result of seismic activity originating from regional faults. Site seismicity is typical of much of Orange County, including Irvine. The Project site could experience ground shaking as a result of several earthquake faults in the Irvine area. California State Law requires structures to incorporate earthquake-reducing design standards in accordance with the latest California Building Code and appropriate seismic design criteria. Project development and operation compliance with this regulatory requirement would reduce potential impacts related to exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving strong seismic ground shaking to a less than significant level. Overall, the project site is located in the seismically active Southern California region and could be subject to moderate to strong ground shaking in the event of an earthquake on one of the many faults in Southern California.

The two primary fault threats are the Newport-Inglewood Fault and the San Andreas Fault. A substantial earthquake on either of such faults could result in major extensive casualties and damage result from collapsed infrastructure, fires, floods and other threats to lives and property. Earthquakes along other faults traversing along and throughout the Los Angeles Basin and Riverside, San Bernardino and San Diego counties also could impact Irvine, although less severely. According to the City of Irvine Emergency Plan (Part 1-48), “scientists have identified almost 100 faults in the greater Los Angeles area known to be capable of a magnitude 6.0 or greater” earthquake. Secondary effects of earthquakes may include the following:

- Fires – There is a high probability of fires following an earthquake due to the number of broken gas lines that typically occur. Water mains and lines often break due to ground movement. The combination of fires and a water shortage can seriously complicate the response to an earthquake.
- Dam Failure – Orange County could be impacted by flooding caused by earthquake induced dam failure of Prado Dam. According to the City of Irvine Emergency Management Plan, this probability is “low” because the Dam is rarely full.
- Hazardous Materials Spills – Hazardous Materials in an industrial and manufacturing area could present a major problem in the event of an earthquake. There are no industrial or manufacturing areas in the vicinity of the proposed project site.

- Oil Spills and Pipeline Breakages – Ruptures of numerous pipelines due to a fault break are likely in the event of a major earthquake. If leaking products are ignited, fire is a serious threat. This is not a substantial potential for the proposed project in that no technical study produced for the proposed project identified any oil pipeline beneath the project site.

Structural failure of the Prado Dam may result from seismic activity, which might result in flooding. Seismic activity also may cause inundation by the action of a seismically induced wave (called a seiche) that overtops the dam without actually causing dam failure. A third potential cause of dam failure or overtopping can be landslides flowing into a reservoir.

According to the City of Irvine Emergency Management Plan, there are several major dams that could impact the City of Irvine in the event of dam failure. These dams are as follows.

Laguna Reservoir – The Irvine Company owns the Laguna Reservoir, which is located Laguna Canyon, approximately three miles southeast of the Sand Canyon/Interstate 405 Freeway interchange.

Rattlesnake Reservoir – The Irvine Ranch Water District owns the Rattlesnake Reservoir, which is located in rolling hills, approximately 2.5 miles northeast of Interstate 5.

Sand Canyon Reservoir – The Irvine Ranch Water District owns the Sand Canyon Reservoir, which is located approximately ¾ mile southeast of University Drive.

San Joaquin Reservoir – The Metropolitan Water District of Southern California owns the San Joaquin Reservoir, which is located in the San Joaquin Hills, approximately one-half mile southeast of the San Joaquin Transportation Corridor at Bonita Canyon Drive.

Santiago Dam and Reservoir – The Irvine Ranch Water District and the Serrano Irrigation District jointly own the Santiago Dam and Reservoir (25,000 acre feet capacity), which is located in the Santa Ana Mountains in eastern Orange County, west of Black Star Canyon and north of Santiago Canyon Road.

Villa Park Dam – The Orange County Flood Control District owns the Villa Park Dam, which is a flood control dam located downstream of the Santiago Dam.

Syphon Reservoir – The Irvine Company owns the Syphon Reservoir, which is located in the rolling Santiago foothills, approximately 0.8-mile northeast of Irvine Boulevard, between Jeffrey Road and Sand Canyon.

Failure of any of the above dams during a catastrophic event, such as an earthquake, is considered unlikely according to the City of Irvine Emergency Management Plan. The

dams have performed well in earthquakes, and failure is not anticipated.

The Revised Geotechnical Foundation Investigation prepared for the project and incorporated into this environmental document (Appendix F) concludes in part “liquefaction and related hazards such as seismic settlement and lateral spreading will not be a significant design constraint.” Adherence to requisite California Building Code provisions will assist in mitigating this potential impact to City-required levels. City of Irvine Standard Condition 2.6 pertaining to protection of structures and persons from ground shaking and seismic-related ground failure, including liquefaction will be placed on the project to ensure any project-related impact will remain at a less than significant level.

No significant geotechnical constraints have been identified and the project site was considered developable from a geotechnical standpoint utilizing most standard grading and building techniques. Impacts of earthquake fault rupture are considered less than significant because standard grading and building techniques will be used to develop the proposed 46,800 square foot medical office building. Furthermore, the Revised Geotechnical Foundation Investigation test data and subsequent geotechnical engineering analysis, visual observations and employment of engineering judgment indicates the existing fill and dense alluvial fan deposits “are generally suitable for the support of planned improvement with low to moderate loads (i.e., shallow foundations, drives, parking stalls, flatwork, landscaping, utilities, etc.) [and] the alluvial fan deposits do not appear to be subject to significant amounts of hydro-collapse.”

B) LESS THAN SIGNIFICANT IMPACT. The Revised Geotechnical Foundation Investigation prepared for the project indicates “the engineered fills and dense alluvial fan deposits are generally suitable for the support of planned improvements with low to moderate loads (i.e. shallow foundations, drives, parking stalls, flatwork, landscaping, utilities, etc.).” In addition, the Investigation indicates test data (to assess potential for hydro-collapse) was correlated with moisture, density and compaction data. The test data, together with subsequent geotechnical engineering analysis, visual observations and “the employment of engineering judgment” further indicates “the alluvial fan deposits [on the project site] do not appear to be subject to significant amounts of hydro-collapse.” In addition, as indicated in the Investigation, alluvial deposits on the project site “are general[ly] suitable for structural support.”

Therefore, project impacts related to soil erosion or loss of topsoil will be less than significant.

C) LESS THAN SIGNIFICANT IMPACT WITH MITIGATION. The Project site is located in an urban area and is surrounded by developed professional offices, administrative offices, residential properties, and a private school. There are no hillsides or unstable soils on the project site. The site is flat and does not contain any area of slope. No existing landslides are present on or adjacent to the Project site. However, the City General Plan designates the project site as a Seismic Response

Area 1 (SRA-1), which is characterized by soft soils and high ground water, and the site is located within a State of California Seismic Hazards Liquefaction Zone. Therefore, there may be potential impacts of project development and operation involving location on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. Mitigation Measure G/S-1 is required.

The project site is located with the Irvine Groundwater Sub-basin. Groundwater within the Sub-basin generally flows in a westerly direction toward the Pacific Ocean. Groundwater in the region is found at depths between 10 feet and 230 feet. Local groundwater depths range from 22 feet to 89 feet below the surface of the project site. The California Geological Survey (2001) report indicates depth of the high groundwater table at the project site is 20 feet. It is possible that perched groundwater and localized wet soils may be encountered in some of the below grade level excavations for the elevator pits. However, it is not anticipated that present and/or future groundwater would have an impact on project grading. The Project site is on a level area and therefore unlikely to cause or be affected by landslides.

The Revised Geotechnical Foundation Investigation indicates the project site is located within an area mapped as having the potential for seismically induced liquefaction, as depicted on the Seismic Hazard Zone Map for the Tustin Quadrangle. The potential for earthquake-induced liquefaction on the project site is that the total estimated settlement range is 0.03 to 0.35 inch and the differential settlement would be 0.3 inch over 40 feet.

The Revised Geotechnical Foundation Investigation concludes that “for lateral spread over gently sloping ground, the depth of the water table and liquefiable soil leads to the conclusion that the shear stresses at depth would not be great enough to cause lateral spread.” In addition, the Investigation indicates the alluvial fan deposits (on-site soils) “... do not appear to be subject to significant amounts of hydro-collapse.”

D) LESS THAN SIGNIFICANT IMPACT WITH MITIGATION. The Revised Geotechnical Foundation Investigation indicates the project site soil has a high expansion potential. Furthermore, the upper several feet of soil materials on the project site have highly variable moisture contents and, given the soils potential for expansion, the moisture content could be problematic for the proposed medical office building in terms of future moisture induced expansive soils movements. Implementation of Mitigation Measure G/S-1 would reduce impacts related to expansive soil to a less than significant level.

E) NO IMPACT. No septic tanks or alternative wastewater disposal systems are proposed. The Project will maintain lateral connections to City of Irvine sewer mainlines. Therefore, no impacts would occur as a result of Project development and no mitigation measures are required.

4.6.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

The Revised Geotechnical Foundation Investigation for the Project concluded the following:

1. The "... proposed project is feasible assuming all applicable recommendations contained herein are implemented."
2. On-site soils in general are "... moderately to highly expansive, severely corrosive to ferrous metals, and possess a negligible exposure to sulfates. However, given that moderate sulfate exposure levels have been noted in the general area and the severe exposure to ferrous metals and hence reinforcing elements, the site should be considered to possess a moderate sulfate exposure in the design of concrete mixes which will be in contact with the soil."
3. "Groundwater is not anticipated to be either encountered during construction and/or be a significant geotechnical design constraint."
4. "Liquefaction and related hazards such as seismic settlement and lateral spreading will not be a significant design constraint."
5. Overlying existing engineered fills have variable moisture contents in the upper 5 feet. In addition, soils in the upper 3 feet likely will be disturbed during demolition. As a result, "... in order to provide a uniform bearing surface for at-grade structures and improvements, the upper 3 to 5 feet across the site will need to be removed and re-compacted."
6. "Based on rough structural loading estimated by our office, foundations for the proposed 3-story office building will likely be able to be founded on conventional spread footings bearing into competent engineered fill with consistent moisture content characteristics."
7. Due to the potential for medium to highly expansive soils, special design considerations will be required for the flatwork associated with the proposed improvements as well as the slab-on-grade for the office building.
8. "The site possesses poor site infiltration characteristics. Consequently, percolation will likely not be possible."

As such, impacts are potentially significant and mitigation is required.

4.6.6 PROJECT DESIGN FEATURES

No Project Design Features are required.

4.6.7 MITIGATION MEASURES

MM G/S-1: Prior to issuance of a grading permit, the Applicant shall submit to the Chief Building Official a site-specific geotechnical study for his/her approval which shall reflect conformance with recommendations about design, grading and construction contained in the "Revised Geotechnical Foundation Investigation, Proposed 3-Level Office Building, 2 Osborn, City of Irvine, California, (December 22, 2016)" and in accordance with requirements of the City of Irvine Building Code and most recent Uniform Building Code and California Building Code applicable at time of grading. All design, grading and construction shall be performed in accordance with requirements of the City of Irvine Building Code and the most recent Uniform Building Code and California Building Code applicable at time of grading, appropriate local

grading regulations, and recommendations of the project geotechnical consultant as summarized in the “Revised Geotechnical Foundation Investigation, Proposed 3-Level Office Building, 2 Osborn, City of Irvine, California, (December 22, 2016)” subject to review and approval by the City of Irvine Building Official.

4.6.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of the Mitigation Measure G/S-1 and compliance with City of Irvine Standard Condition 2.6 (Site Specific Geotechnical Study) would reduce all project-related impacts related to Geology and Soils to a less than significant level.

4.6.9 CUMULATIVE IMPACTS

The sole application approved for future development or redevelopment within the vicinity of the Project site at the time of publication of the Notice of Preparation pertained to the 18-acre (162,444 square foot) Woodbridge Village Center, which is located approximately one-half mile west of the Project site along the south side of Barranca Parkway. The City approved a Master Plan Modification that involved demolition of 30,658 square feet of retail and office space to expand outdoor spaces for patrons of the Center, which would decrease the area of uses in the Center to 137,198 square feet, and two Conditional Use Permits that would allow a gas station, drive-thru car wash, convenience store, and fast food restaurant (with drive-thru land) within the Center. These discretionary actions would decrease the areas of uses within the Center by 25,426 square feet.

Impacts related to geology and soils of both the proposed Project and the Woodbridge Village Center project combined would be less than significant with mitigation. Therefore, Project development and operation will not add to cumulative impacts related to geology and soils.

Section 4 Environmental Impacts – GHG Emissions

4.7 GREENHOUSE GAS EMISSIONS

Information for this section was derived from the City of Irvine General Plan – Energy Element, the “City of Irvine Energy Plan” (July 8, 2008), and the “Air Quality/Greenhouse Gas Emissions Analysis” included as Appendix E to this EIR.

4.7.1 ENVIRONMENTAL SETTING

Global Climate Change

Global climate change is the observed increase in the average temperature of the earth’s atmosphere and oceans together with other significant changes in climate (such as precipitation or wind) that last for an extended period of time.

Climate change refers to any change in measures of weather lasting for an extended period (decades or longer). Climate change may result from natural factors such as changes in the sun’s intensity, from natural processes within the climate system such as changes in ocean circulation, or human activities such as the burning of fossil fuels, land clearing or agricultural activities. The primary observed effect of global climate change has been a rise in the average global tropospheric (the zone of the atmosphere characterized by water vapor, weather, winds and decreasing temperature with increasing altitude) temperature of 0.36 degrees Fahrenheit per decade, determined from meteorological measurements worldwide between 1990 and 205. Climate change modeling demonstrates further warming may occur that may induce additional changes in the global climate system during the 21st century. Changes to the global climate system, ecosystems and the environment of California could include rising sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns, or more energetic aspects of extreme weather that include droughts, heavy precipitation, heat waves, extreme cold, and increased intensity of tropical cyclones. Specific effects in California might include a decline in the Sierra Nevada snowpack, erosion of the State coastline, and seawater intrusion in the San Joaquin Delta.

Global surface temperatures have risen by 1.33 degrees Fahrenheit between 1906 and 2005. The rate of warming over the last 50 years was almost double that over the last 100 years. The latest projections, based on state-of-the-art climate models used by the State of California indicate that temperatures in California are expected to rise 3-10.5 degrees Fahrenheit by the end of the 21st century. Prevailing scientific opinion about climate change is that “most of the warming observed over the last 60 years is attributable to human activities” (International Panel on Climate Change, 2013). Increased amounts of Carbon Dioxide and other greenhouse gases are the primary causes of human-induced component of global warming. The observed warming effect associated with the presence of greenhouse gases in the atmosphere (from either natural or human sources) often is referred to as “the greenhouse effect.”

Greenhouse gases (“GHG”) are present naturally in the atmosphere, are released by natural sources, or are formed from secondary reactions occurring in the atmosphere. The following are gases that are widely considered as the principal contributors to human-induced global climate

Section 4 Environmental Impacts – GHG Emissions

change.

- Carbon Dioxide (CO₂)
- Methane (CH₄)
- Nitrous Oxide (N₂O)
- Hydrofluorocarbons (HFC)
- Perfluorocarbons (PFC)
- Sulfur Hexafluoride (SF₆)

Human activities over the last 200 years have caused substantial quantities of greenhouse gases to be released into the atmosphere, which enhances the natural greenhouse effect. Some scientists believe this phenomenon can cause global warming. Although greenhouse gases produced by human activities include naturally occurring greenhouse gases, some gases (Hydrofluorocarbons; Perfluorocarbons; Sulfur Hexafluoride) are completely new to the earth's atmosphere. Other gases such as water vapor are short-lived in the atmosphere compared to other greenhouse gases, which remain in the atmosphere for significant periods of time and contribute to climate change in the long term. Water vapor generally is excluded from the list of greenhouse gases because it is short-lived in the atmosphere and its atmospheric concentrations are determined largely by natural processes (such as oceanic evaporation).

The six gases listed above vary considerably in terms of global warming potential – a concept developed to compare the ability of each greenhouse gas to trap heat in the atmosphere relative to another gas. Global warming potential is based on several factors, including relative effectiveness of a gas in absorbing infrared radiation and length of time the gas remains in the atmosphere (termed “atmospheric lifetime”). The global warming potential of each gas is measured relative to Carbon Dioxide because that gas is the most abundant greenhouse gas. The definition of global warming potential for a particular greenhouse gas is the ratio of heat trapped by one-unit mass of the greenhouse gas to the ratio of heat trapped by one-unit mass of Carbon Dioxide over a specified time period. Greenhouse gas emissions typically are measured in terms of metric tons (equivalent to approximately 1.1 tons) of “Carbon Dioxide equivalents.”

The following Table 4.7-A identifies the global warming potential for Carbon Dioxide, Methane, and Nitrous Oxide, which are three of the greenhouse gases analyzed in the “Air Quality and Greenhouse Gas Analysis” for the proposed project.

TABLE 4.7-A		
Global Warming Potential for Selected Greenhouse Gases		
POLLUTANT	LIFETIME (YEARS)	GLOBAL WARMING POTENTIAL (100-YEAR)
Carbon Dioxide (CO ₂)	-100	1
Methane (CH ₄)	12	28
Nitrous Oxide (N ₂ O)	121	265
Source: First Update to the Climate Change Scoping Plan (ARB, 2014)		

The transportation sector was the largest source of greenhouse gas emissions in 2014 – representing 36 percent of California’s greenhouse gas emission inventory. The largest emissions category within the transportation sector is on-road passenger vehicles, heavy duty trucks and buses. Emissions from on-road sources constitute more than 92 percent of the transportation sector total. Industry and electricity generation were California’s second and third largest categories of greenhouse gas emissions, respectively.

Following is a summary of the characteristics of the six primary greenhouse gases.

Carbon Dioxide

Carbon Dioxide generally exists in its oxidized form as CO₂ in the atmosphere. Natural sources of Carbon Dioxide include the following: human, animal and plant respiration; volcanic outgassing; decomposition of organic matter; and, evaporation from oceans. Human-caused Carbon Dioxide sources include combustion of fossil fuels and wood, waste incineration, mineral production and deforestation. Natural removal process of Carbon Dioxide (such as photosynthesis by land and ocean plants) cannot keep pace with this extra input of human-made Carbon Dioxide. Consequently, Carbon Dioxide is increasing in the atmosphere; concentration of Carbon Dioxide in the atmosphere has increased approximately 30 percent since the late 19th century.

Methane

Methane is produced when organic matter decomposes in environments that lack sufficient oxygen. According to the Environmental Protection Agency, natural sources of Methane include fires, geologic processes, and bacteria that produce Methane in a variety of settings (especially wetlands). Anthropogenic sources include rice cultivation, livestock, landfills and waste treatment, biomass burning, and fossil fuel combustion such as burning of coal, oil, and natural gas. The major removal process of atmospheric Methane – a chemical breakdown in the atmosphere – cannot keep pace with source emissions. Therefore, Methane concentrations in the atmosphere are increasing.

Nitrous Oxide

Nitrous Oxide is produced naturally by a wide variety of biological sources, particularly microbial action in water and soils. Oceans and tropical soils account for the majority of natural source emissions. Nitrous Oxide also is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Stationary and mobile combustion sources emit Nitrous Oxide. Quantity of Nitrous Oxide emitted varies according to the type of fuel, technology, pollution control device used, and maintenance and operating practices. The primary sources of human generated Nitrous Oxide are agricultural soil management and fossil fuel combustion.

Hydrofluorocarbons (HFC), Perfluorocarbons (PFC), and Sulfur Hexafluoride (SF₆)

HFC are primarily used as substitutes for O₃ depleting substances regulated under the Montreal

Section 4 Environmental Impacts – GHG Emissions

Protocol. The Montreal Protocol is an international treaty that was approved on January 1, 1989. It was designated to protect the O₃ layer by phasing out production of several groups of halogenated hydrocarbons believed to be responsible for O₃ depletion and which are potent greenhouse gases. PFC and SF are emitted from various industrial processes including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. Although there is no aluminum or magnesium production in California, the rapid growth in the semiconductor industry in California has resulted in increased use of PFC.

Emissions Sources and Inventories

Global Emissions

In 2012, worldwide emissions of greenhouse gases totaled 29 billion metric tons of Carbon Dioxide equivalent per year, as estimated by the United Nations Framework Convention on Climate Change in 2015 with information accumulated from country inventories.

United States Emissions

In 2013, the United States emitted approximately 6.7 billion metric tons of Carbon Dioxide equivalent greenhouse gases. This amount was a decrease from 7.3 billion metric tons of Carbon Dioxide equivalent greenhouse gases emitted by the United States in 2007 and represented approximately 9 percent less than 2005 levels according to the Environmental Protection Agency. The electric power industry and transportation sectors combined account for approximately 70 percent of the greenhouse gas emissions. The remainder was emitted by the industrial, agricultural, commercial and residential sectors. The majority of the electric power industry and all the transportation emissions were generated from direct fossil fuel combustion.

State of California Emissions

According to Air Resources Board emission inventory estimates, California emitted approximately 441.5 million metric tons of Carbon Dioxide equivalent greenhouse gas emissions in 2014. This represents a 9.4 percent decrease since 2004. The Air Resources Board estimates transportation was the source of approximately 36 percent of California's greenhouse gas emissions in 2014, followed by electricity generation at 20 percent and industrial sources at 21 percent. Residential and commercial activities were responsible for 9 percent of greenhouse gas emissions. Agriculture was responsible for 8 percent of greenhouse gas emissions, followed by high-GWP gases at 4 percent, and recycling and waste at 2 percent.

The Air Resources Board has projected California Statewide unregulated greenhouse gas emissions for 2020 (in the absence of any greenhouse gas emissions reduction actions) to be 509 million metric tons of Carbon Dioxide equivalent. Greenhouse gas emissions from the transportation and electricity sectors are expected to increase but remain at approximately 30 percent and 32 percent of total emissions, respectively.

Energy

Energy is defined as anything that makes work possible and causes movement against resistance. Energy sources are categorized as “renewable” and “non-renewable.” Non-renewable sources (e.g. petroleum fuels; natural gas) cannot be restored, while renewable sources (e.g. solar; wind; hydroelectric; geothermal gas) can be harnessed indefinitely. Non-renewable sources are subject to price fluctuation and supply interruptions and emit by-products such as air pollution, water pollution and acid rain. These by-products are not associated with renewable energy sources.

CEQA Guidelines Appendix F is an advisory document that provides guidance about information that an Environmental Impact Report should include to assure that “energy implications are considered in project decisions” and directs environmental impact reports to contain a “discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.” (Public Resources Code Section 21100(b)(3). Application F lists potential energy impacts that may be relevant to the Energy Conservation analysis.

Energy Suppliers

The primary supplier of retail natural gas to Irvine is the Southern California Gas Company (Gas Company). The primary supplier of retail electricity to Irvine is the Southern California Edison Company (SCE). Electricity can be generated by a combination of oil, natural gas, hydroelectric, nuclear, or renewable sources such as wind and solar.

Energy Consumption

Irvine’s energy is consumed by residential, commercial, industrial, office, agricultural and transportation uses. The commercial sector is the largest energy (electricity) consumer in Irvine. Natural gas is most commonly used by the residential sector. Lighting and space heating/air conditioning are principal end users of electricity and natural gas in the residential and commercial sectors. Transportation is the only major end user of liquid fuels.

Total non-residential electricity usage in Orange County in 2015 was 1,4091.515732 Gwh (millions of Kwh). California per capita electricity consumption in 2010 was lowest in the United States at 6,721 Kwh. Total natural gas usage in Orange County in 2015 was 233.788529 million thermal units.

Project development (demolition and construction activities) and operation will result in increased use and demand for electricity, natural gas and other forms of energy in the following contexts. Methods of lessening the demand for energy sources are noted also.

- Increased diesel fuel required for construction vehicles
 - Construction vehicles will be maintained so fuel use is efficient
 - Construction vehicles will not be left in idle more than necessary
- Increased gasoline fuel for the estimated additional 1,691 Average Daily (vehicle) Trips
 - California motor vehicle fuel efficiency standards will serve to reduce required fuel

- Increased electricity required for increases in building interior lighting, office lighting, parking lot lighting, landscape lighting, security lighting
 - The Project medical office building will be constructed to LEED Standards pertaining to insulation, window type, hvac systems and other design treatments
 - The Project medical office building will comply with all Title 24 requirements
 - Project landscaping will use plantings natural to Southern California, low-water use, and drought-tolerant species
- Increased electricity required to operate medical appliances and machinery
 - The Project tenants will use energy efficient appliances to the extent feasible
- Increased electricity required to provide water service to Project
 - Water efficient appliances and low-water drought-tolerant landscaping will result in less demand for water and concomitantly less demand for electricity
- Increased electricity required to be provided during peak hour demand
 - LEED design and construction will generate less required electricity
- Increased electricity and/or natural gas required to operate building air conditioning and heating systems
 - The Project medical office building will be constructed to LEED Standards pertaining to insulation, window type, heating ventilation and air conditioning (HVAC) systems and other design treatments

Project energy efficiency measures are listed in Table 4.7-D. The Project increased demand for energy supplied by electricity and natural gas would not be substantial in relation to energy available from various sources.

Short-term consumption energy impacts from demolition and construction activities are considered to be less than significant. Demolition and construction activities would comply with all relevant energy-related regulations, which would conserve energy and natural resources. Energy consumption during construction would be commensurate with typical urban office construction projects. In addition, construction would be temporary.

There would be an increase in local energy consumption from Project operation. Long-term energy consumption impacts from Project daily operation as a medical office building would generate demand for electricity, natural gas and water supply, and would generate wastewater requiring off-site conveyance, treatment and disposal. This would require additional amounts of energy. Additional long-term energy demands would result from added employee and patient vehicular trips. However, Project design as a LEED certified building would ensure Project operation would not result in inefficient, wasteful, or unnecessary consumption of energy. Thereby, long-term impacts of Project operation would be less than significant.

Cumulatively, future development within Irvine (which includes the revitalization of the Woodbridge Village Center) would increase the need for electricity and natural gas. However, these developments would not result in inefficient, wasteful, or unnecessary consumption of energy due to compliance with State and local regulations. Therefore, the cumulative impacts to energy of these projects would be less than significant.

4.7.2 EXISTING REGULATIONS & STANDARD CONDITIONS

National

The United States is a signatory to the United Nations Framework Convention on Climate Change. This Convention is an international environmental treaty produced at the Rio de Janeiro Summit in 1992 and commits signatories to "achieve stabilization of GHG concentrations in the atmosphere at a low enough level to prevent dangerous anthropogenic interference with the climate system." The goal is not directly associated with a specifically identifiable emissions reduction target or commitment.

The United States government establishes fuel economy standards for new automobiles and trucks. The 2007 Energy Bill requires the National Highway Traffic Safety Administration to develop phased requirements to achieve fleet-wide average performance of 35 miles per gallon by 2020. On May 19, 2009, the President announced a new National Fuel Efficiency Policy to increase fuel economy by more than 5 percent by requiring a fleet-wide average of 25.5 miles per gallon by 2016, beginning with model year 2012.

Massachusetts vs. Environmental Protection Agency

In 2007, the United States Supreme Court ruled in *Massachusetts v. the Environmental Protection Agency* (EPA) that the Clean Air Act is written to include greenhouse gases. More specifically, under the decision the Court found that greenhouse gases, including carbon dioxide, are within the Clean Air Act definition of an air pollutant, thereby giving the EPA authority to regulate carbon dioxide and other greenhouse gases.

As a response, an EPA press release on December 7, 2009, announced the EPA's final findings that "greenhouse gases (GHGs) threaten the public health and welfare of the American people." In addition, the press release confirmed "GHG emissions from on-road vehicles contribute to that threat." The EPA has proposed greenhouse gas standards for light-duty vehicles as part of its effort to reduce greenhouse gas emissions and to meet its obligation under the Clean Air Act.

State of California

The State of California has created a set of legislation, executive orders, policies and programs intended to reduce greenhouse gas emissions. More than a decade of concerted research has demonstrated to scientists that early signs of climate change already are evident in California – demonstrated in increased average temperatures, changes in temperature extremes, reduced Sierra Nevada snowpack, sea level rise, and ecological shifts. Generally, research indicates California should expect overall hotter and drier conditions, increased average temperatures, rising sea levels, and increasing intensity of extreme weather events such as heat waves, wildfires, droughts and floods.

The California Climate Action Team and the Air Resources Board have developed several reports to achieve the Governor's greenhouse gas targets. Reliance on achieving the targets is based on voluntary actions of California businesses, local governments and community groups, and on State incentive and regulatory programs. These include the Climate Action Team's 2010 "Report to Governor Schwarzenegger and the Legislature," the Air Resource Board's 2007 "Expanded list of Early Action Measures to Reduce Greenhouse Gas Emissions in California," and the Air Resources Board's "First Update to the Climate Change Scoping Plan: Building on the Framework Pursuant to AB 32, the California Global Warming Solutions Act of 2006." The reports identify strategies to reduce California's emissions to levels proposed in Executive Order S-3-05 and Assembly Bill 32 that are applicable to the proposed project.

State of California Code of Regulations, Title 24 – Energy Building Regulations

The Building Energy Efficiency Standards were first adopted in 1976 and have been updated periodically since then as directed by statute. The Standards contain energy and water efficiency requirements (and indoor air quality requirements) for newly constructed buildings, additions to existing buildings, and alterations to existing buildings. The Public Resources Code requires the California Energy Commission to establish performance standards in the form of an "energy budget" in terms of the energy consumption per square foot of floor space. Thereby, the Standards include a prescriptive option that allows builders to comply by using methods known to be efficient and a performance option that allows builders complete freedom in their designs provided the building achieves the same overall efficiency as an equivalent building using the prescriptive option.

The 2016 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to non-residential Standards include alignment with national standards. New efficiency requirements for elevators and direct digital controls are included in the non-residential standards. The Standards are divided into three basic sets: mandatory requirements that apply to all buildings; performance standards (energy budgets) that vary by climate zone (of which there are 16 in California); and, building type. Therefore, the Standards are tailored to local conditions.

CalGreen (Part 11 of the 2010 Title 24 Building Standards Code is the California Green Building Standards Code)

The California State Legislature passed CalGreen in 2010 with an effective date of January 1, 2011. CalGreen is the first mandatory statewide green building code in the United States. CalGreen applies to all residential, commercial, hospital and school buildings. It requires waste and water reductions, energy inspections, and use of low pollutant emitting interior materials, and establishes a 75 percent waste material diversion goal for the State of California.

Green buildings emit less pollution, use more environmentally friendly materials and are healthier for occupants. Buildings generate 30 percent of greenhouse gas emissions. Green buildings have smaller carbon footprints than conventional buildings. Green buildings also

Section 4 Environmental Impacts – GHG Emissions

result in better indoor air quality and are less expensive to maintain due to reduced demand for heating, cooling and water. In California, commercial buildings account for 36 percent of the State's electricity use. Building materials account for nearly 22 percent of the waste stream going to landfills. The average green building uses 30 percent less energy and 30-50 percent less water than a comparable "non-green" building.

State of California Assembly Bill 32 (2006)

Assembly Bill 32 (AB 32, also known as the Global Warming Solutions Act of 2006) commits the State to reduce greenhouse gas emissions in California to 1990 levels by 2020 and to 80 percent below 1990 levels by 2050. It requires the California Air Resources Board (CARB) to develop regulations and market mechanisms in pursuit of that mandate. Mandatory emissions caps for significant sources (e.g., electricity producers, cement plants) began January 1, 2012. Neither AB 32 nor the CARB Scoping Plan implementing AB 32 specifically mandates that each individual city adopt its own greenhouse gas reduction plan to meet AB 32 targets on a city-specific basis.

Senate Bill 375

SB 375 (signed by the Governor in September, 2008) requires the South Coast Air Quality Management District (SCAQMD) to develop a "Sustainable Communities Strategy" to meet AB 32 Statewide targets on a regional basis. Under SB 375, the South Coast Air Quality Management District (SCAQMD) must adopt its initial Sustainable Communities Strategy within three years (subject to certain exceptions), and then update the Sustainable Communities Strategy regularly thereafter. SCAQMD completed the final Sustainable Communities Strategy and received approval of such in early 2012.

Under SB 375, the Sustainable Communities Strategy must focus on reducing greenhouse gas emissions exclusively from autos and light trucks. Emissions from other sources, such as energy use in buildings or construction, are not addressed by a Sustainable Communities Strategy. Perhaps for this reason, SB 375 specifically prohibits reliance on the regional Sustainable Communities Strategy to satisfy California Environmental Quality Act (CEQA) requirements.

Senate Bill 97

When cities amend their general plans in a manner that triggers CEQA requirements for climate change analysis, the cities generally will not be able to simply reference the Sustainable Communities Strategy. Rather, they generally still will need to do – or promise to complete within short order – their own city-specific "Climate Action Plan" (Greenhouse Gas Emissions Reduction Plan) to comply with CEQA. Similarly, cities cannot rely on the Sustainable Communities Strategy for CEQA review of individual private development projects (with certain narrow exceptions), but will be able simply to confirm consistency with a city-specific climate action plan.

Section 4 Environmental Impacts – GHG Emissions

The California State Natural Resources Agency has adopted amendments (through Senate Bill 97) to CEQA Guidelines (that became effective March 18, 2011) that specifically require analysis of climate change impacts in environmental review of projects. These new guidelines offer lead agencies a streamlined approach to processing environmental documentation. Once a city adopts a city-wide "Greenhouse Gas Reduction Plan," future projects can simply be evaluated for consistency, and project applicants can participate in pre-set mitigation protocols that are predictable and can be made potentially more affordable and efficient when instituted city-wide.

Assembly Bill 1358

The Complete Streets Act of 2007 (AB 1358) ensures transportation plans of communities in California will meet needs of all users of the roadway including pedestrians, bicyclists, public transit riders, motorists, children, the elderly, and the disabled. AB 1358 is designed to make roadways safer and more convenient for those who choose to walk, ride a bicycle, or ride transit. Safer roadways enable more people to gain health benefits by choosing an active form of transportation and benefit all by reducing traffic congestion, auto-related air pollution, and production of greenhouse gas emissions. AB 1358 requires the legislative body of a city or county, upon revision of its general plan, to identify how the jurisdiction will provide for routine accommodation of all users of the roadway, including motorists, pedestrians, bicyclists, individuals with disabilities, seniors, and users of public transportation. This legislation also directs the California State Office of Planning and Research to amend guidelines for development of general plan circulation elements so building and operation of local transportation facilities safely and conveniently accommodate everyone regardless of mode of travel. Requirements of the Act took effect on January 1, 2009.

Assembly Bill 811

Assembly Bill 811 allows local governments to establish assessment districts to fund energy efficiency and renewable energy projects. This Bill was modeled on the successful Berkeley First programs and Palm Desert Energy Independence and provides an important opportunity to provide monetary resources for owners of existing buildings to make energy efficiency improvements and to add on site renewable energy to their properties.

Assembly Bill 1493

In December, 2005, California petitioned the United States Environmental Protection Agency to allow the State to require more stringent fuel economy standards. On July 1, 2009, the Environmental Protection Agency granted California a waiver that enables California to enforce stricter tailpipe emissions on new motor vehicles. The waiver requested enforcement of the stricter standards beginning with the 2009 model year, but has not yet been implemented. Implementation of more stringent fuel economy standards will reduce automobile emissions intensity.

Section 4 Environmental Impacts – GHG Emissions

Senate Bill 1078

This Bill passed in 2002, established Renewable Portfolio Standards for each State investor-owned utility to acquire 20% of its electricity from renewable resources by 2010 and 33% by 2020.

Senate Bill 1368

This Bill, passed in 2006, establishes emissions performance standards for new and existing power plants that produce energy sold to publicly owned and investor owned utilities.

Senate Bill 7

This Bill, passed in 2009, requires the State to achieve a 20% reduction in per capita water use by 2020. Noncompliance by local water providers will make them ineligible for State grant or loan funding.

Senate Bill 407

This Bill, passed in 2010, requires inefficient plumbing fixtures be replaced with more efficient models at time of property sale or improvement.

Assembly Bill 939

This Bill, passed in 1989, established the goal of achieving a statewide diversion rate of 50% and requires cities and counties to divert a minimum 50% of their waste stream for reuse or recycling.

Senate Bill 1016

This Bill, passed in 2008, established per capita disposal rate requirements and goals for local agencies in California. Requirements are expressed in pounds per person per day.

Assembly Bill 341

The Governor signed Assembly Bill 341 into law on October 5, 2011. Among its provisions, the Bill establishes a statewide policy goal of source reducing, recycling or composting at least 75% of solid waste generated by 2020 and requires a business (defined as a commercial or public entity) that generates more than 4 cubic yards of commercial solid waste per week or a multifamily residential dwelling of 5 or more units to arrange for recycling services on and after July 1, 2012. In addition, each jurisdiction is required to implement a commercial solid waste recycling program that consists of education, outreach and monitoring of businesses that is appropriate for that jurisdiction and is designed to divert commercial solid waste from businesses.

Section 4 Environmental Impacts – GHG Emissions

Appliance Energy Efficiency Regulation

California Appliance Efficiency Regulations address 21 categories of Federally-regulated and non-Federally regulated appliances that range from air conditioning units to exit signs. Title 20 reduces emissions intensity of new and existing buildings by establishing performance standards for devices often used in buildings and, in some cases, public infrastructure.

California Energy Plan

The California Energy Commission drafted the State Energy Plan, which identifies emerging trends in energy supply, demand, conservation, public health and safety, and maintenance of a healthy economy. The Plan recommends reductions in congestion and increased efficiency in the use of fuel supplies. The Plan also encourages urban design that reduces vehicle miles traveled and promotes pedestrian and bicycle use.

California Renewables Portfolio Standard

Under Senate Bill XI-2, signed into law in April 2011, the Renewables Portfolio Standard applies to all electricity retailers in California. The entities were required to meet the Renewables Portfolio Standard goals of 20% of retail sales from eligible renewables by the end of 2013, 25% by the end of 2016, and 33% by 2020.

California Public Utilities Commission Energy Efficiency Strategic Plan

This Strategic Plan describes a series of measures to improve energy efficiency and to address a variety of energy and emissions-related issues. Two important goals of the Strategic Plan are zero net energy residential buildings by 2020 and zero net energy commercial buildings by 2030, which would reduce emissions associated with new buildings.

Renewable Portfolio Standard

This Standard requires a minimum 20 percent of California's electricity be provided from clean, carbon-free sources including solar, wind, biomass and small hydropower by 2020. Implementation of the Renewable Portfolio Standard will reduce emissions intensity of purchased electricity and reduce emissions associated with buildings and infrastructure.

Executive Order S-3-05

Prior to signing AB 32, Governor Schwarzenegger issued Executive Order S-3-05, which provides an additional, long-term greenhouse gas emissions reduction target of 80 percent below 1990 levels by 2050. Governor Arnold Schwarzenegger issued an Executive Order seeking a more aggressive non-binding target of 33 percent renewable energy by 2020.

Section 4 Environmental Impacts – GHG Emissions

Executive Order S-1-07 – Low Carbon Fuel Standard

California's Low Carbon Fuel Standard requires an approximate 10 percent reduction in carbon intensity of California motor fuels. This is the first standard to examine specifically carbon content of transportation related fuels. The Fuel Standard also is recognized as a "discrete early action item" by the California Air Resources Board in its Scoping Plan.

City of Irvine General Plan – Energy Element Objectives and Policies

The following Objectives and Policies are most relevant to development and operation of the proposed project.

Objective I-1: ENERGY CONSERVATION – Maximize energy efficiency through land use and transportation planning

Policy (a) in part: Encourage energy-efficient landscaping (water conserving plants, indigenous vegetation, and use of on-site water runoff) consistent with the City's Sustainability and Landscaping Ordinance

Policy (a) in part: Encourage, as part of required landscape plans, plant types and irrigation systems which minimize water usage and provide cooling opportunities during summer and minimize conflicts with solar access during winter

City of Irvine City Council Resolution No. 05-153

Irvine City Council Ordinance No. 09-12 was adopted on September 22, 2009. The City adopted the ordinance in conjunction with the State of California's Green Building Code Standards to promote conservation and resource efficiency for development.

City of Irvine Energy Plan

The City of Irvine Energy Plan is the initial step in implementing the General Plan Energy Element Objectives and Policies by presenting the energy situation in 2008, defining goals, listing next actions to be taken, and presenting strategies and policies to meet the goals. The Energy Plan found the breakdown of total energy consumed within Irvine was approximately 40 percent electricity, 34 percent natural gas, and 26 percent gasoline. Municipal facilities consumed less than one-tenth of one percent of total energy consumed by buildings within City boundaries. Of electricity consumed, 72 percent was consumed by small-to-medium businesses, 16 percent was consumed by residential uses, and 10 percent by large commercial and industrial uses.

The intent of Irvine Energy Plan goals is "... to match or exceed the State's energy and emissions reduction goals for California" by involving all Irvine residents and businesses in reducing energy consumption, by increasing energy efficiency in buildings to reduce building energy use, and to transition new buildings Citywide to renewable energy. Following are Irvine

Section 4 Environmental Impacts – GHG Emissions

Energy Plan Implementation Strategies relevant to development and operation of the proposed project.

Conservation and Improved Efficiency

- All new commercial/industrial construction should be encouraged to exceed the State Energy Code Title 24 by at least 15 percent.
- Develop incentives for high performance design and construction in the private sector, such as reduced fees and expedited processing
- Provide incentives for achieving higher standards of energy efficiency alone, such as fast-tracked permitting for proposed projects that exceed Title 24 by 15 percent or more.
- Encourage businesses to power all decorative lighting, advertising, and other non-safety related exterior lighting by renewable energy.
- Work with local utilities, energy and business interest groups to develop a program for re-commissioning existing commercial buildings.
- Work with the utilities, local energy interest groups and local business and civic organizations to provide training and educational programs about energy efficiency and conservation, demand response programs and renewable energy resources especially wind and solar, for local businesses.
- Encourage less paved areas and more shading adjoining buildings to reduce the “heat island effect.” Trees help moderate the temperature through evapotranspiration, and provide shade that reduces the amount of solar radiation absorbed by pavement and buildings. Properly located trees can reduce the cost of cooling buildings, reducing air-conditioning needs up to 30 percent, thereby reducing the amount of fossil fuels required to produce electricity.
- Encourage the more widespread use of grey water for permitted non-potable purposes such as toilet flushing and irrigation on-site. Grey water is different than reclaimed water. It is the wastewater from all water-using fixtures except toilets and sinks with food grinders; it contains far less organic material than normal waste water and so can potentially be managed in different ways. In some buildings, as much as 50 percent of water use can be recaptured and reused to flush toilets.
- Encourage the use of waterless urinals in new construction and major remodeled projects.
- Consider adopting (and adapting as necessary for commercial areas) the Model Lighting Ordinance and Design Guidelines jointly developed by the International Dark Sky Association and the Illuminating Engineering Society of North America. The Model Ordinance requires outdoor lighting appropriate to communities, the environment, and the natural habitat.

Citywide Transportation

- Encourage Irvine employers to use telecommuting technologies and to examine the possible benefits of alternative work schedules to allow some employees to work out of their homes at certain times and to reduce the traffic congestion and environmental impacts of employee commuting.

- Encourage businesses to provide preferential parking for van pools/car pools, and as rewards for energy efficiency ideas; also provide preferential parking for neighborhood shuttles, and for employees' hybrid cars.
- Work with businesses to provide their employees up-to-date information on how to use transportation alternatives particularly the new I-shuttle recently launched in the Irvine Business Complex. Include tips on driving, and energy, health and pollution impacts of driving.
- Implement policies in the City's Circulation Element that are likely to result in a decreased use of fossil fuel energy, especially those recommendations that encourage walking, transit and bicycling.
- Encourage businesses to enter into a contract to make the ZEV-NET vehicles at the Irvine Transportation Center available to its employees, to reduce the number of older "station" cars used, and encourage more of its employees to commute by train.
- Encourage the use of new car rental/car sharing options such as Flexcar.
- Discourage the provision of ample free employee parking. Free parking is a strong incentive to drive alone, and represents a subsidy those who bike or walk, or use rideshare or public transit does not receive.
- Another alternative would be to give all employees who choose some other mode of transportation a cash subsidy equivalent to the cost of paid parking. Those employees may use the cash to pay for their commute and pocket the difference. Such a system offers employees who take public transit or bike to work similar subsidy-payments to those presently benefitting from free parking.
- Evaluate construction of covered parking areas to provide preferential parking which also serve as solar PVV generation sites. Provide employee free plug-in hybrid refueling stations at City facilities with solar PV electricity generation systems.
- Encourage businesses to facilitate employee purchases of Renewable Energy Credits to offset their commute emissions. The cost to offset the average commuter's emissions (3 tons/year) is between \$30 and \$40. Employees who are environmentally proactive could take advantage of the opportunity. To encourage participation, the business could offer to pay a portion of the cost of the offsets.
- Work with OCTA to provide lunch time shuttle bus use in the other areas of the City. Employee commuter surveys often indicate that about 15 percent of drivers commute alone because they need their cars for personal business such as banking, dry-cleaning, or small shopping accomplished during the lunch hour at adjacent shopping centers. A personal auto is not needed if alternative transportation is available during the lunch hour.
- In all new developments, prioritize the implementation of circulation system improvements, incentives and disincentive measures to reduce single-occupancy automobile travel, and promote bus transit, rail transit/fixed guide way systems, carpooling, bicycling and walking.
- Encourage local businesses to use incentives and disincentive measures to reduce single-occupancy automobile travel by their employees, and to promote the use of bus transit, carpooling, bicycling, and walking to work.
- Promote and expand alternatives to single-occupancy driving, advocate at county and regional levels for increased supply/increased frequency, reliable and convenient public

transportation. Promote regional public transit, especially between major Orange County urban centers.

- Work with regional transportation agencies to develop and promote a regional on-line car pool rider connector to help residents who wish to car pool to connect with other drivers using similar routes.
- Encourage all new commercial/office centers to include food services, a gym with showers, bike lockers, etc. to reduce employees' need/desire to leave the area during lunch breaks. Bike lockers safely store bicycles during the day, together with helmets and other bike equipment and make bike commuting more appealing.
- Discourage the provision of free parking in commercial, educational, and other centers.

Energy Information and Education

Provide incentives for achieving higher standards of energy efficiency, such as fast-tracked permitting for proposed projects that exceed code requirements by 15 percent, and/or that meet Irvine Build Green guidelines for energy and renewable energy.

4.7.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines, the Project would create significant impacts to greenhouse gas emissions if it would:

- A) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment;
- B) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gases.

The CEQA Guidelines do not identify numeric thresholds for greenhouse gas emissions impacts. Rather, lead agencies have discretion in evaluating significance. Air districts in California are still developing and revising threshold methodology and thresholds. Therefore, greenhouse gas emissions impacts must be evaluated on a case-by-case basis until the Southern California Air Quality Management District adopts significance thresholds and greenhouse gas emissions impact methodology.

However, to guide local agencies in analyzing greenhouse gas emissions, SCAQMD proposed a screening level for residential, commercial, and mixed use developments of 3,000 MTCO₂e, which is used for purposes of this analysis.

4.7.4 ENVIRONMENTAL IMPACTS

Evaluation of proposed project-related impacts involves modeling and estimating proposed project emission of greenhouse gas emissions. Estimates are based on past performance and do not take into account future energy-efficient technology that may reduce greenhouse gas emissions. Therefore, modeled emissions represent a worst-case

- A) LESS THAN SIGNIFICANT IMPACT.** Project development (construction) and operation would generate greenhouse gas emissions. The majority of energy consumption and associated generated greenhouse gas emissions would occur during the proposed project's operation. Typically, more than 80 percent of total energy consumption occurs during use of buildings and less than 20 percent of energy is consumed during construction (United Nations Environment Programme, 2007).

The following activities associated with the proposed project could directly or indirectly contribute to generation of greenhouse gas emissions.

- **Construction Activities** – During project development (construction), greenhouse gases would be emitted through construction equipment operation and from worker and vendor vehicles. Combustion of fossil fuels creates greenhouse gases such as Carbon Dioxide, Methane and Nitrous Oxide). Methane also is emitted during fueling of heavy equipment
- **Gas, Electricity, and Water Use** – Natural gas use results in emission of Methane (the major component of natural gas) and Carbon Dioxide (from combustion of natural gas). In addition, electricity use on the Project site would result in greenhouse gas emissions if the electricity is generated by fossil fuel. California's water conveyance system is energy-intensive.
- **Solid Waste Disposal** – Solid waste generated by proposed project development and operation could contribute to greenhouse gas emissions in several ways. Landfilling and other methods of disposal use energy for transporting and managing the waste, and produce greenhouse gases to varying degrees. Landfilling, the most common waste management practice, results in release of Methane from the anaerobic decomposition of organic materials. In addition, many materials in landfills do not decompose fully and the carbon that remains is sequestered in the landfill and not released into the atmosphere.
- **Motor Vehicle Use** – Transportation associated with proposed project development and operation would result in greenhouse gas emissions from combustion of fossil fuels in daily automobile and truck trips. Vehicle trips would make up the majority of the Project's GHG emissions.

GHG estimates for construction and operation phases of the Project are below. The calculation for construction emissions includes Carbon Dioxide and annual Carbon Dioxide Equivalent greenhouse gas emissions from increased energy consumption, water usage, solid waste disposal, and estimated greenhouse gas emissions from vehicular traffic that would result from project development and operation.

Construction Activities

Construction activities produce combustion emissions from various sources (e.g. site grading; utility engines; on-site heavy duty construction vehicles; equipment hauling materials to/from the Project site; asphalt paving; motor vehicles transporting the construction crew) that vary daily as construction activity levels change. The following Table 4.7-B lists annual Carbon Dioxide Equivalent emissions for each of the planned construction phases because greenhouse gas

emissions associated with Project development (demolition and construction) would predominantly consist of Carbon Dioxide. These emissions persist in the atmosphere for a substantially longer period of time than other criteria pollutants such as PM₁₀, hence the following Table contains a row delineating the data for pollutant amortizing over 30 years:

TABLE 4.7-B				
Construction Greenhouse Gas Emissions				
CONSTRUCTION PHASE 2017	TOTAL REGIONAL POLLUTANT EMISSIONS (Metric Tons per Year)			
	CARBON DIOXIDE	METHANE	NITROUS OXIDE	CARBON DIOXIDE EQUIVALENT
DEMOLITION	26	<0.01	0	26
SITE PREPARATION	3.4	<0.01	0	3.5
GRADING	6	<0.01	0	6.1
BUILDING CONSTRUCTION	266	0.05	0	267
ARCHITECTURAL COATING	16	<0.01	0	16
PAVING	8.8	<0.01	0	8.8
TOTAL CONSTRUCTION ACTIVITIES	326	0.05	0	327
AMORTIZED OVER 30 YEARS	11	<0.01	0	11
Source: LSA, October, 2016				

The “Air Quality and Greenhouse Gas Analysis” prepared for the Project indicates the Project is required to comply with regional rules that assist in reducing short-term air pollutant emissions. South Coast Air Quality Management District Rule 403 requires that fugitive dust be controlled with best available control measures so the presence of such dust does not remain visible in the atmosphere beyond the property line of the emissions source (SCAQMD 2005). Rule 403 also requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off a project site. The dust suppression techniques summarized below can reduce fugitive dust generation and compliance with these rules would reduce impacts on nearby sensitive receptors (SCAQMD 2005). Applicable Rule 403 measures are the following.

- Apply non-toxic chemical soil stabilizers according to manufacturer specifications to all inactive construction areas (previously graded areas inactive for 10 or more days)
- Water active sites at least twice daily (locations where grading is to occur will be thoroughly watered prior to earthmoving)
- Cover all trucks hauling dirt, sand, soil or other loose materials, or maintain at least 2 feet (0.6 meters) of freeboard (vertical space between the top of the load and the top of the

Section 4 Environmental Impacts – GHG Emissions

- trailer) in accordance with requirements of California Vehicle Code Section 23114
- Pave construction access roads at least 100 feet (30 meters) onto the site from the main road
- Reduce traffic speeds on all unpaved roads to 15 mph or less

Applicable CalRecycle Sustainable (Green) Building Program Measures:

- Recycle/reuse at least 50 percent of construction materials (including, but not limited to, soil, mulch, vegetation, concrete, lumber, metal and cardboard)
- Use “green building materials” (materials that are rapidly renewable or resource-efficient, and recycled and manufactured in an environmentally friendly way) for at least 10 percent of the project, as specified in the CalRecycle website

Adherence to Rule 403 measures, as required, will ensure Project development (demolition and construction) will not result in significant generation of greenhouse gas emissions or will not exceed greenhouse gas emissions thresholds.

Operational Activities

Long-term operation of the proposed project would generate greenhouse gas emissions from area, energy, mobile, waste, and water sources. Each of these sources is discussed below.

Greenhouse gas emission estimates presented in Table 4.7-C below indicate that total emissions associated with operation of the Project would result in greenhouse gas emissions of 1,528 Metric Tons of Carbon Dioxide Equivalent annually, or a net increase of 993 MTCO₂e when reduced by the GHG emissions generated onsite currently. Therefore, anticipated annual emissions would not exceed SCAQMD’s proposed screening level of 3,000 MTCO₂e.

Energy

Starting on January 1, 2014, several new California Building Codes have been enacted. All structures other than one- and two-family dwellings and town homes were to be built under the new 2016 California Building Codes to improve public health, safety and general welfare through enhancing design and construction of buildings by using building concepts that have a positive environmental impact and that encourage sustainable construction practices. Buildings represent 39 percent of United States primary energy usage and 70 percent of its electricity consumption (United States Department of Energy, 2012). Development and operation of the proposed project would increase demand for electricity and natural gas due to the increased building area and number of patients. Non-mobile sources of greenhouse gas emissions primarily are associated with building heating systems and increased regional power plant electricity generation needed from the proposed project electrical demands. The proposed project would comply with existing State and federal regulations pertaining to energy efficiency of buildings, appliances and lighting. This would reduce proposed project electricity demand. Starting on January 1, 2014, several new California Building Codes have been enforced.

Proposed project development and operation would indirectly result in a minor increase in greenhouse gas emissions from off-site electricity generation at power plants and on-site natural gas consumption.

TABLE 4.7-C
Operational Greenhouse Gas Emissions

SOURCE	POLLUTANT EMISSIONS, METRIC TONS PER YEAR					
	BIO-CARBON DIOXIDE	NON-BIO CARBON DIOXIDE	TOTAL CARBON DIOXIDE	METHANE	NITROUS OXIDE	CARBON DIOXIDE EQUIVALENT
OPERATIONAL EMISSIONS						
Area Sources	0	<0.01	<0.01	0	0	<0.01
Energy Sources	0	187	187	<0.0	<0.01	188
Mobile Sources	0	1,065	1,065	0.05	0	1,066
Waste Sources	103	0	103	6.1	0	230
Water Usage	1.9	25	27	0.19	<0.01	33
TOTAL PROJECT EMISSIONS	104	1,289	1,393	6.3	0	1,528
TOTAL EXISTING EMISSIONS	36	453	489	2.2	0	535
NET NEW EMISSIONS	68	836	904	4.1	0	993

Source: LSA, October, 2016

Area Sources

Area sources of greenhouse gas emissions include consumer products, hearths, and landscaping. Project operation would result in increased greenhouse gas emissions from area sources (less than 0.01 Metric Tons of Carbon Dioxide Equivalent annually).

Water Use

Water-related energy use consumes 19 percent of California's electricity annually (California Energy Commission, 2005). Energy use and related greenhouse gas emissions are based on electricity used for water supply and conveyance, water treatment, water distribution, and water treatment. Proposed project operation would indirectly result in greenhouse gas emissions from the off-site electricity generation at power plants and on-site natural gas consumption.

Refrigerants

There is currently a federal ban on Chlorofluorocarbons. Therefore, it is assumed project development and operation would not generate Chlorofluorocarbons emissions. Project development and operation may emit a small amount of Hydrofluorocarbons from leakage and service of refrigeration and air conditioning equipment and from disposal of equipment. However, details about refrigerants to be used at the proposed project are not known at this time. Perfluorocarbons and Sulfur Hexafluoride typically are used in industrial applications – none of

Section 4 Environmental Impacts – GHG Emissions

which would be used as part of project development or operation. Therefore, the proposed project development and operation are not anticipated to contribute significant emissions of these additional greenhouse gas emissions.

Mobile Sources

Mobile sources (vehicle trips and vehicle miles traveled) are the largest source of greenhouse gas emissions in California, representing approximately 38 percent of annual Carbon Dioxide emissions generated in the State. Vehicle Miles Traveled is the most direct indicator of Carbon Dioxide emissions from the proposed project. Its associated Carbon Dioxide emissions function as the best indicator of total greenhouse gas emissions. Emissions from vehicle exhaust would comprise 70 percent of the proposed project's total Carbon Dioxide emissions.

- B) LESS THAN SIGNIFICANT IMPACT.** The net increase in emissions level of 993 MT CO₂e/year [993 Metric Tons of Carbon Dioxide Equivalent Annually] is less than SCAQMD's proposed screening threshold of 3,000 MT CO₂e/year for commercial projects; thus, project-level GHG emissions are less than significant. Therefore, project development and operation is consistent with all City GHG policies and goals.

4.7.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

The proposed medical office use would be consistent with City of Irvine General Plan Objectives and Policies. In addition to this consistency, the project would not generate GHG emissions in excess of SCAQMD's proposed screening threshold of 3,000 MTCO₂e. Therefore, the resulting level of significance project development and operation will have on Greenhouse Gas Emissions is less than significant.

4.7.6 PROJECT DESIGN FEATURES

The Climate Action Team and the Air Resources Board have developed several reports to achieve the Governor's greenhouse gas emissions reduction targets that rely on voluntary actions of California businesses, local government, local community groups, and State incentive and regulatory programs. These include the Climate Action Team 2010 "Report to Governor Schwarzenegger and the Legislature," the Air Resource Board 2007 "Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California," and the Air Resource Board "First Update to the Climate Change Scoping Plan: Building on the Framework Pursuant to AB 32, the California Global Warming Solutions Act of 2006." The reports identify strategies to reduce California's emissions to levels proposed in Executive Order S-3-05 and Assembly Bill 32 that are applicable to the Project. The Scoping Plan that was adopted in 2008 and updated in 2014 is the most recent document. The strategies included in the Scoping Plan that apply to the Project are contained below in Table 4.7-D, which also provides a summary of the extent to which the Project would comply with strategies to help California reach emission reduction targets. Strategies listed in Table 4.7-D are either part of the Project design or requirements under local or State ordinances. Implementation of these strategies will ensure Project contribution to cumulative greenhouse gas emissions would be reduced. Furthermore, to ensure

Project development and operation complies with and would not conflict with or impede implementation of greenhouse gas emissions reduction goals identified in Assembly Bill 32, Executive Order S3-05, and other strategies to help reduce greenhouse gas emissions to the level proposed by the Governor, the following Project Design Feature GHG-1 will be implemented.

In addition to modeled GHG emissions being below thresholds, it also should be noted that the proposed medical office building will be constructed to LEED Silver standards, which will assist in reducing greenhouse gas emissions resulting from Project development and operation.

TABLE 4.7-D Project Compliance with Greenhouse Gas Emission Reduction Strategies	
STRATEGY	PROJECT COMPLIANCE
ENERGY EFFICIENCY MEASURES	
<p>Energy Efficiency. Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts including new technologies, and new policy and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California (including both investor-owned and publicly-owned utilities).</p> <p>Renewables Portfolio Standard. Achieve a 33 percent renewable energy mix statewide.</p> <p>Green Building Strategy. Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.</p>	<p>Compliant. The proposed project will comply with Title 24 standards, including the 2016 California Building Codes. In addition, the project would implement Project Design Feature GCC-1, identified in this section, including measures to incorporate energy-efficient building design features.</p>
WATER CONSERVATION AND EFFICIENCY MEASURES	
<p>Water Use Efficiency. Continue efficiency programs and use cleaner energy sources to move and treat water. Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and waste water. Increasing efficiency of water transport and reducing water use would reduce greenhouse gas emissions.</p>	<p>Compliant. The proposed project would implement Project Feature GCC-1, including measures to increase water use efficiency, which would increase the efficiency of water transport and reduce water use.</p>
SOLID WASTE REDUCTION MEASURES	
<p>Increase Waste Diversion, Composting, and Commercial Recycling, and Move Toward Zero-Waste. Increase waste diversion from landfills beyond the 50 percent mandate to provide for additional recovery of recyclable materials. Composting and commercial recycling could have</p>	<p>Compliant. Data available from CalRecycle¹ indicates that Orange County has not achieved the 50 percent diversion rate. The proposed project would implement Project Feature GCC-1, including measures to increase</p>

substantial greenhouse gas reduction benefits. In the long-term, zero-waste policies that would require manufacturers to design products to be fully recyclable may be necessary.	solid waste diversion, composting and recycling, which would increase waste diversion.
TRANSPORTATION AND MOTOR VEHICLE MEASURES	
<p>Vehicle Climate Change Standards. Assembly Bill 1493 (Pavley) required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of greenhouse gas emissions from passenger vehicles and light-duty trucks. Regulations were adopted by the Air Resources Board in September, 2004.</p> <p>Light-Duty Vehicle Efficiency Measures. Implement additional measures that could reduce light-duty greenhouse gas emissions. For example, measures to ensure tires are properly inflated can both reduce greenhouse gas emissions and improve fuel efficiency.</p> <p>Adopt Heavy- and Medium-Duty Fuel and Engine Efficiency Measures. Regulations to require retrofits to improve the fuel efficiency of heavy-duty trucks that could include devices that reduce aerodynamic drag and rolling resistance. This measure also could include hybridization of and increased engine efficiency of vehicles.</p> <p>Low Carbon Fuel Standard. The Air Resources Board identified this measure as a Discrete Early Action Measure. This measure would reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020.</p>	<p>Compliant. The proposed project does not involve vehicle manufacture. However, vehicles purchased and used within the project site would comply with any vehicle and fuel standards the Air Resources Board adopts.</p>
<p>Regional Transportation-Related Greenhouse Gas Targets. Develop regional greenhouse gas emissions reduction targets for passenger vehicles. Local governments will play a significant role in the regional planning process to reach passenger vehicle greenhouse gas emissions reduction targets. Local governments have the ability to directly influence both the siting and design of new residential and commercial developments in a way that reduces greenhouse gases associated with vehicle travel.</p>	<p>Compliant. Specific regional emission targets for transportation emissions do not directly apply to the proposed project; regional greenhouse gas reduction target development is outside the scope of the proposed project analysis. The proposed project will comply with any plans developed by the City of Irvine and the County of Orange.</p>
<p>Measures to Reduce High-Global Warming Potential Gases. The Air Resources Board has</p>	<p>Compliant. New products used or serviced on the Project site would</p>

Section 4 Environmental Impacts – GHG Emissions

identified Discrete Early Action measures to reduce greenhouse gas emissions from refrigerants used in car air conditioners, semi-conductor manufacturing, and consumer products. The Air Resources Board also has identified potential reduction opportunities for future commercial and industrial refrigeration, changing refrigerants used in auto air conditioning systems, and ensuring existing car air conditioning systems do not leak.	comply with future Air Resources Board rules and regulations.
Source: Compiled by LSA, October, 2016 ¹ CalRecycle Countywide, Regionwide, and Statewide Jurisdiction Diversion/Disposal Progress Report, Website: http://www.calrecycle.ca.gov/LGCCentralReports/Jurisdiction/DiversionkDisposal.aspx	

PDF GHG-1: To ensure the Project complies with and would not conflict with or impede implementation of reduction goals identified in Assembly Bill 32, the Governor’s Executive Order S-3-05 and other strategies to help reduce greenhouse gases to the level proposed by the Governor, the Project will implement a variety of measures that will reduce its greenhouse gas emissions. To the extent feasible and to the satisfaction of the City of Irvine, the following measures will be incorporated into the design and construction of the Project:

Construction and Building Materials.

- Use locally produced and/or manufactured building materials for at least 20 percent of the construction materials used for the Project
- Recycle/reuse at least 50 percent of the demolished and/or grubbed construction materials (including, but not limited to, soil, vegetation, concrete, lumber, metal and cardboard) if feasible
- Use “green building materials,” such as those materials that are resource-efficient and are recycled and manufactured in an environmentally friendly way, for at least 10 percent of the Project

Energy Efficiency Measures

- Design all Project buildings to meet or exceed California Building Code Title 24 energy standard, including but not limited to, any combination of the following:
 - Increase insulation such that heat transfer and thermal bridging is minimized
 - Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption
 - Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment
- Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings
- Install “cool” roofs and cool pavements
- Install energy-efficient heating and cooling systems, appliances and equipment, and control systems
- Install solar lights or light-emitting diodes for outdoor lighting or outdoor lighting that meets the City of Irvine Code

Section 4 Environmental Impacts – GHG Emissions

Water Conservation and Efficiency Measures

- Devise a comprehensive water conservation strategy appropriate for the Project and its location. The strategy may include the following, plus other innovative measures that may be appropriate:
 - Create water-efficient landscapes within the development
 - Install water-efficient irrigation systems and devices, such as soils moisture-based irrigation controls
 - Use reclaimed water, if available, for landscape irrigation within the Project; install the infrastructure to deliver and use reclaimed water, if available
 - Design buildings to be water-efficient; install water-efficient fixtures and appliances, including low-flow faucets and waterless urinals
 - Restrict watering methods (e.g. prohibit systems that apply water to non-vegetated surfaces) and control runoff

Solid Waste Measures

- To facilitate and encourage recycling to reduce landfill-associated emissions, among others, the project will provide trash enclosures that include additional enclosed area(s) for collection of recyclable materials; the recycling collection area(s) will be located within, near, or adjacent to each trash and rubbish disposal area; the recycling collection area will be a minimum of 50 percent of the area provided for the trash/rubbish enclosure(s) or as approved by the Waste Management Department of the City of Irvine
- Provide employee education on waste reduction and available recycling services

Transportation Measures

- To facilitate and encourage non-motorized transportation, bicycle racks shall be provided in convenient locations to facilitate bicycle access to the Project area; bicycle racks shall be shown on project landscaping and improvement plans submitted for Planning Department approval and shall be installed in accordance with those plans
- Provide pedestrian walkway and connectivity requirements

4.7.7 MITIGATION MEASURES

No Mitigation Measures required.

4.7.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts would be less than significant without mitigation. However, compliance with all regulatory requirements and implementation of **PDF GHG-1** would ensure Project development and operation would not conflict with or impede implementation of reduction goals identified in Assembly Bill 32, the Governor's Executive Order EO-S-3-05, and other strategies to help reduce greenhouse gas emissions to the level proposed by the Governor. Therefore, Project contribution to greenhouse gas emissions would be less than significant.

4.7.9 CUMULATIVE IMPACTS

The Master Plan Modification and Conditional Use Permits for the Woodbridge Village Retail Center would allow development of a gas station, drive-thru car wash, convenience store, and a fast food restaurant with drive-thru within the Center. In addition, the Master Plan Modification involves demolition of 30,658 square feet of retail and office space to expand outdoor spaces for Center patrons. Therefore, the redeveloped Center would be decreased in area by 25,426 square feet – to a total area of 137,198 square feet. Due to the decrease square footage, it is reasonable to assume the Woodbridge Village Retail Center Project would result in fewer GHG emissions compared to existing conditions. Project greenhouse gas emissions were determined not to exceed SCAQMD's proposed threshold, as indicated above in this Section. Therefore, impacts would not be cumulatively considerable.

4.8 HAZARDS/HAZARDOUS MATERIALS

Information for this section was derived from the City of Irvine General Plan Safety Element, the California Department of Public Health “Medical Waste Report to the Legislature,” the Orange County Health Agency “Medical Waste” web page, and Phase I Environmental Site Assessment which are included as Appendix F to this EIR.

4.8.1 ENVIRONMENTAL SETTING

The proposed project involves retaining the same medical office use, but increasing building square footage through demolition and replacement with a new medical office building. Consequently, medical waste will be generated in addition to construction waste generated from demolition of the existing building and construction of the proposed larger building.

Definitions

Hazardous Waste – The California Department of Toxic Substances Control (DTSC) defines “hazardous waste” as follows:

Hazardous waste – includes any waste that, due to its quantity, concentration, or physical, chemical, or infectious characteristics may either:

- Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness;
- Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Hazardous waste can appear in household waste, wastewater, green waste or biosolids (solids remaining after treating wastewater).

Medical Waste – is defined in the State of California “Medical Waste Management Act” (California Health and Safety Code Section 117690[a]) as follows.

- Any biohazardous, pathology, pharmaceutical, or trace chemotherapy waste not regulated by the federal Resource Conservation and Recovery Act of 1976 Public Law 94-580), as amended; sharps and trace chemotherapy wastes generated in a health care setting in the diagnosis, treatment, immunization, or care of humans or animals; waste generated in autopsy or necropsy; waste during preparation of a body for final disposition such as cremation or interment; waste generated in research pertaining to the production or testing of microbiologicals; waste generated in research using human or animal pathogens; sharps and laboratory waste that poses a potential risk of infection to humans generated in the inoculation of animals in commercial farming operations; waste generated from the consolidation of home-generated sharps; and waste generated in the cleanup of trauma scenes. Biohazardous, pathology, pharmaceutical, sharps, and trace chemotherapy wastes that meet the conditions of this section are not subject to any of the

hazardous waste requirements found in Chapter 6.5 (commencing with Section 25100) of Division 20.”

Biohazardous waste includes the following:

- Regulated medical waste, clinical waste, or biomedical waste that is a waste or reusable material derived from the medical treatment of a human or from an animal that is suspected by the attending veterinarian of being infected with a pathogen that is also infectious to humans, which includes diagnosis and immunization; or from biomedical research, which includes the production and testing of biological products;
- Regulated medical waste or clinical waste or biomedical waste suspected of containing a highly communicable disease;
- Laboratory waste such as human specimen cultures or animal specimen cultures that are infected with pathogens that are also infectious to humans; cultures and stocks of infectious agents from research; wastes from the production of bacteria, viruses, spores, discarded live and attenuated vaccines used in human health care or research, discarded animal vaccines. . . ; culture dishes, devices used to transfer, inoculate, and mix cultures; and wastes identified by Section 173.134 of Title 49 of the Code of Federal Regulations as Category B “once waster” for laboratory wastes;
- Waste that at the point of transport from the generator’s site or at the point of disposal contains recognizable fluid human blood, fluid human blood products, containers, or equipment containing human blood that is fluid, or blood from animals suspected by the attending veterinarian of being contaminated with infectious agents known to be contagious to humans;
- Waste containing discarded materials contaminated with excretion, exudate, or secretions from humans or animals that are required to be isolated by the infection control staff, the attending physician and surgeon, the attending veterinarian, or the local health officer, to protect others from highly communicable diseases or disease of animals that are communicable to humans.

Sharps Container is defined as follows:

- A rigid puncture-resistant container used in patient care or research activities meeting the standards of, and receiving approval from, the United States Food and Drug Administration as a medical device used for the collection of discarded medical needles or other sharps.

The proposed project site currently contains a 16,015 square foot medical office building. Medical/dental offices within the existing building generate hazardous waste associated with medical uses.

4.8.2 EXISTING REGULATIONS & STANDARD CONDITIONS

Medical Waste

Medical waste is a subset of waste generated at health care facilities such as hospitals,

physician's offices, dental practices, blood banks, and veterinary hospitals/clinics, as well as medical research facilities and laboratories. In general, medical waste is health care waste that may be contaminated by blood, body fluids or other potentially infectious materials and is often referred to as regulated medical waste.

States largely assume the role of regulating medical waste; however, the United States Environmental Protection Agency retains jurisdiction over medical waste treatment technologies. California and County of Orange requirements are as follows.

Medical Waste Management Act

The California Medical Waste Management Act (MWMA) became effective in 1991. The California Department of Public Health assumed responsibility as the oversight agency for medical waste management in 2007. Several amendments to the MWMA have been enacted. Assembly Bill 333 was the initial comprehensive change to the MWMA by restructuring the definition of medical waste, mandating use of separate and distinct tracking and shipping documents, modifying large and small generator requirements, and amending rules for self-transport of small amounts of medical waste.

California has a “cradle-to-grave” tracking system for medical waste. Generators of medical waste are required to register with their respective Local Enforcement Agencies (e.g. the County of Orange) and are legally responsible to ensure that medical waste generated by their facility is treated appropriately and managed in a manner that protects the public and the environment by minimizing or eliminating the risk of exposure to agents that cause disease. The MWMA-required “tracking document” accompanies medical waste from the point of generation through its transport to a treatment facility and point of destruction.

The MWMA also governs the following: proper storage of medical waste; appropriate treatment for different types of medical waste; requirements that generators of medical waste must adhere to; operating conditions for medical waste treatment facilities; and jurisdictional oversight by state or local authorities.

The California Department of Public Health – Medical Waste Management Program staff is housed in Sacramento and Los Angeles/Glendale. Staff conducts comprehensive review of facility compliance inspections and responds to complaints associated with mismanagement or illegal disposal of medical waste.

California Health and Safety Code

Chapter 6.95, Section 25502, California Health and Safety Code, and Title 19, California Code of Regulations describe the State of California's hazardous materials emergency planning and community right-to-know program. In Orange County, the Orange County Fire Authority is the agency designated to administer this program for its contract cities (which include the City of Irvine). The Orange County Fire Authority maintains business plans for all business in Irvine that handle a hazardous material in quantities equal to or greater than 500 pounds, 55 gallons, or

200 feet of gas at STP, or federal extremely hazardous substances (California acutely hazardous materials) in excess of threshold planning quantities, at one time. The majority of hazardous materials contained in the Fire Authority's inventory for Irvine consist of acids, solvents, petroleum products, anhydrous ammonia, and chlorine. In event of a hazardous materials incident in Irvine, the Orange County Fire Authority will act as the lead agency within the City limits and will provide an Incident Commander. Support will be provided by Irvine's Departments of Public Safety and Public Works. The Orange County Hazardous Materials Response Team will be notified through Irvine Police Dispatch and requested to respond. In general, response at the City level will be limited to containment, situation analysis, and possible evacuation of the threatened population.

United States Occupational Safety and Health Administration (OSHA)

At the federal level, management of the medical waste stream is shared among several different agencies. The federal Occupational Safety and Health Administration establishes and enforces standards to ensure working conditions for employees are safe and healthful. Regarding medical waste management, OSHA enforces the Blood Borne Pathogen standard to ensure the safety of workers who may be exposed to biological fluids potentially containing etiologic agents that cause disease during waste management activities. The United States Environmental Protection Agency (EPA) oversees air emissions from incineration of waste. The United States Postal Service (USPS) has authority over waste sent through the mail and the USDOT regulates commercial transport of medical waste over public roads.

Orange County Health Care Agency – Environmental Health Division

The Orange County Health Care Agency regulates generators of medical waste, inspects medical waste facilities, on-site medical waste treatment units and common storage areas, and investigate complaints about a facility's medical waste handling. The facilities inspected include hospitals, skilled nursing facilities, physician's offices, dental offices, and veterinarian offices. All large quantity generators and small quantity generators of medical waste are required to register with the Orange County Health Care Agency. If a facility generates 200 pounds or more of medical waste in any one month of a 12-month period, it is considered a "large quantity generator" and must be registered with the Orange County Health Care Agency. A permit from the Health Care Agency is required for each facility that treats medical waste on-site, using steam sterilization or microwave technology. If a facility generates less than 200 pounds of medical waste per month and does not treat medical waste on-site, it is considered a "small quantity generator." If a medical waste accumulation area is used by several generators for storage of medical waste prior to collection by a registered hauler, it then is considered a common storage area and an Orange County Health Care Agency – Environmental Health Division permit is required. Compliance inspections occur to establish the facility's status as a small quantity generator.

Orange County Health Care Agency – Environmental Health Division requirements for initial containment of medical waste are as follows:

- Medical waste must be separated from other wastes at the point of origin;
- Biohazardous waste must be placed in red bags conspicuously labeled with “BIOHAZARDOUS WASTE” or the international biohazard symbol with the word “BIOHAZARD.” The red bags must be impervious to water and thick enough to pass a 165-gram dart impact test;
- Sharps waste must be contained in rigid, puncture and leak resistant containers. These containers shall be labeled with “SHARPS WASTE” or the international biohazard symbol with the word ‘BIOHAZARD’;
- Grinders, compactors or trash chutes are not to be used for medical waste prior to treatment;
- Chemotherapy waste, pathology waste and pharmaceutical waste must be separated from other medical waste. These types of waste must be incinerated at a permitted medical waste incinerator.

In addition, containers and carts used to store closed bags of medical waste must be as follows:

- Leak resistant;
- Tightly covered;
- Clean and in good repair;
- Labeled on all sides with “BIOHAZARDOUS WASTE” or the international biohazard symbol and the word “BIOHAZARD”;
- Washed and decontaminated after each use.

Furthermore, the final storage area (where containers of medical waste are stored for disposal or treatment) is required to be as follows:

- Secured to prevent access to unauthorized persons;
- Marked with warning signs legible from 25 feet distant; signs must state in English and Spanish and any other appropriate language – “CAUTION-BIOHAZARDOUS WASTE STORAGE AREA – UNAUTHORIZED PERSONS KEEP OUT”;
- Protected from animals and natural elements.

City of Irvine General Plan Integrated Waste Management Element

General Plan Integrated Waste Management Element Objectives and/or Policies that are applicable to the proposed project are the following.

Objective H-1: SOLID WASTE – Cooperate in guiding the development and improvement of a solid waste disposal system within the County of Orange that will meet the needs of the City and protect the City from damage by unplanned disposal of refuse

Policy (g) – Require, to the extent necessary to comply with state law, during discretionary application review, solid waste reduction and recycling efforts for residential, commercial, industrial, institutional and recreational land uses to reduce the amount of waste disposed at landfills. Require businesses which intend to handle or store hazardous substances (waste and materials) to obtain all necessary permits and comply with all regulations and standards

administered by the California Environmental Protection Agency (Cal/EPA) – Department of Toxic Substances Control, Orange County Health Care Agency, Santa Ana Regional Water Quality Control Board, South Coast Air Quality Management District, Orange County Fire Authority and the City of Irvine Zoning, Building, and Public Safety Codes.

Standard Conditions

Standard Condition 2.24 (Solid Waste Recycling)

Prior to the issuance of grading permits for a project that involves the demolition of an asphalt or concrete parking lot on site, the applicant shall submit a waste management plan demonstrating compliance with the requirements of Title 6, Division 7 of the City of Irvine Municipal Code relating to recycling and diversion of demolition waste as applicable to said project. Over the course of demolition and construction, the applicant shall ensure compliance with all code requirements related to the use of City-authorized waste haulers.

Standard Condition 3.7 (Solid Waste Recycling)

Prior to the issuance of building permits for a project that involves new construction or that involves the demolition or renovation of existing buildings on site, the applicant shall comply with requirements of Title 56, Division 7 of the City of Irvine Municipal Code relating to recycling and diversion of construction and demolition waste as applicable to said project. Over the course of demolition and construction, the applicant shall ensure compliance with all code requirements related to the use of City-authorized waste haulers.

4.8.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines, the Project would result in significant impacts to hazardous materials if it would:

- A) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- B) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- C) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- D) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;

- E) For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area;
- F) For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area;
- G) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- H) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

4.8.4 ENVIRONMENTAL IMPACTS

A), B), and C) LESS THAN SIGNIFICANT IMPACT WITH MITIGATION

Construction Waste

Small amounts of hazardous materials may be used during construction. Construction may involve transport, storage and use of chemical agents, solvents, paints and other hazardous materials typically associated with construction activities. In addition, demolition of the existing building and parking lot and removal of demolished materials may result in release of some hazardous materials. Mardan School (grades K through 12) borders the Project site to the south across Osborn. The School buildings and outdoor play area are approximately 40 meters from the southerly Project site boundary. All construction-related materials, including any hazardous materials, will be required to be used, handled, and transported in compliance with federal, State, County and City of Irvine requirements, as discussed above. With mandated compliance with applicable federal, state, County and City requirements, impacts related to emissions of hazardous materials, including near a school, would be less than significant without mitigation.

The Phase I Environmental Assessment (Appendix F) conducted for the Project and Project site indicated (although sampling of suspect Asbestos Containing Materials was not part of the scope of the Assessment) “given the age of the subject property building, 1991, friable (easily crumbled) asbestos containing materials will not exist since they were outlawed in the 1980s and large quantities of non-friable asbestos containing building materials are not anticipated to have been used in the subject property building.” In addition, (although surveying and inspecting for Lead Based Paint was not included in the Assessment scope and only a very limited and cursory visual inspection was performed by a non-licensed professional) “given the age of the subject property building, 1991, LBP [Lead Based Paint] is not anticipated to have been used. Lead based paint was banned for uses in residential and commercial buildings in 1978.” Furthermore, due to the age of the existing building, lead welds were not anticipated to have been used. Lead in solder was banned from construction materials in 1988.

The existing medical office building on the Project site was constructed in 1991, subsequent to laws banning use of asbestos and lead as discussed previously.

No evidence of Asbestos or Lead Based Paint was encountered on the Project site or in the existing medical office building due to its relatively newer age. Although not required due to the less than significant impact related to Asbestos and Lead Based Paint for the proposed medical office building, implementation of Mitigation Measure **MM H/H 1** will require a materials survey for potential asbestos in irrigation pipes on the Project site. The survey will determine what, if any, measures would be required to address any presence of asbestos in the pipes.

Medical Waste

The proposed medical office will generate medical waste. Transport and disposal of medical waste is regulated by federal, State, and Orange County Health Care Agency – Environmental Health Division regulations (discussed above in “Existing Regulations and Standard Conditions”). The Applicant will be required to adhere to State and County regulations that would ensure any potential impacts related to transport, use, or disposal of medical waste would remain at a less than significant level. In addition, adherence to State and County regulations would avoid any potential impacts to schools in proximity to the Project site.

Dental Waste

It may be possible dental offices may be located within the new building. The United States Environmental Protection Agency has signed off on a final rule under the Clean Water Act to control the discharge of mercury and other metals entering the waste stream from dental practices. The date for compliance for most dentists will be at the end of 2019.

Under the final rule, a dental facility that laces or removes amalgam will be subject to two Best Management Practices.

- Collect and recycle scrap amalgam;
- Clean chairside traps with non-bleach or non-chlorine cleanser so as not to release mercury.

The rule also includes an amalgam separator installation requirement that is compliant with either the American National Standards Institute American National Standard/American Dental Association Specification 108 for Amalgam Separators (2009) with Technical Addendum (2011); or, with the International organization for Standardization 11143 Standard (2008) or subsequent versions so long as that version requires amalgam separators to achieve at least a 95% removal efficiency. In addition, all dental facilities must submit to the local authority a compliance report and have maintenance and inspection records available for inspection.

With implementation of applicable federal, state, and local regulations, including the new mercury rule in the Clean Water Act, impacts would be less than significant and require no mitigation. In addition, adherence to applicable State and County regulations would avoid any potential impacts to schools in proximity to the Project site.

D) NO IMPACT. As indicated in the Phase I Assessment (Appendix F) to this document that was prepared for the Project, the property is not located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, proposed project development and operation would not create a significant hazard to the public or the environment.

E and F) NO IMPACT. The Project site is not located within the Airport Environs Land Use Plan boundaries for John Wayne Airport, which is approximately 5 miles west of the Project site. In addition, no private airport or airstrip is located within 2 miles of the Project site. Therefore, project development and operation would not result in creation of a safety hazard for people residing or working in the project area.

G) NO IMPACT. Project development and operation would not impair or physically interfere with City of Irvine Emergency Management Plan or Standardized Emergency Management System provisions related to ensuring effective responses to multi-agency and multi-jurisdiction emergencies in the vicinity of the Project site. City-designated evacuation routes and emergency ingress and egress would not be obstructed by proposed project development or operation. Therefore, Project development and operation would have no impact on an adopted emergency response plan or emergency evacuation plan.

H) NO IMPACT. The vicinity of the project site is considered to have a low fire risk and is not identified in the City General Plan Safety Element (Figure J-2; Fire Hazard Areas) as a high fire severity zone. Although fire is a risk for any kind of structure, the new 46,800 square foot medical building would not be at any greater risk than other uses adjacent to the site. The project design will include emergency fire access routes, and the Orange County Fire Authority (OCFA) will review the building plans to ensure the building design meets Fire Department standards, including those for building materials, sprinklers, internal firewalls, access for emergency vehicles, etc. Therefore, project development and operation would not expose people or structures to significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. No impact will result and no mitigation measures are required.

4.8.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

The proposed medical office use will generate more medical waste than the existing medical office use because the proposed size of the building will increase by approximately 30,000 square feet. Transport and disposal of the medical waste will be conducted according to State, County and local requirements. In addition, compliance with these requirements will maintain the existing safety in terms of its non-exposure of nearby Mardan School students and staff to hazardous materials. Furthermore, safe and efficient emergency access to the Project site will be maintained (as discussed in the Transportation/Traffic Section of this document). Therefore, the level of impact related to hazards and hazardous substances (including medical waste) prior to mitigation will be less than significant.

4.8.6 DESIGN FEATURES

No Project Design Features are required.

4.8.7 MITIGATION MEASURES

MM H/H 1: Prior to issuance of a Demolition/Grading Permit for the existing medical office building, the Applicant shall complete and submit an asbestos and hazardous materials survey of all irrigation pipes and building materials for review and approval to the satisfaction of the Director of Community Development Department.

4.8.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Mitigation Measures delineated above, together with adherence to State and County requirements for disposal of medical and dental waste, would reduce potential impacts associated with hazards and hazardous materials to an insignificant level. In addition, development and operation of the proposed project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

4.8.9 CUMULATIVE IMPACTS

The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation publication pertained to the 18-acre (162,444 square foot) Woodbridge Village Center, located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway.

The City of Irvine Planning Commission granted approvals on July 21, 2016 for the modernization of the Woodbridge Village Retail Center through the following applications: Master Plan Modification to re-image the existing center and expand outdoor spaces; a Conditional Use Permit modification for a gas station, drive-thru car wash and convenience store; and a Conditional Use Permit for a new 4,226 square foot fast food restaurant with drive-thru. With various demolition activities, the redeveloped retail center would be decreased by 25,246 square feet – from 162,444 to 137,198 square feet.

Some use of hazardous materials would occur during construction and future operation of the future operation of the gas station and car wash. It is not anticipated any dangerous activities or significant increase in use of hazardous materials would occur during project development or operation. However, similar to the Project, federal, State, County, and City of Irvine requirements for use, transport and disposal of hazardous substances would ensure any related impacts would remain less than significant. Therefore, the Project's impacts would not be cumulatively considerable and no adverse cumulative impacts related to hazardous substances or creations of health hazards are anticipated.

4.9 HYDROLOGY/WATER QUALITY

The following narrative is based on information in the City of Irvine approved “Preliminary Water Quality Management Plan (WQMP) prepared by LPA, Inc, which is included in Appendix H to this EIR, the City of Irvine General Plan, and the City of Irvine Emergency Management Plan.

4.9.1 ENVIRONMENTAL SETTING

The project site is not located within a Floodplain or Flood Hazard area. The City of Irvine General Plan Safety Element, Figure J-3 (Exhibit 4-20, Flood Hazard Areas) depicts San Diego Creek between the easterly City boundary and Culver Drive as a theoretical 100-year flood area as designated by the Federal Emergency Management Agency. San Diego Creek is located approximately one-quarter mile south of the project site. The project site currently is completely built out with a single-story, 16,015 square foot medical office building, surface parking lot, and introduced landscaping and lighting. The project site slopes gently from the west to the southeast. Surface drainage follows the surface contour and flows via sheet flow to the center of the parking area of the project site where it is channeled by a drainage trench to the south leading to a stormwater drain or onto Osborn. The existing project site contains 52,085 square feet of pervious area (41.8 percent of the site) and 72,415 square feet of impervious area (58.2 percent of the site).

According to the City Emergency Management Plan and the Flood Insurance Administration and as indicated on the Flood Insurance Rate Maps are the following, none of which are near the proposed project site.

- East side of Barranca Channel between Barranca Parkway and Alton Parkway, easterly to Milliken
- East side of Tustin City limits to Construction Circle West on the north, and Barranca Parkway on the south
- Bill Barber Park
- Peters Canyon Wash, both sides between Tustin City limits and Harvard, from Interstate-5 to SCCRA railroad
- Northwood, south of Trabuco Road and West of Jeffrey Road
- Mason Regional Park, and Sand Canyon Channel between San Diego Creek and Sand Canyon Reservoir
- Bee Canyon Wash, between Interstate-5 and SCRRA railroad
- Sand Canyon Creek from Sand Canyon east to the City limits
- Serrano Creek from Muirlands to San Diego Creek

4.9.2 EXISTING REGULATIONS & STANDARD CONDITIONS*Standard Conditions*

Standard Condition 2.7 – Groundwater Survey: Prior to the issuance of precise grading permits, the applicant shall submit to the Chief Building Official a groundwater survey of the entire site. The analysis shall be prepared by a licensed geotechnical engineer versed in groundwater analysis and shall include the following information and analysis.

- Potential for perched groundwater intrusion into the shallow groundwater zone upon build-out
- Analysis for relief of groundwater buildup and properties of soil materials on-site
- Impact of groundwater potential on building and structural foundations
- Proposed mitigation to avoid potential for groundwater intrusion within five feet of the bottom of the footings.

Standard Condition 2.12 – Water Quality Notice of Intent: Prior to issuance of preliminary or precise grading permits for a project that will result in soil disturbance of one (1) or more acres of land, the Applicant shall provide the Chief Building Official with evidence that a Notice of Intent (NOI) has been filed with the State Water Resources Control Board. Such evidence shall consist of a copy of the NOI stamped by the State Water Resources Control Board or the Regional Water Quality Control Board, or a letter from either agency stating that the NOI has been filed.

Standard Condition 2.13 – Water Quality Management Plan: Prior to issuance of preliminary or precise grading permits, the Applicant shall submit to the Chief Building Official for review and approval, a Water Quality Management Plan (WQMP). The WQMP shall identify the Best Management Practices (BMP) that will be used on the site to control predictable pollutant runoff.

4.9.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines, the proposed project may create a significant impact if it would:

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

- C) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- D) Substantially alter the existing drainage pattern of the area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner in which would result in flooding on- or off-site;
- E) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- F) Otherwise substantially degrade water quality;
- G) Place housing within a 100-year flood hazard area as mapped on federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- H) Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- I) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam;
- J) Cause inundation by seiche, tsunami, or mudflow.

4.9.4 ENVIRONMENTAL IMPACTS

A) LESS THAN SIGNIFICANT IMPACT

Project Construction

Construction activities associated with the project would have the potential to result in the conveyance of pollutants into municipal storm drains. . Construction would involve use, storage and transport of construction-related paint, solvent, chemical agents and other hazardous materials.

Section 402 of the Federal Water Pollution Control Act requires projects that disturb one or more acres of soil to obtain a National Pollutant Discharge Elimination System General Construction Permit.

The Santa Ana Regional Water Quality Control Board (SARWQCB) implements the stormwater permitting program as part of the National Pollutant Discharge Elimination System (NPDES) authority granted under the federal Clean Water Act. The Project would be required to comply with the “Statewide General Construction Stormwater Permit” (CGP) which addresses waste discharge requirements for discharges of stormwater runoff associated with construction activities. Under the CGP, the applicant

will be required to implement a stormwater pollution prevention plan (SWPPP) to minimize the incidence of construction-related pollutants entering the storm water system. Several items are required in a SWPPP, including site maps showing drainage and discharge locations and location of control measures, a description of pollution prevention Best Management Practices (BMP) to be implemented on the site, BMP inspection procedures, and requirements for stormwater monitoring. Compliance with these requirements would prevent violation of water quality standards and waste discharge requirements during Project construction activities.

Project Operation

Project development would include construction of new impervious surfaces that may result in a slight increase in the amount of stormwater captured on the Project site and conveyed to the City storm drain system. Compliance with mandatory NPDES permit requirements, City building standard requirements, and implementation of the BMPs identified in the required WQMP would ensure Project operation would not contribute additional sources of polluted runoff. Therefore, operational impacts related to creating or contributing runoff water which would exceed the capacity of the existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff would remain less than significant. The required WQMP would identify BMP designed to reduce impacts to water quality, potentially such as the installation of filtration measures at inlets and directing runoff to landscaped areas. Project development and operation would not otherwise substantially degrade water quality and resultant impacts would be less than significant.

Municipal Stormwater Permits mandated by the Federal Water Pollution Control Act require new development and significant re-development projects to incorporate post-construction Best Management Practices to comply with the local Standard Urban Stormwater Mitigation Plan, Drainage Area Management Plan, and/or Water Quality Management Plan to reduce rainfall runoff and improve quality of water that leaves a property. The local Drainage Area Management Plan requires new developments to implement appropriate routine structural and non-structural Best Management Practices.

A Preliminary Water Quality Management Plan was prepared for the project and indicates the Project will generate the following pollutants: sediment; nutrients; metals; bacteria; oil and grease; trash and debris; organics; and, pesticides.

Prior to construction, the City of Irvine Standard Condition Approval 2.13 will require the project Applicant to submit a Final Water Quality Management Plan (WQMP). The WQMP would identify the Best Management Practices (BMP) that will be used on the site to control predictable pollutant runoff, including site design BMPs, source control BMPs, and treatment control BMPs. Implementation of the BMPs identified in the WQMP would assure project development would not violate water quality standards and waste discharge requirements during subsequent operation of the project.

The post-development runoff volume (2-year/24-hour) is 10,020 cubic feet, which is an increase of 872 cubic feet (9.5 percent) over the 2-year/24-hour pre-development runoff volume of 9,148 cubic feet. Per the Orange County Model WQMP, post-development runoff for the 2-year, 24-hour storm event cannot exceed the runoff volume of the pre-development condition for the 2-year, 24-hour storm event by more than 5 percent. Post-development time of concentration will be considerably increased due to runoff being routed through Filterra units and the detention tanks, which are components of the proposed Project. In addition, the Preliminary Water Quality Management Plan concluded that drawdown times and friction through the Filterra units and detention tanks will result in a 10-minute time of concentration, which is more than the existing time of concentration of eight (8) minutes. Implementation of Project Design Feature **PDF HYD/WQ-1** will be sufficient in detaining the additional 872 cubic feet of runoff created by Project development and operation, as indicated in the Preliminary Water Quality Management Plan. With implementation of design features, impacts would be less than significant.

B) LESS THAN SIGNIFICANT IMPACT. Ground water depths as low as 22 feet were determined on-site during preparation of the Preliminary Water Quality Management Plan. The proposed increased medical office use would increase impervious areas (in that the great majority of both the existing project site and the proposed development on the project site consist of paved areas) but not to the extent of interfering with groundwater percolation and recharge. Therefore, the project would not substantially deplete groundwater supplies, or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level and that any project development and operational related impacts would be less than significant.

C) LESS THAN SIGNIFICANT IMPACT. The proposed increased medical office use would slightly increase impervious area (reference Table 4.9-A) compared to existing conditions. Surface drainage follows the surface contour that flows via sheet flow to the center of the parking area of the project site where it is channeled by a drainage trench to the south leading to a stormwater drain or onto Osborn. Project development and operation would maintain the basic existing drainage pattern.

As indicated in the Preliminary Water Quality Management Plan prepared for the project, surface runoff from the project site will be collected and treated using bio-filtration devices and routed into the proposed on-site storm drain system. All project roof drains also will be connected to the proposed on-site storm drain system and flow through Filterra bio-filtration units. To limit hydro-modification, an 84-inch (diameter) 25-foot long detention tank with sump pump will be included in the storm drain system to limit the flow rate at the project site. The tank discharges to the existing catch basin on Osborn, which in turn is connected to the existing 18-inch storm drain line on Osborn and then to a 36-inch storm drain that leads to the San Diego Creek tributary, which extends to the Upper and Lower Newport Bay area and into the Pacific Ocean.

With implementation of project features to reduce contaminants from stormwater, Project development and operation would not result in impacts related to substantially altering the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site. Impacts would be less than significant and no mitigation measures will be required.

D & E) LESS THAN SIGNIFICANT IMPACT. No stream or river proceeds through or adjacent to the project site. The proposed increased medical office use would increase impervious areas compared to existing conditions. Project development would include construction of new impervious surfaces (reference following Table 4.9-A) that may result in an increase in the amount of stormwater captured on the Project site and conveyed to the City storm drain system. Surface runoff from the project site will be collected and treated using biofiltration devices and routed into the proposed on-site storm drain system. All roof drains also will be connected to the proposed on-site storm drain system and flow through Filterra biofiltration units. To limit hydromodification, an 84-inch diameter/25-foot long detention tank with sump pump will be included in the storm drain system to limit the flow rate exiting the project site. The tank discharges to the existing catch basin on Osborn, which is connected to the existing 18-inch storm drain line on Osborn and then to a 36-inch storm drain that leads to the San Diego Creek tributary. However, due to the amount of impervious surface being added, the post-development runoff volume for the 2-year, 24-hour storm event exceeds the pre-development condition for the 2-year, 24-hour storm event by more than 5 percent, as indicated in Table 4.9-B. The Project is designed to comply with City building codes to minimize impacts associated with flooding. In addition, Implementation of Project Design Feature **PDF HYD/WQ-1** will be sufficient in detaining the additional 872 cubic feet of runoff created by Project development and operation, as indicated in the Preliminary Water Quality Management Plan.

Project development and operation would not result in substantially altering the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river. Although Project development would increase the rate and amount of surface runoff, such increase would not result in flooding on-site or off-site due to implementation of **PDF HYD/WQ-1**.

TABLE 4.9-A				
Pervious/Impervious Surface Areas				
Project Area	Pervious		Impervious	
	Area (Sq. Ft.)	Percentage	Area (Sq. Ft.)	Percentage
Pre-Project Condition	52,085	41.8%	72,415	58.2%
Post-Project Condition	30,876	24.8%	93,624	75.2%

Source: Preliminary Water Quality Management Plan, LPA, Inc.

TABLE 4.9-B
Pre- and Post-Development Peak Flow Rates

	2-Year, 24-Hour Peak Volume (cu-ft)	2-Year, 24-Hour Peak Flow Rate (cfs)	Time of Concentration (min)
Pre-Development	9,148	4.24	8.0
Post-Development	10,020	3.67	10.5

Source: Preliminary Water Quality Management Plan, LPA, Inc.

Project Design Feature PDF/HYD WQ-13, which provides for Filterra units and an underground detention tank will lessen the impact of increased Post-Development flow rates due to the increased impervious surface on the project site. Impacts would be less than significant without mitigation.

F) LESS THAN SIGNIFICANT IMPACT.

The Preliminary Water Quality Management Plan prepared for the Project indicates the following stormwater pollutants are expected in a post-development stage.

- Suspended-solid/sediment emanating from drains in planter areas
- Nutrients from fertilizers, trash and debris
- Heavy metals from automobiles
- Pathogens (Bacteria/Viruses) routinely detected in pavement runoff
- Pesticides from landscaped areas
- Oil and grease from parking areas
- Toxic Organic Compounds from landscape maintenance
- Trash and debris

Project compliance with mandatory NPDES, SWPPP, and City building standard requirements as well as implementation of the required project-specific WQMP would ensure all reduce water quality impacts to a less than significant level. The required WQMP would include BMPs designed to reduce impacts to water quality, such as the installation of filtration measures at inlets and directing runoff to landscaped areas. Project development and operation would not otherwise substantially degrade water quality and resultant impacts would be less than significant.

G & H) NO IMPACT. As delineated by the Flood Insurance Rate Map (FIRM) designated by the Federal Emergency Management Agency (FEMA) and as identified in the City of Irvine General Plan – Safety Element (Figure J-3), the Project site is not located within a 100-year floodplain. Therefore, Project development and operation would not place housing within a 100-year flood hazard area as mapped on federal Flood Hazard Boundary or Flood Insurance Rater Map or other flood hazard delineation map. No impact would occur.

I) LESS THAN SIGNIFICANT IMPACT.

According to the City of Irvine Emergency Management Plan, there are several major dams that could have significant impact on the City of Irvine in event of dam failure. These dams are as follows.

Laguna Reservoir – The Irvine Company owns the Laguna Reservoir, which is located Laguna Canyon, approximately three miles southeast of the Sand Canyon/Interstate 405 Freeway interchange

Rattlesnake Reservoir – The Irvine Ranch Water District owns the Rattlesnake Reservoir, which is located in rolling hills, approximately 2.5 miles northeast of Interstate 5

Sand Canyon Reservoir – The Irvine Ranch Water District owns the Sand Canyon Reservoir, which is located approximately ¾ mile southeast of University Drive

San Joaquin Reservoir – The Metropolitan Water District of Southern California owns the San Joaquin Reservoir, which is located in the San Joaquin Hills, approximately one-half mile southeast of the San Joaquin Transportation Corridor at Bonita Canyon Drive

Santiago Dam and Reservoir – The Irvine Ranch Water District and the Serrano Irrigation District jointly own the Santiago Dam and Reservoir (25,000 acre feet capacity), which is located in the Santa Ana Mountains in eastern Orange County, west of Black Star Canyon and north of Santiago Canyon Road

Villa Park Dam – The Orange County Flood Control District owns the Villa Park Dam, which is a flood control dam located downstream of the Santiago Dam

Syphon Reservoir – The Irvine Company owns the Syphon Reservoir, which is located in the rolling Santiago foothills, approximately 0.8-mile northeast of Irvine Boulevard, between Jeffrey Road and Sand Canyon

Although the City of Irvine Emergency Management Plan indicates dam failures, seiches due to seismic activity, landslides flowing into a reservoir, and heavy rain that fills a dam and saturates the ground within the inundated area “... is considered unlikely, the quality construction of the dams has enabled them to perform “... well in earthquakes, and failure is not expected to occur.” Due to the construction of these dams, they have performed well in earthquakes, and failure is not expected to occur.”

J) NO IMPACT. The project site is located substantially inland from the ocean; therefore, tsunamis pose no threat to the project site. A seiche is an oscillation of water within a closed impoundment such as a lake or reservoir caused by seismic activity or landslide. No lakes or reservoirs are adjacent to the project site. The City of Irvine General Plan – Safety Element (Figure J-3) indicates the project site is not

located within an area where flooding may occur. Therefore, project development and operation will not be exposed to inundation by seiche, tsunami or mudflow. No impact would occur.

4.9.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Impacts would be less than significant without mitigation.

4.9.6 PROJECT DESIGN FEATURES

PDF HYD/WQ-1: The project storm drain system will include a 72-inch (diameter) by 25-foot long underground detention tank (962 square feet) to detain the additional 872 cubic feet of runoff created by proposed project development.

4.9.7 MITIGATION MEASURES

MM HYD/WQ-1: – Prior to issuance of a grading permit, the Applicant shall prepare and submit a Final Water Quality Management Plan for review and approval by the Chief Building Official.

4.9.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of the noted Project Design Features will result in less than significant impacts.

4.9.9 CUMULATIVE IMPACTS

The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation publication pertained to the 18-acre (162,444 square foot) Woodbridge Village Center, located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway. The City of Irvine Planning Commission granted approvals on July 21, 2016 for the modernization of the Woodbridge Village Retail Center through the following applications: Master Plan Modification to re-image the existing center and expand outdoor spaces; a Conditional Use Permit modification for a gas station, drive-thru car wash and convenience store; and a Conditional Use Permit for a new 4,226 square foot fast food restaurant with drive-thru. With various demolition activities, the redeveloped retail center would be decreased by 25,246 square feet – from 162,444 to 137,198 square feet.

Long-term operation of the proposed new 46,800 square foot medical office building and surface parking lot will not substantially alter drainage patterns of the project site. There would be an increase in impervious surface that could result in additional runoff. However, additional runoff would not cause flooding or water quality impacts. No changes to drainage patterns would result in significant impacts to hydrology and water quality. The Woodbridge Village Center Project would be required to comply with all applicable laws regarding water quality and flooding. Therefore, together, the Woodbridge Village Center project and the proposed medical office building would not result in cumulative impacts related to Hydrology and Water Quality.

Section 4 Environmental Impacts – Land Use & Planning

4.10 LAND USE & PLANNING

4.10.1 ENVIRONMENTAL SETTING

The project site is located in the Village of Woodbridge in the central area of the City of Irvine. Woodbridge Village is generally bound by Irvine Center Drive to the north, Interstate 405 to the south, Jeffrey Road to the east, and Culver Drive to the west. The project site occupies 2.86 acres at the southeast corner of the Barranca Parkway/Lyon intersection and is bound by Barranca Parkway to the north, Osborn to the south, Willard to the east, and Lyon to the west.

The project site currently is developed with a single-story, 16,015 square foot medical office building, surface parking lot, and mature landscaping (trees, shrubs and plantings) within the parking lot and along the project site perimeter. The project site is directly bordered by streets – to the north is Barranca Parkway and one- and two-story single-family residences beyond; to the south by Osborn and the Mardan School (private) beyond; to the east by Willard and the Kaiser Permanente Health Care facility beyond; and, to the west by Lyon and the Irvine Unified School District administrative offices. Barranca Parkway is a four-lane roadway with a left turn lane proceeding from west-bound Barranca Parkway south to Lyon at the northwest corner of the project site. The other three bordering streets are two lane roadways.

City of Irvine General Plan Designation

The proposed project site is located within Planning Area 15 (Woodbridge) of the Irvine General Plan. Planning Area 15 comprises 1,745 acres and contains areas designated Commercial, Multi-Use, Open Space, and Institutional. The proposed project site is designated “Multi-Use” in the Irvine General Plan Land Use Element. Forty-one (41) acres are designated Multi-Use.

4.10.2 EXISTING REGULATIONS & STANDARD CONDITIONS

City of Irvine General Plan Land Use Designation

The proposed project site is located within Planning Area 15 (Woodbridge) of the Irvine General Plan. Planning Area 15 comprises 1,745 acres and contains areas designated Commercial, Multi-Use, Open Space, and Institutional. The proposed project site is designated “Multi-Use” in the Irvine General Plan Land Use Element. Forty-one (41) acres are designated Multi-Use.

City of Irvine General Plan Land Use Element

The following City of Irvine General Plan – Land Use Element Objectives and Policies are relevant to the proposed project.

Objective A-1: CITY IDENTITY – Preserve and strengthen Irvine’s identity as a diverse and innovative community

Policy (b): Use building masses and landscaping to create a sense of unity for the various

Section 4 Environmental Impacts – Land Use & Planning

components through the City.

Policy (c): Ensure energy efficiency and low maintenance needs through the following methods:

- Land use planning
- Building design
- Landscaping design

Policy (f): Promote sustainable development through energy and water conservation, reduced reliance on non-renewable resources, and the use of native trees, shrubs, and grasses with low maintenance costs.

Objective A-2: ECONOMIC DEVELOPMENT – Promote viable commercial centers, successful manufacturing areas, and dynamic employment centers.

Policy (b): Provide neighborhood retail and service centers within walking or biking distance of residential communities and employment centers.

Policy (h): Retain and attract businesses that meet the shopping and service needs of the community as well as create quality employment opportunities.

Objective A-4: BALANCED LAND USES – Manage growth to ensure balanced residential and non-residential development throughout the City.

Policy (g) in part: Maintain accurate statistical information and intensity ceilings in the General through the following efforts:

- Evaluating land use intensities in conjunction with the review of any zone change to permit development or modify intensity. Factors to be considered include, but are not limited to, the following: the maximum intensity allowed pursuant to Table A-1 of the General plan; large infrastructure improvements planned or built in the project area that have reduced land available for development; circulation patterns; environmental constraints; and compatibility with surrounding land uses.
- Allocating intensity to a specific planning area(s) in lieu of banking intensity when it is the City's desire to transfer intensity between planning areas

Objective A-6: LAND USE COMPATIBILITY – Achieve harmonious land use patterns throughout the City.

Policy (a): Ensure, through the discretionary review process, the public health, safety, and welfare of sensitive receptors/land uses in close proximity to the following land uses:

- Uses which handle, generate, and/or transport hazardous substances (as defined by federal and state regulations)
- Uses which create excessive noise
- Uses which create excessive dust
- Uses which create other land use conflicts

Section 4 Environmental Impacts – Land Use & Planning

At the same time, ensure that the proposed sensitive receptors/land uses will not have an impact on the continued operation and/or expansion of the following land uses:

- Airports
- Surface utilities
- Off-Site hazardous waste facilities
- Solid waste facilities
- Manufacturing uses
- Research and development uses
- Mining and processing uses
- Any land use which handles, generates, and/or transports hazardous substances as defined by federal and state regulations

Policy (c): Ensure, through the discretionary review process, that the siting of any land use which handles, generates, and/or transports hazardous substances, as defined by federal and state regulations, will not have a negative impact on existing sensitive receptors/land uses

Objective A-7: URBAN DESIGN – Create a visually attractive and efficiently organized City.

Policy (c): Implement the concept of a multiple focal point City designed to minimize congestion by conveniently locating facilities and services in each planning area

City of Irvine Zoning Designation

The proposed project site is designated a Multi-Use – 3.1 zoning district. The maximum building square footage allowed is 440,158. All nonresidential development requires a Master Plan approval within the Multi-Use Zoning District pursuant to Section 2-17-2.

TABLE 4.10-A	
Multi-Use District Development Standards (City Zoning Ordinance)	
CATEGORY	ZONING STANDARD
MAXIMUM SITE COVERAGE	60%
MAXIMUM BUILDING HEIGHT	70 feet
MINIMUM LANDSCAPE COVERAGE	15%
BUILDING SETBACK FROM PRIMARY HIGHWAY	45 feet
SIDE BUILDING SETBACKS	Per Approved Master Plan

4.10.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines, the proposed project may create a significant impact if it would:

- A) Physically divide an established community;

Section 4 Environmental Impacts – Land Use & Planning

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

4.10.4 ENVIRONMENTAL IMPACTS

- A) **NO IMPACT:** The project site is located within the urbanized Woodbridge Village community and currently developed with an existing medical building, surface parking lot and other impervious hardscape areas. The project site is bordered by and one- and two-story residences to the north, the Mardan Private School and a senior residential facility to the south, the Kaiser Permanente Health Care facility to the east, and the Irvine Unified School District administrative center to the west. The proposed project involves demolition of a 16,015 square foot single-story medical office building and surface parking lot and replacement of such with a 46,800 square foot two-story medical office building over an open parking garage, surface parking and perimeter and project site landscaping. The proposed project thereby would be over 30,000 square feet intensification of the existing medical office use on the same sized property and continue to be used for medical offices. Landscaping on the project site would occupy 30,876 square feet (approximately 25 percent of the project site) and include trees and surface planting along the perimeter of the site and within the surface parking lot. Eighteen existing trees will be retained and supplemented by additional tree, shrub and surface planting. Moreover, the proposed project would be compatible with the variety of existing land uses and low- to mid-rise buildings in the surrounding area. Thereby, the proposed project will not physically divide the established surrounding community. No impact will occur and no mitigation measures are required.
- B) **LESS THAN SIGNIFICANT IMPACT.** The proposed project land use is consistent with allowable uses in the Irvine General Plan Land Use designation of Multi-Use. That is, medical office uses are allowed within the Multi-Use designated area. The Project Applicant, Sterling America Investments, Inc., is requesting a General Plan Amendment, Zone Change and Master Plan approvals to allow project development and operation as proposed. The project requires a General Plan Amendment, Zoning Change and Master Plan to allow expansion of a new 46,800 square feet two-story medical office building. The General Plan Amendment and Zone Change applications would increase maximum development intensities allowed in the multi-use zoning designation by amending applicable maximum square footage tables and exhibits within the Woodbridge Village of Planning Area 15. The Master Plan establishes design relative to building size, height, and setbacks; floor plans; architectural elevations; parking; and, landscaping. Project development as proposed

Section 4 Environmental Impacts – Land Use & Planning

would be consistent with Irvine General Plan Land Use Element Objectives and Policies, listed below.

Objective A-1: City Identity. Preserve and strengthen Irvine’s identity as a diverse and innovative community.

Policy (c) – Ensure energy efficiency and low maintenance needs through the following methods:

- Land Use planning
- Building Design
- Landscaping Design

Policy (d) – Maintain and enhance the physical appearance of the City as the infrastructure ages and the growth rate declines.

Policy (f) – Promote sustainable development through energy and water conservation, reduced reliance on non-renewable resources, and the use of native trees, shrubs, and grasses with low maintenance costs.

Please see the energy discussion as identified in Section 4.7 (Greenhouse Gas Emissions).

Objective A-4: Balanced Land Uses. Manage growth to ensure balanced residential and nonresidential development throughout the City.

Growing population in Irvine will need increased availability of health care facilities. The Project, by expanding the existing medical office use, will continue to provide health care services for the Irvine community and potentially for residents of other cities. The Project will contribute to maintaining a balance between residential and non-residential land uses in the City of Irvine and thereby is consistent with General Plan Objective A-4.

Policy (g) (in part) – Maintain accurate statistical information and intensity ceilings in the General Plan through the following efforts:

- Evaluating land use intensities in conjunction with the review of any zone change to permit development or modify intensity. Factors to be considered include, but are not limited to, the following: the maximum intensity allowed pursuant to Table A-1 of the General Plan; large infrastructure improvements planned or built in the project area that have reduced land available for development; circulation patterns; environmental constraints; and compatibility with surrounding land uses.

The Project consists of a General Plan Amendment, Zone Change and Master Plan that would allow demolition of an existing single-story (16,015 square foot) medical office building and replaced with a new two-story medical office building (46,800

Section 4 Environmental Impacts – Land Use & Planning

square feet on an approximate 2.9-acre site. The General Plan and Zone Change would increase allowable development intensity (by 30,785 square feet) in the multi-use zoning designation by amending applicable maximum square footage tables and exhibits within the 3.1 Multi-Use zone of Planning Area 15 to allow for the proposed development. The Master Plan establishes design relative to building size, height, setbacks, floor plans, architectural elevations, parking and landscaping. Medical Office use is allowed within the multi-use zoning designation. However, under present General Plan and Zoning designations, no additional building intensity would be allowed in the 3.1 Multi-Use zone of Planning Area 15. Approval of the proposed General Plan Amendment and Zone Change thereby would remove an existing regulatory obstacle to growth in Planning Area 15 and would lead to a larger facility medical office building.

Objective A-6: Land Use Compatibility. Achieve harmonious land use patterns throughout the City.

Policy (a) – Ensure, through the discretionary review process, the public health, safety, and welfare of sensitive receptors/land uses when locating such uses in close proximity to the following land uses:

- **Uses which handle, generate, and/or transport hazardous substances (as defined by federal and state regulations).**
- **Uses which create excessive noise.**
- **Uses which create excessive dust.**
- **Uses which create other land use conflicts.**

Policy (c) – Ensure, through the discretionary review process, that the siting of any land use which handles, generates, and/or transports hazardous substances, as defined by federal and state regulations, will not have a negative impact on existing sensitive receptors/land uses.

Policy (j) – Residential areas and sensitive uses shall be protected from the encroachment of incompatible activities or land uses which would cause a hazard or substantial nuisance or otherwise create a negative impact upon sensitive uses or the residential living environment.

As indicated in Section 4.8 (Hazards/Hazardous Materials) in this document, Project use, disposal and transport of medical waste will comply with requirements of the California Medical Waste Management Act, California Health and Safety Code, United States Occupational Safety and Health Administration, and Orange County Health Care Agency Environmental Health Division. Construction waste will be handled and disposed in compliance with City of Irvine regulations.

The Noise Section of this document (Section 4.12) indicates the increased levels of noise, both for the short-term and long-term, will either be less than significant or mitigated to a less than significant level.

Section 4 Environmental Impacts – Land Use & Planning

Section 4.3 (Air Quality) of this document indicates measures that will be implemented during the demolition and construction (i.e. development) phase of the Project that will ensure the sensitive uses in the proximity of the Project site will not be exposed to excessive levels of dust.

The existing medical office use has not created a substantial nuisance to the nearby residential areas. The proposed medical office land use represents a continuation, albeit intensity, of the current land use on the Project site.

- C) NO IMPACT:** The project site is located within the urbanized Woodbridge Village community. The project site is not located within either a habitat conservation plan or natural community conservation plan. Therefore, project development and operation would not conflict with any habitat conservation plan or natural community conservation plan. No impact would result and no mitigation measures are required.

4.10.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

The proposed project is not consistent with development square footage allowance within Planning Area 15 – Multi-Use.

4.10.6 PROJECT DESIGN FEATURES

No Project Design Features are required.

4.10.7 MITIGATION MEASURES

Approval of the proposed General Plan Amendment, Zone Change and Master Plan would establish new allowable development intensity within the 3.1 Multi-Use zone of Planning Area 15. Therefore, no Mitigation Measures are required.

4.10.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Approval of the proposed General Plan Amendment, Zone Change and Master Plan would ensure project-related impacts to Land Use and Planning would be less than significant.

4.10.9 CUMULATIVE IMPACTS

The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation publication pertained to the 18-acre (162,444 square feet) Woodbridge Village Center, located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway. Approvals at Woodbridge Village Center allow for uses that are typical within a retail center. The City of Irvine Planning Commission granted approvals on July 21, 2016 for the modernization of the Woodbridge Village Retail Center through the following applications: Master Plan Modification to re-image the existing

Section 4 Environmental Impacts – Land Use & Planning

center and expand outdoor spaces; a Conditional Use Permit modification for a gas station, drive-thru car wash and convenience store; and a Conditional Use Permit for a new 4,226 square foot fast food restaurant with drive-thru. With various demolition activities, the redeveloped retail center would be decreased by 25,246 square feet – from 162,444 to 137,198 square feet.

The proposed medical office building involves no change in land use. Rather, the proposed development application represents an intensification of the existing medical office use on the project site. The proposed project is consistent with Objectives and Policies enumerated in each element of the Irvine General Plan and specifically with the Objectives and Policies of the Land Use Element as noted above. Furthermore, the land use impact of this particular project on this particular site is not significant in relation to the CEQA Thresholds of Significance. The proposed project involves a General Plan Amendment and Zone Change that would increase allowable square footage in the Multi-Use 3.1 area of Woodbridge Planning Area 15. The General Plan Amendment and Zone Change would ensure project consistency with the City General Plan and Zoning Code. The proposed Master Plan indicates project consistency with development standards noted above in Table 4.10-A.

Approvals at Woodbridge Village Center allow for uses that are typical within a retail center. Therefore, the cumulative impacts of the Project, together with the Woodbridge Village Center redevelopment, would not result in significant impacts as those impact thresholds are identified in the Thresholds of Significance above.

Section 4 Environmental Impacts – Mineral Resources

4.11 MINERAL RESOURCES

Information in this Section was derived from the City of Irvine General Plan.

4.11.1 ENVIRONMENTAL SETTING

Mineral extraction activities are not present on the project site. As such, the potential for mineral resources to occur onsite is low. Furthermore, the project site is not located within a mineral producing area as classified by the California Geologic Survey. No locally-important mineral resource recovery sites are located on or near the project site or are identified in the City of Irvine General Plan, a specific plan, or other land use plan. Therefore, project development will not result in loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. No impact would result.

4.11.2 EXISTING REGULATIONS & STANDARD CONDITIONS

No existing City regulations pertaining to Mineral Resources are relevant to the proposed project development or operation.

4.11.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines the Project would result in impacts to mineral resources if it would cause:

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

4.11.4 ENVIRONMENTAL IMPACTS

- A) **and B) NO IMPACT.** Mineral extraction activities are not present on the project site. As such, the potential for mineral resources to occur onsite is low. Furthermore, the project site is not located within a mineral producing area as classified by the California Geologic Survey. No locally-important mineral resource recovery sites are located on or near the project site or are identified in the City of Irvine General Plan, a specific plan, or other land use plan. Therefore, project development will not result in loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. No impact would result.

4.11.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Project development and operation will not result in any significant impacts to Mineral Resources.

Section 4 Environmental Impacts – Mineral Resources

4.11.6 PROJECT DESIGN FEATURES

No Project Design Features are required.

4.11.7 MITIGATION MEASURES

No Mitigation Measures are required.

4.11.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

No significant impacts to Mineral Resources will result from project development or operation.

4.11.9 CUMULATIVE IMPACTS

No mineral resource sites are identified in the project vicinity. Project development and operation together with development and operation of the renovated Woodbridge Village Center project will not result in any cumulative impacts to Mineral Resources.

4.12 NOISE

The information in this section is derived from the City of Irvine General Plan and “Noise and Vibration Impact Analysis” which is included as Appendix H to this EIR. The Analysis examines impacts of the proposed project on adjacent uses and evaluates mitigation measures required by the proposed project.

METHODOLOGY

Evaluation of noise and vibration impacts associated with the proposed project includes the following:

- Determination of short-term construction noise and vibration levels at off-site noise sensitive uses and comparison of City Noise Ordinance requirements and construction vibration building damage and/or human annoyance criteria recommended by the Federal Transit Administration, the California State Department of Transportation, and the City of Irvine;
- Determination of long-term noise levels from vehicular traffic on the proposed project site using guidelines provided by the Federal Highway Administration and from on-site stationary sources using empirical noise data obtained in field measurements and at off-site noise sensitive uses, and comparison of the noise levels to the pertinent City of Irvine noise standards;
- Determination of required Mitigation Measures to reduce long-term on-site noise impacts from all sources.

Definitions

Decibel (Db) – A unit of measurement that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm of this ratio

Weighted Sound Level (DbA) – The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in the Noise and Vibration Impact Analysis for the proposed project are A-weighted, unless reported otherwise.

Community Noise Equivalent Level, L_{eq} – The 24-hour A-weighted average sound level from midnight to midnight, obtained after addition of 5 DbA to sound levels occurring in the evening from 7:00 PM to 10 PM and after addition of 10 DbA to sound levels occurring in the night between 10:00 PM and 7:00 PM

Ambient Noise Level – The all-encompassing noise associated with a given environment at a specified time; usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant

Intrusive – The noise that intrudes over and above the existing ambient noise at a given location.

The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content, as well as the prevailing ambient noise level.

4.12.1 ENVIRONMENTAL SETTING

Characteristics of Sound

Noise usually is defined as unwanted sound that consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation and sleep. Sound has two significant characteristics to the human ear – pitch and loudness. Pitch generally is an annoyance; loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave resulting in tone range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by intensity of sound waves combined with reception characteristic of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound effect and which can be precisely measured with instruments.

Measurement of Sound

Decibels can be used to measure sound. Decibels (dB) are not linear units, such as pounds, but are measured on a logarithmic scale representing points on a sharply rising curve (e.g. 10 decibels are 10 times more intense than 1 decibel). Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud). Sound levels are generated from a source with a decrease in decibel occurring exponentially as the distance from the source increases.

Noise impacts can be described in three categories, as follows:

- Audible impacts that refer to increases of noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dB or greater because this level has been found to be barely perceptible in exterior environments. Only audible changes in existing ambient or background noise levels are considered potentially significant.
- Potentially audible impacts refer to a change in the noise level between 1 dB and 3 dB, a range of noise level found to be noticeable only in laboratory environments.
- Changes in noise levels of less than 1 dB, which are inaudible to the human ear.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 Db-A weighted. Exposure to high noise levels affects the entire body system.

Table 4.12-A indicates common sound levels/sources.

TABLE 4.12-A Common Noise Levels			
NOISE SOURCE	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noise Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	8 times as loud
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	4 times as loud
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	2 times as loud
Near Freeway Auto Traffic	70	Moderately Loud	2 times as loud
Average Office	60	Quiet	One-half as loud
Suburban Street	55	Quiet	One-half as loud
Light Traffic; Soft Radio Music in Apartment	50	Quiet	One-quarter as loud
Large Transformer	45	Quiet	One-quarter as loud
Average Residence without Stereo Playing	40	Faint	One-eighth as loud
Soft Whisper	30	Faint	One-eighth as loud
Rustling Leaves	20	Very Faint	One-eighth as loud
Human Breathing	10	Very Faint	Threshold of Hearing
Source: Handbook of Acoustical Measurements and Noise Control [Harris, 1991]			

The City of Irvine General Plan, Noise Element defines the following Noise Compatibility levels.

TABLE 4.12-B Land Use Noise Compatibility								
LAND USE CATEGORIES	ENERGY AVERAGE (CNEL)							
Categories	Uses	≤	55	60	65	70	75	80≥
RESIDENTIAL	Single-Family	A	A	B	B	C	D	D
RESIDENTIAL	Mobile-Home	A	A	B	C	C	D	D
COMMERCIAL Regional	Hotel; Motel; Transient Lodging	A	A	B	B	C	C	D
COMMERCIAL Regional Community	Commercial Retail; Bank; Restaurant; Movie Theater	A	A	A	A	B	B	C
COMMERCIAL Community INDUSTRIAL & INSTITUTIONAL	Office Building; Research & Development; Professional Office; City Office Building	A	A	A	B	B	C	D
COMMERCIAL Recreation INSTITUTIONAL General	Amphitheater; Concert Hall; Auditorium; Meeting Hall	B	B	C	C	D	D	D
COMMERCIAL Recreation	Children's Amusement Park; Miniature Golf; Go-Car Truck; Health Club; Equestrian Center	A	A	A	B	B	D	D
COMMERCIAL Community INDUSTRIAL General	Automobile Service Station; Auto Dealer; Manufacturing; Warehousing; Wholesale; Utilities	A	A	A	A	B	B	B
INSTITUTIONAL General	Hospital; Church; Library; School Classrooms	A	A	B	C	C	D	D
OPEN SPACE	Parks	A	A	A	B	C	D	D
OPEN SPACE	Golf Courses; Nature Centers; Cemeteries; Wildlife Reserves; Wildlife Habitat	A	A	A	A	B	C	C
AGRICULTURAL	Agriculture	A	A	A	A	A	A	A

ZONE A (Clearly Compatible) – Specified land use is satisfactory, based on assumption any buildings involved are of normal conventional construction without any special noise insulation requirements.

ZONE B (Normally Compatible) – New construction or development should be undertaken only after detailed analysis of noise reduction requirements are made and needed noise insulation features in design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.

ZONE C (Normally Incompatible) – New construction or development should normally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features must be included in the design.

ZONE D (Clearly Incompatible) – New construction or development should generally not be undertaken.

Vibration

Vibration refers to ground-borne noise and perceptible motion that is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Vibration energy propagates from a source through intervening soil and rock layers to foundations of nearby buildings. The vibration then propagates from the building foundation throughout the remainder of the structure. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 or fewer decibels.

Typical sources of ground-borne vibration are construction activities (e.g. blasting, pile driving, operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with both ground-borne vibration and noise from these sources usually are localized to areas within approximately 100 feet from the source of vibration. When roadways are smooth, vibration from traffic is rarely perceptible, which is the case near the proposed project site. However, both construction of the proposed project and the freight train operations could result in ground-borne vibration that may be perceptible and annoying. It is not uncommon for construction processes to cause vibration of sufficient amplitudes to damage nearby buildings (Federal Transit Administration, 2006).

Following are factors that influence ground-borne vibration and noise:

- **Vibration Source** – Vehicle suspension, wheel types and condition, railroad track/roadway surface, railroad track support system, speed, transit structure, and depth of vibration source
- **Vibration Path** – Soil type, rock layers, soil layering, depth to water table, and frost depth
- **Vibration Receiver** – Foundation type, building construction, and acoustical absorption

Overview of the Existing Noise Environment

The primary existing noise sources in the proposed project vicinity are transportation facilities. Traffic along Barranca Parkway, Lyon, Willard, and Osborn is a steady source of ambient noise.

Vehicular Traffic Noise

Guidelines in the Federal Highway Administration Highway Traffic Noise Prediction Model were used to evaluate highway traffic-related noise conditions along roadway segments in the vicinity of the proposed project. The standard vehicle mix for Southern California roadways was used for traffic on these roadway segments. The traffic noise levels represented of a worst-case scenario in the following table assume a flat terrain and no shielding between traffic and noise contours.

**TABLE 4.12-C
Existing Traffic Noise Levels**

ROADWAY SEGMENT	ADT	CENTERLINE TO 70 dBA CNEL (Feet)	CENTERLINE TO 65 dBA CNEL (Feet)	CENTERLINE TO 60 dBA CNEL (Feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane
OSBORN, BETWEEN BARRANCA PARKWAY & WILLARD	1,100	<50	<50	<50	51.1
OSBORN, BETWEEN WILLARD & EAST YALE LOOP	2,200	<50	<50	<50	54.1
WILLARD, BETWEEN BARRANCA PARKWAY & OSBORN	360	<50	<50	<50	46.3
EAST YALE LOOP, BETWEEN BARRANCA PARKWAY & ALTON PARKWAY	9,800	<50	63	131	64.5
BARRANCA PARKWAY, BETWEEN CREEK ROAD & LYON	22,200	63	128	273	68.8
BARRANCA PARKWAY, BETWEEN LYON & EAST YALE LOOP	22,300	63	129	274	68.9
BARRANCA PARKWAY, BETWEEN EAST YALE LOOP & JEFFEY ROAD	25,200	68	139	297	69.4
Source: LSA Associates, Inc. (October, 2016) ADT = Average Daily Traffic CNEL = Community Noise Equivalent Level dBA = A-Weighted Decibels					

Table 4.12-C indicates as follows:

- Along Barranca Parkway the 70, 65 and 60 dBA CNEL noise contours would extend to 68, 139 and 297 feet from the centerline of the roadway, respectively.
- The 70, 65 and 60 dBA CNEL noise contours along Osborn and Willard all are confined to within the roadway rights-of-way
- Along East Yale Loop between Barranca Parkway and Alton Parkway, the 65 and 60 dBA CNEL noise contours extend to 63 and 131 feet from the roadway centerlines, respectively; the 70 dBA CNEL noise contour is confined to within the roadway right-of-way.

Stationary Source Noise

The project site is adjacent to an existing private school, medical and office uses. Stationary noise sources from adjacent school, medical, and offices uses include the loading and unloading areas associated with these uses, parking lot noise (such as car doors closing), and conversations/playground noise.

Sensitive Land Uses in the Project Vicinity

The sensitive receptor closest to the project site is the Mardan School to the south approximately 82 feet (25 meters) away from the project site. The Inn at Woodbridge senior residential complex building is approximately 400 feet from the project site. The closest residence to the north across Barranca Parkway is 130 feet (40 meters) from the project boundary. The Kaiser Permanente Health Care medical buildings are approximately 180 feet (55 meters) from the project site. The Irvine Unified School District administrative office building is approximately 130 feet (40 meters) from the project boundary.

4.12.2 EXISTING REGULATIONS & STANDARD CONDITIONS

City of Irvine General Plan Noise Element

The following table indicates noise standards specified in the City of Irvine General Plan Noise Element are used as a guideline to evaluate acceptability of noise levels generated by traffic flow. The standards are for assessment of long-term vehicular traffic noise impacts. The City has exterior noise criteria for outdoor living areas associated with residential uses but has no exterior noise criteria for office buildings or professional offices such as the proposed medical office building. Table F-1 of the Noise Element indicates noise levels in interior areas of new office buildings/professional offices shall not exceed 50 dBA CNEL. Other short-term noise impacts (e.g. construction activities or on-site stationary sources) are regulated by the City Noise Ordinance.

TABLE 4.12-D			
Interior & Exterior Noise Standards Energy Average (CNEL)			
LAND USE CAEGORIES		ENERGY AVERAGE (CNEL)	
CATEGORIES	USES	INTERIOR	EXTERIOR
RESIDENTIAL	SINGLE-FAMILY; MULTIPLE-FAMILY	45 – 55	65
	MOBILE HOME	--	65
COMMERCIAL/INDUSTRIAL	HOTEL; MOTEL; TRANSIENT LODGING	45	65
	COMMERCIAL; RETAIL; BANK; RESTAURANT	55	--
	OFFICE BUILDING; PROFESSIONAL OFFICE; RESEARCH & DEVELOPMENT	50	--
	AMPHITHEATER; CONCERT HALL; AUDITORIUM; MEETING HALL	45	--
	GYMNASIUM (MULTIPURPOSE)	50	--
	HEALTH CLUBS	55	--
	MANUFACTURING; WAREHOUSING; WHOLESALE; UTILITY	65	--
	MOVIE THEATER	45	--
INSTITUTIONAL	HOSPITAL; SCHOOL CLASSROOM	45	65
	CHURCH; LIBRARY	45	--
OPEN SPACE	PARKS	--	65
Source: City of Irvine General Plan Noise Element			

City Of Irvine Municipal Code Noise Ordinance

The City of Irvine Noise Ordinance establishes maximum permissible noise level that may intrude into a neighboring property. The Noise Ordinance was adopted in 1975 and most recently revised in 2015. It establishes noise level standards for various land use categories affected by stationary noise sources.

For all professional office and public institutional properties (Noise Zone 2), the exterior noise level shall not exceed 55 dBA for more than 30 minutes in any hour. The noise levels are adjusted upward accordingly for events occurring within shorter periods of time. At any time,

the exterior noise shall not exceed 75 dBA. The interior noise level for all professional offices shall not exceed 55 dBA for events lasting equal to or less than 15 minutes but more than 5 minutes. At any time, interior noise shall not exceed 65 dBA.

The City Municipal Code Noise Ordinance does not establish upper limits for construction noise as it is temporary in nature and will cease to occur after completion of proposed project development. Instead, the Noise Ordinance regulates time periods that construction activities may occur, recognizing that construction activities undertaken during daytime hours are a typical part of living in a mixed-use neighborhood and does not cause a significant disruption. Pursuant to the City of Irvine Municipal Code, Chapter 2 Noise, Section 6-8-205 Special Provisions, construction activities shall occur only between 7:00 AM and 7:00 PM., Monday through Friday, and between 9:00 AM and 6:00 PM on Saturdays. No construction shall be permitted outside of these hours or on Sundays and federal holidays.

City of Irvine Zoning Ordinance

The City Zoning Ordinance (City of Irvine 2015a), Section 5-8-4, states that a vibration annoyance criteria limit of 78 VdB during the daytime hours should be used for sensitive receptors (e.g., residences and/or churches). This vibration annoyance threshold is used in this analysis.

Vibration Impact Criteria

The criteria for environmental impact from ground-borne vibration and noise are based on single-event maximum levels.

Federal Transit Administration

The “Noise and Vibration Impact Analysis” prepared for the proposed project uses vibration standards for ground-borne vibration impacts on human annoyance that are included in the Federal Transit Administration’s 2006 *Transit Noise and Vibration Impact Assessment*. Criteria for environmental impact from ground-borne vibration and noise are based on maximum levels for a single event.

Federal Transit Administration guidelines indicate a vibration level of up to 102 Vibration Velocity Decibels (VdB) is considered safe for buildings consisting of reinforced concrete, steel, or timber (no plaster) , and would not result in any construction vibration damage. For a non-engineered timber and masonry building, the construction building vibration damage criterion is 94 VdB.

The following table indicates ground-borne vibration and ground-borne noise impact criteria for general assessment of proposed project impacts.

TABLE 4.12-E
Ground-Borne Vibration & Ground-Borne Noise Impact
Criteria for General Assessment

LAND USE CATEGORY	GROUND-BORNE VIBRATION IMPACT LEVELS			GROUND-BORNE NOISE IMPACT LEVELS (dB)		
	FREQUENT EVENTS	OCCASIONAL EVENTS	INFREQUENT EVENTS	FREQUENT EVENTS	OCCASIONAL EVENTS	INFREQUENT EVENTS
CATEGORY 1: BUILDINGS WHERE VIBRATION WOULD INTERFERE WITH INTERIOR OPERATIONS	65 VdB	65 VdB	65 VdB	N/A	N/A	N/A
CATEGORY 2: RESIDENCES AND BUILDINGS WHERE PEOPLE NORMALLY SLEEP	72 VdB	75 VdB	80 VdB	35 dBA	38 dBA	43 dBA
CATEGORY 3: INSTITUTION LAND USES WITH PRIMARILY DAYTIME USE	75 VdB	78 VdB	83 VdB	40 dBA	43 dBA	48 dBA

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, 2006

Frequent Events – More than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.

Occasional Events – Between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.

Infrequent Events – Fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.

Standard Conditions

Standard Condition 3.5 (Acoustical Study)

Prior to issuance of Building Permits for each structure or tenant improvement, other than a parking structure, the Applicant shall submit a final acoustical report prepared to the satisfaction of the Director of Community Development. The report shall demonstrate that the development

will be sound attenuated against present and project noise levels including stationary, roadway, aircraft, helicopter, and railroad noise to meet City interior and exterior noise standards. The final acoustical report shall include all information required by the City's Acoustical Report Information Sheet (Form 42-48). The report shall be accompanied by a list identifying the sheet(s) of the building plans that include required sound attenuation measures.

4.12.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines, the proposed project may create a significant impact if it would:

- A) Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- B) Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise level;
- C) Result in a substantially permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- D) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- E) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels;
- F) For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

4.12.4 ENVIRONMENTAL IMPACTS

A) and D) LESS THAN SIGNIFICANT IMPACT WITH MITIGATION.

Short-Term Construction-Related Impacts

Construction Impacts

According to the Noise and Vibration Impact Analysis (January, 2017, Page 16) prepared for the Project, noise levels from grading and other project development (construction) activities may range up to 88 dBA at the closest sensitive receptors, medical and/or office uses adjacent to the proposed project site for very limited times when construction occurs near the project boundary.

Short-term noise impacts would be associated with demolition, excavation, grading, paving and interior improvement to the building during project construction. The following two types of short-term noise impacts could occur during construction of the proposed project:

- Construction crew commutes and transport of construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the project site. Although there would be a relatively high single-event noise exposure potential causing intermittent noise nuisance (passing pickup trucks at 50 feet would generate up to a maximum 75 dBA), the effect on longer-term (hourly; daily) ambient noise levels would be slight. Therefore, short-term construction-related impacts associated with worker commute and equipment transport to the proposed project site would be less than significant.
- Noise related to excavation, grading and building on the proposed project site would change the character of noise generated on the site. Therefore, noise levels surrounding the proposed project site would increase as construction progresses. Similarities in dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized according to work phase. Typical noise levels range up to 90 dBA at a distance of 50 feet during the noisiest construction phases during excavation and grading of the site. Typical operating cycles for these types of construction equipment (e.g. earthmoving equipment) may involve 1 or 2 minutes operation at full-power followed by 3 or 4 minutes at lower power settings. Use of heavy-duty construction equipment during project development would result in a worst-case noise level of 92 dBA at a distance of 50 feet from the active construction area. The nearest existing sensitive receptors, including the Mardan School (82 feet away from the project site) would not be exposed to construction noise exceeding 88 dBA.

The City of Irvine Municipal Code Noise Ordinance (2015) does not establish noise level limits for construction noise because it is temporary. Instead, the Noise Ordinance regulates time periods that construction activities may occur, recognizing that construction activities undertaken during daytime hours are a typical part of living in a mixed-use neighborhood and does not cause a significant disruption.

Pursuant to the City of Irvine Municipal Code, Chapter 2 Noise, Section 6-8-205 Special Provisions, construction activities shall occur only between 7:00 AM and 7:00 PM, Monday-Friday, and between 9:00 AM and 6:00 PM on Saturdays. No construction is permitted outside of these hours or on Sundays and federal holidays. Construction associated with the proposed project would comply with City-permitted construction hours. Nonetheless, impacts related to temporary construction noise are potentially significant due to the location of the project site in proximity to sensitive receptors.

As such, Mitigation Measure MM N-1 and MM N-2 are required. Mitigation Measure MM N-1 specifies measures to separate noise sources and sensitive receptors during

construction; MM N-2 provides for installation of temporary noise blankets. With implementation of Mitigation Measures MM N-1 and MM N-2 and the City's Noise Ordinance that controls the hours/days that construction activities may occur, construction-related noise impacts associated with the proposed project would be less than significant.

B) LESS THAN SIGNIFICANT IMPACT.

Construction Vibration Building Damage Potential

Ground-borne vibration from construction activity would mostly be low to moderate in scale. The range of ground-borne vibration levels would dissipate with increasing distance from the project site and would not cause any damage to Mardan School buildings as well as the nearest residences, medical and office buildings. In addition, no vibration-caused building damage in the vicinity of the proposed project site would occur, as indicated in the Noise and Vibration Impact Analysis (Tables K and L, Pages 20-21).

Construction Vibration Human Annoyance Potential

City of Irvine uses recommended Federal Transit Administration (FTA) threshold of 78 Vibration Velocity Decibels (VdB) at sensitive receptor locations for potential vibration annoyance. Bulldozers and other heavy-duty construction equipment generate approximately 87 VdB of ground-borne vibration at 25 feet based on the *Transit Noise and Vibration Impact Assessment* (FTA, 2005). Due to distance to sensitive receptors, vibration levels from construction equipment would be 72 VdB or lower at the nearest Mardan School building (82 feet from project site) or 66 VdB or lower at the nearest residential/Irvine Unified School District offices (130 feet from project site), per Table L (Page 21) of the Noise and Vibration Impact Analysis. Therefore, the vibration level from project development (construction) would not exceed the City's vibration threshold for human annoyance at the nearest sensitive use buildings in the vicinity of the project site.

C) LESS THAN SIGNIFICANT IMPACT WITH MITIGATION.

Long-Term Traffic Noise Impacts

A noise impact analysis was performed to evaluate highway traffic-related noise conditions along roadway segments in the vicinity of the proposed project. Information was derived from the Traffic Impact Analysis (2017) prepared for the proposed project. The Traffic Impact Analysis studies traffic volumes for the existing situation, and for 2020, 2035 and post-2035 from a standpoint with proposed project development and without proposed project development shown in Tables F-I. The study used guidelines from the Federal Highway Administration Highway Traffic Noise Prediction Model (1977), which remain valid because no changes in propagation of sound or noise have been identified for calculation of vehicular traffic noise. A standard vehicle mix for

Southern California roadways was used for assumed traffic on these roadways.

The noise levels represent worst-case scenarios that assume no shielding is provided between traffic and the locations of noise contours. Analysis concluded that project-related traffic would have 2.9 dBA or less increase in noise levels along roadway segments in the vicinity of the proposed project for the existing, 2020, 2035, and post-2035 scenarios. As indicated in the following narratives within this Section, all roadway segments would have 2.9 dBA or less traffic noise level increases under all “With Project” scenarios. This amount increase in traffic noise levels in the outdoor environment would not be perceptible by the human ear when the increase occurs gradually over time and no significant off-site traffic noise impacts from proposed project-related traffic would occur. However, the proposed medical office building would be exposed to traffic noise levels along Barranca Parkway. Implementation of City Standard Condition of Approval 3.5 and Project Design Feature N-1 will ensure this impact will remain at a less than significant level.

TABLE 4.12-F &
TABLE 4.12-G

Table 4.12-F: Existing Traffic Noise Levels Without and With Project												
Roadway Segment	Existing Without Project (Baseline)					Existing With Project						
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Change in ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase over CNEL (dBA) 50 ft from Centerline of Outermost Lane
Osborn between Lyon and Willard	1,100	< 50	< 50	< 50	54.1	1,500	400	< 50	< 50	< 50	52.5	1.4
Osborn between Willard and East Yale Loop	2,200	< 50	< 50	< 50	54.1	3,200	1,000	< 50	< 50	< 50	55.8	1.7
Willard between Barranca Parkway and Osborn	360	< 50	< 50	< 50	46.3	700	340	< 50	< 50	< 50	49.2	2.9
East Yale Loop between Barranca Parkway and Alton Parkway	9,800	< 50	63	131	64.5	10,200	400	< 50	64	135	64.6	0.1
Barranca Parkway between Creek Road and Lyon	22,200	63	128	273	68.8	22,600	400	64	130	276	68.9	0.1
Barranca Parkway between Lyon and East Yale Loop	22,300	63	129	274	68.9	22,300	0	63	129	274	68.9	0.0
Barranca Parkway between East Yale Loop and Jeffrey Road	25,200	68	139	297	69.4	25,500	300	69	141	299	69.4	0.0

Source: LSA Associates, Inc. (October 2016).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = feet

Table 4.12-G: 2020 Traffic Noise Levels Without and With Project												
Roadway Segment	2020 Without Project (Baseline)					2020 With Project						
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Change in ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase over CNEL (dBA) 50 ft from Centerline of Outermost Lane
Osborn between Lyon and Willard	1,100	< 50	< 50	< 50	54.1	1,500	400	< 50	< 50	< 50	52.5	1.4
Osborn between Willard and East Yale Loop	2,200	< 50	< 50	< 50	54.1	3,200	1,000	< 50	< 50	< 50	55.8	1.7
Willard between Barranca Parkway and Osborn	360	< 50	< 50	< 50	46.3	700	340	< 50	< 50	< 50	49.2	2.9
East Yale Loop between Barranca Parkway and Alton Parkway	10,600	< 50	66	138	64.8	11,100	500	< 50	68	142	65.0	0.2
Barranca Parkway between Creek Road and Lyon	24,300	67	136	290	69.2	24,500	200	67	137	291	69.3	0.1
Barranca Parkway between Lyon and East Yale Loop	24,100	66	135	288	69.2	24,000	-100	66	135	287	69.2	0.0
Barranca Parkway between East Yale Loop and Jeffrey Road	26,800	71	145	309	69.7	27,000	200	71	146	311	69.7	0.0

Source: LSA Associates, Inc. (October 2016).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = feet

TABLE 4.12-H &
TABLE 4.12-I

Table 4.12-H:2035 Traffic Noise Levels Without and With Project												
Roadway Segment	2035 Without Project (Baseline)					2035 With Project						
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Change in ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase over CNEL (dBA) 50 ft from Centerline of Outermost Lane
Osborn between Lyon and Willard	1,100	< 50	< 50	< 50	51.1	1,500	400	< 50	< 50	< 50	52.5	1.4
Osborn between Willard and East Yale Loop	2,200	< 50	< 50	< 50	54.1	3,200	1,000	< 50	< 50	< 50	55.8	1.7
Willard between Barranca Parkway and Osborn	360	< 50	< 50	< 50	46.3	700	340	< 50	< 50	< 50	49.2	2.9
East Yale Loop between Barranca Parkway and Alton Parkway	11,300	< 50	69	144	65.1	11,700	400	< 50	70	147	65.2	0.1
Barranca Parkway between Creek Road and Lyon	28,100	73	150	319	69.9	28,400	300	73	151	321	69.9	0.0
Barranca Parkway between Lyon and East Yale Loop	27,600	72	148	315	69.8	27,600	0	72	148	315	69.8	0.0
Barranca Parkway between East Yale Loop and Jeffrey Road	30,400	76	158	336	70.2	30,600	200	76	158	338	70.2	0.0

Source: LSA Associates, Inc. (October 2016).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = feet

Table 4.12-I: Post 2035 Traffic Noise Levels Without and With Project												
Roadway Segment	Post 2035 Without Project (Baseline)					Post 2035 With Project						
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Change in ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase over CNEL (dBA) 50 ft from Centerline of Outermost Lane
Osborn between Lyon and Willard	1,100	< 50	< 50	< 50	51.1	1,500	400	< 50	< 50	< 50	52.5	1.4
Osborn between Willard and East Yale Loop	2,200	< 50	< 50	< 50	54.1	3,200	1,000	< 50	< 50	< 50	55.8	1.7
Willard between Barranca Parkway and Osborn	360	< 50	< 50	< 50	46.3	700	340	< 50	< 50	< 50	49.2	2.9
East Yale Loop between Barranca Parkway and Alton Parkway	12,400	< 50	73	153	65.5	12,700	300	< 50	74	155	65.6	0.1
Barranca Parkway between Creek Road and Lyon	26,400	70	144	306	69.6	26,700	300	70	145	308	69.6	0.0
Barranca Parkway between Lyon and East Yale Loop	26,400	70	144	306	69.6	26,500	100	70	144	307	69.6	0.0
Barranca Parkway between East Yale Loop and Jeffrey Road	29,200	74	153	327	70.0	59,500	300	75	154	330	70.1	0.1

Source: LSA Associates, Inc. (October 2016).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = feet

Barranca Parkway

In Year 2035, Barranca Parkway between Lyon and East Yale Loop (the segment directly adjacent to the proposed project site) would have the highest daily traffic volumes (27,600 average daily traffic). Under this worst-case scenario, the 70, 65, and 60 dBA CNELs along Barranca Parkway adjacent to the proposed project site would extend up to 72 feet, 148 feet, and 315 feet, respectively, from the roadway centerline. The proposed medical office building on the project site is approximately 120 feet from the road centerline and would potentially be exposed to traffic noise up to 66.4 dBA CNEL. The worst combined traffic and aircraft noise level would be 67 dBA CNEL because the airport noise in this area is below 60 dBA CNEL, which is at least 6.5 dBA lower than the traffic noise and would contribute a small increase (0.9 dBA) to the overall ambient noise (Noise and Vibration Impact Study, page 22). The City does not have an exterior noise standard for outdoor areas associated with office buildings or professional offices. Therefore, no Mitigation Measures would be required in ground floor areas. No sound walls would be required for exterior areas of the proposed project.

Based on the United States Environmental Protection Agency *Protective Noise Levels* (EPA, 1978), with windows or doors open, interior noise levels at the proposed medical office building would potentially exceed the 50 dBA CNEL interior noise standard for office buildings or professional offices (Noise and Vibration Impact Study, page 25). With windows closed, interior noise levels in the proposed medical office building would not exceed the 50 dBA CNEL interior noise standard for office buildings or professional offices (Noise and Vibration Impact Study, page 25). In addition, a final acoustical study will be submitted prior to building permit issuance to demonstrate compliance as required City Standard Condition of Approval 3.5.

Windows with Sound Transmission Class (STC) ratings provided by standard building construction (STC-24 to STC-28) would be sufficient for medical offices directly adjacent to Barranca Parkway (PDF N-2). Air conditioning, as a form of mechanical ventilation, is required to ensure windows can remain closed for prolonged periods of time. The proposed medical office building provides air conditioning as a standard feature (PDF N-1). Therefore, no Mitigation Measures would be required for the building façade along Barranca Parkway where there may be medical offices directly exposed to traffic noise on Barranca Parkway.

Lyon and Osborn

Under Year 2035 projections with buildout of the proposed project, the segment of Lyon and Osborn would have its highest traffic volumes (1,500 average daily traffic). The 70, 65 and 60 dBA CNELs along these segments of Lyon and Osborn would be confined to within the roadway rights-of-way. The proposed medical office building would be located outside the 55 dBA CNEL noise contour from these two roads.

Based on the United States Environmental Protection Agency *Protective Noise Levels* (EPA, 1978), with windows or doors open, interior noise levels at the proposed medical office building would not exceed the 50 dBA CNEL interior noise standard for office buildings or professional office uses. With windows closed, interior noise levels in the proposed medical office building would also be below the 50 dBA CNEL interior noise standard for office buildings or professional office uses (Noise and Vibration Impact Study, page 25). Final acoustical study will be submitted prior to building permit issuance to demonstrate compliance as required City Standard Condition of Approval 3.5.

Windows with Sound Transmission Class (STC) ratings provided by standard building construction (STC-24 to STC-28) would be sufficient for medical offices facing south and west. Air conditioning, as a form of mechanical ventilation, is recommended although the desirable interior noise level would be achieved with the windows open scenario. Therefore, because air conditioning would be a part of the proposed project, no Mitigation Measures would be required for the building façade facing south and west.

Willard

Under Year 2035 projections with buildout of the proposed project, the Willard segment would have its highest traffic volumes (700 average daily traffic). The 70, 65 and 60 dBA CNELs along the Willard segment would be confined to within the roadway rights-of-way. The proposed medical office building would be located outside the 55 dBA CNEL noise contour from Willard.

Based on the United States Environmental Protection Agency *Protective Noise Levels* (EPA, 1978), with windows or doors open, interior noise levels at the proposed medical office building facing east would not exceed the 50 dBA CNEL interior noise standard for office buildings or professional offices. With windows closed, interior noise levels in the proposed medical office building would not exceed the 50 dBA CNEL interior noise for office buildings or professional office uses (Noise and Vibration Impact Study, page 25). Final acoustical study will be submitted prior to building permit issuance to demonstrate compliance as required City Standard Condition of Approval 3.5.

Windows with Sound Transmission Class (STC) ratings provided by standard building construction (STC-24 to STC-28) would be sufficient for medical offices facing east. Air conditioning, as a form of mechanical ventilation (PDF N-1) although the desirable interior noise level would be achieved with the windows open scenario. Therefore, because air conditioning would be a part of the proposed project, no Mitigation Measures would be required for the building façade facing east.

Long-Term Ground Borne Noise and Vibration from Vehicular Traffic

It is unusual for on-road vehicles to cause ground-borne noise or vibration problems because rubber tires and suspension systems of buses and other on-road vehicle provide vibration isolation and reduce noise. Most problems with on-road vehicle-related noise

and vibration can be directly related to a pothole, bump, expansion joint, or other discontinuity in the road surface. The proposed project would have smooth pavement and thereby would not result in significant ground-borne noise or vibration impacts from vehicular traffic. No significant vibration impacts would result and no Mitigation Measures would be required.

Long-Term Stationary Noise Impacts

Proposed project development and operation would potentially expose stationary-source noise impacts from loading/unloading activities and parking lot activities to adjacent residences and/or medical office uses.

On-Site Stationary-Source Noise Impacts

Adjacent residences, Mardan private school, and/or medical office uses potentially would be exposed to project-related delivery trucks and parking lot activities.

- **Truck Delivery and Loading/Unloading** – Delivery trucks for medical office uses generate noise levels of 75 dBA at 50 feet based on previous noise measurements of medical-office uses conducted by LSA in past years. Truck idling noise would be similar to or lower than the loading/unloading activity noise. Additionally, construction pass-by noise and passing pickup trucks at 50 feet would generate up to a maximum 75 Dba (Noise and Vibration Study, page 26).

The Mardan School is the closest sensitive receptor to the project site. The “Noise and Vibration Impact Analysis” prepared for the proposed project indicates “... with a minimum 150 feet distance from loading/unloading or truck idling from the medical office use would be 69 dBA or lower at the nearest outdoor areas on the Mardan School site. The Inn at Woodbridge senior residential community buildings are approximately 400 feet from the proposed medical office loading/unloading or truck idling areas, and noise levels would be 57 dBA or lower due to distance-related attenuation. This range of loading and unloading noise would be similar to or lower than traffic noise from Osborn.

The nearest residences to the north across Barranca Parkway are approximately 180 feet away from the nearest loading/unloading area of the proposed project site. At 180 feet, the noise associated with the proposed medical office use would be 64 dBA or lower at the nearest residence to the north. This noise level from truck delivery and/or loading/unloading activity is similar to or lower than existing vehicle noise along Barranca Parkway and would therefore not increase ambient noise levels.

Loading/unloading on the proposed project site would be located approximately 300 feet from the nearest Kaiser Permanente Health Care medical buildings to the

east would be 59 dBA or lower at the nearest outdoor areas. This loading and unloading noise level would be similar to or lower than traffic noise from Barranca Parkway and Willard.

Noise impacts to adjacent uses to the south, east and west would not exceed City standards as follows: for interior noise levels of 55 dBA for single-family and multi-family residences (to the north and southeast) with open windows, 45 dBA with closed windows, and for exterior noise levels of 65 dBA; for institutional (school) use (to the south) interior noise level of 45 dBA and exterior noise level of 65 dBA; and for office buildings (to the east and west) interior noise level of 50 dBA. Therefore, no Mitigation Measures for these impacts are required.

For off-site dwelling units to the north of the proposed project site, standard building construction (with windows closed) of the proposed medical office building would provide sufficient exterior-to-interior noise attenuation ($64 \text{ dBA} - 24 \text{ dBA} = 40 \text{ dBA}$) for noise from stationary sources to meet the City 50 dBA interior noise standard (Noise and Vibration Impact Study, page 27). For the school to the south and office buildings to the east and west of the project site, standard building construction (with windows rated STC-24 to STC-28) also would provide sufficient exterior-to-interior noise attenuation for noise from stationary sources to meet the City 50 dBA interior noise standard. Therefore, no window upgrades for these off-site sensitive land uses would be necessary to reduce the exterior stationary-source noise to meet the City 50 dBA interior noise standard.

- **Parking Lot Activity** – Parking activities such as employee conversation or door slamming would generate approximately 60 to 70 dBA at 50 feet. Noise from the on-site parking areas would not be anticipated to be significant –70 dBA or lower at the closest off-site residential units. Because this noise would be intermittent, and would occur at varying times throughout the day as employees and patients arrive and depart according to work and medical appointment schedules; would rarely occur in the evening or at night; and would not occur on weekends when medical offices are closed; no significant noise impacts would occur and no Mitigation Measures are required.

E) NO IMPACT. The project site is not located within the boundaries of any airport land use plan. The closest airport is John Wayne Airport, which is approximately six miles west of the Project site. Therefore, project development and implementation would not expose people residing or working in the Project area to excessive noise levels associated with an airport. No impact will result.

F) NO IMPACT. There are no private airstrips in the vicinity of the Project site; therefore, project development and implementation would not expose people residing in or working in the project area to excessive noise levels associated with an airstrip. No impact will result.

4.12.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

As indicated above, project development (construction) related noise would be significant in decibels and impact the surrounding environment, particularly the Mardan School that borders the proposed project site to the south across Osborn. Although the City of Irvine does not regulate construction-related noise because of its intermittent nature, Mitigation Measures N-2 below would require the Applicant to construct a temporary noise barrier wall along the entire project site property line to lessen the potential temporary significant noise impact to the Mardan School.

4.12.6 PROJECT DESIGN FEATURES

The following Project Design Features apply to the proposed project and will assist in reduction and avoidance of potential impacts related to noise.

Project Design Feature N-1: Provide mechanical ventilation (e.g. an air-conditioning system) to all medical offices.

Project Design Feature N-2: Provide windows with Sound Transmission Class (STC) ratings provided by standard building construction (STC-24 to STC-280) for medical offices directly adjacent to Barranca Parkway.

4.12.7 MITIGATION MEASURES

MM N-1: Prior to issuance of grading permits, the project Applicant shall incorporate the following measures as notes on the grading plan cover sheet to ensure the greatest distance between noise sources and sensitive receptors during construction activities has been achieved.

- Construction equipment, fixed or mobile, shall be equipped with properly operating and maintained noise mufflers consistent with manufacturers' standards
- Construction staging areas shall be located away from off-site sensitive uses during the later phases of project development
- The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the proposed project site whenever feasible

MM N-2: Prior to issuance of demolition and grading permits, the project Applicant shall install temporary sound blankets (fences typically composed of polyvinyl chloride-coated outer shells with adsorbent inner insulation) along project boundaries. A study shall be provided to determine exact height and location to the satisfaction of the Director of Community Development.

4.12.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

No mitigation to address aircraft noise impacts and stationary noise impacts is needed because the related post-project noise impacts are less than significant.

Construction and traffic noise impacts would be less than significant with implementation of the Project Design Feature, Mitigation Measures, and Standard Condition indicated above.

4.12.9 CUMULATIVE IMPACTS

The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation publication pertained to the 18-acre (162,444 square foot) Woodbridge Village Center, located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway. Approvals at Woodbridge Village Center allow for uses that are typical within a retail center.

The City of Irvine Planning Commission granted approvals on July 21, 2016 for the modernization of the Woodbridge Village Retail Center through the following applications: Master Plan Modification to re-image the existing center and expand outdoor spaces; a Conditional Use Permit modification for a gas station, drive-thru car wash and convenience store; and a Conditional Use Permit for a new 4,226 square foot fast food restaurant with drive-thru. With various demolition activities, the redeveloped retail center would be decreased by 25,246 square feet – from 162,444 to 137,198 square feet.

The proposed project involves no change in land use. Rather, the proposed development application represents an intensification of the existing medical office use on the project site. The proposed project is consistent with Objectives and Policies enumerated in each element of the Irvine General Plan and as contained in this document. Furthermore, the cumulative noise impacts of this particular project and approvals at Woodbridge Village Center, in combination with the existing noise environment, are not significant in relation to the CEQA Thresholds of Significance. Noise emanating from either parking area on the two properties would be similar in nature and origin, but not cumulative due to the distance between the two project sites. Traffic noise was measured for both projects and found not to exceed City of Irvine thresholds. Both projects would be required to adhere to applicable City noise standards. Associated construction noise would be temporary in nature (duration of construction schedule; days of construction; hours of construction; varied components of construction), therefore, potential cumulative impacts related to Noise are not anticipated to be significant.

Section 4 Environmental Impacts – Population & Housing

4.13 POPULATION & HOUSING

The information in this section is derived from the City of Irvine General Plan Housing Element (Supplement 9, July 2015), California State Department of Finance, United States Bureau of the Census (2010 Census; and 2014/2015 estimates), California State University Fullerton – Center for Demographic Reports, and the Southern California Association of Governments “Local Profiles Report.”

4.13.1 ENVIRONMENTAL SETTING

There is some discrepancy among various sources regarding population estimates. However, all sources provide data that comparatively are within appropriate ranges.

United State Census Data

The United States Bureau of the Census publishes population, household and employment data gathered through decennial census tabulations and through non-census year estimates and projections. The most recent national census was conducted in 2010. However, the Census Bureau also published data taken in subsequent years from different sources. Table 4.13-A presents the City of Irvine population and housing figures from 2000 – 2010 and 2014/2015.

TABLE 4.13-A							
City of Irvine Population & Housing, 2000-2010 and 2014/2015							
Category	2000	2010	Change, 2000-2010	% Change, 2000-2010	2014/2015	Change, 2010-2014/2015	% Change, 2010-2014/2015
Population	143,072	212,375	69,303	48.4%	256,927	44,552	20.9%
Housing	52,711	83,899	30,188	56.2%	87,934	4,035	4.8%
Sources: United States Census; Vintage 2015 Population Estimates; 2010-2014 American Community Survey 5-Year Estimates							

Table 4.13-B presents the Orange County population and housing figures from 2000 – 2010 and 2014/2015.

TABLE 4.13-B						
Orange County Population & Housing, 2000-2010 and 2014/2015						
Category	2000	2010	Change, 2000-2010	% Change, 2000-2010	2014/2015	% Change, 2010-2014/2015
Population	2,846,289	3,010,232	163,943	5.8%	3,169,776	5.3%
Housing	969,484	1,048,907	79,423	8.2%	1,080,987	3.1%
Source: United States Census						

Section 4 Environmental Impacts – Population & Housing

The data above indicate population and housing unit growth rates in the City of Irvine between 2000-2010 and between 2010-2014/2015 exceeded the respective growth rates in Orange County during those time periods.

Southern California Association of Governments (SCAG)

The Southern California Association of Governments (SCAG) is the largest Metropolitan Planning Organization in the United States. The SCAG region includes six counties (Los Angeles; Orange; Ventura; Riverside; San Bernardino; Imperial) and 191 cities. SCAG is mandated by federal law to conduct research and develop a Regional Transportation Plan (RTP) that incorporates a Sustainable Communities Strategy (SCS) per California State law.

In 2008, SCAG initiated the Local Profiles Project as part of a larger initiative to provide a variety of services to its member cities and counties. Member jurisdictions provided extensive information that became incorporated into the Profiles, which initially were released in 2009. The Profiles have been updated every two years. Local Profiles provide basic information about each member jurisdiction. They provide current and historical demographic, socio-economic, housing, transportation and education data that is accumulated from a variety of sources. Information presented is intended to demonstrate current trends that may assist local governments with community planning and outreach efforts and help residents learn more about their communities. Current Local Profile Reports focus on changes since 2000.

Population Growth

The data indicate that between 2000 and 2014, the total population of the City of Irvine increased by 99,579 to 242,651, which equated to a growth rate of 69.6 percent (the Orange County population growth rate for this time period was 9.4 percent).

Household Growth

Between 2000 and 2014, the total number of households in the City of Irvine increased by 66.2% (33,899), which was higher than the Orange County growth rate (7.6%). The average household size in Irvine in 2014 was 2.7 persons; the Orange County average was 3.0.

Employment Data

Total jobs include wage and salary jobs and jobs held by business owners and self-employed persons; total jobs do not include unpaid volunteers, family workers, and private household workers.

In 2013, there were 230,422 total jobs in the City of Irvine, an increase of 0.64% from 2007.

Section 4 Environmental Impacts – Population & Housing

Construction jobs in the City decreased by 24% between 2007 and 2013; retail jobs decrease by 9.3% in the same time period. The number of professional and management jobs in Irvine decreased by 6.7% between 2007 and 2013. During this time period, education jobs increased from 16% to 17.7% of total jobs in Irvine. In 2013, the Professional sector was the largest job sector in the City, accounting for 29.1% of total jobs.

Center for Demographic Research at California State University Fullerton

The Center for Demographic Research (CDR) was established in 1996 as a non-profit research center dedicated to the development and support of demographic research. CDR is sponsored by the County of Orange, Orange County Transportation Authority, Orange County Council of Governments, Orange County Sanitation District, Transportation Corridor Agencies, Southern California Association of Governments, Municipal Water District of Orange County, Orange County Water District, and the orange County Local Agency Formation Commission. CDR operates in partnership with California State University, Fullerton and has as its academic home the College of Humanities and Social Sciences. The Center's Mission Statement is to "provide accurate and timely information regarding population, housing, and employment characteristics for Orange County, California in an efficient and cost-effective manner. Its Guiding Principles are the following: Objectivity; Accuracy; Honesty, Trust and Respect; Learning and Teaching; and, Teamwork and Problem Solving.

The following Table 4.13-C indicates Population Projections for the City of Irvine from 2020 to 2040.

TABLE 4.13-C					
City of Irvine Demographic Projections					
(Center for Demographic Research)					
Projection	JULY, 2020	JULY, 2025	JULY, 2030	JULY, 2035	JULY, 2040
Population	296,092	318,018	325,413	326,756	327,292

CDR's estimate is that the City of Irvine's population will increase from 251,736 in 2015 to 327,292 in 2040. This represents an increase of 30 percent in 25 years.

Orange County Sustainable Communities Strategy

The Sustainable Communities Strategy is a required element of the Regional Transportation Plan that will integrate land use and transportation strategies that will achieve Air Resources Board emissions reduction targets (reference the "Air Quality" and "Greenhouse Gas Emissions" sections of this document). SCAG is charged with developing the Sustainable Communities Strategy. The document relies on conclusions about employment, as follows.

Section 4 Environmental Impacts – Population & Housing

Major growth was projected to occur near the Irvine Spectrum in the far southern area of the City, and the cities of Tustin, Anaheim Canyon, Fullerton, and Buena Park -- all of which are near major transportation corridors. Intensification of employment centers also means increased density of land uses and creation of synergies and opportunities to mix land uses. This can increase pedestrian-scale mobility and reduce vehicle miles traveled and greenhouse gas emissions.

City of Irvine General Plan Housing Element

The City General Plan Housing Element (Supplement 9, July 2015) indicates historical trends in City population, employment and housing. Following is information related to population and housing, as indicated in the Housing Element.

Population

The following Table 4.13-D uses United States Bureau of the Census data and California State Department of Finance Population and Housing Estimates (May 2012) to determine Irvine's population from 1980 to 2012 and demonstrates between 1980-1990 the City population increased by more than 77 percent; between 1990-2000, City population further increased by almost 30 percent. Between 2000 and 2012, Irvine's population increased by 56 percent.

TABLE 4.13-D				
Historic Population Growth in Irvine, 1980-2012				
YEAR	POPULATION	NUMERICAL CHANGE	PERCENT CHANGE	AVERAGE ANNUAL GROWTH
1980	62,134	-	-	-
1990	110,330	48,196	77.6%	7.7%
2000	143,072	32,742	29.7%	3.0%
2010	212,375	69,303	48.4%	4.8%
2012	223,729	11,354	5.3%	32%

In comparison to population growth in cities neighboring Irvine and Orange County as a whole, Irvine experienced growth at a much faster pace. The majority of Irvine's population growth results from development of planning areas that are designated primarily for residential land uses. Some of the City's population growth also can be attributed to rezoning of land from Industrial to Multi-Use in the Irvine Business Complex area in the western portion of the City.

Employment

The Housing Element also indicates employment trends in Irvine. As indicated in the following Table 4.13-E, the largest employment sector in the City is Education, Health Care and Social

Section 4 Environmental Impacts – Population & Housing

Assistance – comprising nearly 24 percent of all jobs. Professional Services comprise the second largest share of employment in the City, followed by Manufacturing and Finance, Insurance, and Real Estate employment. The Housing Element further indicates that many people who work in Irvine do not live in the City. In fact, the Element states “Irvine’s population actually doubles ... during the work day as the City draws workers from other cities” The following table provides data indicating employment sectors in the City between 2006 and 2010.

TABLE 4.13-E		
Employment by Industry, 2006-2010		
INDUSTRY	NUMBER	PERCENT
AGRICULTURE, FORESTRY, FISHING AND HUNTING, MINING	167	0.2%
CONSTRUCTION	2,816	2.8%
MANUFACTURING	12,315	12.4%
WHOLESALE TRADE	4,019	4.1%
RETAIL TRADE	8,088	8.2%
TRANSPORTATION AND WAREHOUSING, UTILITIES	2,067	2.1%
INFORMATION	3,059	3.1%
FINANCE AND INSURANCE, REAL ESTATE RENTAL AND LEASING	12,209	12.3%
PROFESSIONAL, SCIENTIFIC, AND MANAGEMENT, ADMINISTRATIVE AND WASTE MANAGEMENT SERVICES	18,125	18.3%
EDUCATIONAL SERVICES, HEALTH CARE AND SOCIAL ASSISTANCE	23,467	23.7%
ARTS, ENTERTAINMENT, RECREATION, ACCOMMODATION AND FOOD SERVICES	6,405	6.5%
OTHER SERVICES, EXCEPT PUBLIC ADMINISTRATION	3,643	3.7%
PUBLIC ADMINISTRATION	2,601	2.6%
TOTAL	98,981	100%
Source: United States Bureau of the Census, 2006-2010 American Community Survey		

The top two employers in the Irvine area are the University of California, Irvine, and the Irvine Unified School District, which together provide the City with more than 16,933 jobs.

4.13.2 EXISTING REGULATIONS & STANDARD CONDITIONS

No Existing Regulations or Standard Conditions pertain to Population and Housing.

Section 4 Environmental Impacts – Population & Housing

4.13.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines, the proposed project may create a significant impact if it would:

- A) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- B) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere;
- C) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

4.13.4 ENVIRONMENTAL IMPACTS

- A) **LESS THAN SIGNIFICANT IMPACT.** The project does not propose development of residential units; therefore, the project would not directly induce population growth in the City. However, the project could indirectly induce population growth through creation of temporary construction-related jobs and medical office employment opportunities for those employees who might decide to move to the City of Irvine after project buildout. This is due to expansion of the proposed medical office building increasing from an existing 16,015 square feet to 46,800 square feet. However, any re-location of employees to residents in Irvine would be accommodated by the existing and planned housing stock. In addition, the project would be consistent with the General Plan and therefore impacts associated with project development and operation related to Population and Housing would be less than significant.

Based on City of Irvine General Plan (Table A-3) employment generation figures for multi-use projects (2 employees per 1,000 square feet of building) project expansion would add approximately 62 more employees to the City work force, some of whom may choose to live in Irvine. Consequently, project development employment generation will not substantially contribute to causing an imbalance in the jobs-housing balance in Woodbridge Village or Irvine. Therefore, no mitigation measures are required.

- B) **NO IMPACT.** As no residential units currently exist on the project site, project development would not cause displacement of any persons or require construction of housing elsewhere. No impact will result and no mitigation measures are required.

Section 4 Environmental Impacts – Population & Housing

C) **NO IMPACT.** As no residential units currently exist on the project site, project development would not cause displacement of any persons or require construction of housing elsewhere. No impact will result and no mitigation measures are required.

4.13.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Impacts would be less than significant without mitigation.

4.13.6 PROJECT DESIGN FEATURES

No Project Design Features are required.

4.13.7 MITIGATION MEASURES

No Mitigation Measures are required because no significant impacts related to population and housing have been identified.

4.13.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Project development and operation would not result in significant impacts to Population and Housing.

4.13.9 CUMULATIVE IMPACTS

The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation publication pertained to the 18-acre (162,444 square foot) Woodbridge Village Center, located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway. Approvals at Woodbridge Village Center allow for uses that are typical within a retail center.

The City of Irvine Planning Commission granted approvals on July 21, 2016 for the modernization of the Woodbridge Village Retail Center through the following applications: Master Plan Modification to re-image the existing center and expand outdoor spaces; a Conditional Use Permit modification for a gas station, drive-thru car wash and convenience store; and a Conditional Use Permit for a new 4,226 square foot fast food restaurant with drive thru. With various demolition activities, the redeveloped retail center would be decreased by 25,246 square feet – from 162,444 to 137,198 square feet.

The project will not substantially increase population or employment growth in Irvine. Temporary construction-related jobs during project development would not contribute to significant increases in population and housing in Irvine. The existing medical office building

Section 4 Environmental Impacts – Population & Housing

employs 32 persons. As a result, in combination with the Woodbridge Project, cumulative project-related impacts to Population and Housing are not considered to be significant.

Section 4 Environmental Impacts – Public Services

4.14 PUBLIC SERVICES & UTILITIES

The information in this section is derived from the City of Irvine General Plan, Orange County Fire Authority web page, Irvine Police Department personnel, and Orange County Public Library web page.

4.14.1 ENVIRONMENTAL SETTING

Police Services

Police services to the project site are provided by the City of Irvine Public Safety Department. The staff goal for the police department in 2016 was 226. Staffing goals are adjusted annually to ensure the following emergency response standards are met (Residential Night-time Population Standard).

1. Responding to Priority E (Emergency) events within 6 minutes, 85% of the time
2. Responding to Priority I (Crimes in Progress) events within 10 minutes 85% of the time
3. Responding to Priority II (Less Serious Crimes Now Occurring) events within 20 minutes 90% of the time

Fire and Emergency Protection Services

The City of Irvine contracts with the Orange County Fire Authority to receive regional fire protection and emergency services. The Fire Authority serves 23 Orange County cities and all unincorporated area in Orange County through 71 stations. The Orange County Fire Authority operates eleven fire stations in the City of Irvine. The closest fire station to the proposed project site is Station #36, approximately one-fourth mile southeast of the site, at 301 East Yale Loop. The Fire Authority is a full service emergency response agency that is able to be deployed without regard for jurisdictional boundaries to provide fire suppression, emergency medical, rescue, and fire prevention services to its contracted jurisdictions. The Fire Authority also handles wildland management and hazardous materials coordination.

Orange County Fire Authority policy for fire protection and emergency services in the City of Irvine is as follows:

1. For fire and basic life safety incidents in urban areas, a first due unit on scene within a five-minute response time for 80% of the time
2. For advanced life support incidents, units shall be located and staff available within an eight-minute response time for 80% of the time

Irvine's fire services are provided from two types of facilities, Battalion stations and Fire stations. OCFA determines what equipment is included at each station.

Educational Facilities

The Irvine Unified School District indicates it provides educational service to more than 30,000

students (K-12) in 24 elementary schools, six middle schools, four high schools, one continuation high school, and two alternative education facilities. Some Irvine residents are served by Tustin Unified School District, Saddleback Valley Unified School District, or Santa Ana Unified School District schools.

The proposed project site is within the service areas for the following public schools: Springbrook Elementary School (655 Springbrook North); South Lake Middle School (655 West Yale Loop); and, Woodbridge High School (2 Meadowbrook). Other public schools near the proposed project site are Eastshore Elementary School (155 Eastshore) and Lakeside Middle School (3 Lemongrass). Mardan School a private school (K-12) located adjacent to the proposed project site, south of Osborn.

Library Services

There are three public Orange County libraries in the City of Irvine: University Park Library (4512 Sandburg Way); Heritage Park Regional Library (14361 Yale Avenue); and, Katie Wheeler Library (13109 Old Myford Road). In addition, each high school in Irvine and Irvine Valley College have on-campus libraries that serve their student populations. The University of California, Irvine has several general libraries on campus with extensive general and special collections. The Lakeview Senior Center also has a small library within its facility.

Parks

Please refer to the “Recreation” section (Section 4.15) in this document for a detailed discussion.

4.14.2 EXISTING REGULATIONS & STANDARD CONDITIONS

Prior to the issuance of a preliminary or precise grading permit, the applicant or responsible party shall submit a Fire Master Plan (service code PR145) to the Orange County Fire Authority for review and approval. Should alternative means and methods (AM&M) be necessary, Service Code PR910 shall then be submitted for concurrent review.

Prior to the issuance of the first building permit, the following shall be reviewed and approved by the Orange County Fire Authority:

- Fire sprinkler system (service codes PR425 or PR430) - any new or remodeled building with a sprinkler system.
- Fire alarm system (service code PR510-PR520)

4.14.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines the proposed project may create a significant impact if it would:

- A) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered

governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable serviced ratios, response times or other performance objectives for any of the following public services: Fire Protection; Police Protection; Schools; Parks; Other Public Facilities.

4.14.4 ENVIRONMENTAL IMPACTS

- A) LESS THAN SIGNIFICANT IMPACT.** Project operation would generate approximately 62 additional employees. As discussed below, the number of additional employees and patients would not be sufficient to adversely affect service ratios or other performance objectives for Fire Protection/Emergency Service; Police Protection; Schools; Parks; or other Public Facilities.

Because the project would add 62 employees and additional patients to an urban environment that is within the existing fire and police service area, Fire protection and emergency service response times would not be affected by Project operation. Fire Station #36 is ¼ mile from the Project site and provides full service to the existing medical office building. Since the use and location will not change, response times are not anticipated to vary substantially from existing response times. Furthermore, vehicular access to the Project will accommodate emergency service.

The City of Irvine Police Department (One Civic Center Plaza) provides law enforcement services to the Project vicinity. The City provides law enforcement throughout the entire City, including the existing office building. An additional 62 employees and additional patients will not increase the population on the Project site such that new officers or facilities would be required. The increase would not be anticipated to generate a substantial increase in service calls.

The Project is a medical office and thereby will not generate a student population. Therefore, no direct impact on Irvine Unified School District school facilities will result from Project development. There may be an indirect impact from Project operation if any of the additional employees relocate from outside Irvine to Irvine and place school age children in Irvine Unified School District schools; however, any indirect impact would not result in a substantial increase in student population in the City such that new facilities would be required to be constructed.

Potential impacts on parks would be less than significant and are discussed in Section 4.15 (Recreation).

No new public facilities would need to be constructed and no existing public facilities would need to be expanded as a result of Project development and operation of the proposed project. Therefore, resulting impacts would be less than significant.

Section 4 Environmental Impacts – Public Services

4.14.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

The anticipated degree to which the proposed project would impact Public Services is less than significant due to the scale of the proposed project and to the medical office use on the project site being retained.

4.14.6 PROJECT DESIGN FEATURES

No Project Design Features are required.

4.14.7 MITIGATION MEASURES

No Mitigation Measures pertaining to Public Facilities are required.

4.14.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The degree of impact to Public Services would remain less than significant without mitigation.

4.14.9 CUMULATIVE IMPACTS

The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation publication pertained to the 18-acre (162,444 square foot) Woodbridge Village Center, located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway. Approvals at Woodbridge Village Center allow for uses that are typical within a retail center. The City of Irvine Planning Commission granted approvals on July 21, 2016 for the modernization of the Woodbridge Village Retail Center through the following applications: Master Plan Modification to re-image the existing center and expand outdoor spaces; a Conditional Use Permit modification for a gas station, drive-thru car wash and convenience store; and a Conditional Use Permit for a new 4,226 square foot fast food restaurant with drive-thru. With various demolition activities, the redeveloped retail center would be decreased by 25,246 square feet – from 162,444 to 137,198 square feet.

The Project-generated increase of 62 employees (96 total employees) would not, in combination with additional employees generated by the Woodbridge Village Center expansion, result in significant adverse impacts to service ratios or other performance objectives for Fire Protection/Emergency Service, Police Protection, Schools, Parks or other Public Facilities. The Fire Station located close to the Project site on East Yale Loop will continue to provide timely fire protection and emergency services. The Police Department provides law enforcement services to the Project vicinity, including Woodbridge Village Center. As indicated in conversation with an Irvine Police Department representative (Justin Patterson on March 29, 2017), the Irvine Police Department's annual budget is based on planned City population and employment increases; that is, the staffing needs of the Police Department respond to land use changes within the City.

The Population and Housing Section, the Recreation Section, and this Section of this document

Section 4 Environmental Impacts – Public Services

indicate the Project-related impacts to other public facilities such as parks, schools or libraries that would result from an increase of 62 Project employees and additional patients at the medical office would be less than significant. The Woodbridge Village Center expansion pertains to an expansion of uses, as noted above, rather than an expansion of Center area. In fact, the Center redevelopment will result in a 15.5% decrease in areas of commercial use on the Center property.

Project-related impacts are considered to be less than significant. As a result, together with the Woodbridge Village Center redevelopment, cumulative impacts are not cumulatively considerable and would remain at a less than significant level for the identified public services.

4.15 RECREATION

The information in this section is derived from the following: City of Irvine General Plan – Parks and Recreation Element; City of Irvine General Plan – Circulation Element; City of Irvine “Bicycle Transportation Plan”; City of Irvine Web site; City of Irvine Park Standards Manual; and, other Environmental Impact Reports cited in the Bibliography.

4.15.1 ENVIRONMENTAL SETTING**Parks**

There are five types of park facilities in Irvine, described as follows.

Regional Open Space: Regional Open Space is land comprised of varied size located through the City that was acquired primarily through dedications made under the Implementation Actions Program of the Conservation and Open Space Element of the City General Plan.

Regional Parks: Regional parks (with passive or active facilities) are owned by the County of Orange and managed by the County Harbors, Beaches and Parks Department. Mason Regional Park (18712 University Drive) is a 345-acre regional recreational facility with a nine-acre lake, grassy knolls, picnic facilities walking trails and extensive landscaping located at the southeasterly corner of Culver Drive and University Avenue, approximately 1.5 miles from the project site.

Community Parks: Community parks generally are a minimum of 20 acres in area (excluding greenbelts, trails and school grounds). According to the City Web site, the City owns and maintains the 19 existing community parks, which are developed with facilities Citywide in scope and are intended to serve more than one residential village. Two community parks are located close to the project site. Windrow Community Park occupies 18.9 acres at the southwest corner of Barranca Parkway and Jeffrey Road (285 East Yale Loop). Windrow contains the (lighted) Ryan Lemmon Stadium, a baseball field, a soccer field, a basketball court, batting cages, concession stand, picnic facilities, drinking fountains, restrooms and electrical outlets. Windrow Community Park also has direct access to the San Diego Creek Trail. Mike Ward Community Park is located at 20 Lake Road. This 22-acre community park has: a multi-use building that also contains the Lakeview Senior Center; two basketball courts; one volleyball court; four racquetball courts; one amphitheater with stage; two drinking fountains; three restrooms; two barbeques; one group picnic area with picnic tables. Mike Ward Community Park also has direct access to the San Diego Creek Trail.

Public Neighborhood Parks: Public neighborhood parks generally are a minimum 4 acres in area (excluding greenbelts, trails and school grounds). The City owns and maintains public parks, of which there are more than 40 in the City. The closest neighborhood park to the project site is Creekview Park, located at 300 East Yale Loop, approximately one-fourth mile from the project site. Creekview Park is a small park (0.7 acre) adjacent to the San Diego Creek Trail. There is a gazebo, three picnic tables and drinking fountain within the Park. Creekview Park has

direct access to the San Diego Creek Trail.

Private Neighborhood Parks: Private neighborhood parks are a minimum one-third acre in area and are able to serve the immediate development or specific planned community in which each park is located. Homeowner associations or maintenance districts own and maintain these parks. Several private neighborhood parks are located in residential developments within Woodbridge Village north of the project site.

Bikeways

The City of Irvine network of On-Street and Off-Street Bikeways is designed to encourage use of bicycles as a safe and convenient means of transportation for recreational and transportation purposes. The On-Street Bikeways network is comprised of 301 lane miles; the Off-Street Bikeways network 54 miles.

The City “Bicycle Transportation Plan” (2011) served to amend the original 2006 Bicycle Transportation Plan in accordance with requirements of Caltrans Bicycle Transportation Account Program (Section 891.2 of the California Streets and Highways Code) to maintain Irvine’s eligibility to compete for grant funding. The Plan is required to be amended every five funding cycles to maintain program eligibility. The Bicycle Transportation Plan describes the existing and proposed bikeway system in the City, bicycle amenities, near- and long-term implementation of bikeways, guidelines for planning, designing and constructing bikeways, and the bicycle education program.

The City of Irvine Bikeways Map illustrates the bikeways network throughout Irvine. The Map depicts existing and planned Off-Street Bikeways, On-Street Bikeways, On-Street Signed Bike Routes, and On-Street Bikeways on One Side of the Road. According to the Map, the closest bikeways to the project site are on-street bikeways along Barranca Parkway and Jeffrey Road and an off-street bikeway adjacent to and along the San Diego Creek channel.

The closest bicycle/walking trail to the project site is the San Diego Creek Trail, which stretches along/above the San Diego Creek. This Trail and Creek are located approximately 350 feet south of the Project site, north of the Mardan School property.

Jeffrey Open Space Trail

The Jeffrey Open Space Trail is an open space corridor that constitutes an important element in the City’s overall open space system that links conservation and open space lands within the City. This Trail will provide a segment of the regional linkage extending from the Pacific Ocean to the Santa Ana Mountains and Cleveland National Forest. Once completed, the Trail will extend approximately five miles through Irvine from Portola Parkway to the north to Quail Hill open space in the southern portion of the City. The Jeffrey Open Space Community Consensus Plan focuses specifically on the portion of the regional trail extending from Interstate to the Natural Communities Conservation Plan lands north of Portola Parkway. Currently, the section from Portola Parkway to south of Roosevelt is completed.

Recreational and Other Public Facilities***Lakeview Senior Center***

Lakeview Senior Center is the senior center closest to the project site. It is located within Mike Ward Community Park, approximately one mile from the project site. Lakeview Senior Center provides many programs, classes, activities and services to seniors as well as providing meeting space for clubs and organizations.

Regional Open Space

The nearest open space system to the proposed project site is the San Diego Creek Trail System. This greenbelt contains a Class I (Off-Street, Riding and Hiking) Trail and greenbelt extending along the Creek bed. Several other regional recreational opportunities are located near Irvine, including the Laguna Wilderness Park, Crystal Cove State Park, and the Upper Newport Bay Ecological Reserve and Regional Park. Orange County-owned and maintained regional parks in or near Irvine include William R. Mason Regional Park in Irvine, Limestone-Whiting Wilderness Park, Peters Canyon Regional Park, and Irvine Regional Park. Limestone Canyon and Whiting Ranch Regional Parks are located north of Irvine. These regional parks contain approximately 4,300 acres of riparian and oak woodland canyons, grassland hills, and slopes with coastal sage scrub habitat. Both regional parks have hiking, bicycling and equestrian trails, portable restrooms, and a visitor center. Laguna Coast Wilderness Park is southwest of Irvine and occupies 7,000 acres of coastal sage scrub and oak and sycamore woodland habitat. Its amenities include hiking, bicycling and equestrian trails, restrooms, an interpretive center, and botanical preserve.

The State of California and the United States Department of the Interior have designated the Irvine Open Space Preserve as a Natural Landmark, in recognition of the exceptional value of its biological and geological resources. This designation as a National Natural Landmark in 2006 of nearly 37,000 acres reflects the outstanding condition, rarity, diversity and value to science and education of natural resources on the property. In 2008, the State of California designated this property as a California Natural Landmark – a designation given to areas that best illustrate the biological and geological character of California and strengthen public appreciation for natural history and conservation.

The first application of the State of California Natural Community Conservation/Habitat Conservation Planning Programs in the Central and Coastal Sub-region of Orange County was the establishment of the 37,000-acre Nature Reserve of Orange County. The Irvine Open Space Preserve represents the second largest area of the Reserve.

4.15.2 EXISTING REGULATIONS & STANDARD CONDITIONS**City of Irvine Local Park Code**

The City Local Park Code is prescribed in the City Municipal Code – Subdivision Ordinance (Section 5-5-1004) and the adopted Park/Public Facilities Standards Manual (Resolution No. 09-141). The Irvine Subdivision Ordinance (Section 5-5-1004) establishes park credit standards, provides for any exceptions for dedication, provides for collection of park fees, provision of improvements and development construction standards and criteria for design of public and private parks. Developers of residential subdivisions in conjunction with the tentative tract map application process are required to dedicate park land or pay fees in lieu of land dedication – at the rate of five acres per thousand City residents. The Local Park Code requirements only apply to residential development.

City of Irvine General Plan Parks and Recreation Element Objectives and Policies do not apply to non-residential projects. Therefore, none are applicable to the proposed project. In addition, there are no specific Project Design Features that relate to Recreation.

4.15.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines, the proposed project may create a significant impact if it would:

- A) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- B) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

4.15.4 ENVIRONMENTAL IMPACTS

A and B) LESS THAN SIGNIFICANT. No residential uses are part of the proposed project and the proposed expanded medical office use (and a corresponding anticipated increase of 62 employees) is not anticipated to generate substantial population growth. Therefore, the Project would not result in a substantial increase in population and would therefore not result in an increase in use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. In addition, the Project would not include recreational facilities. Therefore, impacts related to recreational facilities would be less than significant.

4.15.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

The project site currently is fully developed with a single-story 16,015 square foot medical office building, surface parking with light fixtures, and introduced landscaping. The proposed project would demolish the existing building and replace it with a two-story 46,800 square foot medical

office building constructed over a surface-level open parking garage, additional surface parking with light fixtures, and introduced landscaping. No substantial increase in population would occur as a result of project development and operation and the resultant increase in number of employees would not cause substantial deterioration of existing recreation facilities in the City. Therefore, the level of significance regarding impacts to Recreation and Recreational Facilities is less than significant.

4.15.6 PROJECT DESIGN FEATURES

No Project Design Features are required.

4.15.7 MITIGATION MEASURES

No Mitigation Measures are required.

4.15.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Project development and operation will result in less than significant impacts to Recreation and Recreational Facilities.

4.15.9 CUMULATIVE IMPACTS

The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation publication pertained to the 18-acre (162,444 square foot) Woodbridge Village Center, located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway. Approvals at Woodbridge Village Center allow for uses that are typical within a retail center.

The City of Irvine Planning Commission granted approvals on July 21, 2016 for the modernization of the Woodbridge Village Retail Center through the following applications: Master Plan Modification to re-image the existing center and expand outdoor spaces; a Conditional Use Permit modification for a gas station, drive-thru car wash and convenience store; and a Conditional Use Permit for a new 4,226 square foot fast food restaurant with drive-thru. With various demolition activities, the redeveloped retail center would be decreased by 25,246 square feet – from 162,444 to 137,198 square feet.

By 2035, the City of Irvine is projected to need a total 1,459 acres of public park land, which will be provided through City-required neighborhood park dedications, equivalent amenities, or fees paid in conjunction with individual future residential project approvals. Project development will not necessitate any additional park land be dedicated or recreation facilities be provided. Therefore, no significant cumulative impacts related to recreational facilities or opportunities are anticipated.

Project development would generate approximately 93 employees, which represents an increase of approximately 62 employees over those employed in the existing medical office building.

This increase in employment is not anticipated to result in significant impacts to parks or recreational facilities in the City.

4.16 TRANSPORTATION & TRAFFIC

Information in the Transportation and Traffic section is based on the Traffic Impact Analysis prepared for the proposed project by LSA Associates (April 14, 2017) and information contained in the City of Irvine General Plan – Circulation Element. The Traffic Impact Analysis (TIA) is included in Appendix J of this EIR.

The purpose of this section is to evaluate impacts of the proposed project development and operation on existing public roadways and intersections adjacent to, and near, the project site.

4.16.1 ENVIRONMENTAL SETTING

The project site is located at 2 Osborn in the Village of Woodbridge, within the City of Irvine. The project site is bordered to the north by Barranca Parkway – designated a Primary Highway in the City of Irvine General Plan Circulation Element, to the south by Osborn, to the east by Willard, and to the west by Lyon. Osborn, Willard and Lyon are designated Local Streets.

Existing Roadways and Intersections

Barranca Parkway – Barranca Parkway is an east-west arterial directly adjacent to and north of the proposed project site. Barranca Parkway is classified as Primary Highway between Jeffrey Road and Culver Drive; that is, a four-lane arterial roadway divided by a raised median. Its designated speed limit is 45 miles per hour. On-street Class II bicycle lanes and sidewalks are provided on both sides of the street in the vicinity of the proposed project site. On-street parking is prohibited. Orange County Transportation Agency Bus Routes 86 and 175 serve Barranca Parkway and other roadways in the project vicinity.

As an important link between east and west Irvine and as a roadway that extends through Irvine, Barranca Parkway provides local and regional access to the project site. The City of Irvine General Plan Circulation Element designates Barranca Parkway in the project site vicinity as a Primary Highway. According to the Circulation Element, a Primary Highway is defined as follows –

“A divided arterial highway of four through lanes. Primary highways provide for the movement of traffic between planning areas; the movement of traffic to and from activity centers within planning areas; and/or the distribution of traffic to and from freeways or transportation corridors.”

In addition, the Circulation Element (Figure B-2) identifies operational characteristics of a “Parkway” as follows – “A moderate speed arterial highway abutting and distributing trips to a variety of land uses. This facility primarily serves short-range trips and is a significant urban design corridor. A parkway has emergency parking only and will have considerable parallel and perpendicular pedestrian movement.”

Furthermore, the Circulation Element (Figure B-3) depicts Barranca Parkway as a “Local Feeder

Transit Corridor,” which is defined as follows – Local Feeder Transit Corridors are “transit routes which serve Irvine and provide connections to the inter-city and regional transit corridors [the nearest to the proposed project site of which is at the Barranca/Harvard intersection]. The systems envisioned to serve the corridors are low volume transit facilities (i.e. bus, train, people mover, dial-a-ride) operating within the available public right-of-way.”

East Yale Loop – East Yale Loop is a north-south arterial east of the proposed project site. The City General Plan Circulation Element designates East Yale Loop as a Secondary Highway; that is a four-lane undivided arterial roadway. Its posted speed limit is 40 miles per hour. On-street bicycle lanes and sidewalks are provided on both sides of the street in the vicinity of the proposed project site. On-street parking is prohibited. Orange County Transportation Agency Bus Route 175 serves East Yale Loop.

Osborn – Osborn is an east-west roadway directly adjacent to and south of the proposed project site. Osborn is a two-lane undivided Local Street according to the General Plan Circulation Element. Its posted speed limit is 25 miles per hour. Sidewalks are provided on both sides of the street. There are no bicycle lanes. On-street parking is prohibited. The existing two driveway access points are on Osborn. Pedestrians can access the proposed project site from any side.

Transit Corridors

The following four hierarchical transit corridors comprise the public transit system.

- Regional Transit Corridors – implemented by OCTA
- Intercity Public Transit Corridors – providing connections between Irvine and other destinations serving inter-city and intra-city traffic
- Intra-City Public Transit Corridors – local corridors serving planning areas that provide a feeder system to inter-city and regional transit corridors; low volume transit facilities such as bus, tram, people-mover, dial-a-ride) that operate within the available public rights-of-ways
- Intra-City Advanced Transit Corridors – corridors that connect to regional transit corridors to serve inter-city and intra-city travel needs; entail maximum usage of overlapping or multi-purpose rights-of-way such as flood control rights-of-way, utility easements, planning area edge buffers, arterial parkways, safety lanes, open space areas; envisioned to be a future component

Public Transit System

The public transit system in the City of Irvine is designed to serve local and regional travel needs. Amtrak and Metrolink trains traverse through Irvine along Los Angeles to San Diego routes. The Irvine station (Irvine Transportation Center) is located at 15215 Barranca Parkway, approximately 3 miles east of the proposed project site. The Irvine Transportation Center also serves as a bus terminal. The Tustin Metrolink Station is approximately 2 miles from the proposed project site, at 2975 Edinger.

The City of Irvine General Plan Circulation Element (Figure B-3 – Public Transit) depicts public transit corridors throughout the City. Jeffrey Road, east of the proposed project site is designated a “Regional Advanced Transit Corridor,” which is defined as a transit corridor that serves Irvine and provides connection to inter-City and regional transit corridors. A Regional Advanced Transit Corridor uses flood control rights-of-way, utility easements, planning area edge buffers, arterial parkways, safety lanes, or similar open space areas. The Circulation Element further notes “the system envisioned for these corridors is an elevated, grade-separated transit facility.” Barranca Parkway adjacent to the proposed project site and extending from Harvard east to the City boundary and the entire circular length of Yale Loop are designated as “Local Feeder Transit Corridors.” These Transit Corridors are designated as transit routes that serve Irvine and provide connections to the inter-city and regional transit corridors. The Circulation Element envisions Local Feeder Transit Corridors as low volume transit facilities (bus, tram, etc.) that operate within the available public right-of-way.

Orange County Transportation Authority bus stops are provided at the northeast corner of Barranca Parkway/Lyon and the northwest and northeast corners of Barranca Parkway/East Yale Loop. Additional Transit Authority bus stops for Route 86 are located on the northwest and southeast corners of East Yale Loop/Alton Parkway. Route 86 provides transportation from the City of Costa Mesa to the City of Mission Viejo and connects with other major bus lines at the Irvine Transportation Center and in the South Coast Plaza area. The proposed project is providing a bus stop turnout on the north side of the project site on Barranca Parkway for future Transit Authority bus routes traveling eastbound on Barranca Parkway.

Trail System

The trail system within Irvine is comprised of one equestrian trail and numerous biking and hiking trails that provide commuting and recreational opportunities. Bicycle trails extend throughout Irvine and connect all areas of the City. The bicycle trail closest to the proposed project site extends along San Diego Creek, approximately 300 feet southerly of the site.

Bikeways

The City of Irvine General Plan Circulation Element includes a list of objectives and policies related to planning for bicycle routes. The bicycle circulation objective is “to plan, provide and maintain a comprehensive bicycle trail network that, together with the regional trail system, encourages increase use of bicycle trails for commuters and recreational purposes.” There currently are Class II on-street bicycle lanes on both sides of Barranca Parkway and East Yale Loop. The San Diego Creek Trail provides a Class I off-street bicycle land approximately one-half mile south of the proposed project site.

4.16.2 EXISTING REGULATIONS & STANDARD CONDITIONS

City of Irvine General Plan Circulation Element Objectives and Policies

The following General Plan Circulation Element Objectives and Policies are relevant to the

proposed project.

Objective B-1: ROADWAY DEVELOPMENT – Plan, provide and maintain an integrated vehicular circulation system to accommodate projected local and regional needs

Policy (d) – Evaluate the incremental additions to the roadway system through use of the City transportation model.

Objective B-2: ROADWAY DESIGN – Develop a vehicular circulation system consistent with high standards of transportation engineering safety and with sensitivity to adjoining land uses

Policy (f) – Visually enhance the appearance of roadways and parking areas through design techniques and landscaping. Particular attention should be paid to streetscape design and the creation of new, and preservation of existing, view corridors.

Policy (g) – Include mitigation measures in the approval of all proposed developments to minimize negative impacts of the automobile.

Objective B-3: PEDESTRIAN CIRCULATION – Establish a pedestrian circulation system to support and encourage walking as a mode of transportation

Policy (b) – Require development to provide safe, convenient, and direct pedestrian access to surrounding land uses and transit stops. Issues such as anticipated interaction between pedestrians and vehicles, proposed infrastructure improvements and design standards shall be considered.

City of Irvine 2012 Circulation Phasing Analysis Report

In the project study area, the City of Irvine 2012 Circulation Phasing Analysis Report indicates the Jeffrey Road/Alton Parkway is a “high-priority intersection.” City TIA Guidelines state a significant impact occurs when a deficient Circulation Phasing Report intersection experiences an increase in Intersection Capacity Utilization of 0.010 or greater rounded to the third decimal place in the interim year (2020).

City of Irvine Level of Service Standards (from the General Plan Growth Management Element)

Level of Service “A” – The volume/capacity ratio ranges from 0 to .60. Traffic volumes are low and speed is not restricted by other vehicles. All signal cycles clear with no vehicles waiting through more than one original cycle. For roadway links, Level of Service A indicates no physical restriction on operating speeds.

Level of Service “B” – The volume/capacity ratio ranges from .61 to .70. Traffic volumes begin to be affected by other traffic. Between 1 and 10 percent of signal cycles have one or more

vehicles that wait through more than one signal/cycle during peak traffic periods. For roadway links, Level of Service B indicates flow with few restrictions on operating speeds.

Level of Service “C” – The volume/capacity ratio ranges from .71 to .80. Operating speeds and maneuverability are closely controlled by other traffic. Between 11 and 30 percent of signal cycles have one or more vehicles that wait through more than one signal cycle during peak traffic periods. For roadway links, Level of Service C indicates stable flow, higher volume, and more restrictions on speed and lane changing.

Level of Service “D” – The volume/capacity ratio ranged from .81 to .90. Traffic will operate at tolerable operating speeds, although with restricted maneuverability. More than 30 percent of signal cycles have one or more vehicles that wait through more than one signal cycle during peak traffic hours. For roadway links, Level of Service D indicates tolerable conditions, approaching unstable flow, and little freedom to maneuver.

Level of Service “E” – The volume/capacity ratio ranges from .91 to 1.0. Traffic will experience restricted speeds, vehicles will frequently have to wait through two or more cycles at signalized intersections, and any additional traffic will result in breakdown of the traffic carrying ability of the system. For roadway links, Level of Service E indicates unstable flow, lower operating speeds than Level of Service D, and some momentary traffic stoppages.

Level of Service “F” – Long queues at traffic, unstable flow, stoppages of long duration with traffic volumes and traffic speed can drop to zero. Traffic volumes will be less than the volume that occurs at Level of Service E. For roadway links, Level of Service F indicates forced flow operation at low speeds there the roadway acts as a storage area and there are many traffic stoppages.

City of Irvine Arterial Highway Definitions Relevant to the Proposed Project

Major Highway – A Major Highway is defined in the General Plan Circulation Element as a divided arterial highway of six to eight through lanes. Jeffrey Road is the closest Major Highway to the proposed project site, and extends perpendicular to Barranca Parkway, approximately one-quarter mile to the east of the proposed project site. Major highways provide for movement of traffic between planning areas and/or distribution of traffic to and from freeways or transportation corridors.

Primary Highway – A Primary Highway is defined in the City General Plan Circulation Element as “a divided arterial highway of four through lanes.” Barranca Parkway adjacent to the proposed project site is a Primary Highway, as depicted on the Circulation Element Figure 4 – Master Plan of Arterial Highways. Primary Highways provide for movement of traffic between planning areas, movement of traffic to and from activity centers within planning areas, and/or distribution of traffic to and from freeways or transportation corridors. Alton Parkway, which runs roughly parallel to Barranca Parkway, south of Barranca Parkway, also is designate a Primary Highway in the proposed project vicinity.

Secondary Highway – A Secondary Highway is defined in the General Plan Circulation Element as an undivided arterial highway of four through lanes. Secondary highways provide for movement of traffic between planning areas and/or movement of traffic to and from activity centers within planning areas. East Yale Loop is the closest Secondary Highway to the proposed project site, approximately one-tenth mile to the east. Creek and Lake are two other Secondary Highways that connect Barranca Parkway west of the proposed project site to Alton Parkway.

City General Plan Circulation Element Figure 2 – Operational Characteristics

The Circulation Element designates operational characteristics of streets in the City by addressing specific characteristics of streets including restricted access, parking prohibitions, and types of traffic using the streets. Relevant functional operational classifications for streets in the vicinity of the proposed project are the following.

Thruway – A Thruway is defined as a relatively high speed arterial highway with restricted access supplementing the freeway system and carrying intermediate range trips to or between major non-residential land uses. A Thruway has emergency parking only and minimal pedestrian interference with traffic. Jeffrey Road is the closest Thruway to the proposed project site and extends through the length of the City in a generally Northeast to Southwest direction with its closest point to the proposed project site approximately .25 miles east.

Parkway – A Parkway is defined as a moderate speed arterial highway abutting and distributing trips to a variety of land uses. This facility primarily serves short-range trips and is a significant urban design element as it borders the activity corridor. A Parkway has emergency parking only and will have considerable parallel and perpendicular pedestrian movement. Barranca Parkway is designated a Parkway throughout the entirety of its length through the City. Alton Parkway also is designated a Parkway.

Collector – There are two types of defined Collectors in the Circulation Element. A Community Collector is defined as a medium speed highway abutting similar land uses with a primary function to collect and distribute trips within a hierarchy of roads and, secondarily, to carry short trips between adjacent neighborhoods. A Community Collector has emergency parking only and has a significant amount of parallel and perpendicular pedestrian traffic. A Local Street is defined as a low speed, low volume roadway primarily for access to residential, business and other abutting properties. A Local Street may have parking and a significant amount of parallel and perpendicular pedestrian traffic. Osborn, Willard and Lyon, which border the proposed project site on three sides, are considered Local Streets.

Project Traffic Impact Analysis

The Traffic Impact Analysis (TIA) prepared for the Project uses the City of Irvine Transportation Analysis Model (ITAM) version (Model No. 15) to forecast 2020, 2035 and Post-2035 approved and pending conditions with and without Project development. The “approved” condition includes each application for development currently approved by the City. The “pending” condition represents projects in the City that are approved and projects currently under review.

The existing plus project scenario was determined by considering the traffic volume differential between the existing no project and existing plus project ITAM runs. The differential was added to existing counts conducted at study area intersections and roadway segments to determine existing plus project conditions. The access analysis examines ITE trip rate based traffic volumes generated by the addition of the Project. This portion of the TIA for project driveways and adjacent intersections was prepared by subtracting existing 2 Osborn volume data from the expected volumes of the Project (except at the project driveways).

Future conditions are based on the funded roadway network and land use assumptions envisioned to be in place by the respective horizon year. Twelve ITAM traffic model runs are required for the future traffic analysis. The model runs are examined with and without the Project under the approved and pending development scenarios.

The Osborn and Lyon roadway segments are not included in ITAM. Therefore, the two roadway segments have been analyzed manually, assuming no ambient growth due to the low potential for growth. Plus project volumes were calculated by distributing Project average daily traffic (ADT) according to the ITAM daily select zone percentages.

Scenarios examined in the TIA are based on ITAM (Model 15) and are as follows.

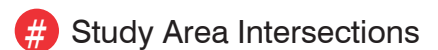
- 2020 Approved Baseline – includes the existing 16,015 square feet of office use and evaluates impacts of each application for development approved by the City
- 2020 Approved Baseline Plus Project – includes impacts of each application for development approved by the City; removes the existing office use; adds 46,800 square feet of medical office use
- 2020 Pending Baseline – includes the existing 16,015 square feet of office use; evaluates cumulative impacts of each application for development currently approved and under review by the City
- 2020 Pending Baseline Plus Project – includes cumulative impacts of each application for development currently approved and under review by the City; removes existing office use; adds 46,800 square feet of medical office use
- 2035 Approved Baseline – includes existing 16,015 square feet of office use and evaluates impacts of each application for development currently approved by the City
- 2035 Approved Baseline Plus Project – includes impacts of each application for development currently approved by the City; removes the existing office use; adds 46,800 square feet of medical office use
- 2035 Pending Baseline – includes existing 16,015 square feet of office use and evaluates cumulative impacts of each application for development currently approved and under review by the City
- 2035 Pending Baseline Plus Project – includes cumulative impacts of each application for development currently approved and under review by the City; removes existing office use; adds 46,800 square feet of medical office use
- Post-2035 Approved Baseline – includes existing 16,015 square feet of office use and evaluates impacts of each application for development currently approved by the City

- Post-2035 Approved Baseline Plus Project – includes impacts of each application for development currently approved by the City; removes existing office use; adds 46,800 square feet of medical office use
- Post-2035 Pending Baseline – includes existing 16,015 square feet of office use and evaluates cumulative impacts of each application for development currently approved and under review by the City
- Post-2035 Pending Baseline Plus Project – includes cumulative impacts of each application for development currently approved and under review by the City; removes existing office use; adds 46,800 square feet of medical office use

The TIA identifies Project impacts at study area intersections and roadway segments for all future conditions indicated above, assuming improvements to the circulation system identified in ITAM. In addition, the TIA includes forecast intersection turn-movement Level of Service (LOS) volumes, Intersection Capacity Utilization (ICU) worksheets, and Average Daily Trips (ADT) volumes.

Traffic Performance Criteria

The TIA used the intersection capacity utilization (ICU) methodology to determine peak-hour operations at signalized intersections in the study area; refer to Exhibit 4-12, Study Area Intersections (Figure 1 of the Traffic Impact Analysis). The methodology compares the volume-to-capacity ratios of conflicting turn movements at an intersection, sums these critical conflicting ratios for each intersection approach, and determines the overall intersection capacity utilization (ICU). The resulting ICU is expressed in terms of Level of Service (LOS), where LOS A represents free-flow activity and LOS F represents over-capacity operation. According to the City of Irvine TIA Guidelines, LOS at an intersection or roadway in the study area is considered unsatisfactory when the ICU exceeds 0.90 (LOS D). LOS volume-to-capacity ratios are listed below.



In addition to the project impact assessment, the TIA performed additional analysis using the 2010 Highway Capacity Manual methodology to determine the LOS at signalized California Department of Transportation (Caltrans) intersections and un-signalized intersections in the study area. This presents LOS in terms of control delay (expressed in seconds per vehicle). The un-signalized intersection methodology presents LOS in terms of total intersection delay and approach delay of the major and minor streets (in seconds per vehicle). Within the City of Irvine, HCM and delay based LOS are not the adopted methodology or basis for impact assessment.

The relationship of ICU to LOS is demonstrated in Table 4.16-A below.

TABLE 4.16-A Relationship of ICU to LOS	
LEVEL OF SERVICE	ICU
A	0.00 – 0.60
B	0.61 – 0.70
C	0.71 – 0.80
D	0.81 – 0.90
E	0.91 – 1.00
E	>1.00

The following table expresses the relationship of intersection delay to LOS.

TABLE 4.16-B Delay to Level of Service		
LEVEL OF SERVICE	SIGNALIZED INTERSECTION DELAY (SECONDS)	UNSIGNALIZED INTERSECTION DELAY (SECONDS)
A	≤ 10.0	≤ 10.0
B	>10.0 and ≤ 20.0	>10.0 and ≤ 15.0
C	>20.0 and ≤ 35.0	>15.0 and ≤ 25.0
D	>35.0 and ≤ 55.0	>25.0 and ≤ 35.0
E	>55.0 and ≤ 80.0	>35.0 and ≤ 50.0
F	>80.0	>50.0

The following Table 4.16-C indicates theoretical daily capacities for roadways in the study area (as contained in the City Traffic Impact Analysis Guidelines)

TABLE 4.16-C		
Daily Capacities of Study Area Roadways		
FACILITY TYPE	NUMBER OF LANES	THEORETICAL CAPACITY
MAJOR HIGHWAY	8	72,000
	7	63,000
	6	54,000
PRIMARY HIGHWAY	4	32,000
SECONDARY HIGHWAY	4	28,000
COMMUTER	2	13,000

A project impact occurs in Irvine when the roadway link or intersection in question exceeds the acceptable LOS (LOS D) *and* the increase in the LOS (ICU or V/C) with the project is greater than or equal to 0.02. Project mitigation will be required back to a LOS 0.90 or the baseline (No Project condition) if the baseline LOS is greater than 0.90.

The TIA for the project analyzed the proposed project driveway on Osborn based on the design criteria recommended in the City Transportation Design Procedure (TDP) (February, 2007), which established uniform policies and procedures for reviewing traffic design plans in Irvine. The TDP were used to evaluate the roadway design features that may be impacted by development and operation of the project. A detailed analysis methodology and approach are contained in the project TIA.

4.16.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines, the proposed project may create a significant impact if it would:

- A) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- B) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- C) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- D) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment);
- E) Result in inadequate emergency access;

- F) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

4.16.4 ENVIRONMENTAL IMPACTS

- A) **LESS THAN SIGNIFICANT IMPACT.** The TIA prepared for the proposed project indicates the project would not result in impacts to intersections or roadway segments as indicated in Exhibit 4-12 above. The Impact Analysis study area boundary included the following 25 intersections and adjacent roadway links.

- Culver Drive/Irvine Center Drive
- Culver Drive/Warner Avenue
- Culver Drive/Barranca Parkway
- Culver Drive/Alton Parkway
- Culver Drive/Main Street
- Culver Drive/Interstate-405 northbound ramps
- Culver Drive/Interstate-405 southbound ramps
- West Yale Loop/Barranca Parkway
- West Yale Loop/Alton Parkway
- Lake Road/Barranca Parkway
- Lake Road/Alton Parkway
- Yale Avenue/Irvine Center Drive
- Creek Road/Barranca Parkway
- Creek Road/Alton Parkway
- East Yale Loop/Barranca Parkway
- East Yale Loop/Alton Parkway
- Jeffrey Road/Irvine Center Drive
- Jeffrey Road/Barranca Parkway
- Jeffrey Road/Alton Parkway
- Jeffrey Road/Interstate-405 northbound ramps
- Jeffrey Road/Interstate-405 southbound ramps
- Sand Canyon Avenue/Barranca Parkway
- Sand Canyon Avenue/Alton Parkway
- Lyon/Barranca Parkway (intersection is not included in the ITAM; future LOS will be evaluated based on growth form ITAM along Barranca Parkway and East Yale Loop)
- East Yale Loop/Osborn (intersection is not included in the ITAM; future LOS will be evaluated based on growth form ITAM along Barranca Parkway and East Yale Loop)

The following Table 4.16-D provides data on Project Trip Generation, which was derived from peak hour driveway counts taken on June 7, 2016 for the existing site and from the 9th Edition ITE “Trip Generation Manual” were used for the proposed medical office use.

TABLE 4.16-D Trip Generation Comparison								
			AM Peak Hour			PM Peak Hour		
Land Use	Size (Sq Ft)	ADT	In	Out	Total	In	Out	Total
Trip Rates								
Medical Office		36.13	1.89	0.50	2.39	1.00	2.57	3.57
Existing Trip Generation								
2 Osborn – Existing Volumes	16,105		21	4	25	5	15	20
Project Trip Generation								
2 Osborn	46,800	1,691	88	23	111	47	120	167
Net Difference		1,691	67	19	86	42	105	147

As the above table demonstrates, the Project would generate 1,691 ADT, including 86 a.m. peak hour trips and 147 p.m. peak hour trips.

Existing Baseline and Plus-Project Traffic Volumes and Levels of Service

The project TIA contains existing traffic counts for study area intersections provided by the City of Irvine and by National Data & Surveying Services. Existing traffic counts are provided in the TIA Appendices. All study area intersections function at satisfactory Levels of Service in the existing and existing plus project condition; refer to Table 4.16-E and 4.16-F. The project TIA concludes as follows “With the addition of the project in the existing setting, all study area intersections would continue to operate at satisfactory LOS. Therefore, the project can be implemented in the existing condition with no significant peak-hour intersection impacts.” In addition, the project TIA found that both the Existing Baseline and Plus-Project ADT (average daily traffic) volumes and volume-to-capacity ratios indicate “all study area roadway segments currently operate at satisfactory LOS with the exception of Culver Drive from Main Street south to the Interstate-405 ramps, which operate at LOS E. With the addition of the proposed project in this setting, the same roadway segment is forecast to continue operating at LOS E. However, the roadway segment volume-to-capacity ratio does not increase by 0.02 or greater; therefore, impacts are less than significant. The conclusion is that “... no significant project impacts are created on roadway segments with implementation of the project in an existing setting.”

TABLE 4.16-E
Existing Intersection LOS Summary

Study Area No.	ITAM Node No.	Intersection	Baseline						Plus Project				Peak-Hour Δ		Significant Impact?
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		ICU or Delay				
			ICU / Delay	LOS	ICU / Delay	LOS	ICU / Delay	LOS	ICU / Delay	LOS	AM	PM			
1	226	Culver Drive/Irvine Center Drive	0.65	B	0.71	C	0.65	B	0.72	C	0.00	0.01	No		
2	227	Culver Drive/Warner Avenue	0.69	B	0.67	B	0.69	B	0.67	B	0.00	0.00	No		
3	228	Culver Drive/Barranca Parkway	0.72	C	0.77	C	0.72	C	0.76	C	0.00	(0.01)	No		
4	229	Culver Drive/Alton Parkway	0.73	C	0.78	C	0.73	C	0.80	C	0.00	0.02	No		
5	230	Culver Drive/Main Street	0.65	B	0.66	B	0.65	B	0.66	B	0.00	0.00	No		
6	232	Culver Drive/I-405 NB Ramps	0.53	A	0.72	C	0.52	A	0.72	C	(0.01)	0.00	No		
7	233	Culver Drive/I-405 SB Ramps	HCM 9.9	A	22.3	C	9.9	A	22.4	C	0.00	0.10	No		
8	264	West Yale Loop/Barranca Parkway	HCM 18.4	B	25.7	C	18.5	B	25.7	C	0.10	0.00	No		
9	268	West Yale Loop/Alton Parkway	0.51	A	0.52	A	0.51	A	0.52	A	0.00	0.00	No		
10	265	Lake Road/Barranca Parkway	0.49	A	0.53	A	0.49	A	0.53	A	0.00	0.00	No		
11	269	Lake Road/Alton Parkway	0.51	A	0.55	A	0.51	A	0.56	A	0.00	0.01	No		
12	261	Yale Avenue/Irvine Center Drive	0.54	A	0.45	A	0.54	A	0.45	A	0.00	0.00	No		
13	266	Creek Road/Barranca Parkway	0.47	A	0.59	A	0.47	A	0.59	A	0.00	0.00	No		
14	270	Creek Road/Alton Parkway	0.45	A	0.43	A	0.45	A	0.44	A	0.00	0.01	No		
15	267	East Yale Loop/Barranca Parkway	0.60	A	0.54	A	0.60	A	0.55	A	0.00	0.01	No		
16	271	East Yale Loop/Alton Parkway	0.63	B	0.55	A	0.62	B	0.56	A	(0.01)	0.01	No		
17	289	Jeffrey Road/Irvine Center Drive	0.67	B	0.79	C	0.67	B	0.79	C	0.00	0.00	No		
18	290	Jeffrey Road/Barranca Parkway	0.76	C	0.73	C	0.77	C	0.73	C	0.01	0.00	No		
19	291	Jeffrey Road/Alton Parkway	0.88	D	0.77	C	0.90	D	0.78	C	0.02	0.01	No		
20	293	Jeffrey Road/I-405 NB Ramps	0.74	C	0.75	C	0.74	C	0.74	C	0.00	(0.01)	No		
21	294	Jeffrey Road/I-405 SB Ramps	HCM 24.1	C	28.5	C	24.0	C	28.4	C	(0.10)	(0.10)	No		
22	309	Sand Canyon Avenue/Barranca Parkway	0.64	B	0.60	A	0.64	B	0.60	A	0.00	0.00	No		
23	310	Sand Canyon Avenue/Alton Parkway	HCM 7.9	A	9.1	A	7.9	A	9.1	A	0.00	0.00	No		
24	-	Lyon/Barranca Parkway	0.48	A	0.53	A	0.47	A	0.53	A	(0.01)	0.00	No		
25	-	East Yale Loop/Osborn	0.57	A	0.63	B	0.57	A	0.62	B	0.00	(0.01)	No		
			0.38	A	0.47	A	0.30	A	0.49	A	(0.08)	0.02	No		
			HCM 26.5	D	19.2	C	29.8	D	21.6	C	3.30	2.40	No		

NB = northbound
SB = southbound

I-405 = Interstate 405

ICU = Intersection Capacity Utilization
HCM = Highway Capacity Manual

= exceeds City's Level of Service (LOS) criteria
Delay is reported in seconds (sec).

TABLE 4.16-F
Existing ADT Volumes and V/C Ratios

ITAM Post No.	Roadway	Segment	Capacity	Baseline			Plus Project			Δ V/C Ratio	Significant Impact?
				ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS		
217	Culver Drive	Irvine Center to Warner	54,000	42,873	0.79	C	42,944	0.80	C	0.01	No
218	Culver Drive	Warner to Barranca	54,000	41,550	0.77	C	41,599	0.77	C	0.00	No
219	Culver Drive	Barranca to Alton	54,000	47,296	0.88	D	47,350	0.88	D	0.00	No
220	Culver Drive	Alton to Main	54,000	45,310	0.84	D	45,358	0.84	D	0.00	No
221	Culver Drive	Main to I-405 Ramps	54,000	50,022	0.93	E	50,041	0.93	E	0.00	No
263	West Yale Loop	Barranca to Alton	28,000	5,816	0.21	A	5,806	0.21	A	0.00	No
268	Lake Road	Barranca to Alton	13,000	6,055	0.47	A	6,051	0.47	A	0.00	No
1565	Creek Road	Barranca to Alton	13,000	3,393	0.26	A	3,390	0.26	A	0.00	No
-	Osborn	Barranca to Willard	13,000	1,052	0.08	A	1,407	0.11	A	0.03	No
-	Osborn	Willard to E. Yale	13,000	2,188	0.17	A	3,186	0.25	A	0.08	No
-	Willard	Barranca to Osborn	13,000	359	0.03	A	697	0.05	A	0.02	No
273	East Yale Loop	Barranca to Alton	28,000	9,758	0.35	A	10,159	0.36	A	0.01	No
295	Jeffrey Road	Irvine Center to Barranca	54,000	40,166	0.74	C	40,306	0.75	C	0.01	No
297	Jeffrey Road	Barranca to Alton	54,000	39,188	0.73	C	39,193	0.73	C	0.00	No
299	Jeffrey Road	Alton to I-405 Ramps	54,000	47,758	0.88	D	48,146	0.89	D	0.01	No
319	Sand Canyon Ave	Barranca to Alton	54,000	24,900	0.46	A	24,861	0.46	A	0.00	No
677	Irvine Center Drive	Culver to Yale	54,000	24,600	0.46	A	24,600	0.46	A	0.00	No
678	Irvine Center Drive	Yale to Jeffrey	54,000	22,200	0.41	A	22,250	0.41	A	0.00	No
750	Barranca Pkwy	Culver to W. Yale	32,000	28,072	0.88	D	28,271	0.88	D	0.00	No
751	Barranca Pkwy	W. Yale to Lake	32,000	25,697	0.80	C	25,917	0.81	D	0.01	No
753	Barranca Pkwy	Lake to Creek	32,000	16,547	0.52	A	16,781	0.52	A	0.00	No
755	Barranca Pkwy	Creek to Lyon	32,000	22,179	0.69	B	22,464	0.70	B	0.01	No
1713	Barranca Pkwy	Lyon to E. Yale	32,000	22,277	0.70	B	22,285	0.70	B	0.00	No
757	Barranca Pkwy	E. Yale to Jeffrey	32,000	25,124	0.79	C	25,397	0.79	C	0.00	No
759	Barranca Pkwy	Jeffrey to Sand Canyon	32,000	13,200	0.41	A	13,191	0.41	A	0.00	No
784	Alton Parkway	Culver to W. Yale	32,000	21,982	0.69	B	22,037	0.69	B	0.00	No
785	Alton Parkway	W. Yale to Lake	32,000	21,123	0.66	B	21,171	0.66	B	0.00	No
787	Alton Parkway	Lake to Creek	32,000	16,764	0.52	A	16,816	0.53	A	0.01	No
789	Alton Parkway	Creek to E. Yale	32,000	16,697	0.52	A	16,738	0.52	A	0.00	No
791	Alton Parkway	E. Yale to Jeffrey	32,000	25,882	0.81	D	26,270	0.82	D	0.01	No
796	Alton Parkway	Jeffrey to Sand Canyon	32,000	20,600	0.64	B	20,503	0.64	B	0.00	No

A = change
 = exceeds City's level of service (LOS) criteria
 ADT = average daily trips
 V/C = volume-to-capacity
 ITAM = Irvine Transportation Analysis Model
 I-405 = Interstate 405

Interim Year 2020 Approved Baseline and Plus-Project Traffic Volumes and Levels of Service

The TIA concludes that all study area intersections are forecast to operate at satisfactory LOS in the 2020 Approved Baseline condition with the exception of Jeffrey Road/Alton Parkway (LOS E in the a.m. peak hour) and Jeffrey Road/I-405 Northbound Ramps (LOS E in the p.m. peak hour); refer to Table 4.16-G. With addition of the proposed project (Plus Project), the same two study area intersections are forecast to continue to operate at LOS E. The peak-hour Intersections Capacity Utilizations do not increase by 0.02 or greater at any signalized intersection, therefore impacts are less than significant.

TABLE 4.16-G
2020 Approved Intersection LOS Summary

Study Area No.	ITAM Node No.	Intersection	Baseline				Plus Project				Peak-Hour Δ		Significant Impact?
			AM Peak Hour ICU / Delay	LOS	PM Peak Hour ICU / Delay	LOS	AM Peak Hour ICU / Delay	LOS	PM Peak Hour ICU / Delay	LOS	AM	PM	
1	226	Culver Drive/Irvine Center Drive	0.73	C	0.72	C	0.73	C	0.72	C	0.00	0.00	No
2	227	Culver Drive/Warner Avenue	0.73	C	0.65	B	0.73	C	0.65	B	0.00	0.00	No
3	228	Culver Drive/Barranca Parkway	0.77	C	0.82	D	0.77	C	0.82	D	0.00	0.00	No
4	229	Culver Drive/Alton Parkway	0.79	C	0.84	D	0.79	C	0.84	D	0.00	0.00	No
5	230	Culver Drive/Main Street	0.68	B	0.71	C	0.69	B	0.71	C	0.01	0.00	No
6	232	Culver Drive/I-405 NB Ramps	0.56	A	0.76	C	0.56	A	0.76	C	0.00	0.00	No
7	233	Culver Drive/I-405 SB Ramps	11.6	B	25.9	C	11.6	B	25.8	C	0.00	(0.10)	No
8	264	West Yale Loop/Barranca Parkway	0.65	B	0.69	B	0.65	B	0.69	B	0.00	0.00	No
9	268	West Yale Loop/Alton Parkway	20.2	C	28.4	C	20.3	C	28.4	C	0.10	0.00	No
10	265	Lake Road/Barranca Parkway	0.53	A	0.59	A	0.52	A	0.60	A	(0.01)	0.01	No
11	269	Lake Road/Alton Parkway	0.56	A	0.57	A	0.56	A	0.57	A	0.00	0.00	No
12	261	Lake Road/Alton Parkway	0.52	A	0.62	B	0.53	A	0.62	B	0.01	0.00	No
13	266	Creek Road/Barranca Parkway	0.57	A	0.50	A	0.57	A	0.50	A	0.00	0.00	No
14	270	Creek Road/Alton Parkway	0.60	A	0.61	B	0.60	A	0.61	B	0.00	0.00	No
15	267	East Yale Loop/Barranca Parkway	0.57	A	0.54	A	0.58	A	0.54	A	0.01	0.00	No
16	271	East Yale Loop/Alton Parkway	0.47	A	0.47	A	0.46	A	0.47	A	(0.01)	0.00	No
17	289	Jeffrey Road/Irvine Center Drive	0.64	B	0.58	A	0.65	B	0.58	A	0.01	0.00	No
18	290	Jeffrey Road/Barranca Parkway	0.69	B	0.61	B	0.69	B	0.61	B	0.00	0.00	No
19	291	Jeffrey Road/Alton Parkway	0.81	D	0.90	D	0.81	D	0.90	D	0.00	0.00	No
20	293	Jeffrey Road/I-405 NB Ramps	0.80	C	0.82	D	0.80	C	0.82	D	0.00	0.00	No
21	294	Jeffrey Road/I-405 SB Ramps	0.95	E	0.87	D	0.95	E	0.88	D	0.00	0.01	No
22	309	Sand Canyon Avenue/Barranca Parkway	0.79	C	0.85	D	0.79	C	0.85	D	0.00	0.00	No
23	310	Sand Canyon Avenue/Alton Parkway	28.6	C	56.5	E	28.8	C	54.9	D	0.20	(1.60)	No
24	-	Lyon/Barranca Parkway	0.74	C	0.73	C	0.74	C	0.71	C	0.00	(0.02)	No
25	-	East Yale Loop/Osborn	13.9	B	15.8	B	13.8	B	15.5	B	(0.10)	(0.30)	No
			0.61	B	0.58	A	0.60	A	0.58	A	(0.01)	0.00	No
			0.69	B	0.71	C	0.69	B	0.71	C	0.00	0.00	No
			0.41	A	0.47	A	0.41	A	0.50	A	0.00	0.03	No
			33.5	D	20.3	C	38.6	E	23.1	C	5.10	2.80	No

NB = northbound
SB = southbound

I-405 = Interstate 405

ICU = Intersection Capacity Utilization
HCM = Highway Capacity Manual

= exceeds City's Level of Service (LOS) criteria
Delay is reported in seconds (sec).

Average Daily Traffic volumes and volume-to-capacity ratios for 2020 approved (baseline and plus-project) conditions indicate “all study area roadway segments currently operate at satisfactory LOS with the exception of Culver Drive from Main Street to the Interstate-405 ramps (LOS E), Barranca Parkway from Culver Drive to West Yale Loop (LOS E), and Alton Parkway from East Yale Loop to Jeffrey Road (LOS E), refer to Table 4.16-H. The conclusion is that “with the addition of the project, the same three roadway segments are forecast to continue operating at LOS E.” Since the roadway segment volume-to-capacity ratio would not increase by 0.02 or greater at these locations with addition of project traffic, no significant project impacts would be created on roadway segments with implementation of the project in the 2020 approved condition. The segment of Culver Drive between Barranca Parkway and Alton Parkway goes from LOS D to LOS E with the addition of the project in the 2020 “Approved Baseline and Plus-Project” development scenario. However a peak hour link analysis shows this segment will operate satisfactorily in both directions during both peak hours. Therefore, no significant project impacts are created on roadway segments with the implementation of the project in the 2020 condition.

TABLE 4.16-H
2020 Approved ADT Volumes and V/C Ratios

ITAM Post No.	Roadway	Segment	Capacity	Baseline			Plus Project			Δ V/C Ratio	Significant Impact?
				ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS		
217	Culver Drive	Irvine Center to Warner	54,000	44,500	0.82	D	44,600	0.83	D	0.01	No
218	Culver Drive	Warner to Barranca	54,000	43,100	0.80	C	43,200	0.80	C	0.00	No
219	Culver Drive	Barranca to Alton	54,000	48,800	0.90	D	48,900	0.91	E	0.01	No
	AM Peak Hour	northbound	4,800	1,361	0.28	A	1,360	0.28	A	0.00	No
		southbound	4,800	2,634	0.55	A	2,623	0.55	A	0.00	No
	PM Peak Hour	northbound	4,800	2,591	0.54	A	2,590	0.54	A	0.00	No
		southbound	4,800	1,622	0.34	A	1,657	0.35	A	0.01	No
220	Culver Drive	Alton to Main	54,000	47,000	0.87	D	47,100	0.87	D	0.00	No
221	Culver Drive	Main to I-405 Ramps	54,000	50,500	0.94	E	50,600	0.94	E	0.00	No
263	West Yale Loop	Barranca to Alton	28,000	6,300	0.23	A	6,300	0.23	A	0.00	No
268	Lake Road	Barranca to Alton	13,000	6,300	0.48	A	6,300	0.48	A	0.00	No
1565	Creek Road	Barranca to Alton	13,000	3,900	0.30	A	3,900	0.30	A	0.00	No
-	Osborn	Barranca to Willard	13,000	1,052	0.08	A	1,407	0.11	A	0.03	No
-	Osborn	Willard to E. Yale	13,000	2,188	0.17	A	3,186	0.25	A	0.08	No
-	Willard	Barranca to Osborn	13,000	359	0.03	A	697	0.05	A	0.02	No
273	East Yale Loop	Barranca to Alton	28,000	10,600	0.38	A	11,000	0.39	A	0.01	No
295	Jeffrey Road	Irvine Center to Barranca	54,000	43,200	0.80	C	43,300	0.80	C	0.00	No
297	Jeffrey Road	Barranca to Alton	54,000	41,400	0.77	C	41,300	0.76	C	0.01	No
299	Jeffrey Road	Alton to I-405 Ramps	54,000	48,300	0.89	D	48,200	0.89	D	0.00	No
319	Sand Canyon Ave	Barranca to Alton	54,000	31,700	0.59	A	31,700	0.59	A	0.00	No
677	Irvine Center Drive	Culver to Yale	54,000	30,500	0.56	A	30,500	0.56	A	0.00	No
678	Irvine Center Drive	Yale to Jeffrey	54,000	27,500	0.51	A	27,500	0.51	A	0.00	No
750	Barranca Pkwy	Culver to W. Yale	32,000	30,800	0.96	E	31,100	0.97	E	0.01	No
751	Barranca Pkwy	W. Yale to Lake	32,000	27,700	0.87	D	28,100	0.88	D	0.01	No
753	Barranca Pkwy	Lake to Creek	32,000	25,000	0.78	C	25,400	0.79	C	0.01	No
755	Barranca Pkwy	Creek to Lyon	32,000	24,200	0.76	C	24,600	0.77	C	0.01	No
1713	Barranca Pkwy	Lyon to E. Yale	32,000	24,200	0.76	C	24,300	0.76	C	0.00	No
757	Barranca Pkwy	E. Yale to Jeffrey	32,000	26,700	0.83	D	27,100	0.85	D	0.02	No
759	Barranca Pkwy	Jeffrey to Sand Canyon	32,000	15,700	0.49	A	15,700	0.49	A	0.00	No
784	Alton Parkway	Culver to W. Yale	32,000	25,500	0.80	C	25,500	0.80	C	0.00	No
785	Alton Parkway	W. Yale to Lake	32,000	25,700	0.80	C	25,700	0.80	C	0.00	No
787	Alton Parkway	Lake to Creek	32,000	23,000	0.72	C	23,000	0.72	C	0.00	No
789	Alton Parkway	Creek to E. Yale	32,000	18,200	0.57	A	18,200	0.57	A	0.00	No
791	Alton Parkway	E. Yale to Jeffrey	32,000	29,700	0.93	E	30,000	0.94	E	0.01	No
796	Alton Parkway	Jeffrey to Sand Canyon	32,000	20,400	0.64	B	20,600	0.64	B	0.00	No

Δ = change

shaded = exceeds City's level of service (LOS) criteria

analysis = Peak Hour Link Analysis

ADT = average daily trips

V/C = volume-to-capacity

ITAM = Irvine Transportation Analysis Model

I-405 = Interstate 405

TABLE 4.16-I
2020 Pending Intersection LOS Summary

Study Area No.	ITAM Node No.	Intersection	Baseline			Plus Project			Peak-Hour Δ ICU or Delay		Significant Impact?
			AM Peak Hour ICU / Delay	LOS	PM Peak Hour ICU / Delay	LOS	AM Peak Hour ICU / Delay	LOS	PM Peak Hour ICU / Delay	LOS	
1	226	Culver Drive/Irvine Center Drive	0.73	C	0.73	C	0.74	C	0.73	C	No
2	227	Culver Drive/Warner Avenue	0.72	C	0.65	B	0.72	C	0.65	B	No
3	228	Culver Drive/Barranca Parkway	0.77	C	0.82	D	0.77	C	0.82	D	No
4	229	Culver Drive/Alton Parkway	0.79	C	0.84	D	0.79	C	0.84	D	No
5	230	Culver Drive/Main Street	0.68	B	0.71	C	0.68	B	0.71	C	No
6	232	Culver Drive/I-405 NB Ramps	0.56	A	0.76	C	0.56	A	0.76	C	No
7	233	Culver Drive/I-405 SB Ramps	11.7	B	25.7	C	11.6	B	25.5	C	No
8	264	West Yale Loop/Barranca Parkway	0.65	B	0.69	B	0.65	B	0.69	B	No
9	268	West Yale Loop/Alton Parkway	0.52	A	0.60	A	0.53	A	0.60	A	No
10	265	Lake Road/Barranca Parkway	0.56	A	0.58	A	0.56	A	0.56	A	No
11	269	Lake Road/Alton Parkway	0.53	A	0.62	B	0.52	A	0.62	B	No
12	261	Yale Avenue/Irvine Center Drive	0.57	A	0.51	A	0.57	A	0.51	A	No
13	266	Creek Road/Barranca Parkway	0.61	B	0.61	B	0.61	B	0.61	B	No
14	270	Creek Road/Alton Parkway	0.58	A	0.54	A	0.59	A	0.54	A	No
15	267	East Yale Loop/Barranca Parkway	0.47	A	0.47	A	0.47	A	0.47	A	No
16	271	East Yale Loop/Alton Parkway	0.65	B	0.58	A	0.64	B	0.58	A	No
17	289	Jeffrey Road/Irvine Center Drive	0.69	B	0.61	B	0.70	B	0.61	B	No
18	290	Jeffrey Road/Barranca Parkway	0.82	D	0.91	E	0.82	D	0.91	E	No
19	291	Jeffrey Road/Alton Parkway	0.81	D	0.83	D	0.81	D	0.82	D	No
20	293	Jeffrey Road/I-405 NB Ramps	0.95	E	0.88	D	0.95	E	0.88	D	No
21	294	Jeffrey Road/I-405 SB Ramps	0.79	C	0.85	D	0.79	C	0.85	D	No
22	309	Sand Canyon Avenue/Barranca Parkway	29.0	C	37.0	E	29.0	C	35.8	E	No
23	310	Sand Canyon Avenue/Alton Parkway	0.74	C	0.73	C	0.74	C	0.73	C	No
24	-	Lyon/Barranca Parkway	13.8	B	15.9	B	13.9	B	15.9	B	No
25	-	East Yale Loop/Osborn	0.59	A	0.59	A	0.60	A	0.60	A	No
			0.70	B	0.72	C	0.72	C	0.72	C	No
			0.41	A	0.47	A	0.41	A	0.50	A	No
			33.5	D	20.4	C	38.6	E	23.1	C	No

Delay is reported in seconds (sec).

ICU = Intersection Capacity Utilization
HCM = Highway Capacity Manual

I-405 = Interstate 405

NB = northbound
SB = southbound

2020 Pending Baseline and Plus-Project Traffic Volumes and Levels of Service

Under the 2020 Pending Baseline, all study area intersections are forecast to operate at satisfactory LOS with the exception of Jeffrey Road/Irvine Center Drive (LOS E in the p.m. peak hour), Jeffrey Road/Alton Parkway (LOS E in the a.m. peak hour), and Jeffrey Road/I-405 Northbound Ramps (LOS E in the p.m. peak hour) refer to Table 4.16-I. With addition of the project, the same three study area intersections are forecast to continue operating at LOS E and the peak-hour Intersections Capacity Utilizations do not increase by 0.02 or greater at any signalized intersection. Therefore, the project can be implemented in the 2020 pending condition with no significant peak-hour intersection impacts. From an operational perspective, the a.m. peak-hour delay at East Yale Loop/Osborn goes from LOS D to LOS E based on HCM methodology with the addition of the project. Since East Yale Loop/Osborn is an unsignalized intersection, traffic signal warrant analysis (TDP-12) was conducted at this intersection and determined that a traffic signal is not warranted for East Yale Loop/Osborn.

Average Daily Traffic volumes and volume-to-capacity ratios for 2020 Pending Baseline conditions indicate “all study area roadway segments currently operate at satisfactory LOS” with the exception of Culver Drive from Main Street to Interstate 405 Ramps (LOS E), Barranca Parkway from Culver Drive to West Yale Loop (LOS E), and Alton Parkway from East Yale Loop to Jeffrey Road (LOS E), refer to Table 4.16-J. The same three roadway segments are forecast to continue operating at LOS E in the Plus Project condition. The segment of Culver Drive between Barranca Parkway and Alton Parkway goes from LOS D to LOS E with the addition of the project in the 2020 “Pending Baseline and Plus-Project” development scenario. However a peak hour link analysis shows this segment will operate satisfactorily in both directions during both peak hours. The roadway segment volume-to-capacity does not increase by 0.02 or greater at these locations. Therefore, no significant project impacts are created on roadway segments with the implementation of the project in the 2020 Pending condition.

TABLE 4.16-J
2020 Pending ADT Volumes and V/C Ratios

ITAM Post No.	Roadway	Segment	Capacity	Baseline			Plus Project			Δ V/C Ratio	Significant Impact?
				ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS		
217	Culver Drive	Irvine Center to Warner	54,000	44,500	0.82	D	44,600	0.83	D	0.01	No
218	Culver Drive	Warner to Barranca	54,000	43,100	0.80	C	43,200	0.80	C	0.00	No
219	Culver Drive	Barranca to Alton	54,000	48,800	0.90	D	48,900	0.91	E	0.01	No
		<i>AM Peak Hour</i>									
		northbound	4,800	1,360	0.28	A	1,360	0.28	A	0.00	No
		southbound	4,800	2,612	0.54	A	2,608	0.54	A	0.00	No
		<i>PM Peak Hour</i>									
		northbound	4,800	2,590	0.54	A	2,594	0.54	A	0.00	No
		southbound	4,800	1,630	0.34	A	1,639	0.34	A	0.00	No
220	Culver Drive	Alton to Main	54,000	47,100	0.87	D	47,200	0.87	D	0.00	No
221	Culver Drive	Main to I-405 Ramps	54,000	50,500	0.94	E	50,600	0.94	E	0.00	No
263	West Yale Loop	Barranca to Alton	28,000	6,300	0.23	A	6,300	0.23	A	0.00	No
268	Lake Road	Barranca to Alton	13,000	6,300	0.48	A	6,300	0.48	A	0.00	No
1565	Creek Road	Barranca to Alton	13,000	3,900	0.30	A	3,900	0.30	A	0.00	No
-	Osborn	Barranca to Willard	13,000	1,052	0.08	A	1,407	0.11	A	0.03	No
-	Osborn	Willard to E. Yale	13,000	2,188	0.17	A	3,186	0.25	A	0.08	No
-	Willard	Barranca to Osborn	13,000	359	0.03	A	697	0.05	A	0.02	No
273	East Yale Loop	Barranca to Alton	28,000	10,600	0.38	A	11,100	0.40	A	0.02	No
295	Jeffrey Road	Irvine Center to Barranca	54,000	43,300	0.80	C	43,400	0.80	C	0.00	No
297	Jeffrey Road	Barranca to Alton	54,000	41,500	0.77	C	41,600	0.77	C	0.00	No
299	Jeffrey Road	Alton to I-405 Ramps	54,000	48,200	0.89	D	48,400	0.90	D	0.01	No
319	Sand Canyon Ave	Barranca to Alton	54,000	31,800	0.59	A	31,800	0.59	A	0.00	No
677	Irvine Center Drive	Culver to Yale	54,000	30,700	0.57	A	30,700	0.57	A	0.00	No
678	Irvine Center Drive	Yale to Jeffrey	54,000	27,800	0.51	A	27,800	0.51	A	0.00	No
750	Barranca Pkwy	Culver to W. Yale	32,000	31,000	0.97	E	31,200	0.98	E	0.01	No
751	Barranca Pkwy	W. Yale to Lake	32,000	27,900	0.87	D	28,100	0.88	D	0.01	No
753	Barranca Pkwy	Lake to Creek	32,000	25,200	0.79	C	25,500	0.80	C	0.01	No
755	Barranca Pkwy	Creek to Lyon	32,000	24,400	0.76	C	24,700	0.77	C	0.01	No
1713	Barranca Pkwy	Lyon to E.Yale	32,000	24,300	0.76	C	24,300	0.76	C	0.00	No
757	Barranca Pkwy	E. Yale to Jeffrey	32,000	26,900	0.84	D	27,200	0.85	D	0.01	No
759	Barranca Pkwy	Jeffrey to Sand Canyon	32,000	15,800	0.49	A	15,800	0.49	A	0.00	No
784	Alton Parkway	Culver to W. Yale	32,000	25,700	0.80	C	25,700	0.80	C	0.00	No
785	Alton Parkway	W. Yale to Lake	32,000	25,900	0.81	D	25,900	0.81	D	0.00	No
787	Alton Parkway	Lake to Creek	32,000	23,200	0.73	C	23,200	0.73	C	0.00	No
789	Alton Parkway	Creek to E. Yale	32,000	18,300	0.57	A	18,400	0.58	A	0.01	No
791	Alton Parkway	E. Yale to Jeffrey	32,000	29,900	0.93	E	30,200	0.94	E	0.01	No
796	Alton Parkway	Jeffrey to Sand Canyon	32,000	20,800	0.65	B	20,800	0.65	B	0.00	No

Δ = change

= exceeds City's level of service (LOS) criteria

italics = Peak-Hour Link Analysis

ADT = average daily trips

V/C = volume-to-capacity

ITAM = Irvine Transportation Analysis Model

I-405 = Interstate 405

2035 Approved Baseline and Plus-Project Traffic Volumes and Levels of Service

Table 4.16-K in the project TIA indicate that in the 2035 approved baseline condition, all study area intersections are forecast to operate at satisfactory LOS with the exception of Jeffrey Road/Alton Parkway (LOS E in both peak hours), Jeffrey Road/I-405 Northbound Ramps (LOS E in the p.m. peak hour) and East Yale Loop/Osborn (LOS E in the a.m. peak hour).” The same three study area intersections are forecast to continue operating at LOS E with addition of the proposed project, but the peak-hour Intersections Capacity Utilizations do not increase by 0.02 or greater at any signalized intersection and therefore do not exceed thresholds.

TABLE 4.16-K
2035 Approved Intersection LOS Summary

Study Area No.	ITAM Node No.	Intersection	Baseline				Plus Project				Peak-Hour Δ		Significant Impact?
			AM Peak Hour ICU / Delay	LOS	PM Peak Hour ICU / Delay	LOS	AM Peak Hour ICU / Delay	LOS	PM Peak Hour ICU / Delay	LOS	AM	PM	
1	226	Culver Drive/Irvine Center Drive	0.79	C	0.81	D	0.79	C	0.81	D	0.00	0.00	No
2	227	Culver Drive/Warner Avenue	0.76	C	0.71	C	0.75	C	0.71	C	(0.01)	0.00	No
3	228	Culver Drive/Barranca Parkway	0.81	D	0.86	D	0.82	D	0.86	D	0.01	0.00	No
4	229	Culver Drive/Alton Parkway	0.82	D	0.89	D	0.82	D	0.89	D	0.00	0.00	No
5	230	Culver Drive/Main Street	0.67	B	0.72	C	0.67	B	0.72	C	0.00	0.00	No
6	232	Culver Drive/I-405 NB Ramps	0.75	C	0.79	C	0.76	C	0.78	C	0.01	(0.01)	No
		<i>HCM</i>	12.7	B	24.9	C	12.8	B	25.2	C	0.10	0.30	No
7	233	Culver Drive/I-405 SB Ramps	0.70	B	0.70	B	0.71	C	0.70	B	0.01	0.00	No
		<i>HCM</i>	26.0	C	31.0	C	26.9	C	30.9	C	0.90	(0.10)	No
8	264	West Yale Loop/Barranca Parkway	0.58	A	0.66	B	0.58	A	0.66	B	0.00	0.00	No
9	268	West Yale Loop/Alton Parkway	0.60	A	0.60	A	0.60	A	0.60	A	0.00	0.00	No
10	265	Lake Road/Barranca Parkway	0.57	A	0.64	B	0.57	A	0.64	B	0.00	0.00	No
11	269	Lake Road/Alton Parkway	0.59	A	0.56	A	0.59	A	0.57	A	0.00	0.01	No
12	261	Yale Avenue/Irvine Center Drive	0.71	C	0.67	B	0.71	C	0.67	B	0.00	0.00	No
13	266	Creek Road/Barranca Parkway	0.64	B	0.58	A	0.64	B	0.57	A	0.00	(0.01)	No
14	270	Creek Road/Alton Parkway	0.48	A	0.50	A	0.49	A	0.50	A	0.01	0.00	No
15	267	East Yale Loop/Barranca Parkway	0.70	B	0.62	B	0.70	B	0.63	B	0.00	0.01	No
16	271	East Yale Loop/Alton Parkway	0.74	C	0.62	B	0.74	C	0.62	B	0.00	0.00	No
17	289	Jeffrey Road/Irvine Center Drive	0.88	D	0.81	D	0.88	D	0.81	D	0.00	0.00	No
18	290	Jeffrey Road/Barranca Parkway ¹	0.81	D	0.84	D	0.81	D	0.84	D	0.00	0.00	No
19	291	Jeffrey Road/Alton Parkway	0.97	E	0.94	E	0.96	E	0.95	E	(0.01)	0.01	No
20	293	Jeffrey Road/I-405 NB Ramps	0.86	D	0.90	D	0.86	D	0.90	D	0.00	0.00	No
		<i>HCM</i>	44.8	D	69.5	E	45.4	D	69.9	E	0.60	0.40	No
21	294	Jeffrey Road/I-405 SB Ramps	0.76	C	0.78	C	0.76	C	0.78	C	0.00	0.00	No
		<i>HCM</i>	14.1	B	16.4	B	14.0	B	16.4	B	(0.10)	0.00	No
22	309	Sand Canyon Avenue/Barranca Parkway	0.64	B	0.67	B	0.64	B	0.67	B	0.00	0.00	No
23	310	Sand Canyon Avenue/Alton Parkway	0.73	C	0.79	C	0.74	C	0.79	C	0.01	0.00	No
24	-	Lyons/Barranca Parkway	0.44	A	0.50	A	0.44	A	0.52	A	0.00	0.02	No
25	-	East Yale Loop/Osborn	37.6	E	22.6	C	44.9	E	26.0	D	7.30	3.40	No
		<i>HCM</i>											

NB = northbound
SB = southbound

I-405 = Interstate 405

ICU = Intersection Capacity Utilization
HCM = Highway Capacity Manual

¹ = exceeds City's Level of Service (LOS) criteria
Delay is reported in seconds (sec).

¹ 0.05 Advanced Transportation Management System (ATMS) credit is assumed at this location.

Average Daily Traffic volumes and volume-to-capacity ratios for 2035 approved (baseline and plus-project) conditions, refer to Table 4.16-L, indicate all study area roadway segments are forecast to operate at satisfactory LOS in the baseline (no project) condition with the exception of the following eight roadways.

- Culver Drive from Barranca Parkway to Alton Parkway (LOS E)
- Culver Drive from Alton Parkway to Main Street (LOS E)
- Culver Drive from Main Street to the I-405 Ramps (LOS E)
- Jeffrey Road from Alton Parkway to the I-405 Ramps (LOS E)
- Barranca Parkway from Culver Drive to West Yale Loop (LOS F)
- Barranca Parkway from West Yale Loop to Lake Road (LOS E)
- Barranca Parkway from East Yale Loop to Jeffrey Road (LOS E)
- Alton Parkway from East Yale Loop to Jeffrey Road (LOS E)

TABLE 4.16-L
2035 Approved ADT Volumes and V/C Ratios

ITAM Post No.	Roadway	Segment	Capacity	Baseline			Plus Project			Δ V/C Ratio	Significant Impact?
				ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS		
217	Culver Drive	Irvine Center to Warner	54,000	47,200	0.87	D	47,200	0.87	D	0.00	No
218	Culver Drive	Warner to Barranca	54,000	45,600	0.84	D	45,600	0.84	D	0.00	No
219	Culver Drive	Barranca to Alton	54,000	52,000	0.96	E	52,100	0.96	E	0.00	No
220	Culver Drive	Alton to Main	54,000	50,500	0.94	E	50,600	0.94	E	0.00	No
221	Culver Drive	Main to I-405 Ramps	54,000	52,100	0.96	E	52,100	0.96	E	0.00	No
263	West Yale Loop	Barranca to Alton	28,000	6,500	0.23	A	6,500	0.23	A	0.00	No
268	Lake Road	Barranca to Alton	13,000	6,400	0.49	A	6,400	0.49	A	0.00	No
1565	Creek Road	Barranca to Alton	13,000	3,900	0.30	A	3,900	0.30	A	0.00	No
-	Osborn	Barranca to Willard	13,000	1,052	0.08	A	1,407	0.11	A	0.03	No
-	Osborn	Willard to E. Yale	13,000	2,188	0.17	A	3,186	0.25	A	0.08	No
-	Willard	Barranca to Osborn	13,000	359	0.03	A	697	0.05	A	0.02	No
273	East Yale Loop	Barranca to Alton	28,000	11,200	0.40	A	11,600	0.41	A	0.01	No
295	Jeffrey Road	Irvine Center to Barranca	54,000	44,900	0.83	D	45,000	0.83	D	0.00	No
297	Jeffrey Road	Barranca to Alton	54,000	43,700	0.81	D	43,800	0.81	D	0.00	No
299	Jeffrey Road	Alton to I-405 Ramps	54,000	51,000	0.94	E	51,300	0.95	E	0.01	No
319	Sand Canyon Ave	Barranca to Alton	54,000	33,600	0.62	B	33,400	0.62	B	0.00	No
677	Irvine Center Drive	Culver to Yale	54,000	36,100	0.67	B	36,000	0.67	B	0.00	No
678	Irvine Center Drive	Yale to Jeffrey	54,000	35,400	0.66	B	35,300	0.65	B	(0.01)	No
750	Barranca Pkwy	Culver to W. Yale	32,000	34,400	1.08	F	34,700	1.08	F	0.00	No
751	Barranca Pkwy	W. Yale to Lake	32,000	31,300	0.98	E	31,500	0.98	E	0.00	No
753	Barranca Pkwy	Lake to Creek	32,000	28,500	0.89	D	28,700	0.90	D	0.01	No
755	Barranca Pkwy	Creek to Lyon	32,000	27,500	0.86	D	27,800	0.87	D	0.01	No
1713	Barranca Pkwy	Lyon to E. Yale	32,000	27,100	0.85	D	27,100	0.85	D	0.00	No
757	Barranca Pkwy	E. Yale to Jeffrey	32,000	29,900	0.93	E	30,100	0.94	E	0.01	No
759	Barranca Pkwy	Jeffrey to Sand Canyon	32,000	18,600	0.58	A	18,600	0.58	A	0.00	No
784	Alton Parkway	Culver to W. Yale	32,000	28,400	0.89	D	28,400	0.89	D	0.00	No
785	Alton Parkway	W. Yale to Lake	32,000	28,400	0.89	D	28,400	0.89	D	0.00	No
787	Alton Parkway	Lake to Creek	32,000	25,400	0.79	C	25,400	0.79	C	0.00	No
789	Alton Parkway	Creek to E. Yale	32,000	20,000	0.63	B	20,000	0.63	B	0.00	No
791	Alton Parkway	E. Yale to Jeffrey	32,000	31,900	1.00	E	32,100	1.00	E	0.00	No
796	Alton Parkway	Jeffrey to Sand Canyon	32,000	23,600	0.74	C	23,500	0.73	C	(0.01)	No

Δ = change

◻ = exceeds City's level of service (LOS) criteria

ADT = average daily trips

V/C = volume-to-capacity

ITAM = Irvine Transportation Analysis Model

I-405 = Interstate 405

Although the above roadways are forecast to continue to operate at unsatisfactory Levels of Service with addition of the proposed project, the roadway segment volumes-to-capacity ratios do not increase by 0.02 or greater at these roadway segments. Therefore, thresholds would not be exceeded and no significant project impacts would be created on roadway segments with implementation of the project in the 2035 approved condition.

2035 Pending Baseline and Plus-Project Traffic Volumes and Levels of Service

Data presented in the project TIA indicate "... all study area intersections are forecast to continue operating at satisfactory LOS in the baseline (no project) condition with the exception of Jeffrey Road/Alton Parkway (LOS E in both peak hours), Jeffrey Road/I-405 Northbound Ramps (LOS E in the pm. peak hour) and East Yale Loop/Osborn (LOS E in the a.m. peak hour)." The same three study area intersections are forecast to continue to operate at LOS E with development of the proposed project. The peak-hour Intersections Capacity Utilizations do not increase by 0.02 or greater at any signalized intersections and therefore do not exceed thresholds.

TABLE 4.16-M
2035 Pending Intersection LOS Summary

Study Area No.	ITAM Node No.	Intersection	Baseline			Plus Project			Peak-Hour Δ		Significant Impact?
			AM Peak Hour ICU/ Delay	LOS	PM Peak Hour ICU/ Delay	LOS	AM Peak Hour ICU/ Delay	LOS	AM	PM	
1	226	Culver Drive/Irvine Center Drive	0.80	C	0.82	D	0.81	D	0.01	0.01	No
2	227	Culver Drive/Warner Avenue	0.77	C	0.72	C	0.76	C	(0.01)	0.01	No
3	228	Culver Drive/Barranca Parkway	0.83	D	0.89	D	0.82	D	(0.01)	0.00	No
4	229	Culver Drive/Alton Parkway	0.83	D	0.90	D	0.83	D	0.00	0.00	No
5	230	Culver Drive/Main Street	0.67	B	0.73	C	0.67	C	0.00	0.00	No
6	232	Culver Drive/I-405 NB Ramps	0.76	C	0.80	C	0.76	C	0.00	0.00	No
		<i>HCM</i>	12.7	B	25.1	C	12.7	B	25.5	0.40	No
7	233	Culver Drive/I-405 SB Ramps	0.71	B	0.70	B	0.71	C	0.00	0.00	No
		<i>HCM</i>	26.4	C	31.4	C	26.0	C	(0.40)	0.40	No
8	264	West Yale Loop/Barranca Parkway	0.58	A	0.66	B	0.58	A	0.00	0.00	No
9	268	West Yale Loop/Alton Parkway	0.60	A	0.61	B	0.61	B	0.01	0.01	No
10	265	Lake Road/Barranca Parkway	0.57	A	0.64	B	0.58	A	0.01	0.00	No
11	269	Lake Road/Alton Parkway	0.59	A	0.57	A	0.59	A	0.00	0.00	No
12	261	Yale Avenue/Irvine Center Drive	0.73	C	0.68	B	0.75	C	0.02	0.00	No
13	266	Creek Road/Barranca Parkway	0.65	B	0.58	A	0.65	B	0.00	0.00	No
14	270	Creek Road/Alton Parkway	0.49	A	0.51	A	0.49	A	0.00	0.00	No
15	267	East Yale Loop/Barranca Parkway	0.70	B	0.63	B	0.71	C	0.01	0.01	No
16	271	East Yale Loop/Alton Parkway	0.75	C	0.63	B	0.75	C	0.00	0.01	No
17	289	Jeffrey Road/Irvine Center Drive	0.89	D	0.83	D	0.89	D	0.00	0.00	No
18	290	Jeffrey Road/Barranca Parkway ¹	0.82	D	0.85	D	0.82	D	0.00	0.01	No
19	291	Jeffrey Road/Alton Parkway	0.97	E	0.96	E	0.97	E	0.00	0.00	No
20	293	Jeffrey Road/I-405 NB Ramps	0.87	D	0.90	D	0.87	D	0.00	0.00	No
		<i>HCM</i>	48.8	D	73.0	E	48.9	D	0.10	(0.40)	No
21	294	Jeffrey Road/I-405 SB Ramps	0.77	C	0.78	C	0.77	C	0.00	0.00	No
		<i>HCM</i>	14.0	B	17.7	B	14.4	B	0.40	(0.40)	No
22	309	Sand Canyon Avenue/Barranca Parkway	0.65	B	0.68	B	0.65	B	0.00	0.00	No
23	310	Sand Canyon Avenue/Alton Parkway	0.73	C	0.81	D	0.74	C	0.01	(0.01)	No
24	-	Lyon/Barranca Parkway	0.45	A	0.50	A	0.44	A	(0.01)	0.03	No
25	-	East Yale Loop/Osborn	37.6	E	22.9	C	44.9	E	7.30	3.90	No
		<i>HCM</i>									

¹ = exceeds City's Level of Service (LOS) criteria

ICU = Intersection Capacity Utilization

I-405 = Interstate 405

NB = northbound

SB = southbound

Delay is reported in seconds (sec).

HCM = Highway Capacity Manual

0.05 Advanced Transportation Management System (ATMS) credit is assumed at this location.

The TIA for the proposed project indicates all study area roadway segments are forecast to operate at satisfactory LOS in the baseline (no project) condition with the exception of the following.

- Culver Drive from Barranca Parkway to Alton Parkway (LOS E)
- Culver Drive from Alton Parkway to Main Street (LOS E)
- Culver Drive from Main Street to the I-405 Ramps (LOS E)
- Jeffrey Road from Alton Parkway to the I-405 Ramps (LOS E)
- Barranca Parkway from Culver Drive to West Yale Loop (LOS F)
- Barranca Parkway from West Yale Loop to Lake Road (LOS E)
- Barranca Parkway from East Yale Loop to Jeffrey Road (LOS E)
- Alton Parkway from East Yale Loop to Jeffrey Road (LOS E)

TABLE 4.16-N
2035 Pending ADT Volumes and V/C Ratios

ITAM Post No.	Roadway	Segment	Capacity	Baseline			Plus Project			Δ V/C Ratio	Significant Impact?
				ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS		
217	Culver Drive	Irvine Center to Warner	54,000	47,800	0.89	D	47,900	0.89	D	0.00	No
218	Culver Drive	Warner to Barranca	54,000	45,700	0.85	D	45,800	0.85	D	0.00	No
219	Culver Drive	Barranca to Alton	54,000	52,400	0.97	E	52,400	0.97	E	0.00	No
220	Culver Drive	Alton to Main	54,000	50,900	0.94	E	50,900	0.94	E	0.00	No
221	Culver Drive	Main to I-405 Ramps	54,000	52,200	0.97	E	52,300	0.97	E	0.00	No
263	West Yale Loop	Barranca to Alton	28,000	6,800	0.24	A	6,800	0.24	A	0.00	No
268	Lake Road	Barranca to Alton	13,000	6,400	0.49	A	6,400	0.49	A	0.00	No
1565	Creek Road	Barranca to Alton	13,000	3,900	0.30	A	3,900	0.30	A	0.00	No
-	Osborn	Barranca to Willard	13,000	1,052	0.08	A	1,407	0.11	A	0.03	No
-	Osborn	Willard to E. Yale	13,000	2,188	0.17	A	3,186	0.25	A	0.08	No
-	Willard	Barranca to Osborn	13,000	359	0.03	A	697	0.05	A	0.02	No
273	East Yale Loop	Barranca to Alton	28,000	11,300	0.40	A	11,700	0.42	A	0.02	No
295	Jeffrey Road	Irvine Center to Barranca	54,000	45,300	0.84	D	45,500	0.84	D	0.00	No
297	Jeffrey Road	Barranca to Alton	54,000	44,500	0.82	D	44,500	0.82	D	0.00	No
299	Jeffrey Road	Alton to I-405 Ramps	54,000	51,700	0.96	E	51,900	0.96	E	0.00	No
319	Sand Canyon Ave	Barranca to Alton	54,000	34,800	0.64	B	34,700	0.64	B	0.00	No
677	Irvine Center Drive	Culver to Yale	54,000	37,300	0.69	B	37,400	0.69	B	0.00	No
678	Irvine Center Drive	Yale to Jeffrey	54,000	36,800	0.68	B	36,800	0.68	B	0.00	No
750	Barranca Pkwy	Culver to W. Yale	32,000	34,800	1.09	F	35,100	1.10	F	0.01	No
751	Barranca Pkwy	W. Yale to Lake	32,000	31,300	0.98	E	31,500	0.98	E	0.00	No
753	Barranca Pkwy	Lake to Creek	32,000	28,400	0.89	D	28,600	0.89	D	0.00	No
755	Barranca Pkwy	Creek to Lyon	32,000	28,200	0.88	D	28,500	0.89	D	0.01	No
1713	Barranca Pkwy	Lyon to E. Yale	32,000	27,700	0.87	D	27,700	0.87	D	0.00	No
757	Barranca Pkwy	E. Yale to Jeffrey	32,000	30,400	0.95	E	30,700	0.96	E	0.01	No
759	Barranca Pkwy	Jeffrey to Sand Canyon	32,000	19,100	0.60	A	19,100	0.60	A	0.00	No
784	Alton Parkway	Culver to W. Yale	32,000	28,800	0.90	D	28,900	0.90	D	0.00	No
785	Alton Parkway	W. Yale to Lake	32,000	28,800	0.90	D	28,800	0.90	D	0.00	No
787	Alton Parkway	Lake to Creek	32,000	25,700	0.80	C	25,800	0.81	D	0.01	No
789	Alton Parkway	Creek to E. Yale	32,000	20,300	0.63	B	20,300	0.63	B	0.00	No
791	Alton Parkway	E. Yale to Jeffrey	32,000	32,100	1.00	E	32,400	1.01	F	0.01	No
	AM Peak Hour	eastbound	3,200	1,671	0.52	A	1,660	0.52	A	0.00	No
		westbound	3,200	1,310	0.41	A	1,322	0.41	A	0.00	No
	PM Peak Hour	eastbound	3,200	1,480	0.46	A	1,480	0.46	A	0.00	No
		westbound	3,200	1,940	0.61	B	1,951	0.61	B	0.00	No
796	Alton Parkway	Jeffrey to Sand Canyon	32,000	23,800	0.74	C	23,900	0.75	C	0.01	No

Δ = change
 = exceeds City's level of service (LOS) criteria
italics = Peak-Hour Link Analysis

ADT = average daily trips
 V/C = volume-to-capacity

ITAM = Irvine Transportation Analysis Model
 I-405 = Interstate 405

With proposed project development and operation, the same eight roadway segments are forecast to continue to operate and the same unsatisfactory LOS, with the exception of Alton Parkway from East Yale Loop to Jeffrey, which diminishes from LOS E to LOS F. A peak-hour link analysis shows that this roadway segment would operate at satisfactory LOS (with v/c ratios below 0.09) in both directions during both peak hours. Therefore, no significant project impacts are created on roadway segments with implementation of the project in the 2035 pending condition.

Post-2035 Approved Baseline and Plus-Project Traffic Volumes and Levels of Service

The TIA data indicate all study area intersections are forecast to operate at satisfactory LOS in the Post-2035 approved Baseline (no project) condition with the exception of Culver Drive/I-405 Northbound Ramps (LOS E in the p.m. peak hour) and Jeffrey Road/Alton Parkway (LOS E in both peak hours) and East Yale Loop/Osborn (LOS E in the a.m. peak hour). Development and operation of the proposed project would result in the same three study area intersections being forecasted to continue to operate at LOS E. However, peak hour Intersections Capacity Utilizations would not increase by 0.02 or greater at any signalized intersections and therefore, thresholds would not be exceeded. Therefore, the TIA concludes "... the project can be implemented in a Post-2035 approved condition with no significant peak-hour intersection impacts."

TABLE 4.16-O
Post-2035 Approved Intersection LOS Summary

Study Area No.	ITAM Node No.	Intersection	Baseline				Plus Project				Peak-Hour Δ		Significant Impact?
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	ICU or Delay	AM	PM				
			ICU / Delay	LOS	ICU / Delay	LOS	ICU / Delay			LOS			
1	226	Culver Drive/Irvine Center Drive	0.78	C	0.79	C	0.78	C	0.79	C	0.00	0.00	No
2	227	Culver Drive/Warner Avenue	0.74	C	0.68	B	0.74	C	0.68	B	0.00	0.00	No
3	228	Culver Drive/Barranca Parkway	0.80	C	0.81	D	0.79	C	0.82	D	(0.01)	0.01	No
4	229	Culver Drive/Alton Parkway	0.78	C	0.88	D	0.78	C	0.87	D	0.00	(0.01)	No
5	230	Culver Drive/Main Street	0.66	B	0.74	C	0.66	B	0.74	C	0.00	0.00	No
6	232	Culver Drive/I-405 NB Ramps	0.90	D	0.97	E	0.90	D	0.96	E	0.00	(0.01)	No
7	233	Culver Drive/I-405 SB Ramps	17.3	B	51.7	D	17.3	B	52.6	D	0.00	0.00	No
8	264	West Yale Loop/Barranca Parkway	32.2	C	28.9	C	31.3	C	28.9	C	(0.90)	0.00	No
9	268	West Yale Loop/Alton Parkway	0.58	A	0.62	B	0.59	A	0.62	B	0.01	0.00	No
10	265	Lake Road/Barranca Parkway	0.59	A	0.60	A	0.59	A	0.60	A	0.00	0.00	No
11	269	Lake Road/Alton Parkway	0.54	A	0.62	B	0.56	A	0.62	B	0.02	0.00	No
12	261	Yale Avenue/Irvine Center Drive	0.57	A	0.51	A	0.58	A	0.52	A	0.01	0.01	No
13	266	Creek Road/Barranca Parkway	0.76	C	0.66	B	0.77	C	0.66	B	0.01	0.00	No
14	270	Creek Road/Alton Parkway	0.62	B	0.54	A	0.64	B	0.54	A	0.02	0.00	No
15	267	East Yale Loop/Barranca Parkway	0.48	A	0.49	A	0.48	A	0.49	A	0.00	0.00	No
16	271	East Yale Loop/Alton Parkway	0.70	B	0.60	A	0.71	C	0.60	A	0.01	0.00	No
17	289	Jeffrey Road/Irvine Center Drive	0.78	C	0.63	B	0.79	C	0.63	B	0.01	0.00	No
18	290	Jeffrey Road/Barranca Parkway¹	0.87	D	0.83	D	0.87	D	0.84	D	0.00	0.01	No
19	291	Jeffrey Road/Alton Parkway	0.76	C	0.77	C	0.75	C	0.77	C	(0.01)	0.00	No
20	293	Jeffrey Road/I-405 NB Ramps	0.98	E	0.95	E	0.98	E	0.95	E	0.00	0.00	No
21	294	Jeffrey Road/I-405 SB Ramps	0.69	B	0.73	C	0.69	B	0.74	C	0.00	0.01	No
22	309	Sand Canyon Avenue/Barranca Parkway	21.2	C	32.5	C	21.2	C	34.8	C	0.00	2.30	No
23	310	Sand Canyon Avenue/Alton Parkway	0.77	C	0.78	C	0.77	C	0.77	C	0.00	(0.01)	No
24	-	Lyon/Barranca Parkway	16.6	B	19.7	B	16.6	B	19.8	B	0.00	0.10	No
25	-	East Yale Loop/Osborn	0.64	B	0.71	C	0.65	B	0.71	C	0.01	0.00	No
			0.78	C	0.85	D	0.78	C	0.86	D	0.00	0.01	No
			0.40	A	0.48	A	0.41	A	0.50	A	0.01	0.02	No
			35.6	E	21.7	C	40.6	E	24.6	C	5.00	2.90	No

NB = northbound
SB = southbound

I-405 = Interstate 405

ICU = Intersection Capacity Utilization
HCM = Highway Capacity Manual

= exceeds City's Level of Service (LOS) criteria
Delay is reported in seconds (sec).
0.05 Advanced Transportation Management System (ATMS) credit is assumed at this location.

The TIA further indicates all study area roadway segments are forecast to operate at satisfactory LOS in the Post-2035 approved Baseline (no project) condition with the exception of the following.

- Culver Drive from Barranca Parkway to Alton Parkway (LOS E)
- Culver Drive from Alton Parkway to Main Street (LOS E)
- Culver Drive from Main Street to the I-405 Ramps (LOS E)
- Jeffrey Road from Alton Parkway to the I-405 Ramps (LOS E)
- Barranca Parkway from Culver Drive to West Yale Loop (LOS E)
- Barranca Parkway from West Yale Loop to Lake Road (LOS E)
- Alton Parkway from East Yale Loop to Jeffrey Road (LOS E)

TABLE 4.16-P
Post-2035 Approved ADT Volumes and V/C Ratios

ITAM Post No.	Roadway	Segment	Capacity	Baseline			Plus Project			Δ V/C Ratio	Significant Impact?
				ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS		
217	Culver Drive	Irvine Center to Warner	54,000	47,600	0.88	D	47,700	0.88	D	0.00	No
218	Culver Drive	Warner to Barranca	54,000	46,200	0.86	D	46,300	0.86	D	0.00	No
219	Culver Drive	Barranca to Alton	54,000	54,100	1.00	E	54,200	1.00	E	0.00	No
220	Culver Drive	Alton to Main	54,000	51,700	0.96	E	51,700	0.96	E	0.00	No
221	Culver Drive	Main to I-405 Ramps	54,000	51,800	0.96	E	51,800	0.96	E	0.00	No
263	West Yale Loop	Barranca to Alton	28,000	6,500	0.23	A	6,500	0.23	A	0.00	No
268	Lake Road	Barranca to Alton	13,000	6,300	0.48	A	6,300	0.48	A	0.00	No
1565	Creek Road	Barranca to Alton	13,000	3,400	0.26	A	3,400	0.26	A	0.00	No
-	Osborn	Barranca to Willard	13,000	1,052	0.08	A	1,407	0.11	A	0.03	No
-	Osborn	Willard to E. Yale	13,000	2,188	0.17	A	3,186	0.25	A	0.08	No
-	Willard	Barranca to Osborn	13,000	359	0.03	A	697	0.05	A	0.02	No
273	East Yale Loop	Barranca to Alton	28,000	12,200	0.44	A	12,600	0.45	A	0.01	No
295	Jeffrey Road	Irvine Center to Barranca	54,000	41,700	0.77	C	41,800	0.77	C	0.00	No
297	Jeffrey Road	Barranca to Alton	54,000	41,300	0.76	C	41,300	0.76	C	0.00	No
299	Jeffrey Road	Alton to I-405 Ramps	54,000	51,400	0.95	E	51,700	0.96	E	0.01	No
319	Sand Canyon Ave	Barranca to Alton	54,000	38,300	0.71	C	38,300	0.71	C	0.00	No
677	Irvine Center Drive	Culver to Yale	54,000	30,900	0.57	A	30,900	0.57	A	0.00	No
678	Irvine Center Drive	Yale to Jeffrey	54,000	27,600	0.51	A	27,700	0.51	A	0.00	No
750	Barranca Pkwy	Culver to W. Yale	32,000	32,400	1.01	F	32,600	1.02	F	0.01	No
751	Barranca Pkwy	W. Yale to Lake	32,000	29,400	0.92	E	29,600	0.93	E	0.01	No
753	Barranca Pkwy	Lake to Creek	32,000	26,000	0.81	D	26,200	0.82	D	0.01	No
755	Barranca Pkwy	Creek to Lyon	32,000	25,800	0.81	D	26,100	0.82	D	0.01	No
1713	Barranca Pkwy	Lyon to E. Yale	32,000	25,700	0.80	C	25,800	0.81	D	0.01	No
757	Barranca Pkwy	E. Yale to Jeffrey	32,000	28,400	0.89	D	28,800	0.90	D	0.01	No
759	Barranca Pkwy	Jeffrey to Sand Canyon	32,000	16,900	0.53	A	17,000	0.53	A	0.00	No
784	Alton Parkway	Culver to W. Yale	32,000	26,300	0.82	D	26,400	0.83	D	0.01	No
785	Alton Parkway	W. Yale to Lake	32,000	25,800	0.81	D	25,800	0.81	D	0.00	No
787	Alton Parkway	Lake to Creek	32,000	23,700	0.74	C	23,700	0.74	C	0.00	No
789	Alton Parkway	Creek to E. Yale	32,000	23,900	0.75	C	23,900	0.75	C	0.00	No
791	Alton Parkway	E. Yale to Jeffrey	32,000	30,200	0.94	E	30,500	0.95	E	0.01	No
796	Alton Parkway	Jeffrey to Sand Canyon	32,000	20,500	0.64	B	20,600	0.64	B	0.00	No

Δ = change

exceeds City's level of service (LOS) criteria

ADT = average daily trips

V/C = volume-to-capacity

ITAM = Irvine Transportation Analysis Model

I-405 = Interstate 405

With development and operation of the proposed project, the same seven roadway segments are forecast to continue to operate at an unsatisfactory LOS. However, the roadway segment volume-to-capacity ratio does not increase by 0.02 or greater at these locations. Therefore, no significant project impacts are created on roadway segments with implementation of the project in the post-2035 approved condition.

TABLE 4.16-Q
Post-2035 Pending Intersection LOS Summary

Study Area No.	ITAM Node No.	Intersection	Baseline			Plus Project			Peak-Hour Δ		Significant Impact?
			AM Peak Hour ICU / Delay	LOS	PM Peak Hour ICU / Delay	LOS	AM Peak Hour ICU / Delay	LOS	PM Peak Hour ICU / Delay	LOS	
1	226	Culver Drive/Irvine Center Drive	0.80	C	0.80	C	0.80	C	0.00	C	No
2	227	Culver Drive/Warner Avenue	0.73	C	0.70	B	0.74	C	0.01	B	No
3	228	Culver Drive/Barranca Parkway	0.81	D	0.84	D	0.81	D	0.00	D	No
4	229	Culver Drive/Alton Parkway	0.79	C	0.90	D	0.79	C	0.00	D	No
5	230	Culver Drive/Main Street	0.66	B	0.76	C	0.66	B	0.00	C	No
6	232	Culver Drive/I-405 NB Ramps	0.90	D	0.98	E	0.90	D	0.00	E	No
7	233	Culver Drive/I-405 SB Ramps	17.3	B	56.9	E	17.3	B	0.00	E	No
8	264	West Yale Loop/Barranca Parkway	0.69	B	0.72	C	0.69	B	0.00	C	No
9	268	West Yale Loop/Alton Parkway	32.3	C	29.2	C	31.8	C	(0.50)	C	No
10	265	Lake Road/Barranca Parkway	0.59	A	0.64	B	0.60	A	0.01	B	No
11	269	Lake Road/Alton Parkway	0.56	A	0.62	B	0.57	A	0.00	B	No
12	261	Yale Avenue/Irvine Center Drive	0.57	A	0.53	A	0.57	A	0.00	A	No
13	266	Creek Road/Barranca Parkway	0.79	C	0.68	B	0.79	C	0.00	B	No
14	270	Creek Road/Alton Parkway	0.65	B	0.55	A	0.65	B	0.01	A	No
15	267	East Yale Loop/Barranca Parkway	0.48	A	0.49	A	0.48	A	0.00	A	No
16	271	East Yale Loop/Alton Parkway	0.72	C	0.61	B	0.72	C	(0.01)	A	No
17	289	Jeffrey Road/Irvine Center Drive	0.79	C	0.63	B	0.79	C	0.00	B	No
18	290	Jeffrey Road/Barranca Parkway ¹	0.89	D	0.84	D	0.89	D	0.00	D	No
19	291	Jeffrey Road/Alton Parkway	0.79	C	0.78	C	0.79	C	0.00	C	No
20	293	Jeffrey Road/I-405 NB Ramps	0.99	E	0.95	E	0.99	E	0.00	E	No
21	294	Jeffrey Road/I-405 SB Ramps	0.70	B	0.75	C	0.70	B	(0.01)	C	No
22	309	Sand Canyon Avenue/Barranca Parkway	21.4	C	36.1	D	21.4	C	0.00	C	No
23	310	Sand Canyon Avenue/Alton Parkway	0.77	C	0.78	C	0.77	C	0.00	C	No
24	-	Lyon/Barranca Parkway	17.1	B	20.0	B	17.1	B	0.00	B	No
25	-	East Yale Loop/Osborn	0.67	B	0.73	C	0.67	B	0.00	C	No
			0.78	C	0.87	D	0.78	C	0.00	D	No
			0.41	A	0.48	A	0.42	A	0.01	A	No
			36.2	E	22.3	C	41.3	E	5.10	D	No

NB = northbound
SB = southbound

I-405 = Interstate 405

ICU = Intersection Capacity Utilization
HCM = Highway Capacity Manual

= exceeds City's Level of Service (LOS) criteria
Delay is reported in seconds (sec).

¹ 0.05 Advanced Transportation Management System (ATMS) credit is assumed at this location.

TABLE 4.16-R
Post-2035 Pending ADT Volumes and V/C Ratios

ITAM Post No.	Roadway	Segment	Capacity	Baseline			Plus Project			Δ V/C Ratio	Significant Impact?
				ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS		
217	Culver Drive	Irvine Center to Warner	54,000	48,700	0.90	D	48,700	0.90	D	0.00	No
218	Culver Drive	Warner to Barranca	54,000	46,500	0.86	D	46,600	0.86	D	0.00	No
219	Culver Drive	Barranca to Alton	54,000	54,900	1.02	F	55,000	1.02	F	0.00	No
220	Culver Drive	Alton to Main	54,000	52,400	0.97	E	52,400	0.97	E	0.00	No
221	Culver Drive	Main to I-405 Ramps	54,000	52,400	0.97	E	52,400	0.97	E	0.00	No
263	West Yale Loop	Barranca to Alton	28,000	6,800	0.24	A	6,800	0.24	A	0.00	No
268	Lake Road	Barranca to Alton	13,000	6,300	0.48	A	6,300	0.48	A	0.00	No
1565	Creek Road	Barranca to Alton	13,000	3,400	0.26	A	3,400	0.26	A	0.00	No
-	Osborn	Barranca to Willard	13,000	1,052	0.08	A	1,407	0.11	A	0.03	No
-	Osborn	Willard to E. Yale	13,000	2,188	0.17	A	3,186	0.25	A	0.08	No
-	Willard	Barranca to Osborn	13,000	359	0.03	A	697	0.05	A	0.02	No
273	East Yale Loop	Barranca to Alton	28,000	12,400	0.44	A	12,700	0.45	A	0.01	No
295	Jeffrey Road	Irvine Center to Barranca	54,000	41,800	0.77	C	41,900	0.78	C	0.01	No
297	Jeffrey Road	Barranca to Alton	54,000	41,400	0.77	C	41,400	0.77	C	0.00	No
299	Jeffrey Road	Alton to I-405 Ramps	54,000	51,800	0.96	E	51,800	0.96	E	0.00	No
319	Sand Canyon Ave	Barranca to Alton	54,000	39,300	0.73	C	39,400	0.73	C	0.00	No
677	Irvine Center Drive	Culver to Yale	54,000	32,400	0.60	A	32,400	0.60	A	0.00	No
678	Irvine Center Drive	Yale to Jeffrey	54,000	28,900	0.54	A	28,900	0.54	A	0.00	No
750	Barranca Pkwy	Culver to W. Yale	32,000	33,200	1.04	F	33,400	1.04	F	0.00	No
751	Barranca Pkwy	W. Yale to Lake	32,000	29,900	0.93	E	30,200	0.94	E	0.01	No
753	Barranca Pkwy	Lake to Creek	32,000	26,400	0.83	D	26,700	0.83	D	0.00	No
755	Barranca Pkwy	Creek to Lyon	32,000	26,600	0.83	D	26,900	0.84	D	0.01	No
1713	Barranca Pkwy	Lyon to E. Yale	32,000	26,700	0.83	D	26,800	0.84	D	0.01	No
757	Barranca Pkwy	E. Yale to Jeffrey	32,000	29,400	0.92	E	29,700	0.93	E	0.01	No
759	Barranca Pkwy	Jeffrey to Sand Canyon	32,000	17,800	0.56	A	17,800	0.56	A	0.00	No
784	Alton Parkway	Culver to W. Yale	32,000	26,900	0.84	D	26,900	0.84	D	0.00	No
785	Alton Parkway	W. Yale to Lake	32,000	26,200	0.82	D	26,200	0.82	D	0.00	No
787	Alton Parkway	Lake to Creek	32,000	24,100	0.75	C	24,100	0.75	C	0.00	No
789	Alton Parkway	Creek to E. Yale	32,000	24,300	0.76	C	24,300	0.76	C	0.00	No
791	Alton Parkway	E. Yale to Jeffrey	32,000	30,600	0.96	E	30,900	0.97	E	0.01	No
796	Alton Parkway	Jeffrey to Sand Canyon	32,000	20,800	0.65	B	20,900	0.65	B	0.00	No

Δ = change

ADT = average daily trips

ITAM = Irvine Transportation Analysis Model

= exceeds City's level of service (LOS) criteria

V/C = volume-to-capacity

I-405 = Interstate 405

Post-2035 Pending Baseline and Plus Project Traffic Volumes and LOS

Table 4.16-Q presents a summary of the intersection LOS for post-2035 pending (baseline and plus project) conditions with the anticipated circulation network. As this table indicates, all study area intersections are forecast to operate at satisfactory LOS in the baseline (no project) condition with the exception of Culver Drive/I-405 Northbound Ramps (LOS E in the p.m. peak hour), Jeffrey Road/Alton Parkway (LOS E in both peak hours), and East Yale Loop/Osborn (LOS E in the a.m. peak hour).

With the addition of the project, the same three study area intersections are forecast to continue operating at LOS E. The peak-hour ICUs do not increase by 0.02 or greater at any of the signalized intersections. East Yale Loop/Osborn is an unsignalized intersection and is already deficient under baseline conditions. Therefore, the project can be implemented in a post-2035 pending condition with no significant peak-hour intersection impacts.

The ADT volumes and v/c ratios for post-2035 pending (baseline and plus project) conditions are presented in Table 4.16-R. As this table indicates, all study area roadway segments are forecast to operate at satisfactory LOS in the baseline (no project) condition with the exception of the following:

- Culver Drive from Barranca Parkway to Alton Parkway (LOS F)
- Culver Drive from Alton Parkway to Main Street (LOS E)
- Culver Drive from Main Street to the I-405 Ramps (LOS E)
- Jeffrey Road from Alton Parkway to the I-405 Ramps (LOS E)
- Barranca Parkway from Culver Drive to West Yale Loop (LOS F)
- Barranca Parkway from West Yale Loop to Lake Road (LOS E)
- Barranca Parkway from East Yale Loop to Jeffrey Road (LOS E)
- Alton Parkway from East Yale Loop to Jeffrey Road (LOS E)

With the addition of the project, the same eight roadway segments are forecast to continue operating at the same unsatisfactory LOS. However, the roadway segment v/c does not increase by 0.02 or greater at these locations. Therefore, no significant project impacts are created on roadway segments with implementation of the project in the post-2035 pending condition.

Transfer of Intensity Alternative

The TIA also analyzed a project alternative which includes the potential for a transfer of intensity from nearby zoning designation (TAZ 220) to the Project site, thereby eliminating the need to increase the overall square footage in the Planning Area. The analysis assumed the conversion and transfer of 30,785 square feet of available (unallocated) retail square footage from TAZ 220 to medical use at the Project site (TAZ 226), to allow for the proposed Project – 46,800 square feet medical office use (16,015 square feet of existing square footage plus 30,785 transferred/converted square feet).

The conversion of unused retail square footage from TAZ 220 to medical office use at the Project (TAZ 226) only affects the Post-2035 approved and pending plus project conditions that have been analyzed for the project. All other scenarios, including the Post-2035 No Project conditions, do not change with this transfer scenario. Access and circulation with the transfer is consistent with the discussion in the prior sections.

The transfer of intensity include the same study area intersections and roadway segments, and as such are forecast to continue operating at an unsatisfactory LOS, like the proposed Project analysis. However, the roadway segment volume-to-capacity does not increase by 0.02 or greater at these locations. Therefore, no significant project impacts are created at intersection and roadway segments with implementation of the transfer in the Post-2035 approved and pending condition. Based on this analysis, the transfer of intensity can be implemented without impacting the surrounding roadway system. The evaluation of the study area intersection and roadway segments LOS with the conversion of 30,875 square feet of medical office use from TAZ 220 to the Project site shows that the addition of project traffic to Post-2035 conditions would not create any significant adverse impacts.

- B) LESS THAN SIGNIFICANT IMPACT.** As indicated in the project TIA, project operation is forecast to generate approximately 1,691 daily vehicle trips. Project operation would thereby generate fewer than 2,400 daily trips, which is the Congestion Management Program threshold. In addition, the proposed project does not take direct access to a Congestion Management Program facility (e.g. Irvine Center Drive). Therefore, a Congestion Management Program-level analysis is not required and the resultant impact level is less than significant.
- C) NO IMPACT.** The project site is located approximately four miles from Orange County/John Wayne Airport, the nearest airfield to the site. According to the City of Irvine General Plan – Safety Element Figure J-4 – Accident Potential Zones, the project site is not located within any designated airport clear and accident potential zones and is not of a size or scale that would result in an increase in air traffic levels. In Therefore, project development and operation will not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. No impact will result.
- D) NO IMPACT.** The intersection of Jeffrey Road/ Alton Parkway is identified as a high-priority intersection in the City of Irvine’s 2012 Circulation Phasing Analysis Report. The City TIA Guidelines state that a significant impact would occur when a deficient Circulation Phasing Report intersection experiences an increase in ICU of 0.010 or greater rounded to the third decimal place in the interim year (2020). The TIA indicates in its intersection LOS analyses that a.m. peak-hour ICU is deficient in both the 2020 Approved Projects and Pending Projects conditions. The 2020 Approved Projects and Pending Projects ICUs for “with” and “without” project conditions were calculated to three decimals. Based on the analysis for the Jeffrey Road/Alton Parkway intersection, the a.m. peak-hour “with” project ICU actually increased by 0.009 under 2020 Approved Projects conditions and by 0.003 under 2020 Pending Projects conditions. Therefore, the conclusion is that a significant project impact does not occur at any Circulation Phasing Report intersections. Although improvements to the Jeffrey Road/Alton Parkway intersection are planned based on the 2012 Circulation Phasing Analysis Report, the proposed medical office building project does not have any responsibilities for these improvements.

The City of Irvine General Plan Circulation Element Objective B-3 states the City should “establish a pedestrian circulation system to support and encourage walking as a mode of transportation.” The following three policies support Objective B-3.

- Link residences with schools, shopping centers, and other public facilities both within a planning area and adjacent to planning areas through an internal system of trails
- Require development to provide safe, convenient, and direct pedestrian access to surrounding land uses and transit stops. Issues such as anticipated interaction between pedestrians and vehicles, proposed infrastructure improvements and design standards shall be considered
- Design and locate land uses to encourage access to them by non-automotive means

In support of Objective B-3, the proposed project would incorporate a continuous internal system of sidewalks. Pedestrian amenities within the project site have been designed to comply with this Objective. Safe and direct access to the public street system would be provided via sidewalks on all sides of the proposed project site. Accessible ramps would be provided where modes intersect (e.g. streets and sidewalks). Furthermore, all adjacent land uses are accessible via non-automotive means.

The City General Plan also specifies a list of goals and objectives for bicycle planning with the objective “to plan, provide and maintain a comprehensive bicycle trail network that, together with the regional trail system encourages increased use of bicycle trails for commuters and recreational purposes.” The proposed project site is accessible to the Class II bicycle lanes on both sides of Barranca Parkway and East Yale Loop and to the Class I off-street bicycle trail adjacent to San Diego Creek south of the proposed project site.

Orange County Transit Authority (OCTA) bus stops are provided near the northeast corner of the Barranca Parkway/Lyon intersection and the northwest and northeast corners of the Barranca Parkway/East Yale Loop intersection. However, OCTA does not currently have bus routes scheduled in the immediate area. Additional OCTA bus stops (for Route 86) are located on the northwest and southeast corners of the Alton Parkway/East Yale Loop intersection. The proposed project is providing a bus stop turnout on the north side of the project site on Barranca Parkway for future OCTA bus routes traveling eastbound on Barranca Parkway.

Therefore, development and operation of the proposed project will not result in a conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

4.16.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

The TIA has concluded that based on its analysis “... the 2 Osborn project can be implemented without impacting the surrounding roadway system ...[and] the addition of project traffic to the existing, 2020, 2035, and post-2035 conditions would not create any significant adverse impacts.” That is, the existing and proposed circulation system “has the capacity to accommodate the proposed project.”

Project design would accommodate pedestrian and bicycle interactions safely.

Therefore, project development and operation would not result in any significant impacts related to Transportation and Traffic CEQA thresholds described above.

4.16.6 PROJECT DESIGN FEATURES

No Project Design Features are required.

4.16.7 MITIGATION MEASURES

No Mitigation Measures are required.

4.16.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

As indicated above, the TIA for the proposed project indicates the proposed project can be developed and operated “without impacting the surrounding roadway system . . . and . . . construction of [the proposed medical office building] shows that the addition of project traffic to the existing, 2020, 2035, and post-2035 conditions would not create any significant adverse impacts.” That is, the circulation system has the capacity to accommodate project-related traffic. As a result, development and operation of the proposed project will result in a less than significant impact to transportation and traffic in the study area.

4.16.9 CUMULATIVE IMPACTS

The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation publication pertained to the 18-acre (162,444 square foot) Woodbridge Village Center, located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway. Approvals at Woodbridge Village Center allow for uses that are typical within a retail center.

The City of Irvine Planning Commission granted approvals on July 21, 2016 for the modernization of the Woodbridge Village Retail Center through the following applications: Master Plan Modification to re-image the existing center and expand outdoor spaces; a Conditional Use Permit modification for a gas station, drive-thru car wash and convenience store; and a Conditional Use Permit for a new 4,226 square foot fast food restaurant with drive-thru. With various demolition activities, the redeveloped retail center would be decreased by 25,246 square feet – from 162,444 to 137,198 square feet. The Approved Woodbridge Village Center is assumed in the existing ITAM Baseline model condition. Therefore, no significant adverse cumulative impacts to traffic would result from development of Woodbridge Village Center in conjunction with the proposed Project.

Section 4 Environmental Impacts – Cultural Resources

4.17 TRIBAL CULTURAL RESOURCES

Information for this section was derived from consultation with the following representatives of the identified culturally affiliated tribes: Joyce Perry, Tribal Manager, Juaneno Band of Mission Indians Adjachemen Nation; Sam Dunlap, Cultural Resources Director, Gabrielino/Tongva Nation; and Andrew Salas, Chairperson, Gabrieleno Band of Mission Indians-Kizh Nation. In addition, information for this section was derived from the City of Irvine General Plan – Cultural Resources Element and from Perkins Coie, “California Land Use & Development Law Report.” This section provides an evaluation of the potential impacts to tribal cultural resources that could result from development of the Project.

4.17.1 ENVIRONMENTAL SETTING

Cultural Setting

Prehistory

California prehistory can be divided into three major periods, beginning in 6000 B.C. and extending to 1771 A.D. The period between 6000 to 1000 B.C. has been described as the Millingstone Horizon by Wallace (1955, 1987) and is typified by an abundance of milling stones and relatively few projectile points, which reflects a primary emphasis on collection of seeds. This earliest period is followed by Intermediate Period Cultures after approximately 1000 B.C. (Wallace 1955, 1978), which was a period that witnessed important technological changes that may be associated with increasing population levels and the beginnings of resource intensification. The appearance of the mortar and pestle is believed to reflect the increasing importance of acorns in the diet; the transition from dart to arrow points by the end of the period indicates the appearance of the bow and arrow. The Late Prehistoric Period (Wallace’s [1955] Horizon IV and Warren’s [1968] Shoshonean Tradition) appears in Orange County at approximately A.D. 600 and extended to A.D. 1771 (Koerper 1981); Mason 1991). Shell beads, small arrow points and, more recently, ceramics are common at these sites.

4.17.2 EXISTING REGULATIONS & STANDARD CONDITIONS

Regulatory Background

United States Native American Graves Repatriation Act

The federal Native American Graves Repatriation act recognizes the following types of evidence of cultural affiliation: geographical; kinship; biological; archaeological; anthropological; linguistic; folklore; oral tradition; historical; or other relevant information or expert opinion. Specifically, the court in *Pueblo of Sandia* observed that the affidavit of a tribal elder and religious leader which listed religious practices and alluded to sacred sites, minutes of a working group meeting that showed a site was used for ceremonial, religious, and medicinal purposes, and an anthropologist’s report on a tribe’s religious and cultural affiliation with a site that noted ceremonial paths and herbs uses, were all forms of evidence (*Pueblo of Sandia v. United States*

Section 4 Environmental Impacts – Cultural Resources

(1995)).

California State Public Resources Code

California State Public Resources Code policies and regulations protect archaeological, paleontological and historical sites. Public Resources Code protections are as follows:

- Sections 5020-5029.5 – provides for continuation of the former Historical Landmarks Advisory Committee as the State Historical Resources Commission, which is in charge of overseeing the administration of the California Register of Historical Resources and is responsible for designation of State Historical Landmarks and Historical Points of Interest
- Sections 5079-5079.65 – provides definitions of the functions and duties of the Office of Historic Preservation, which is responsible for administration of federally and state-mandated historic preservation programs in California and the California Heritage Fund
- Sections 5097.9-5097.998 – provides protection to Native American historical and cultural resources and sacred sites and identifies powers and duties of the Native American Heritage Commission; requires notification to descendants of discoveries of Native American human remains and provides for treatment and disposition of human remains and associated grave materials.

California Senate Bill 18

California State law provides for limited protection of Native American prehistoric, archaeological, cultural, spiritual and ceremonial places, such as the following: sanctified cemeteries, religious, ceremonial sites, shrines, burial grounds, prehistoric ruins, archaeological sites; and, sacred sites.

California Senate Bill 18 placed new requirements on local governments for developments in or near a Traditional Tribal Cultural Place (TTCP). Local jurisdictions must provide opportunities for involvement of California Native American tribes in the land planning process to preserve traditional tribal cultural places. The Final Tribal Guidelines recommends the Native American Heritage Commission provide written information within 30 days to inform the Lead Agency if a proposed project is determined to be near a TTCP and another 90 days for tribes to respond to a local government if the tribes want to consult to determine whether the project would have an adverse impact on the TTCP.

SB 18 also amended California Civil Code Section 815.3 to add California Native American tribes to the list of entities that can acquire and hold conservation easements to protect their cultural places.

California Assembly Bill 52

Governor Brown signed Assembly Bill Number 52 on September 25, 2014. California Assembly Bill 52 became effective on July 1, 2015. The legislation imposes new requirements

Section 4 Environmental Impacts – Cultural Resources

for consultation regarding projects that may affect a tribal cultural resource, includes a broad definition of what may be considered to be a tribal cultural resource, and includes a list of recommended mitigation measures.

Assembly Bill 52 added “tribal cultural resources” to categories of cultural resources that are specifically required to be protected under CEQA. “Tribal resources” are defined as either (1) sites, features, places cultural landscapes, sacred places and objects with cultural value to a California Native American tribe” that are included in the State register of historical resources or a local register of historical resources, or that are determined to be eligible for inclusion in the State register; or, (2) resources determined by the lead agency, in its discretion, to be significant based on the criteria for listing in the State register. Under this legislation, a project that may cause a substantial adverse change in the significance of a tribal cultural resource is defined as a project that may have a significant effect on the environment. Where a project may have a significant impact on a tribal cultural resource, the lead agency’s environmental document must discuss the impact and whether feasible alternatives or mitigation measures could avoid or substantially lessen the impact.

Assembly Bill 52 further requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a proposed project if they have requested notice of projects proposed within that area. If a tribe requests consultation within 30 days upon receipt of the notice, the lead agency must consult with the tribe. Consultation may include discussing type of environmental review necessary, significance of tribal cultural resources, significance of project impacts on tribal cultural resources, and alternatives and mitigation measures recommended by the tribe. The parties must consult in good faith, and consultation is considered concluded when either the parties agree to measures to mitigate or avoid a significant effect on a tribal cultural resource (if such a significant effect exists) or when a party concludes mutual agreement cannot be attained.

The legislation also identifies mitigation measures that may be considered to avoid significant impacts if there is no agreement on appropriate mitigation. Recommended measures include the following:

- Preservation in place
- Protecting the cultural character and integrity of the resource
- Protecting the traditional use of the resource
- Protecting the confidentiality of the resource
- Permanent conservation easements with culturally appropriate management criteria

California Public Resources Code

Under existing law, environmental documents must not include information about the location of an archaeological site or sacred lands or any other information that is exempt from public disclosure pursuant to the Public Records Act. (Cal Code Regulations. Section 15120(d)) Native American graves, cemeteries and sacred places and records of Native American places, features and objects also are exempt from disclosure. This exclusion reflects California’s strong policy in

Section 4 Environmental Impacts – Cultural Resources

favor of protecting Native American artifacts. Confidential cultural resource inventories or reports generated for environmental documents should be maintained by the lead agency under separate cover and shall not be available to the public.

Public Resources Code provisions include additional rules that govern confidentiality during tribal consultation. (Public Resources Code, Section 21082.3(c)) First, information submitted by a California Native American tribe during the environmental review process may not be included in the environmental document or disclosed to the public without the prior written consent of the tribe. Consistent with current practice, confidential information may be included in a confidential appendix. A lead agency may exchange information confidentially with other public agencies that have jurisdiction over the environmental document. This confidentiality protection extends to a tribe's comment letter on an environmental document. A lead agency can summarize tribal comment letters in a general way while still maintaining confidentiality. Secondly, an exception to the general rule prohibiting disclosure is that the lead agency and the tribe may agree to share confidential information regarding tribal cultural resources with the project applicant and its agents. In that case, the project applicant is responsible for keeping the information confidential, unless the tribe consents to disclosure in writing, in order to prevent looting, vandalism, or damage to the cultural resource. The project applicant must use a reasonable degree of care to protect the information. Additionally, information that is already publically available, developed by the project applicant, or lawfully obtained from a third party that is not the tribe, lead agency, or another public agency may be disclosed during the environmental review process. Thirdly, the new law does not affect any existing cultural resource or confidentiality protections. Fourthly, the lead agency or another public agency may describe the information in general terms in the environmental document. This is so that the public is informed about the basis of the decision, while confidentiality is maintained.

California Public Resources Code Section 21084.3(b) indicates culturally appropriate mitigation for a tribal cultural resource is different than mitigating impacts to archaeological resources and appropriate mitigation measures should be identified through consultation with the tribal government. If the lead agency determines a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process, new provisions in the Public Resources Code describe mitigation measures that, if determined by the lead agency to be feasible, may avoid or minimize significant adverse impacts. Examples of such mitigation measures include the following.

- Avoidance and preservation of the resources in place, including but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including but not limited to, the following:
 - Protecting the cultural character and integrity of the resource
 - Protecting the traditional use of the resource
 - Protecting the confidentiality of the resource

Section 4 Environmental Impacts – Cultural Resources

- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places
- Protecting the resource

City of Irvine General Plan

The City of Irvine General Plan – Cultural Resources Element “recognizes the importance of historical, archaeological, and paleontological resources in the City of Irvine and establishes a process for their early identification, consideration, and where appropriate, preservation.” Archaeological resources include any location. European contact with California began in 1542. Archaeological resources included any location that contains evidence of human activities that occurred prior to 1750; historical sites established prior to 1750 also are archaeological sites. Paleontological resources include any location that contains a trace of plants or animals from past ages.

Paleontological investigations in Irvine have demonstrated the region previously was a marine environment. Several historic and archaeological sites in Irvine have been recorded by previous surveys (reference Cultural Resources Element, Figure E-1, Historical/Archaeological Landmarks). Two of those sites (Barton’s Mound; Portola Campsite at Tomato Springs) are noted in the California Inventory of Historic Resources. The Cultural Resources Element divides the City into zones according to the likelihood of the presence of important paleontological resources. Figure E-2 of the General Plan depicts such zones and indicates the proposed project site is located in a “Low” Sensitivity Zone. This zone classification is assigned to areas that typically have altered or geologically young rocks exposed at the surface.

Cultural Resources Element Goals and Policies relevant to the proposed project include the following.

Objective E-2: Ensure the proper disposition of historical, archaeological, and paleontological resources to minimize adverse impacts, and to develop an increased understanding and appreciation for the community’s historic and prehistoric heritage, and that of the region.

Policy (g) – Ensure that adverse impacts of a proposed project on cultural resources are mitigated in accordance with CEQA, as well as other appropriate City policies and procedures, where preservation of a significant site is not practical.

City of Irvine Standard Condition 2.5 – Archaeologist/Paleontologist

Prior to the issuance of the first preliminary or precise grading permit for a project that is located on land that includes potentially significant archaeological and/or paleontological sites, and for any subsequent permit involving excavation to increased depth, the applicant shall provide letters from an archaeologist and/or a paleontologist. The letters shall state that the applicant has retained these individuals, and that the consultant(s) will be on call during all grading and other

Section 4 Environmental Impacts – Cultural Resources

significant ground disturbing activities. Determination of the need for these consultants shall be based on the environmental analysis for the project. These consultants shall be selected from the roll of qualified archaeologists and paleontologists maintained by the County of Orange (OC Public Works/OC Planning). The archaeologist and/or paleontologist shall meet with Community Development staff, and shall submit written recommendations specifying procedures for cultural/scientific resource surveillance. These recommendations shall be reviewed and approved by the Director of Community Development prior to issuance of the grading permit and prior to any surface disturbance on the project site. Should any cultural/scientific resources be discovered during grading, no further grading shall occur in the area of the discovery until the Director of Community Development is satisfied that adequate provisions are in place to protect these resources. This condition and the approved recommendations shall be incorporated on the cover sheet of the grading plan under the general heading: “Conditions of Approval.”

4.17.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines, the proposed project would create a significant impact to cultural resources if it would:

- A) Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is;
 - 1) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
 - 2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

4.17.4 ENVIRONMENTAL IMPACTS

A) LESS THAN SIGNIFICANT IMPACT WITH MITIGATION. The project site is developed with a 16,015 square foot medical office building and associated surface parking lot. The City of Irvine General Plan Cultural Resources Element does not identify any historical or archaeological landmarks in the project vicinity, which is developed with professional office buildings, administrative office buildings, residential uses, and a private school. The proposed project involves demolition of the 16,015 square foot single-story medical office building and surface parking lot and replacement of such with a 46,800 square foot two-story medical office building over an open parking garage, surface parking and perimeter and project site landscaping.

In the unlikely event human remains are encountered during the project grading or other construction activities, Mitigation Measure TCR-1 would be required. Pursuant to Mitigation Measure TCR-1, if human remains were encountered, the proper authorities would be notified,

Section 4 Environmental Impacts – Cultural Resources

and standard procedures for the respectful handling of human remains in compliance with State Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98 would be implemented. With implementation of mitigation, impacts would be less than significant.

In addition, Mitigation Measure TCR-2 will serve to ensure proper professional observation will occur during Project grading operations. A licensed professional archaeological/paleontological observer will be present during these activities. Should Native American artifacts or resources be found, the observer will stop the activities and notify identified Tribal Councils, whose representative(s) will determine disposition of the found artifacts and/or resources.

4.17.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

The project site is fully developed with a medical office building, surface parking lot, and introduced landscaping. Some grading will be necessary to prepare the property for accommodating the proposed larger medical office building and parking. However, no cultural resources (historical; archaeological; paleontological) or human remains are known to exist on the project site or were identified prior to development of the existing medical office building. The project would retain, but expand the medical office use of the property and accommodate a parking garage in addition to a surface parking lot. There may be a possibility of discovery of paleontological resources or human remains associated with Native American settlement beneath the surface that were not discovered during original grading activity.

Project development could potentially result in discovery of human remains not discovered during surface grading for the existing medical office building because additional sub-surface grading would need to be made to accommodate the proposed larger medical office building and surface parking garage. Therefore, potential project development impacts to human remains are potentially significant.

4.17.6 PROJECT DESIGN FEATURES

No Project Design Features are required.

4.17.7 MITIGATION MEASURES

MM TCR-1: Prior to the issuance of the first preliminary or precise grading permit, the following note shall be placed on the plans:

In the event human remains are encountered during construction, the following steps shall be taken:

- There shall be no further excavation or disturbance of the project site until the Orange County Coroner is contacted to determine if the remains are prehistoric and that no investigation of the cause of death is required. If the coroner determines the remains to be Native American, then the coroner shall contact the Native American Heritage Commission within 24 hours, and the Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the

Section 4 Environmental Impacts – Cultural Resources

deceased Native American. The most likely descendant may make recommendations to the applicant or City for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, which shall be considered and implemented by the applicant, as appropriate, in coordination with the City.

- Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with recommendations of the most likely descendant or on the property in a location not subject to further subsurface disturbance:
 - The Native American Heritage Commission is unable to identify a most likely descendant or the most likely descendant failed to make a recommendation within 24 hours after being notified by the Commission;
 - The descendant identified fails to make a recommendation; or,
 - The applicant rejects the recommendation of the descendant and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

MM TCR-2: A licensed professional archaeological/paleontological observer shall be present on the Project site to observe all grading activities. Should Native American artifacts be found, the Applicant shall be responsible for informing identified Tribal Councils, whose representative(s) shall determine the disposition of the found artifacts.

4.17.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Adherence to the City of Irvine Standard Condition and Mitigation Measure noted above will reduce any potential project impacts to Cultural Resources to a level of insignificance.

4.17.9 CUMULATIVE IMPACTS

The project site and vicinity are located within the developed Woodbridge Village community. Woodbridge contains single-family and multi-family residential units, commercial uses, general professional and medical offices, and recreation uses. The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation publication pertained to the 18-acre (162,444 square foot) Woodbridge Village Center, located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway.

The City of Irvine Planning Commission granted approvals on July 21, 2016 for the modernization of the Woodbridge Village Retail Center through the following applications: Master Plan Modification to re-image the existing center and expand outdoor spaces; a Conditional Use Permit modification for a gas station, drive-thru car wash and convenience store; and a Conditional Use Permit for a new 4,226 square foot fast food restaurant with drive-thru. With various demolition activities, the redeveloped retail center would be decreased by 25,246 square feet – from 162,444 to 137,198 square feet.

Section 4 Environmental Impacts – Cultural Resources

If there is any potential for significant impacts to tribal cultural resources, Mitigation Measure TCR-1 will be required to determine the nature and extent of the resources and related impacts. Neither the project nor other cumulative developments are expected to result in significant impacts to cultural resources. Implementation of the identified and appropriate Standard Condition 2.5 and Mitigation Measures TCR-1 and TCR-2 as part of project development would ensure cumulative impacts related to cultural resources would remain at a less than significant level.

4.18 UTILITIES & SERVICE SYSTEMS

The information in this section is based on the City of Irvine General Plan and communications with the Irvine Ranch Water District and the Orange County Waste Management Agency.

4.18.1 ENVIRONMENTAL SETTING

The City of Irvine currently has a list of authorized waste haulers for waste and recycling collection services. Contractors are required to select haulers from the approved list. There are 31 recycling and diversion facilities located near Irvine where contractors can take source-separated materials. Project solid waste for disposal would be transported to the Frank R. Bowerman landfill.

The Irvine Ranch Water District provides potable (drinking), non-potable (recycled) water, and sewer service to Irvine.

4.18.2 EXISTING REGULATIONS & STANDARD CONDITIONS**State of California**

The California Green Building Standards Code – “CALGreen” Sections 4.408, 5.408, and 5.713.8) requires projects to recycle or otherwise divert construction and demolition debris from landfills. The requirements promote reuse of resources and help extend the useful life of landfills in compliance with California state laws including the California Integrated Waste Management Act (Assembly Bill 939, Sher) and Mandatory Construction and Demolition Waste Diversion (Senate Bill 1374, Keuhl), as well as CALGreen. Assembly Bill 939 required cities and counties to achieve a landfill diversion rate of 50% by year 2000 and to reduce, reuse, recycle and compost solid waste materials to the maximum extent feasible before utilizing landfills or other disposal methods to conserve water, energy and other natural resources.

City of Irvine Municipal Code

The City of Irvine Municipal Code (Title 6, Division 7 – Chapter 9) also requires certain types of projects to recycle or otherwise divert demolition and construction waste from landfills (brick; drywall; other masonry; cardboard; green waste; paper; carpet; lumber; plastic; concrete; metals). Many products used in construction are valuable resources that can be reused, recycled or otherwise diverted from landfills. As part of City compliance with state waste diversion mandates, City Ordinance 07-18 (Construction and Demolition Debris Recycling and Reuse Ordinance; Title 6, Division 7, Chapter 9 of the Irvine Municipal Code) as amended requires at least 75% of all concrete and asphalt construction and demolition debris and 65% of all other construction and demolition debris generated by any “Covered Project shall be delivered to a material recovery facility, with the intention that such material be recycled, or otherwise diverted from landfills through direct delivery of such materials to brokers or end-users, through on-site reuse, or through any other diversion method(s) specified in an approved Waste Management Plan.” The Ordinance further states “all other construction and demolition debris” shall include

fixtures, appliances, and other similar items. “Covered Project” per Section 6-7-903 of the City of Irvine Municipal Code is defined as 1) All projects involving new or existing residential development, except for additions or renovations not increasing an existing building's conditioned area, volume or size, or others exempted in accordance with 6-7-902-B; or 2) All non-residential projects subject to a building or demolition permit, unless determined to be exempted in accordance with Section 6-7-902D or otherwise by the California Green Building Code ().

City of Irvine General Plan

Objective H-3: WASTE WATER – Control wastewater and storm runoff in a manner to minimize impact on adjacent existing or planned land uses.

- **Policy (c)** – “... Encourage the use of alternative Best Management Practices (BMPs) to control and minimize urban pollutant runoff.”
- **Policy (e)** – Minimize changes in hydrology and pollutant loading; require incorporation of control; including structural and non-structural BMPs, to mitigate the projected increases in pollutant loads and flows; ensure that post-development runoff rates and velocities from a site have no significant adverse impact on downstream erosion and stream habitat; minimize the quantity of storm water directed to impermeable surfaces and the Municipal Separate Storm Systems (MS4s) and maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground.
- **Policy (h)** – Provide for appropriate permanent measures to reduce storm water pollutant loads from the development site.

City Council Ordinance No. 07-18

The Irvine City Council passed an Ordinance on November 13, 2007 to meet state mandates for diversion of construction and demolition waste from landfills. This Ordinance requires at least 75% of all concrete and asphalt construction and demolition debris and 65% of all other construction and demolition debris generated by a “Covered Project” to be delivered to a material recovery facility for recycling intent, or otherwise diverted from landfills through direct delivery of such materials to brokers or end-users, through on-site reuse, or through any other diversion method) specified in an approved Waste Management Plan. Fixtures, appliances and other similar items are included in “all other” construction and demolition debris. “Covered Projects” are any of the following:

- All projects involving new or existing residential development, except for additions or renovations not increasing an existing building's conditioned area, volume or size, or others exempted in accordance with 6-7-902-B; or
- All non-residential projects subject to a building or demolition permit, unless determined to be exempted in accordance with Section 6-7-902D. or otherwise by the California Green Building Code)

Zero Waste Principles Ordinance No. 07-95

This City Ordinance adopted Zero Waste as a long-term goal for Irvine to eliminate waste and pollution in the manufacture, use, storage and recycling of materials. The Ordinance is intended to commit Irvine to establish City programs to encourage Irvine residents, businesses and agencies to use, reuse and recycle materials judiciously and to encourage manufacturers to produce and market less toxic and more durable, repairable, reusable, recycled and recyclable products.

Standard Conditions

SC USS-1: Prior to demolition of the existing medical office building, the Applicant must demonstrate through documentation in a manner approved by the Director of Public Works that deconstruction activities will occur before demolition in an effort to salvage still useable fixtures, windows, doors, appliances, furnishings, and other such items. Said documentation shall identify the name of the party that will conduct deconstruction and the dates/time period when deconstruction activity is anticipated to occur.

SC USS-2: Prior to issuance of a demolition permit or building permits, and during the course of the project, the Applicant shall comply with all provisions of Title 6, Division 7, Chapter 9 of the Irvine Municipal Code, requiring submittal and implementation of a City-approved Waste Management Plan that shall contain the following, as a minimum.

- Proposed start and end date for the project
- Description of deconstruction efforts
- Estimated weight of project waste to be generated by material type
- Maximum weight of such materials that can feasibly be diverted via reuse or recycling by material type
- City-authorized vendor(s) that the Applicant proposes to use to haul the materials
- Name and location of recycling and/or material recovery facility or facilities to which the materials will be hauled, the amount of material to be hauled to such facilities, and expected diversion rates by material type
- Estimated weight of construction and demolition debris that will be disposed of in a landfill

4.18.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Appendix G of the CEQA Guidelines the proposed project would create a significant impact to utilities and service systems if it would:

- A) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

- B) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- C) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- D) Have insufficient water supplies available to serve the entitlements and resources, or require new or expanded entitlements;
- E) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- F) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
- G) Conflict with federal, state, and local statutes and regulations related to solid waste

4.18.4 ENVIRONMENTAL IMPACTS

A), B), D), E) LESS THAN SIGNIFICANT WITH MITIGATION. The Irvine Ranch Water District (IRWD) provides potable (drinking) water, non-potable (recycled) water and sewer services to the City of Irvine and to the project site. IRWD encompasses a 181-square mile service area with an estimated population of more than 381,000. IRWD's water resources reliability program relies on diversifying water supplies and further maximizing local resources to meet demands. These efforts include maximizing local groundwater development, expanding IRWD's recycling water program, and developing water banking facilities in the Kern County area to provide a contingency, supplemental supply for extended drought or supply interruptions when imported supplies may be restricted.

IRWD's Urban Water Management Plan (UWMP) examines IRWD's historic and current water use projections and compares water supplies with demands over the next 20 years. The UWMP serves as a long-range planning document for water supply and demand and provides an overview of IRWD's water supply and usage, recycled water and conservation programs. The Plan identifies imported and local water supplies that will meet future demands, including groundwater recovery and water recycling, as well as IRWD's current and planned conservation measures. The Plan is updated every five years.

The Irvine Ranch Water District assumes a water demand factor, as well as a waste water generation factor, for office buildings of 200 gallons per day/1,000 square feet of building; this would equate to a daily demand of 9,360 gallons for the fully developed Project. Due to this increase in demand on IRWD water and wastewater facilities, impacts are potentially significant. As such, Mitigation Measure MM USS-1 is required to reduce impacts to water and sewer

services. This Mitigation Measure (MM USS-1) would require the Applicant to draft to an amendment to the Sub-Area Master Plan or a technical memorandum, and submit the Master Plan or memorandum to IRWD to obtain certification from IRWD that the additional water and sewer demands from the Project can be accommodated by IRWD. With implementation of Mitigation Measure USS-1, impacts to water and sewer facilities will be less than significant.

Section 4.9 (Hydrology) in this document discusses water and wastewater treatment in additional detail, particularly in light of the increase in runoff to be generated by an increase in impervious surfaces accompanying Project development, and contains Project Design Features, Standard Conditions, and Mitigation Measures that will ensure any Project impacts to Hydrology will be less than significant.

C) LESS THAN SIGNIFICANT IMPACT. The proposed increased medical office use would increase impervious areas compared to existing conditions. Project development would include construction of new impervious surfaces (reference following Table 4.9-A) that may result in an increase in the amount of stormwater captured on the Project site and conveyed to the City storm drain system. Surface runoff from the project site will be collected and treated using biofiltration devices and routed into the proposed on-site storm drain system. All roof drains also will be connected to the proposed on-site storm drain system and flow through Filterra biofiltration units. To limit hydromodification, an 84-inch diameter/25-foot long detention tank with sump pump will be included in the storm drain system to limit the flow rate exiting the project site. The tank will discharge to the existing catch basin on Osborn, which is connected to the existing 18-inch storm drain line on Osborn and then to a 36-inch storm drain that leads to the San Diego Creek tributary. However, due to the amount of impervious surface being added, the post-development runoff volume for the 2-year, 24-hour storm event exceeds the pre-development condition for the 2-year, 24-hour storm event by more than 5 percent, as indicated in Table 4.9-B. The Project is designed to comply with City building codes to minimize impacts associated with flooding. In addition, implementation of Project Design Feature **PDF HYD/WQ-1** will be sufficient in detaining the additional 872 cubic feet of runoff created by Project development and operation, as indicated in the Preliminary Water Quality Management Plan. With implementation of **PDF HYD/WQ-1**, post-development runoff from the 2-year, 24-hour storm event would not exceed the pre-development condition for the 2-year, 24-hour storm event by more than 5 percent; therefore, impacts would be less than significant.

F) LESS THAN SIGNIFICANT IMPACT. According to officials at Orange County Waste and Recycling, the Frank R. Bowerman landfill has permission to operate until year 2053 and capacity to operate until 2065. This landfill accepts not only solid waste from uses within the City of Irvine, but also accepts solid waste from other cities in Los Angeles County. The CalRecycle estimate for solid waste generated by an office use is one pound per 100 square feet per day. Therefore, the proposed 46,800 square foot medical office building can be expected to generate 468 net pounds of solid waste per day. This amounts to an increase of 308 pounds per day over the current estimated generation of 160 pounds per day. Project-generated solid waste disposal will account for a small fraction of total remaining capacity (as indicated above, the Landfill has 48 more years of operational capacity) and thereby will result in a less than significant impact to the landfill that will serve the Project.

G) LESS THAN SIGNIFICANT IMPACT. The City of Irvine requires (City Council Ordinance No. 07.18) as follows - - “at least 75% of all concrete and asphalt construction and demolition debris and 50% of all other construction and demolition debris generated by any Covered Project shall be delivered to a material recovery facility, with the intention that such material be recycled, or otherwise diverted from landfills through direct delivery of such materials to brokers or end-users, through on-site reuse, or through any other diversion method(s) specified in an approved Waste Management Plan.” Covered Projects are defined as any of the following: all projects involving residential development of more than one residential unit; all projects involving new non-residential development of at least one structure with a project area of 5,000 square feet or greater; or, all projects involving non-residential demolition and/or renovation of 10,000 square feet or greater of project area. The Project thereby qualifies as a “Covered Project.” The City of Irvine, through Ordinance No. 07.18, complies with State regulations related to diversion of solid waste. The Project will not conflict with federal, state, or local statutes and regulations related to solid waste; the Project impact will be less than significant.

4.18.5 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Project development and operation would increase the size of a medical office building on the project site by more than 30,000 square feet and add approximately 64 additional employees. This increase would necessitate additional water use and sewage disposal. The level of such would be potentially significant.

4.18.6 PROJECT DESIGN FEATURE

No Project Design Feature was required.

4.18.7 MITIGATION MEASURES

MM USS-1: Prior to issuance of any grading permit, the Applicant shall obtain, and submit to the City, certification from Irvine Ranch Water District that IRWD can accept the potable, non-potable, and sewer system capacity associated with the Project. The Applicant shall submit a technical memorandum or a Sub-Area Master Plan addendum to IRWD in order to obtain IRWD’s certification, and shall submit a copy of the Master Plan addendum or technical memorandum to the City prior to issuance of grading permits.

4.18.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Adherence to State and local regulations, including above-noted City of Irvine Standard Conditions, and implementation of the Mitigation Measure above will ensure project development and operation impacts to Utilities and Service Systems will be reduced to a less than significant level.

4.18.9 CUMULATIVE IMPACTS

The sole application approved for future development within the vicinity of the Project site at the time of the Notice of Preparation publication pertained to the 18-acre (162,444 square foot) Woodbridge Village Center, located at 4500-4820 Barranca Parkway, approximately one-half mile west of the Project site along Barranca Parkway. Approvals at Woodbridge Village Center allow for uses that are typical within a retail center.

The City of Irvine Planning Commission granted approvals on July 21, 2016 for the modernization of the Woodbridge Village Retail Center through the following applications: Master Plan Modification to re-image the existing center and expand outdoor spaces; a Conditional Use Permit modification for a gas station, drive-thru car wash and convenience store; and a Conditional Use Permit for a new 4,226 square foot fast food restaurant with drive-thru. With various demolition activities, the redeveloped retail center would be decreased by 25,246 square feet – from 162,444 to 137,198 square feet.

The Irvine Water District provides water and waste water service to the medical office building property. Drainage facilities are in place. The Woodbridge Village Center renovation project is conditioned to comply with all City drainage requirements as well as having all water and waste water service in place. The Project also is required to comply with all City of Irvine and State requirements related to provision of water and waste water service as indicated in this section. In addition, added stormwater flow rates due to increased impervious surface will be accommodated per Mitigation Measures specified in the Hydrology and Water Quality Section of this EIR. Therefore, the proposed larger medical office building is not anticipated to result, together with the Woodbridge Village Center renovation, in significant cumulative impacts related to Utilities and Service Systems.

Section 5 Growth Inducing Impacts of the Proposed Project/ Significant Unavoidable Adverse Impacts

5.0 GROWTH INDUCING IMPACTS TO THE PROPOSED PROJECT/SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Growth Inducing Impacts of the Proposed Project

CEQA Guidelines Sections 15126(d) and 15126.2(d) require an analysis of project level and cumulative growth inducing impacts on the surrounding environment. The following questions provide the context for addressing potential growth-inducing effects.

- A. Would the project remove obstacles to growth, e.g. through construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?
- B. Would this project result in the need to expand one or more public services to maintain desired levels of service?
- C. Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?
- D. Would approval of this project involve some precedent setting action that could encourage and facilitate other activities that could significantly affect the environment?

According to CEQA Guidelines, growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment.

- A. Would the project remove obstacles to growth, e.g. through construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?**

As indicated in the Initial Study and in this Environmental Impact Report (Section 2 – Project Description and Section 4.13 – Population and Housing), the Project would not involve construction of new major infrastructure facilities or extension of major infrastructure facilities in the Project vicinity that would induce substantial population growth. All roadways, drainage facilities and public utilities connections exist and are sized to accommodate the level of development the Project proposes. Existing utility facilities from surrounding roadways will provide a sufficient connection to the existing utility systems to accommodate Project build out.

The Project consists of a General Plan Amendment, Zone Change and Master Plan that would allow demolition of an existing single-story (16,015 square foot) medical office building and 122 surface parking spaces and replace it with a new two-story medical office building (46,800 square feet) with open ground-level parking (260 spaces) on an approximate 2.9-acre site. The General

Section 5 Growth Inducing Impacts of the Proposed Project/ Significant Unavoidable Adverse Impacts

Plan and Zone Change would increase allowable development intensity by 30,785 square feet in the 3.1 Multi-Use zoning designation by amending applicable maximum square footage tables and exhibits within the 3.1 Multi-Use zone of Planning Area 15 to allow for the proposed development. The Master Plan establishes design relative to building size, height, setbacks, floor plans, architectural elevations, parking and landscaping. Medical Office use is allowed within the multi-use zoning designation. However, under present regulations, no additional building intensity would be allowed in the 3.1 zone of Planning Area 15 as it exceeds maximum caps. Approval of the proposed General Plan Amendment and Zone Change would remove an existing regulatory obstacle to expand existing non-residential uses in Planning Area 15 and enable the proposed larger facility medical office building. Therefore, requested discretionary approvals would result directly in employment growth consisting of short-term construction jobs and long-term medical office jobs. The scale of this growth in population, employment and housing would not be substantial, as indicated in Section 4.13 – Population and Housing of this document.

B. Would this project result in the need to expand one or more public services to maintain desired levels of service?

No expansion of public services would be necessary to accommodate Project build out as discussed in Section 4.14 – Public Services and Utilities. Fire protection and emergency service is provided to the Project site primarily from Station #36, which is approximately one-fourth mile southeast of the site, at 301 East Yale Loop. Law enforcement services to the Village of Woodbridge are provided by the Irvine Police Department. Project development would not result in substantial impacts to other public services such as schools (no housing is proposed to be constructed on site and the Project is not anticipated to substantially increase population such that schools would be affected) or libraries. Therefore, Project development and operation will not result in the need to expand one or more public services to maintain desired levels of service.

C. Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

Project development would result in temporary construction-related employment and longer-term employment opportunities associated with future medical offices. Therefore, Project development will encourage and facilitate economic effects but none of which could significantly affect the environment. Furthermore, the scale of the proposed Project would not be sufficiently large or result in sufficient population growth to cause new physical structures to be built that would impact the environment.

D. Would approval of this project involve some precedent setting action that could encourage and facilitate other activities that could significantly affect the environment?

Approval of the proposed General Plan Amendment and Zone Change would allow an increase of development intensity of 30,785 square feet within the 3.1 Multi-Use zone of Woodbridge Village

Section 5 Growth Inducing Impacts of the Proposed Project/ Significant Unavoidable Adverse Impacts

Planning Area 15. A surplus of unused development intensity in the 4.1 Neighborhood Commercial zone of Planning Area 15 would remain available if the Project were to be approved as proposed. Although property owners may apply for intensified development and propose to amend the City General Plan and Zoning Ordinance to accommodate any future proposals, approval of the proposed Project will not involve a precedent setting action that could be applied to other properties and thereby encourage or facilitate growth that otherwise would not occur. General Plan Amendment and Zone Change requests are legislative actions that are granted on a case-by-case basis after careful consideration.

Significant Unavoidable Adverse Impacts

Section 15126.2(c) of the CEQA Guidelines requires that an Environmental Impact Report describe any significant irreversible environmental changes that would result from development (construction) or operation of the proposed project. Implementation of the proposed project would involve demolition of the existing 16,015 square foot single-story medical office building and construction of a two-story, 46,800 square foot medical office building above a surface parking garage.

Project development involves a long-term commitment of the use of the property. It is likely the life span of the new medical office building could extend for as long as 25-50 years. As determined in the various sections of this document, development and operation of the proposed medical office building will not result in significant unavoidable adverse impacts to the environment. The following impacts are noted, but are either temporary in nature (noise and air quality resulting from demolition and construction activities), can be assumed by existing providers of public services (police services, fire and emergency services, utility providers, and waste disposal services), or are accommodated within existing facilities (transportation and traffic roadway system). Although the following are noted, none of the impacts are considered “significant” in scope or scale, as indicated throughout this document and as follows.

- **Aesthetics** – Partial view impacts were identified as the proposed building will be larger in scale from the existing building. However, the proposed building is well within City setbacks and height standards, exceeds landscape requirements, and will utilize similar building materials as the existing building. Potential impacts from light and glare are mitigated, resulting in a less than significant impact.
- **Agricultural Resources** – No impacts to Agricultural Resources would result from Project development and operation because the Project site is fully developed with a medical office use, the Project vicinity is fully developed with various offices, commercial, public and residential uses. No Prime Farmland, forest resources or agriculturally-zoned land is on the Project site.
- **Air Quality** – All identified impacts would be Less Than Significant in scale in that no South Coast Air Quality standards or plans would be violated. Project operation would

Section 5 Growth Inducing Impacts of the Proposed Project/ Significant Unavoidable Adverse Impacts

comply with South Coast Air Quality Management District requirements. In addition, City Standard Conditions would ensure dust generated by demolition and construction would be controlled and will not impact nearby sensitive uses.

- **Biological Resources** – The Project site is fully developed as a medical office facility. The Project vicinity also is fully developed with urban uses. No sensitive, threatened or endangered species inhabit the Project site. However, Project development will require removal of some trees on site and may disturb some bird species during mating season. Implementation of specified Mitigation Measures will ensure these impacts will be reduced to a Less Than Significant level. In addition, Project development and operation will not conflict with adopted State, regional or City habitat conservation plans.
- **Cultural Resources** – City Standard Conditions will ensure any paleontological resources or human remains uncovered during grading activities will be handled in compliance with legal requirements. All potential impacts to these and archaeological resources will remain at a Less Than Significant level.
- **Geology and Soils** – The Project site is not located within a designated Earthquake Fault Zone. No faults cross the Project site. However, like all Southern California, the Project site can be subject to effects from ground shaking during earthquakes, including liquefaction due to area soft soils and high groundwater. However, implementation of the specified Mitigation Measure will ensure any Project-related impact will remain at a Less Than Significant level.
- **Greenhouse Gas Emissions** – Project development and operation will not result in generation of greenhouse gas emissions that would conflict with any adopted State plans. As a result, any Project-related impacts related to greenhouse gas emissions would be Less Than Significant.
- **Hazards and Hazardous Materials** – Demolition and construction activities would generate small amounts of hazardous materials. No asbestos or lead-based paint is present on the Project site due to the relative age of the existing medical office building. Project operation will generate medical (and potentially dental) waste. However, compliance with State of California and County of Orange requirements related to storage, transport and disposal of such waste will ensure all related impacts will be reduced to, and remain, a Less Than Significant level. Furthermore, there is a Mitigation Measure that will require a study to verify no asbestos is present on underground pipelines.
- **Hydrology and Water Quality** – Project-related development and operation activities will not result in significant impacts to water quality or flooding, with the exception of increased surface runoff. This will be reduced to, and be maintained at, a Less Than Significant level with implementation of specified Project Design Features, Best

Section 5 Growth Inducing Impacts of the Proposed Project/ Significant Unavoidable Adverse Impacts

Management Practices and Mitigation Measures.

- **Land Use and Planning** – No impacts to City adopted plans, habitat conservation plans or the land use pattern of the Project vicinity will result from Project development or operation.
- **Mineral Resources** – No impacts to Mineral Resources would result from Project development and operation because the Project site is fully developed with a medical office use, the Project vicinity is fully developed with various offices, commercial, public and residential uses. No mineral resources or appropriately-zoned land is on the Project site.
- **Noise** – All Project development (demolition and construction) related noise will be maintained at a Less Than Significant level. Noise from construction activities would only be temporary in nature. Nearby sensitive land uses will not be exposed to long-term significant increases in ambient noise levels. The resultant impacts will be Less Than Significant in scale.
- **Population and Housing** – Project development will not result in substantial population, employment or housing growth that would cause deterioration in any physical facilities or divide any area communities. No people or housing would be displaced.
- **Public Services and Utilities** – Project development will not result in substantial increases in population, employment or housing growth that would cause deterioration of any physical facilities, or require new public services and utilities. All related impacts to nearby facilities would be Less Than Significant in scale.
- **Recreation** – Due to the Less Than Significant increase in population and employment resulting from Project development and operation, any related impacts to area recreation facilities would be Less Than Significant.
- **Transportation and Traffic** – Project development and operation will not cause significant deterioration of traffic flow on area roadways or at area intersections. The scale of Project-related traffic impacts thereby will remain at a Less Than Significant level.

Utilities and Service Systems – Project development and operation will not result in impacts of a significant level that are related to fire/emergency services, law enforcement services, parks, schools and other public facilities. This is because Project-related population and employment growth would not be sufficiently large to cause need for new or expanded facilities nor would cause deterioration to existing public facilities. The only Potentially Significant Impact is related to an increase of impervious surface area on the Project site that would impact stormwater flow amount and rate. However, this impact will be mitigated to a Less Than Significant Level by adhering to Irvine Ranch Water District requirements.

6.0 ALTERNATIVES TO THE PROPOSED PROJECT

6.1 PURPOSE AND SCOPE

CEQA Guidelines Section 15126.6 requires an Environmental Impact Report to describe and analyze "... 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." In addition, it is noted that an Environmental Impact Report is not required to consider every conceivable alternative to the project or to consider infeasible alternatives, but should identify alternatives that were considered by the Lead Agency (in the present case, the City of Irvine) and rejected as infeasible. CEQA Guidelines specify that the range of alternatives required in an Environmental Impact Report is governed by a "rule of reason" that requires an Environmental Impact Report to set forth only those alternatives necessary to permit a reasoned choice. Reasons for rejecting an alternative include the failure of the alternative to meet most Project Objectives, the alternative is infeasible, or the alternative would not avoid significant impacts to the environment. CEQA Guidelines Section 15126.6(f)(1) states that evaluation of feasibility of alternatives can consider "site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries... and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site."

The Project Environmental Impact Report has not identified any impacts resulting from development and operation of the proposed Project that would remain significant after implementation of Mitigations, Standard Conditions, and/or Project Design Features.

The following Alternatives analysis is framed around a comparison of impacts resulting from development and operation of the proposed Project and those impacts associated with the alternatives. The alternatives identified and evaluated are the following:

- No Project Alternative
- Project with Transfer of Development Intensity Alternative
- Reduced Medical Office Building Height/Reduced Square Footage with Transfer of Development Intensity Alternative
- Reduced Medical Office Building Height/Reduced Square Footage with NO Transfer of Development Intensity Alternative
- General Office/Reduced Building Height/Reduced Square Footage with Transfer of Development Intensity Alternative
- General Office/Reduced Building Height/Reduced Square Footage with NO Transfer of Development Intensity Alternative

6.2 PROJECT OBJECTIVES

The following are the primary Project Objectives:

- To provide additional local medical services in the Woodbridge Village community.
- To concentrate jobs near residential areas and regional transportation systems.
- To provide a sustainably designed building that is not only energy conscious but also a healthy work environment and that is designed to attain Leadership in Energy and Environmental Design (LEED) certification from the United States Green Building Council

6.3 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS

Project Alternatives that were considered and rejected included the following:

- Another Location
- Construction of Two Smaller Medical Buildings with a Combined Square Footage Equal to the Project, and a Parking Structure On-Site
- Relocation of the Medical Office Building on the Project Site

No other property in the vicinity of the Project site is controlled by, or owned by, the project Applicant; therefore, the Another Location Alternative was rejected. Although construction of two smaller medical buildings would achieve Project objectives, this Alternative, because the total square footage proposed would remain the same as would the proposed medical use, would not reduce or eliminate potential impacts pertaining to Hazards and Hazardous Materials; Noise; Transportation and Traffic; Public Services, or Utilities and Service Systems. Depending on building placement and height, potential impacts pertaining to Aesthetics (light and glare) could be lessened. The Relocation Alternative was rejected because, due to the unchanging equivalent building area, traffic generation and medical office use, it would not reduce or eliminate impacts pertaining to Hazards and Hazardous Materials; Noise; Transportation and Traffic; Public Services; or Utilities and Service Systems.

6.4 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

Based on the criteria listed above, the following four alternatives have been determined to represent a reasonable range of alternatives. The alternatives analyzed below are the following;

- No Project Alternative
- Project with Transfer of Development Intensity Alternative
- Reduced Medical Office Building Height/Square Footage with Transfer of Development Intensity Alternative
- Reduced Medical Office Building Height/Reduced Square Footage with NO Transfer of Development Intensity Alternative
- General Office/Reduced Building Height/Reduced Square Footage with Transfer of Development Intensity Alternative
- General Office/Reduced Building Height/Reduced Square Footage with NO Transfer of

Section 6

Alternatives to the Proposed Project

Development Intensity Alternative

The following Table 6-A provides a summary of relative impacts and feasibility of each alternative. A more detailed discussion of each alternative is provided below.

TABLE 6-A Summary of Development Alternatives			
	Alternative	Description	Basis for Selection and Summary of Analysis
	Project	<ul style="list-style-type: none"> Demolish single-story 16,015 square foot medical office building Construct two-story 46,800 square foot medical office building over parking garage (48 feet, 8 inches height to top of mechanical screen) General Plan Amendment and Zone Change to increase allowable development intensity by 30,785 square feet in 3.1 Multi-Use zoning designation in Planning Area 15 Master Plan to establish designs for building size, height, setbacks, floor plans and architectural elevations, 260 total parking spaces, landscaping 	<ul style="list-style-type: none"> Increases overall intensity by 30,785 square feet in 3.1 Multi-Use zoning designation in Planning Area 15
ALT #	Alternatives Analyzed in this Environmental Impact Report		
#1	No Project Alternative	<ul style="list-style-type: none"> Existing City General Plan and Zoning Ordinance development intensities would remain Existing single-story, 16,015 square foot medical office building would remain Existing 122 parking spaces would remain 	<ul style="list-style-type: none"> Required by CEQA Eliminates most environmental impacts associated with the Project Does not meet all Project Objectives
#2	Project with Transfer of Development Intensity Alternative	<ul style="list-style-type: none"> Construct two-story 46,800 square foot medical office building over parking garage (48 feet, 8 inches height to top of mechanical screen) Required 260 total parking spaces Project, excludes addition of 30,785 square feet of development intensity to 3.1 Multi-Use zone, but rather transfers 30,785 square feet of development intensity from 4.1 Neighborhood Commercial zone to 3.1 Multi-Use zone in PA 15 	<ul style="list-style-type: none"> Level of environmental impacts same as with Project Meets Project Objectives No increase in overall square footage intensity in PA 15

Section 6

Alternatives to the Proposed Project

		<ul style="list-style-type: none"> General Plan Amendment and Zone Change to transfer intensity between zones 	
#3	Reduced Medical Office Building Height/Reduced Square Footage with Transfer of Development Intensity Alternative	<ul style="list-style-type: none"> Construction of two-story, 36,540 square foot medical office building, representing a reduction of 10,260 square feet from proposed Project Eliminates first floor parking garage, thereby reducing overall building height by 10 feet (approximately 38 feet, 8 inches height to top of mechanical screen) Required parking reduced to 203 spaces Transfer of 20,525 square feet of development intensity from 4.1 Neighborhood Commercial zone to 3.1 Multi-Use zone in PA 15 General Plan Amendment and Zone Change to transfer intensity between zones 	<ul style="list-style-type: none"> Lessens environmental impacts pertaining to aesthetics, air quality, hazards and hazardous materials, land use, noise, public services, transportation and traffic, and utilities and service systems Meets Project Objectives No increase in overall square footage intensity in PA 15
#4	Reduced Medical Office Building Height/Reduced Square Footage with NO Transfer of Development Intensity Alternative	<ul style="list-style-type: none"> Construction of two-story, 36,540 square foot medical office building, representing a reduction of 10,260 square feet from proposed Project Eliminates first floor parking garage, thereby reducing overall building height by 10 feet (approximately 38 feet, 8 inches height to top of mechanical screen) Required parking reduced to 203 spaces General Plan Amendment and Zone Change to increase allowable development intensity by 20,525 square feet in 3.1 Multi-Use zoning designation in Planning Area 15 	<ul style="list-style-type: none"> Lessens environmental impacts pertaining to aesthetics, air quality, hazards and hazardous materials, land use, noise, public services, transportation and traffic, and utilities and service systems Meets Project Objectives Increases overall square footage intensity by 20,525 square feet in PA 15
#5	General Office/Reduced Building Height/Reduced Square Footage with Transfer of Development Intensity Alternative	<ul style="list-style-type: none"> Construction of two-story, 36,540 square foot general office building Eliminates first floor parking garage, thereby reducing overall building height by 10 feet (approximately 38 feet, 8 inches height to top of mechanical screen) Required parking reduced to 147 spaces Transfer of 20,525 square feet of 	<ul style="list-style-type: none"> Lessens environmental impacts pertaining to aesthetics, air quality, hazards and hazardous materials, land use, noise, public services, transportation and

Section 6

Alternatives to the Proposed Project

		<p>development intensity from 4.1 Neighborhood Commercial to 3.1 Multi-Use zone in PA 15</p> <ul style="list-style-type: none"> • General Plan Amendment and Zone Change to transfer intensity between zones 	<p>traffic, and utilities and service systems</p> <ul style="list-style-type: none"> • Does not meet all Project Objectives • No increase in overall square footage intensity in PA 15
#6	General Office/Reduced Building Height/Reduced Square Footage with NO Transfer of Development Intensity Alternative	<ul style="list-style-type: none"> • Construction of two-story, 36,540 square foot general office building • Eliminates first floor parking garage, thereby reducing overall building height by 10 feet (approximately 38 feet, 8 inches height to top of mechanical screen) • Required parking reduced to 147 spaces • General Plan Amendment and Zone Change to increase allowable development intensity by 20,525 square feet in 3.1 Multi-Use zoning designation in Planning Area 15 	<ul style="list-style-type: none"> • Lessens environmental impacts pertaining to aesthetics, air quality, hazards and hazardous materials, land use, noise, public services, transportation and traffic, and utilities and service systems • Does not meet all Project Objectives • Increases overall square footage intensity by 20,525 square feet in PA 15

6.5 IMPACT ANALYSIS

6.5.1 No Project Alternative (Alternative #1)

CEQA Guidelines Section 15126.6(e) requires an evaluation of a “No Project Alternative.” The No Project Alternative compares environmental impacts of the Project site remaining in its current state (i.e. as a single-story, 16,015 square foot medical office building) versus environmental impacts with mitigation measures if the City were to approve the Project.

Impact Analysis

Aesthetics

There would be no additional impact to the visual character of the Project site because the existing single-story medical office use, parking lot and mature site landscaping would remain as developed. That is, the general appearance of the Project site would not change. No impacts to a scenic vista or scenic highway would occur in that Barranca Parkway is not a State- or City-designated scenic highway. Further, there would be no additional light and glare emitted. Medical offices generally close by 6:00 p.m., which for most of the year occurs in daylight or

twilight. Thereby, use of light is minimized. Parking lot lighting would remain confined to the Project site through use of existing shield boxes. Tree removal would not occur. Therefore, impacts related to Aesthetics would be less than significant and reduced when compared to the Project.

Agricultural Resources

There would be no impacts to Agricultural Resources in the No Project Alternative. The project site is not utilized for farmland purposes, is not zoned for agricultural use, or utilized for forest use. The Project site currently is developed with a medical building, surface parking lot and imported landscaping. The surrounding areas are developed with medical offices, administrative offices, residences and a private school and have no farmland. No Williamson Act land, Prime Farmland or forest resources would be impacted by Project development.

Air Quality

No increases in air pollutant emissions would occur with this Alternative because it would not involve construction and would not increase the intensity of the existing development onsite. No short-term or long-term generation of emissions would result. No fugitive dust or potential air quality impacts associated with grading, demolition or construction activities would be generated. In addition, no generation of Volatile Organic Compounds from architectural coatings would occur. Furthermore, no odors associated with construction equipment would be generated. Therefore, impacts related to Air Quality would be less than significant and reduced when compared to the Project.

Biological Resources

The No Project Alternative would maintain the Project site in its current state. The Project site is fully developed and is located within an urbanized area. No change in use or development intensity accompanies this Alternative. Therefore, this Alternative would have no effect on existing habitat on-site or off-site or on wetlands. In addition, implementation of this Alternative would not conflict with the adopted Orange County Natural Community Conservation Plan – Central and Coastal Sub-Region or the City of Irvine Urban Forestry Manual. Therefore, impacts related to Biological Resources would be less than significant and reduced when compared to the Project.

Cultural Resources

Implementation of the No Project Alternative would not result in any potential significant impacts to historical, archaeological, or paleontological resources, or result in any disturbance to human remains. No grading or construction would occur. Therefore, impacts related to Cultural Resources would be less than significant and reduced when compared to the Project.

Geology and Soils

Any potential impacts related to Geology and Soils would be avoided because the No Project Alternative would maintain the Project site in its current state as developed with a 16,015 square foot medical office building, parking lot and landscaping. No grading would occur. Therefore, impacts related to Geology and Soils would be less than significant and reduced when compared to the Project.

Greenhouse Gas Emissions

No change in use, grading or construction would occur with the No Project Alternative. Therefore, no increase in greenhouse gas emissions would occur. The City of Irvine has not adopted a citywide Climate Action Plan but has adopted an Energy (Conservation) Plan. This Alternative would not conflict with any adopted plan, policy or regulation adopted for the purpose of reducing greenhouse gases. In addition, no additional energy would be consumed by Project development or operation. Therefore, impacts related to Greenhouse Gas Emissions would be less than significant and reduced when compared to the Project.

Hazards and Hazardous Materials

Implementation of the No Project Alternative would not result in any additional use, transport or disposal of potentially hazardous materials generated by medical and dental uses because the current use would be maintained. No potentially hazardous construction materials would be transported, used or disposed. In addition, no additional impacts to emergency services would result. Therefore, impacts related to Hazards and Hazardous Materials would be less than significant and reduced when compared to the Project.

Hydrology and Water Quality

Implementation of the No Project Alternative would result in less runoff than the Project. Impervious surfaces would not be increased and thereby no increase in amount of storm water captured on-site and conveyed to the City storm drain system would occur. Surface drainage would remain as is. No additional dangers from exposing people or property to seiche or other dam failure would occur. Furthermore, no impacts would occur to bodies of water in the Project vicinity. Therefore, impacts related to Hydrology and Water Quality would be less than significant and reduced when compared to the Project.

Land Use and Planning

The No Project Alternative would allow the current 16,015 square foot medical office building to continue to operate. No additional allowable building square footage would be permitted. No additional impacts to the surrounding community or to Orange County Natural Community Conservation Plan – Central and Coastal Sub-Region or the City of Irvine Urban Forestry Manual provisions would occur. Therefore, impacts related to Land Use would be less than significant

and reduced when compared to the Project.

Mineral Resources

There would be no impacts to Mineral Resources in this Alternative. Mineral extraction activities are not present on the project site or on adjacent or nearby properties in the urbanized Woodbridge Village community. The project site and surrounding areas are not identified as sources of important mineral resources. As such, the potential for mineral resources to occur on site is low. Furthermore, the project site is not located within a mineral producing area as classified by the California Geologic Survey. Implementation of this Alternative will not result in loss of availability of a known mineral resource that would be of value to the region and residents of the State.

Noise

Implementation of the No Project Alternative would not involve any construction activity and thereby would not increase temporary noise levels on-site or in the Project vicinity. In addition, because no construction would occur and the use would remain current there would be no increase in long-term noise associated with Project operation. Therefore, impacts related to Noise would be less than significant and reduced when compared to the Project.

Population and Housing

The No Project Alternative would not add residents or employees and thereby result in less than significant and reduced impacts to Population and Housing when compared to the Project.

Public Services

Implementation of the No Project Alternative would not result in any new impacts or in increased impacts to public services provision. No new housing would be provided. No new population or employment would be generated. Therefore, impacts related to Public Services would be less than significant and reduced when compared to the Project.

Recreation

Implementation of the No Project Alternative would not generate any new population or employment on the Project site. No additional use of recreation facilities would occur. Therefore, impacts related to Recreation would be less than significant and reduced when compared to the Project.

Transportation and Traffic

Implementation of the No Project Alternative will generate fewer overall and peak hour vehicle trips than the Project. Therefore, impacts related to Transportation and Traffic would be less than

significant and reduced when compared to the Project.

Utilities and Service Systems

Implementation of the No Project Alternative would not result in increased demand for utilities provision related to water, sewer, electricity, natural gas and solid waste disposal. Therefore, impacts related to Utilities and Service Systems would be less than significant and reduced when compared to the Project.

Conclusion

The No Project/Existing General Plan Alternative would avoid or reduce potential impacts that would result from development and operation of the Project in all impact categories. However, this Alternative would not meet the Project Objectives. Implementation of the No Project Alternative would not result in creation of jobs beneficial to the community, nor provide additional local medical services to the community that could be accessible by walking or biking. Furthermore, the No Project Alternative would not provide a new sustainably designed building for the purpose of attaining LEED certification from the United States Green Building Council.

6.5.2 Project with Transfer of Development Intensity Alternative (Alternative #2)

This Alternative would provide for the following: demolition of the existing 16,015 square foot single-story medical office building on the 2.86-acre Project site; construction of a two-story 46,800 square foot medical office building in part over a 57-space ground level parking garage; 260 total parking spaces (57 within the open parking garage; 203 within a surface lot); and, landscaping. In addition, this Alternative would exclude the Project application request to add 30,785 square feet to the 3.1 Multi-Use zone and instead provide for transfer of 30,785 square feet of unused allowable development intensity from the 4.1 Neighborhood Commercial zone to the 3.1 Multi-Use zone within Woodbridge Village to accommodate the proposed increased development on the Project site.

In practical effect, this Alternative would enable the Project to be developed as proposed, but without adding to the overall level of impacts in the Village of Woodbridge.

Impact Analysis

Aesthetics

This Alternative would not substantially damage scenic resources or scenic vistas existing on or near the Project site. In addition, this Alternative would result in light and glare impacts commensurate to the Project. Therefore, impacts related to Aesthetics for Alternative #2 would be equivalent in scope and scale when compared to the Project.

Agricultural Resources

There would be no impacts to Agricultural Resources in the Project with Transfer of Development Intensity Alternative, the same as the Project's impact. The project site is not utilized for farmland purposes, is not zoned for agricultural use, or utilized for forest use. The Project site currently is developed with a medical building, surface parking lot and imported landscaping. The surrounding areas are developed with medical offices, administrative offices, residences and a private school and have no farmland. No Williamson Act land, Prime Farmland or forest resources would be impacted by Project development.

Air Quality

This Alternative would be the same scope and scale as the project and would therefore, as with the Project, which would not result in generation of additional pollutants that would exceed regional air quality standards. In addition, this Alternative would be required to comply with South Coast Air Quality Management District Rule 403 related to control fugitive dust. Short-term and long-term impacts to Air Quality would be generally identical in scale and scope to the Project. Therefore, impacts related to Air Quality for Alternative #2 would be equivalent in scope and scale when compared to the Project.

Biological Resources

This Alternative would not result in additional or more substantial impacts to Biological Resources than those identified as resulting from Project development. This Alternative would not increase impacts to wildlife habitats or wildlife corridors and would not conflict with any City-adopted or regionally-adopted habitat conservation plans, such as the Orange County Natural Community Conservation Plan – Central and Coastal Sub-Region or the City of Irvine Urban Forestry Manual. Therefore, impacts related to Biological Resources Alternative #2 would be equivalent in scope and scale when compared to the Project.

Cultural Resources

This Alternative would not result in additional or more substantial impacts to Cultural Resources (historical resources, archaeological resources, or paleontological resources) than those identified as resulting from Project development because this Alternative would allow development equivalent in scope and scale when compared to the Project. Any potential impact to unknown human remains would be mitigated in a manner similar to that required of the Project. Therefore, impacts related to Cultural Resources for Alternative #2 would be equivalent in scope and scale when compared to the Project.

Geology and Soils

This Alternative would not change the intensity of proposed development on the Project site or change the development footprint from the Project. No additional or new impacts pertaining to

exposure of people or structures to seismic shaking and its collateral effects would occur as a result of implementation of this Alternative. Therefore, impacts related to Geology and Soils for Alternative #2 would be equivalent in scope and scale when compared to the Project.

Greenhouse Gas Emissions

This Alternative would not result in generation of greenhouse gases in excess of recommended State standards. The City of Irvine has not adopted a citywide Climate Action Plan but has adopted an Energy (Conservation) Plan. This Alternative would comply with City of Irvine recommendations for reduction of greenhouse gas emissions in a manner similar to the Project. This Alternative would allow the Project to be developed at its proposed intensity. Therefore, impacts related to Greenhouse Gas Emissions for Alternative #2 would be equivalent in scope and scale when compared to the Project.

Hazards and Hazardous Materials

Implementation of this Alternative would not result in any additional use, transport or disposal of potentially hazardous materials generated by medical and dental uses over that of the Project. No additional hazardous construction materials would be transported, used or disposed. In addition, no additional impacts to emergency services would result. Therefore, impacts related to Hazards and Hazardous Materials for Alternative #2 would be equivalent in scope and scale when compared to the Project.

Hydrology and Water Quality

Implementation of this Alternative would result in similar runoff as would the Project. Impervious surfaces would not be increased and thereby no increase in amount of storm water captured on-site and conveyed to the City storm drain system would occur. Surface drainage would remain as is. No additional dangers from exposing people or property to seiche or other dam failure would occur. Furthermore, no additional impacts would occur to bodies of water in the Project vicinity. Therefore, impacts related to Hydrology and Water Quality for Alternative #2 would be equivalent in scope and scale when compared to the Project.

Land Use and Planning

Implementation of this Alternative would eliminate the request to add 30,785 square feet of additional intensity to the 3.1 Multi-Use zone. Instead, this Alternative would allow unused 30,785 square feet of allowable development intensity in the neighboring 4.1 Neighborhood Commercial zone to be transferred to the 3.1 Multi-Use zone to allow for the Project site expansion. No division to the existing community would result. Therefore, impacts related to Land Use and Planning for Alternative #2 would be equivalent in scope and scale when compared to the Project.

Mineral Resources

There would be no impacts to Mineral Resources in this Alternative. Mineral extraction activities are not present on the project site or on adjacent or nearby properties in the urbanized Woodbridge Village community. The project site and surrounding areas are not identified as sources of important mineral resources. As such, the potential for mineral resources to occur on site is low. Furthermore, the project site is not located within a mineral producing area as classified by the California Geologic Survey. Implementation of this Alternative will not result in loss of availability of a known mineral resource that would be of value to the region and residents of the State.

Noise

Construction noise would be short-term in nature and mitigated in a way commensurate to that for the Project. There would be long-term increases in noise equivalent to the Project. Implementation of this Alternative would enable the Project to be developed as proposed, but would not add to the overall level of short-term or long-term noise. Therefore, impacts related to Noise for Alternative #2 would be equivalent in scope and scale when compared to the Project.

Population and Housing

Implementation of this Alternative would not result in generation of population beyond that of the Project. No housing would be accommodated in this Alternative, as with the Project. In addition, there would be an increase in employment generation equal to that contemplated for the Project. Therefore, impacts to Population and Housing for Alternative #2 would be equivalent in scope and scale when compared to the Project.

Public Services

Under this Alternative the demand for public services generated by addition of 30,785 square feet of allowable development could increase the Alternative's impact related to provision of fire protection and emergency services, law enforcement services, and potentially other public services, such as use of libraries. However, the development intensity of this Alternative would be equivalent to the proposed development intensity of the Project. Therefore, impacts to Public Services for Alternative #2 would be equivalent in scope and scale when compared to the Project.

Recreation

This Alternative does not propose housing. There would be an increase in employment due to the transfer of 30,785 square feet of allowable development from the 4.1 Neighborhood Commercial zone to the 3.1 Multi-Use zone. However, impacts to Recreation for Alternative #2 would be equivalent in scope and scale when compared to the Project.

Transportation and Traffic

This Alternative would be developed at an allowable intensity and area as that proposed by the

Project because 30,785 square feet of allowable development intensity would be transferred from the 4.1 Neighborhood Commercial zone to the 3.1 Multi-Use zone. No increase in trips would occur because overall Project traffic generation and peak hour vehicle trips would remain as analyzed for the Project. Impacts related to Transportation and Traffic (adjacent roadways and intersections in the vicinity of the Project site) for Alternative #2 would be equivalent in scope and scale when compared to the Project.

Utilities and Service Systems

This Alternative would be developed at an allowable intensity and area as that proposed in the Project because 30,785 square feet of allowable development intensity would be transferred from the 4.1 Neighborhood Commercial zone to the 3.1 Multi-Use zone. No increase in development intensity would occur. No additional demand for water provision, sewer service, electricity, natural gas and solid waste disposal would be necessary beyond that in the proposed Project. Therefore, impacts to Utilities and Service Systems for Alternative #2 would be equivalent in scope and scale when compared to the Project.

Conclusion

Implementation of the Project with Transfer of Development Intensity Alternative would result in impacts similar in scope and scale to those identified with the Project. This Alternative would not avoid or lessen the impacts of the Project, but would potentially slightly lessen impacts in the City due to the transfer of unused development intensity in the 4.1 Neighborhood Commercial zone to the 3.1 Multi-Use zone. There would be no increase of overall square footage within the Planning Area. In addition, this Alternative would accomplish Project Objectives. Jobs would be created. Additional medical care would be available to Irvine residents (who could walk or bike to the new medical office building) and residents of nearby cities. In addition, the building would be designed to attain LEED certification from the United States Green Building Council.

6.5.3 Reduced Medical Office Building Height/Reduced Square Footage with Transfer of Development Intensity Alternative (Alternative #3)

This Alternative would reduce the size of the proposed medical office building to 36,540 square feet (decrease of 10,260 square feet) by removing the 57-space first floor open parking garage. This would result in a reduction of the proposed building height by 10 feet to approximately 38 feet, 8 inches to top of mechanical screen. In addition, this Alternative would forego the originally-requested increase in allowable development intensity within the 3.1 Multi-Use zone and would request a transfer of 20,525 square feet of allowable development intensity from the 4.1 Neighborhood Commercial zone to the 3.1 Multi-Use zone to accommodate a building area of 36,540 square feet. Landscaping is included in this Alternative. Required parking would be reduced to 203 parking spaces that will be provided in a surface lot.

Impact Analysis

Aesthetics

This Alternative at build out would result in a 22 percent reduction in building square footage compared to the Project (36,540 square feet rather than 46,800 square feet) and a building height reduction of 10 feet to an approximately 38 feet, 8 inches to top of mechanical screen. Views to and across the Project site would be less impeded compared to the Project due to the reduction in building massing and height. No change in impact related to a scenic highway or scenic resource would result. Due to the reduced building square footage and structure height, there would be commensurately less light and glare emanating from the building. Surface parking lot lighting would remain substantially the same; however, lighting within the eliminated parking garage would be absent. Therefore, impacts related to Aesthetics would be lessened slightly with implementation of Alternative #3 when compared to the Project.

Agricultural Resources

There would be no impacts to Agricultural Resources in this Alternative. The project site is not utilized for farmland purposes, is not zoned for agricultural use, or utilized for forest use. The Project site currently is developed with a medical building, surface parking lot and imported landscaping. The surrounding areas are developed with medical offices, administrative offices, residences and a private school and have no farmland. No Williamson Act land, Prime Farmland or forest resources would be impacted by Project development.

Air Quality

The reduced building area - 36,540 square feet - in this Alternative would result in commensurately fewer overall and peak hour automobile trips generated by this Alternative which in turn would result in fewer emissions from automobile traffic during operation of the project. Construction-related temporary increases in pollutants also would decrease slightly due to less construction and shorter duration of construction. Similar to the Project, this Alternative would not violate regional air quality standards or result in a considerable net increase of any criteria pollutant. In addition, this Alternative would lessen the time that sensitive receptors may be exposed to vehicle exhaust and related odors. Therefore, impacts related to Air Quality would be lessened with implementation of Alternative #3 when compared to the Project.

Biological Resources

Implementation of this Alternative would involve similar level of impacts to biological resources as the Project in that demolition and construction activities could disturb nearby nesting activities, although during a shortened time frame. No riparian or federally protected wetlands, habitats or species would be impacted. Furthermore, impletion of this Alternative would not conflict with any City-adopted or regionally-adopted habitat conservation plans, such as the Orange County Natural Community Conservation Plan – Central and Coastal Sub-Region or the City of Irvine

Urban Forestry Manual. Therefore, impacts related to Biological Resources of Alternative #3 would be equivalent in scope and scale when compared to the Project.

Cultural Resources

Implementation of this Alternative would involve somewhat less grading (in depth) than the Project. Thereby, no impact on historical, archaeological or paleontological resources would occur. The potential for uncovering human remains would be maintained. Therefore, impacts related to Cultural Resources of Alternative #3 would be equivalent or very slightly less when compared to the Project.

Geology and Soils

Implementation of this Alternative would have the same potential as the Project of exposing people or structures to adverse effects involving ground shaking or ground failure. Therefore, impacts related to Geology and Soils of Alternative #3 would be equivalent when compared to the Project.

Greenhouse Gas Emissions

Implementation of this Alternative would result in fewer automobile trips, fewer construction vehicle trips, less grading, and shorter time of construction. In turn, the potential for emission of greenhouse gases would be reduced. Therefore, impacts related to Greenhouse Gas Emissions of Alternative #3 would be less when compared to the Project.

Hazards and Hazardous Materials

Implementation of this Alternative would involve slightly less construction materials due to the reduced scale of the building. This, combined with fewer medical offices in the building would result in slightly less potential for creation of a hazard to the public or environment that could result from use, transport and/or disposal of hazardous (medical waste; construction-associated waste) materials. Construction time would be slightly lessened; thereby, fewer emissions would occur that could potentially affect nearby sensitive uses. Therefore, impacts related to Hazards and Hazardous Materials of Alternative #3 would be less when compared to the Project.

Hydrology and Water Quality

Implementation of this Alternative would maintain roughly the same amount of impervious surface as the Project in that the first floor of the building would in part replace the surface parking. Water quality standards, waste discharge requirements, runoff, and existing drainage patterns would remain. No housing or structures would be placed in a 100-year flood hazard area and danger of exposing people or structures to flooding from rupture of a dam or levee or from inundation by seiche, tsunami or mudflow would remain unchanged (as no impact). Therefore, impacts related to Hydrology and Water Quality of Alternative #3 would likely be equivalent to

the Project impacts.

Land Use and Planning

Implementation of this Alternative would transfer reserved and unallocated development intensity within the 4.1 Neighborhood Commercial zone to the 3.1 Multi-Use zone in the planning area. The current proposed Project would increase 30,785 square feet of total intensity within the 3.1 Multi-Use zone plus retain unused 30,785 square feet minimum of development within the 4.1 Neighborhood Commercial zone for future expansions. This Alternative would not increase the total square footage in the Planning Area; instead it would increase 3.1 Multi-Use zone by 20,525 square feet resulting from transfer of remaining development intensity from the 4.1 Neighborhood Commercial zone (subtract 20,525 square feet).

Mineral Resources

There would be no impacts to Mineral Resources in this Alternative. Mineral extraction activities are not present on the project site or on adjacent or nearby properties in the urbanized Woodbridge Village community. The project site and surrounding areas are not identified as sources of important mineral resources. As such, the potential for mineral resources to occur on site is low. Furthermore, the project site is not located within a mineral producing area as classified by the California Geologic Survey. Implementation of this Alternative will not result in loss of availability of a known mineral resource that would be of value to the region and residents of the State.

Noise

Implementation of this Alternative would involve less construction, shorter duration of construction, and 22 percent less development square footage on the Project site. Thereby, short-term noise (related to development of the medical office building) and long-term noise (related to operation of the reduced-size medical office building) would be commensurately less. This would prove less exposure of sensitive receptors to noise. Therefore, impacts related to Noise of Alternative #3 would be lessened when compared to the Project.

Population and Housing

Implementation of this Alternative would not include housing; thereby no population would be added. However, it is possible some of the new employees would choose to reside in Irvine. An estimated 21 fewer employment opportunities would result with this alternative (employee increase by 41) when compared to the Project (employee increase by 62) based on City of Irvine General Plan (Table A-3) employment generation figures for multi-use projects. Therefore, impacts related to Population, Housing and Employment of Alternative #3 would be slightly lessened when compared with the Project.

Public Services

Implementation of this Alternative would decrease the size of the proposed medical office building by 10,260 square feet to allow a 36,540 square foot building, with the transfer of 20,525 square feet of allowable development from the 4.1 Neighborhood Commercial zone. The overall decrease from the Project would result in commensurate fewer needs for public services. Therefore, impacts to Public Services of Alternative #3 would be lessened when compared to the Project.

Recreation

No housing would be added as part of implementation of this Alternative. The smaller building would generate fewer employees and therefore would potentially mean less employee-generated use of nearby recreation facilities. Therefore, impacts related to Recreation of Alternative #3 would be lessened when compared to the Project.

Transportation and Traffic

This Alternative would result in 10,260 square feet less of medical office when compared to the Project. This would translate to fewer vehicle trips involving patients, employees, maintenance workers and public service providers, both overall and at peak hours. In addition, fewer parking spaces would be required and accommodated in total on the surface parking lot. Therefore, impacts related to Transportation and Traffic of Alternative #3 would be lessened when compared to the Project.

Utilities and Service Systems

Implementation of this Alternative would generate less need for water provision, sewer service, wastewater treatment, and solid waste disposal. Therefore, impacts related to Utilities and Service Systems of Alternative #3 would be lessened when compared to the Project.

Conclusion

Alternative #3 would reduce Project impacts. There would be no increase of overall square footage within the Planning Area compared to existing conditions under this Alternative. This Alternative would accomplish Project Objectives but to a slightly lesser degree than the Project due to the reduction in scale compared to the Project. Jobs would be created. Additional medical care would be available to Irvine residents (who could walk or bike to the new medical office building) and residents of nearby cities. In addition, the building would be designed to attain LEED certification from the United States Green Building Council.

6.5.4 Reduced Medical Office Building Height/Reduced Square Footage with NO Transfer of Development Intensity Alternative (Alternative #4)

This Alternative would reduce the size of the proposed medical office building to 36,540 square feet (decrease of 10,260 square feet from Project) by removing the 57-space first floor open parking garage. This would result in a reduction of the proposed building height by 10 feet to approximately 38 feet, 8 inches (two stories) height to top of mechanical screen. Similar to the Project, this Alternative would - require an increase in allowable development intensity within the 3.1 Multi-Use zone by 20,525 square feet (compared to 30,785 square feet needed for Project) in the 3.1 Multi-Use zone. Landscaping is included in this Alternative. Required parking would be reduced to 203 parking spaces that would be provided in a surface lot.

Aesthetics

This Alternative at build out would result in a 22 percent reduction in building square footage compared to the Project (36,540 square feet rather than 46,800 square feet) and a building height reduction of 10 feet to an approximately 38 feet, 8 inches to top of mechanical screen. Views to and across the Project site would be less impeded compared to the Project due to the reduction in building massing and height. No change in impact related to a scenic highway or scenic resource would result. Due to the reduced building square footage and structure height, there would be commensurately less light and glare emanating from the building. Surface parking lot lighting would remain substantially the same; however, lighting within the eliminated parking garage would be absent. Therefore, impacts related to Aesthetics would be lessened with implementation of Alternative #4 when compared to the Project.

Agricultural Resources

There would be no impacts to Agricultural Resources in this Alternative. The project site is not utilized for farmland purposes, is not zoned for agricultural use, or utilized for forest use. The Project site currently is developed with a medical building, surface parking lot and imported landscaping. The surrounding areas are developed with medical offices, administrative offices, residences and a private school and have no farmland. No Williamson Act land, Prime Farmland or forest resources would be impacted by Project development.

Air Quality

The reduced building area - 36,540 square feet - in this Alternative would result in commensurately fewer overall and peak hour automobile trips generated by this Alternative which in turn would result in fewer emissions from automobile traffic during operation of the project. Construction-related temporary increases in pollutants also would decrease slightly due to less construction and shorter duration of construction. Similar to the Project, this Alternative would not violate regional air quality standards or result in a considerable net increase of any criteria pollutant. In addition, this Alternative would lessen the time that sensitive receptors may be exposed to vehicle exhaust and related odors. Therefore, impacts related to Air Quality would be

lessened with implementation of Alternative #4 when compared to the Project.

Biological Resources

Implementation of this Alternative would involve similar level of impacts to biological resources as the Project in that demolition and construction activities could disturb nearby nesting activities, although during a shortened time frame. No riparian or federally protected wetlands, habitats or species would be impacted. Furthermore, impletion of this Alternative would not conflict with any City-adopted or regionally-adopted habitat conservation plans, such as the Orange County Natural Community Conservation Plan – Central and Coastal Sub-Region or the City of Irvine Urban Forestry Manual. Therefore, impacts related to Biological Resources of Alternative #4 would be equivalent in scope and scale when compared to the Project.

Cultural Resources

Implementation of this Alternative would involve somewhat less grading (in depth) than the Project. Thereby, no impact on historical, archaeological or paleontological resources would occur. The potential for uncovering human remains would be maintained. Therefore, impacts related to Cultural Resources of Alternative #4 would be equivalent or very slightly less when compared to the Project.

Geology and Soils

Implementation of this Alternative would have the same potential as the Project of exposing people or structures to adverse effects involving ground shaking or ground failure. Therefore, impacts related to Geology and Soils of Alternative #4 would be equivalent when compared to the Project.

Greenhouse Gas Emissions

Implementation of this Alternative would result in fewer automobile trips, fewer construction vehicle trips, less grading, and shorter time of construction. In turn, the potential for emission of greenhouse gases would be reduced. Therefore, impacts related to Greenhouse Gas Emissions of Alternative #4 would be less when compared to the Project.

Hazards and Hazardous Materials

Implementation of this Alternative would involve slightly less construction materials due to the reduced scale of the building. This, combined with fewer medical offices in the building would result in slightly less potential for creation of a hazard to the public or environment that could result from use, transport and/or disposal of hazardous (medical waste; construction-associated waste) materials. Construction time would be slightly lessened; thereby, fewer emissions would occur that could potentially affect nearby sensitive uses. Therefore, impacts related to Hazards and Hazardous Materials of Alternative #4 would be less when compared to the Project.

Hydrology and Water Quality

Implementation of this Alternative would maintain roughly the same amount of impervious surface as the Project in that the first floor of the building would in part replace the surface parking. Water quality standards, waste discharge requirements, runoff, and existing drainage patterns would remain. No housing or structures would be placed in a 100-year flood hazard area and danger of exposing people or structures to flooding from rupture of a dam or levee or from inundation by seiche, tsunami or mudflow would remain unchanged (as no impact). Therefore, impacts related to Alternative #4 would likely be equivalent to the Project impacts.

Land Use and Planning

This Alternative would retain the originally-requested increase in allowable development intensity within the 3.1 Multi-Use zone as the Project does, thereby increasing the overall square footage in Planning Area 15. In addition, there would be unused minimum 30,785 square feet of development within the 4.1 Neighborhood Commercial zone for future expansions. Total new medical office building area would be 36,540 square feet (10,260 square feet less than the proposed Project). As a result, implementation of Alternative #4 would result in less impact related to Land Use and Planning than implementation of the proposed Project.

Mineral Resources

There would be no impacts to Mineral Resources in this Alternative. Mineral extraction activities are not present on the project site or on adjacent or nearby properties in the urbanized Woodbridge Village community. The project site and surrounding areas are not identified as sources of important mineral resources. As such, the potential for mineral resources to occur on site is low. Furthermore, the project site is not located within a mineral producing area as classified by the California Geologic Survey. Implementation of Alternative #4 will not result in loss of availability of a known mineral resource that would be of value to the region and residents of the State.

Noise

Implementation of this Alternative would involve less construction, shorter duration of construction, and 22 percent less development square footage on the Project site. Thereby, short-term noise (related to development of the medical office building) and long-term noise (related to operation of the reduced-size medical office building) would be commensurately less. This would prove less exposure of sensitive receptors to noise. Therefore, impacts related to Noise of Alternative #4 would be lessened when compared to the Project.

Population and Housing

Implementation of this Alternative would not include housing; thereby no population would be added. However, it is possible some of the new employees would choose to reside in Irvine. An

estimated 21 fewer employment opportunities would result with this alternative (employee increase by 41) when compared to the Project (employee increase by 62) based on City of Irvine General Plan (Table A-3) employment generation figures for multi-use projects. Therefore, impacts related to Population, Housing and Employment of Alternative #4 would be slightly lessened when compared with the Project.

Public Services

Implementation of this Alternative would decrease the size of the proposed medical office building by 10,260 square feet to allow a 36,540 square foot building, with no transfer of allowable development from the 4.1 Neighborhood Commercial zone. The overall decrease from the Project would result in commensurate fewer needs for public services. Therefore, impacts to Public Services from implementation of Alternative #4 would be lessened when compared to the Project.

Recreation

No housing would be added as part of implementation of this Alternative. The smaller building would generate fewer employees and therefore would potentially mean less employee-generated use of nearby recreation facilities. Therefore, impacts related to Recreation of Alternative #4 would be lessened when compared to the Project.

Transportation and Traffic

This Alternative would result in 10,260 square feet less of medical office space when compared to the Project. This would translate to fewer vehicle trips involving patients, employees, maintenance workers and public service providers, both overall and at peak hours. In addition, fewer parking spaces would be required and accommodated in total on the surface parking lot. Therefore, impacts related to Transportation and Traffic of Alternative #4 would be lessened when compared to the Project.

Utilities and Service Systems

Implementation of this Alternative would generate less need for water provision, sewer service, wastewater treatment, and solid waste disposal. Therefore, impacts related to Utilities and Service Systems of Alternative #4 would be lessened when compared to the Project.

Conclusion

Alternative #4 with NO Transfer would reduce Project impacts. There would be an increase of overall square footage within the Planning Area by 20,525 square feet in the 3.1 Multi-Use Zone Planning Area 15. Thereby, there would be retained an unused minimum 30,785 square feet of development within the 4.1 Neighborhood Commercial zone for future expansions. This Alternative would accomplish Project Objectives but to a slightly lesser degree than the Project

due to the reduction in scale compared to the Project. Jobs would be created. Additional medical care would be available to Irvine residents (who could walk or bike to the new medical office building) and residents of nearby cities. In addition, the building would be designed to attain LEED certification from the United States Green Building Council.

6.5.5 General Office/Reduced Building Height/Reduced Square Footage with Transfer of Development Intensity Alternative (Alternative #5)

This Alternative would reduce the size of the proposed building to 36,540 square feet (10,260 square feet decrease) by removing the 57-space first floor open parking area. This would result in a reduction of the proposed building height by 10 feet to approximately 38 feet, 8 inches ~~height~~ to top of mechanical screen. This Alternative would provide for a General Office Building rather than a Medical Office Building. In addition, this Alternative would forego the current requested increase of 30,785 square feet development intensity within the 3.1 Multi-Use zone (to accommodate a 46,800 square foot medical office use) and instead request a transfer of 20,525 square feet of development intensity from the 4.1 Neighborhood Commercial zone to the 3.1 Multi-Use zone to accommodate a 36,540 square foot general office use. Landscaping is included in this Alternative. Required parking would be reduced to 147 parking spaces that will be provided in a surface lot.

Impact Analysis

Aesthetics

This Alternative would result in 22 percent reduction of building square footage than the Project (36,540 square feet rather than 46,800 square feet) and a 10 foot building height reduction to approximately 38 feet, 8 inches to top of mechanical screen rather than 48 feet. The Project site is developed and thereby no additional degradation of scenic resources on site would occur. Views to and across the Project site would be less impeded. No change in impact related to a scenic highway or scenic resource would result. However, due to the reduced building square footage and building height, there would be commensurately less light and glare emanating from the building. Surface parking lot light would remain substantially the same; lighting within the eliminated parking garage would be absent. Therefore, impacts related to Aesthetics of Alternative #5 would be lessened when compared to the Project.

Agricultural Resources

There would be no impacts to Agricultural Resources in Alternative #5. The project site is not utilized for farmland purposes, is not zoned for agricultural use, or utilized for forest use. The Project site currently is developed with a medical building, surface parking lot and imported landscaping. The surrounding areas are developed with medical offices, administrative offices, residences and a private school and have no farmland. No Williamson Act land, Prime Farmland or forest resources would be impacted by Project development.

Air Quality

The reduced building area and change in general office land use (36,540 square feet) in this Alternative would result in commensurately fewer overall and peak hour automobile trips generated by this Alternative. Based on the Institute of Transportation Engineers, the number of peak hour and daily vehicular trips for a general office would be less than the number of vehicular trips generated for a medical office. In turn, this would result in less emissions from automobile traffic (Project-generated; construction-generated). Construction-related temporary increases in pollutants also would decrease due to less construction and shorter duration of construction. This Alternative would not violate regional air quality standards or result in a considerable net increase of any one criteria pollutant. In addition, this Alternative would lessen the time that sensitive receptors may be exposed to vehicle exhaust and related odors. Therefore, impacts related to Air Quality of Alternative #5 would be lessened when compared to the Project.

Biological Resources

Implementation of this Alternative would involve similar level of impacts to biological resources as the Project in that demolition and construction activities could disturb nearby nesting activities, although during a shortened time frame. No riparian or federally protected wetlands, habitats or species would be impacted substantially. Furthermore, implementation of this Alternative would not conflict with any City-adopted or regionally-adopted habitat conservation plans, such as the Orange County Natural Community Conservation Plan – Central and Coastal Sub-Region or the City of Irvine Urban Forestry Manual. Therefore, impacts related to Biological Resources of Alternative #5 would be equivalent in scope and scale when compared to the Project.

Cultural Resources

Implementation of this Alternative would involve somewhat less grading (in depth) than the Project. Thereby, no impact on historical, archaeological or paleontological resources would occur. The potential for uncovering human remains would be maintained. Therefore, impacts related to Cultural Resources of Alternative #5 would be equivalent or very slightly less when compared to the Project.

Geology/Soils

Implementation of this Alternative would still have the potential of exposing people or structures to adverse effects involving ground shaking or ground failure. Therefore, impacts related to Geology and Soils of Alternative #5 would be equivalent when compared to the Project.

Greenhouse Gas Emissions

Implementation of this Alternative would result in fewer automobile trips, fewer construction vehicle trips, less grading, and shorter time of construction. In turn, the potential for emission of greenhouse gases would be reduced. Therefore, impacts related to Greenhouse Gas Emissions of

Alternative #5 would be less when compared to the Project.

Hazards/Hazardous Materials

Implementation of this Alternative would involve less construction and would be operated for general office uses, instead of medical offices. General Office uses would not include transport and/or disposal of hazardous medical waste materials. Although existing regulations reduce hazards associated with medical uses to a less than significant level. Construction waste, some of which may be hazardous, would be generated. However, construction time would be lessened; thereby, fewer construction-related hazardous emissions would occur that could potentially affect nearby sensitive uses. Therefore, impacts related to Hazards and Hazardous Materials of Alternative #5 would be less when compared to the Project.

Hydrology/Water Quality

Implementation of this Alternative would maintain roughly the same amount of impervious surface as the Project in that the first floor of the building would in part replace the parking garage. Water quality standards, waste discharge requirements, runoff, and existing drainage patterns would remain. No housing or structures would be placed in a 100-year flood hazard area and danger of exposing people or structures to flooding from rupture of a dam or levee or from inundation by seiche, tsunami or mudflow would remain unchanged (as no impact). Therefore, impacts related to Hydrology and Water Quality of Alternative #5 would likely be equivalent to the Project impacts.

Land Use and Planning

Implementation of this Alternative would change the land use by eliminating medical office with general office uses and reducing the scale of development from the proposed Project. This would decrease the medical services available in the Village of Woodbridge. General Office land use is consistent with the City of Irvine General Plan and Zoning Ordinance for the 3.1 Multi-Use zone within the Village of Woodbridge. In addition, the change in land use would not divide an existing community or conflict with any City-adopted or regionally-adopted habitat conservation plans, such as the Orange County Natural Community Conservation Plan – Central and Coastal Sub-Region or the City of Irvine Urban Forestry Manual.

Implementation of this Alternative would also mean less development could occur within the 4.1 Neighborhood Commercial zone as unused intensity will be transferred and the overall square footage in Village of Woodbridge will not be further increased. The currently proposed Project would increase 30,785 square feet of allowable development within the 3.1 Multi-Use zone while also retaining unused 30,785 square feet minimum of development intensity within the 4.1 Neighborhood Commercial zone.

Mineral Resources

There would be no impacts to Mineral Resources in this Alternative. Mineral extraction activities are not present on the project site or on adjacent or nearby properties in the urbanized Woodbridge Village community. The project site and surrounding areas are not identified as sources of important mineral resources. As such, the potential for mineral resources to occur on site is low. Furthermore, the project site is not located within a mineral producing area as classified by the California Geologic Survey. Therefore, project development and operation will not result in loss of availability of a known mineral resource that would be of value to the region and residents of the state.

Noise

Implementation of this Alternative would involve less construction, shorter duration of construction, and 22 percent less development on the Project site. Thereby, short-term noise (related to development of the Alternative) and long-term noise (related to operation of the reduced-size office building) would be commensurately less. This would result in less exposure of sensitive receptors to noise. Therefore, impacts related to Noise of Alternative #5 would be lessened when compared to the Project.

Population & Planning

Implementation of this Alternative would not include housing; thereby no population would be added. However, it is possible some of the new employees would choose to reside in Irvine. An estimated 21 fewer employment opportunities would result with this alternative (employee increase by 41) when compared to the Project (employee increase by 62) based on City of Irvine General Plan (Table A-3) employment generation figures for multi-use projects.). Therefore, impacts related to Population, Housing and Employment of Alternative #5 would be slightly lessened when compared with the Project.

Public Services

Implementation of this Alternative would decrease the size of the building by 10,260 square feet to allow, but with the transfer of 20,525 square feet of allowable development from the 4.1 Neighborhood Commercial zone to allow a 36,540 square foot building. The overall decrease from the Project would result in less need for public services. Therefore, impacts related to Public Services of Building Alternative #5 would be lessened when compared to the Project.

Recreation

No housing would be added as part of implementation of this Alternative. Fewer employees than the Project would mean potentially less use of recreation facilities. Therefore, impacts related to Recreation of Alternative #5 would be lessened when compared to the Project.

Transportation & Traffic

This Alternative would result in 10,260 square feet less for general office use than the Project. This compared to the proposed project would translate to fewer vehicle trips involving employees, no patients, maintenance workers and public service providers, both overall and during peak hours. In addition, fewer parking spaces would be required for office use and accommodated in total on the surface parking lot. As mentioned earlier, the number of peak hour and daily vehicular trips for a general office would be less than the number of vehicular trips generated for a medical office. Therefore, impacts related to Transportation and Traffic of Alternative #5 would be lessened when compared to the Project.

Utilities & Service Systems

Implementation of this Alternative would generate less need for water provision, sewer service, wastewater treatment, and solid waste disposal due to the reduced scale of the building. Therefore, impacts related to Utilities and Service Systems of Alternative #5 would be lessened when compared to the Project.

Conclusion

Alternative #5 would lessen Project impacts related to Aesthetics, Air Quality, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Population and Housing (Employment), Public Services, Transportation and Traffic, and Utilities and Service Systems. The decrease in impact levels would be the result of a smaller building and a change in land use from medical office to general office.

Implementation of Alternative #5 would accomplish most of the Project Objectives with the exception of providing local medical services that can easily be accessed by walking or biking. This Alternative would provide jobs to the community. There would be no increase of overall square footage within the Planning Area under this Alternative as intensity will be transferred. Furthermore, this Alternative would provide a building designed to attain LEED certification from the United States Green Building Council.

6.5.6 General Office/Reduced Building Height/Reduced Square Footage with NO Transfer of Development Intensity Alternative (Alternative #6)

This Alternative would reduce the size of the proposed building to 36,540 square feet (10,260 square feet decrease) by removing the 57-space first floor open parking area. This would result in a reduction of the proposed building height by 10 feet to approximately 38 feet, 8 inches ~~height~~ to top of mechanical screen. Similar to the Project, this Alternative would request an increase in the allowable development intensity in the 3.1 Multi-Use zone in Planning Area 15 (to accommodate a 36,540 square foot general office use). Landscaping is included in this Alternative. Required parking would be reduced to 147 parking spaces that would be provided in a surface lot.

Impact Analysis

Aesthetics

This Alternative would result in 22 percent reduction of building square footage than the Project (36,540 square feet rather than 46,800 square feet) and a 10 foot building height reduction to approximately 38 feet, 8 inches to top of mechanical screen rather than 48 feet. The Views to and across the Project site would be less impeded compared to the Project due to the reduction in building massing and height. No change in impact related to a scenic highway or scenic resource would result. However, due to the reduced building square footage and building height, there would be commensurately less light and glare emanating from the building. Surface parking lot light would remain substantially the same; lighting within the eliminated parking garage would be absent. Therefore, impacts related to Aesthetics of this Alternative would be lessened when compared to the Project.

Agricultural Resources

There would be no impacts to Agricultural Resources in this Alternative. The project site is not utilized for farmland purposes, is not zoned for agricultural use, or utilized for forest use. The Project site currently is developed with a medical building, surface parking lot and imported landscaping. The surrounding areas are developed with medical offices, administrative offices, residences and a private school and have no farmland. No Williamson Act land, Prime Farmland or forest resources would be impacted by Project development.

Air Quality

The reduced building area and change in land use from medical to general office (36,540 square feet) in this Alternative would result in commensurately fewer overall and peak hour automobile trips generated by this Alternative. Based on the Institute of Transportation Engineers, the number of peak hour and daily vehicular trips for a general office would be less than the number of vehicular trips generated for a medical office. In turn, this would result in less emissions from automobile traffic (Project-generated; construction-generated). Construction-related temporary increases in pollutants also would decrease due to less construction and shorter duration of construction. This Alternative would not violate regional air quality standards or result in a considerable net increase of any one criteria pollutant. In addition, this Alternative would lessen the time that sensitive receptors may be exposed to vehicle exhaust and related odors. Therefore, impacts related to Air Quality of Alternative #6 would be lessened when compared to the Project.

Biological Resources

Implementation of this Alternative would involve similar level of impacts to biological resources as the Project in that demolition and construction activities could disturb nearby nesting activities, although during a shortened time frame. No riparian or federally protected wetlands, habitats or species would be impacted substantially. Furthermore, impletion of this Alternative would not

conflict with any City-adopted or regionally-adopted habitat conservation plans, such as the Orange County Natural Community Conservation Plan – Central and Coastal Sub-Region or the City of Irvine Urban Forestry Manual. Therefore, impacts related to Biological Resources of Alternative #6 would be equivalent in scope and scale when compared to the Project.

Cultural Resources

Implementation of this Alternative would involve somewhat less grading (in depth) than the Project. Thereby, no impact on historical, archaeological or paleontological resources would occur. The potential for uncovering human remains would be maintained. Therefore, impacts related to Cultural Resources of Alternative #6 would be equivalent or very slightly less when compared to the Project.

Geology/Soils

Implementation of this Alternative would still have the potential as the Project of exposing people or structures to adverse effects involving ground shaking or ground failure. Therefore, impacts related to Geology and Soils of Alternative #6 would be equivalent when compared to the Project.

Greenhouse Gas Emissions

Implementation of this Alternative would result in fewer automobile trips, fewer construction vehicle trips, less grading, and shorter time of construction. In turn, the potential for emission of greenhouse gases would be reduced. Therefore, impacts related to Greenhouse Gas Emissions of Alternative #6 would be less when compared to the Project.

Hazards/Hazardous Materials

Implementation of this Alternative would involve less construction and would preclude opportunities for medical offices. General Office uses would not include transport and/or disposal of hazardous medical waste materials. Although existing regulations reduce hazards associated with medical uses to a less than significant level. Construction waste, some of which may be hazardous, would be generated. However, construction time would be lessened; thereby, fewer construction-related hazardous emissions would occur that could potentially affect nearby sensitive uses. Therefore, impacts related to Hazards and Hazardous Materials of Alternative #6 would be less when compared to the Project.

Hydrology/Water Quality

Implementation of this Alternative would maintain roughly the same amount of impervious surface as the Project in that the first floor of the building would in part replace the parking garage. Water quality standards, waste discharge requirements, runoff, and existing drainage patterns would remain. No housing or structures would be placed in a 100-year flood hazard area and danger of exposing people or structures to flooding from rupture of a dam or levee or from

inundation by seiche, tsunami or mudflow would remain unchanged (as no impact). Therefore, impacts related to Hydrology and Water Quality of Alternative #6 would likely be equivalent to the Project impacts.

Land Use and Planning

Implementation of this Alternative would change the land use by replacing medical office with general office uses from the Project site and reducing the scale of development from the proposed Project. General Office use is consistent with the City of Irvine General Plan and Zoning Ordinance for the 3.1 Multi-Use zone within the Village of Woodbridge. This would decrease the medical services available in the Village of Woodbridge. In addition, the change in land use would not divide an existing community or conflict with any City-adopted or regionally-adopted habitat conservation plans, such as the Orange County Natural Community Conservation Plan – Central and Coastal Sub-Region or the City of Irvine Urban Forestry Manual.

This Alternative would retain the originally-requested increase in allowable development intensity within the 3.1 Multi-Use zone as the Project does, thereby increasing the overall square footage in Planning Area 15. In addition, there would be unused minimum 30,785 square feet of development within the 4.1 Neighborhood Commercial zone for future expansions. Total new general office building area would be 36,540 square feet (10,260 square feet less than the proposed Project). As a result, implementation of this Alternative would result in less impact related to Land Use and Planning than would implementation of the proposed Project.

Mineral Resources

There would be no impacts to Mineral Resources in this Alternative. Mineral extraction activities are not present on the project site or on adjacent or nearby properties in the urbanized Woodbridge Village community. The project site and surrounding areas are not identified as sources of important mineral resources. As such, the potential for mineral resources to occur on site is low. Furthermore, the project site is not located within a mineral producing area as classified by the California Geologic Survey. Therefore, project development and operation will not result in loss of availability of a known mineral resource that would be of value to the region and residents of the state.

Noise

Implementation of this Alternative would involve less construction, shorter duration of construction, and 22 percent less development on the Project site. Thereby, short-term noise (related to development of the Alternative) and long-term noise (related to operation of the reduced-size office building) would be commensurately less. This would result in less exposure of sensitive receptors to noise. Therefore, impacts related to Noise of Alternative #6 would be lessened when compared to the Project.

Population & Planning

Implementation of this Alternative would not include housing; thereby no population would be added. However, it is possible some of the new employees would choose to reside in Irvine. An estimated 21 fewer employment opportunities would result with this alternative (employee increase by 41) when compared to the Project (employee increase by 62) based on City of Irvine General Plan (Table A-3) employment generation figures for multi-use projects. Therefore, impacts related to Population, Housing and Employment of Alternative #6 would be slightly lessened when compared with the Project.

Public Services

Implementation of this Alternative would decrease the size of the building by 10,260 square feet to allow general office use. The overall decrease from the Project would result in less need for public services. Therefore, impacts related to Public Services of this Alternative would be lessened when compared to the Project.

Recreation

No housing would be added as part of implementation of this Alternative. Fewer employees than the Project would mean potentially less use of recreation facilities. Therefore, impacts related to Recreation of Alternative #6 would be lessened when compared to the Project.

Transportation & Traffic

This Alternative would result in a general office use with 10,260 square feet less than the Project. This compared to the proposed project would translate to fewer vehicle trips involving employees, no patients, maintenance workers and public service providers, both overall and during peak hours. In addition, fewer parking spaces would be required for office use and accommodated in total on the surface parking lot. As mentioned earlier, the number of peak hour and daily vehicular trips for a general office would be less than the number of vehicular trips generated for a medical office. Therefore, impacts related to Transportation and Traffic of Alternative #6 would be lessened when compared to the Project.

Utilities & Service Systems

Implementation of this Alternative would generate less need for water provision, sewer service, wastewater treatment, and solid waste disposal due to the reduced scale of the building. Therefore, impacts related to Utilities and Service Systems of Alternative #6 would be lessened when compared to the Project.

Conclusion

Alternative #6 would lessen Project impacts related to Aesthetics, Air Quality, Geology and Soils,

Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Population and Housing (Employment), Public Services, Transportation and Traffic, and Utilities and Service Systems. The decrease in impact levels would be the result of a smaller building and a change in land use from medical office to general office.

Implementation of Alternative #6 would accomplish most of the Project Objectives with the exception of providing local medical services that can easily be accessed by walking or biking. This Alternative would provide jobs to the community. Furthermore, this Alternative would provide a building designed to attain LEED certification from the United States Green Building Council. There would be an increase of overall square footage within the Planning Area.

6.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA required a lead agency to identify the “environmentally superior alternative” and, in cases where the “No Project” Alternative is environmentally superior to the proposed Project, the environmentally superior development alternative must be identified. Four alternatives have been identified as “environmentally superior” to the proposed Project.

- No Project Alternative (Alternative #1)
- Project with Transfer of Development Intensity Alternative (Alternative #2)
- Reduced Medical Office Building Height/Reduced Square Feet with Transfer of Development Intensity Alternative (Alternative #3)
- General Office/Reduced Building Height/Reduced Square Feet with Transfer of Development Intensity Alternative (Alternative #5)

The No Project Alternative (Alternative #1) has the least impact to the environment because it would not result in development (construction) changes to building height, scale, light and glare, and would not generate any additional traffic or short-term and long-term noise. In addition, the No Project Alternative would not result in increased vehicle emissions and would not require any additional public services or utilities. Furthermore, no increase in use, transport or disposal of medical waste would occur. Therefore, this Alternative would avoid all Project impacts. However, it would not meet the Project’s objectives to the extent the Project does.

The Project with Transfer of Development Intensity Alternative (Alternative #2) is identified as an environmentally superior alternative to the proposed Project. Impacts of this Alternative would be similar in scope and scale to the proposed Project, but there would be fewer and less intense cumulative impacts due to the transfer of 30,785 square feet of existing allowable intensity from neighboring zoning designation to another; thereby overall square footage is not increased in the Planning Area. In addition, implementation of this Alternative would accomplish Project Objectives and be designed to attain LEED certification from the United States Green Building Council.

The Reduced Medical Office Building Height/Reduced Square Footage with Transfer of Development Intensity Alternative (Alternative #3) is also identified as an environmentally superior alternative to the proposed Project. This Alternative would lessen the Project’s less than

significant impacts related to Aesthetics (Light and Glare), Air Quality, Greenhouse Gas Emissions, Hazards and Hazardous Substances, Hydrology and Water Quality, Noise, Public Services, and Transportation and Traffic, and associated cumulative impacts. There would be no increase of overall square footage within the Planning Area compared to existing conditions. In addition, this Alternative would accomplish Project Objectives but to a lesser degree than the Project. Jobs would be created. Additional medical care would be available to Irvine residents (who could walk or bike to the new medical office building) and residents of nearby cities. In addition, the building would be designed to attain LEED certification from the United States Green Building Council.

The General Office/Reduced Building Height/Reduced Square Footage with Transfer of Development Intensity Alternative (Alternative #5) also has been identified as an environmentally superior alternative. This Alternative would lessen the Project's less than significant impacts associated with Aesthetics (Light and Glare), Air Quality, Greenhouse Gas Emissions, Hazards and Hazardous Substances, Hydrology and Water Quality, Noise, Public Services, and Transportation and Traffic, and would lessen area cumulative impacts. There would be no increase of overall square footage within the Planning Area compared to existing conditions. This Alternative would attain some Project Objectives. This Alternative would provide jobs to the community. However, the General Office/Reduced Building Height Alternative would not satisfy a Project Objective of providing additional local medical services that can easily be accessed by walking or biking. Furthermore, this Alternative would provide a building designed to attain LEED certification from the United States Green Building Council.

BIBLIOGRAPHY**City of Irvine General Plan**

- Circulation Element
- Conservation and Open Space Element
- Cultural Resources Element
- Energy Element
- Housing Element
- Integrated Waste Element
- Land Use Element
- Parks and Recreation Element
- Public Safety Element
- Recreation Element

City of Irvine

- Business Strategic Plan
- City Bikeways Map
- City Council Resolution 05-153 (Municipal Facilities Green Building Program) (December 13, 2005)
- City Council Resolution 05-154 (City of Irvine Green Homes Program) (December 13, 2005)
- City Council Resolution 07-18 (Diversion of Construction and Demolition Waste) (November 27, 2007)
- City Council Resolution 07-95 (Zero Waste Principles) (July 10, 2007)
- City of Irvine Energy Plan (July 8, 2008)
- Emergency Management Plan
- Final Bicycle Transportation Plan (2011, as amended)
- Irvine Guide to Shop, Dine, Play and Explore (2016)
- “Irvine Senior Connection – An Activity and Resource Guide,” (irvineseniors.org)
- Municipal Code – Section 6-7-900 and 902(A) (Solid Waste Diversion)
- Municipal Code – Section 5-7-401 ff (Urban Forestry Ordinance)
- Park Standards Manual (updated April 20, 2005)
- Planning Commission Resolution No. 08-2920 (October 2, 2008), “A Resolution of the Planning Commission of the City of Irvine Approving Master Plan 00401066-PMPC for the Development of 150,000-Square Feet of Medical Office and 7,200-Square Feet of Retail/Restaurant uses at the northwest Corner of Alton Parkway and Sand Canyon Avenue in Planning Area 12 (Oak Creek); Filed by Centra Realty Corporation”
- Irvine Chamber Visitor’s Bureau, www.IrvineCVB.org

Other

- All Phase Environmental, Inc., “Phase One Environmental Site Assessment of: 2 Osborn Street, Irvine, California, 92604,” (December 24, 2001)
- American Council of Engineering Companies, 2016 California Environmental Quality Act – CEQA Guidelines
- Audubon Society, “The Migratory Bird Treaty Act, Explained”
- California Department of Conservation web page, “CGS Information Warehouse: Mineral Land Classification”
- California Department of Fish and Wildlife, “Natural Community Conservation Plan/Habitat Management Plan: Central/Coastal Orange County”
- California Department of Public Health – Medical Waste Management Program, “Medical Waste Management Act – January 2015: California Health and Safety Code Sections 117600-118360”
- California Environmental Protection Agency – Santa Ana Regional Water Quality Control Board
- California Environmental Protection Agency, “Air Resources Board Scoping Plan” (2007 and 2014)
- Center for Demographic Research, “2016 Orange County Progress Report” for Orange County and for City of Irvine
- Center for Demographic Research, “Orange County Facts & Figures” (June, 2016)
- Christopher Chou, Perkins Coie, “California Land Use & Development Law Report – AB 52 Amends CEQA by Creating a New Category of Cultural Resources and New Requirements for Consultation with Native American Tribes,” (September 30, 2014)
- City of Irvine, 2000 General Plan EIR
- City of Irvine, 2000 General Plan, as adopted June 13, 2006
- City of Irvine, “Emergency Management Plan,” (2004)
- City of Irvine, “Emergency Management Plan – Final,” (July 8, 2008)
- City of Irvine, Municipal Code, available at <http://www.municode.com/resources>
- City of Irvine, Police Services webpage
- County of Orange Environmental Management Agency, “Natural Community Conservation Plan & Habitat Conservation Plan – County of Orange, Central & Coastal Subregion, Parts I and II: NCCP/HCP” (July 17, 1996)
- County of Orange Health Care Agency, “Medical Waste” webpage, ochelathinfo.com/eh/waste/medwaste
- County of Orange Integrated Waste Management Department, “RELOOC – Regional Landfill Options for Orange County, Strategic Plan UPDATE 2007: Planning Together for the Future,” (November, 2007)
- County of Orange, “Regional Landfill Options for Orange County – 40 Year Strategic Plan”
- County of Orange, OCgov.com/OCWaste&Recycling webpage
- County of Orange, “Orange County Sustainable Communities Strategy”

- GMU Geotechnical, Inc., “Report of Geotechnical Investigation, 3-Story Office Building and 4-Level Parking Structure, 2 Osborn, City of Irvine, California,” (July 11, 2014)
- Holly Roberson, JD, “AB 52: A CEQA Guidelines Update for Tribal Cultural Resources”
- Kling Consulting Group, Inc., “Geotechnical Review of Proposed Medical Office Building and Parking Structure, 2 Osborn, Irvine, California,” (October 21, 2016) review of GMU Geotechnical, Inc., Report of Geotechnical Investigation, 3-Story Office Building and 4-Level Parking Structure, 2 Osborn, City of Irvine, California PN 14-086-00 dated July 11, 2014”
- LPA, “Building Height Analysis,” (September 15, 2016)
- LPA, Inc., “Preliminary Water Quality Management Plan (WQMP) (August 15, 2016)
- LPA, Project Plans: Master Plan, Existing Site Plan, Parking Summary, Roadway Sections, Ground Floor Plan, Second and Third Floor Plan, Roof Plan, Exterior Elevations, Landscape Site Plan, (March 15, 2016)
- LSA Associates, Burke Consulting, O.C. Business Services, “Orange County Sustainable Communities Strategy (SCS)”, (June 14, 2011)
- LSA Associates, Inc., “Traffic Impact Analysis – 2 Osborn, City of Irvine, County of Orange, California (October 21, 2016)
- Orange County Fire Authority webpage
- Santa Clara Valley Habitat Agency, “FAQ”, scv-habitatagency.org
- Seismic Hazard Zone Map for the Tustin Quadrangle’
- South Coast Air Quality Management District, “Final 2016 Air Quality Management Plan (AQMP)”
<http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp> (March 2017)
- Southern California Association of Governments, “Local Profiles Report 2015: Profile of the City of Irvine” (May 2015)
- Southern California Association of Governments, “Regional Transportation Plan: 2012-2035; Sustainable Communities Strategy,” (April, 2012)
- State of California, “Hazardous Waste” (flyer)
- State of California – Health and Human Services Agency, California Department of Public Health, Medical Waste Management Program, Memo from Alison Dabney, Chief, Medical Waste Management Program, to Local Enforcement Agencies who implement the Medical Waste Management Program, Medical Waste Generators, Transfer and Treatment Facilities & Transporters re: Senate Bill 225 – An Urgency Act to Amend California Health and Safety Code Relating to Medical Waste,
www.cdph.ca.gov/certlic/mediocalwaste, (September 30, 2015)
- State of California – Health and Human Services Agency, California Department of Public Health, Center for Environmental Health, Environmental Management Branch, “Medical Waste – Report to the Legislature; As required by Assembly Bill 333 (Wieckowski, Chapter 564, Statutes of 2014, (February 2016)
- State of California – Health and Safety Code (Section 25110.02, 25115, 25117)

- State of California – Department of Public Health, Medical Waste Management Program, “Medical Waste Management Act – California Health and Safety Code Sections 117600-118360,” (January 2015)
- State of California – Department of Public Health, “Medical Waste Management Program,” web page, www.cdph.ca.gov/certlic/medicalwaste
- United States Environmental Protection Agency, “Medical Waste,” web page epa.gov/rcra/medical-waste
- United States Census Bureau, “Quick Facts – Orange County California”
- United States Fish and Wildlife Service, “Orange County Central-Coastal NCCP/HCP,” (May 2007)
- United States Fish and Wildlife Service, “Migratory Bird Treaty Act”
- Western Regional Climate Center, “Recent Climate in the West,” Website: www.wrcc.dri.edu (referenced in the “Air Quality and Greenhouse Gas Analysis”

Other Environmental Impact Reports

- Central Irvine General Plan Amendment and Zone Change EIR (June 9, 1983)
- Final EIR – Alderwood Residential Project (July 7, 2011)
- Heritage Fields Project, 2012 GPA/ZC Draft Second Supplemental EIR
- IBC Vision Plan and Mixed Use Overlay Zoning Code Recirculated Draft EIR
- Northern Sphere EIR
- Supplemental EIR – Amendment to GPA-18 Resco Development Project (January 15, 1987)
- Woodbridge Mixed-Use General Plan Amendment (86-GA-0040), Expanded Initial Study (87-EC-19611)

Web Pages

- City of Irvine – cityofirvine.org/
 - Business Recycling – [/environmental-programs/business-recycling](http://cityofirvine.org/environmental-programs/business-recycling)
 - City of Irvine’s Environmental Policies – [/environmental-programs/city-irvine-environmental-policies](http://cityofirvine.org/environmental-programs/city-irvine-environmental-policies)
 - City Programs and Resources – [/environmental-programs/city-programs-and-resources](http://cityofirvine.org/environmental-programs/city-programs-and-resources)
 - Community Parks – [/city-parks-facilities/city-parks](http://cityofirvine.org/city-parks-facilities/city-parks)
 - Composting – [/environmental-programs/composting](http://cityofirvine.org/environmental-programs/composting)
 - Construction and Demolition Recycling – [/environmental-programs/construction-and-demolition-recycling](http://cityofirvine.org/environmental-programs/construction-and-demolition-recycling)
 - County Parks – [/city-parks-facilities/county-parks](http://cityofirvine.org/city-parks-facilities/county-parks)
 - Educational Handouts – [/environmental-programs/educational-handouts](http://cityofirvine.org/environmental-programs/educational-handouts)
 - Energy – [/environmental-programs/energy](http://cityofirvine.org/environmental-programs/energy)
 - Green Building – [/environmental-programs/green-building](http://cityofirvine.org/environmental-programs/green-building)
 - Hazardous Waste Disposal – [/environmental-programs/hazardous-waste-disposal](http://cityofirvine.org/environmental-programs/hazardous-waste-disposal)

- Hiking and Biking – /open-space-nature/hiking-biking
- Irvine Open Space Preserve – /open-space-nature/Irvine-open-space-preserve
- Irvine Open Space Preserve, Contacts and Resources –
/open-space-nature/contacts-and-resources
- Irvine Open Space Preserve, Natural Communities –
/open-space-nature/natural-communities
- Irvine Open Space Preserve, Preservation Strategies –
/open-space-nature/preservation-strategies
- Irvine Ranch Conservancy – /open-space-nature/Irvine-ranch-conservancy
- Jeffrey Open Space Trail – /open-space-trails/Irvine-open-space-trail
- Lakeview Senior Center Amenities – /senior-services/amenities
- Lakeview Senior Center General Information –
/senior-services/general-information
- Lakeview Senior Center Resources and Services –
/senior-services/resources-services
- Local Utility Companies – /environmental-programs/local-utility-companies
- Mike Ward Community Park – /city-parks-facilities/mike-ward-community-park
- Neighborhood Parks – /city-parks/neighborhood-parks
- Reuse Tips for Businesses – /environmental-programs/reuse-tips-businesses
- Water Quality Regulatory Requirements –
/environmental-programs/water-quality-regulatory-requirements
- Water Quality Tips for Businesses –
/environmental-programs/water-quality-tips-businesses
- Zero Waste – /environmental-programs/zero-waste
- Zero Waste for Contractors and Developers –
/environmental-programs/zero-waste-contractors-and-developers