

1. *Executive Summary*

1.1 *INTRODUCTION*

This Draft Environmental Impact Report (DEIR) addresses the environmental effects associated with the implementation of the proposed Irvine Business Complex Vision Plan and Overlay Zoning Code (proposed project). The California Environmental Quality Act (CEQA) requires that local government agencies, prior to taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects. An Environmental Impact Report (EIR) is a public document designed to provide the public and local and state governmental agency decision-makers with an analysis of potential environmental consequences to support informed decision-making. This document focuses on those impacts determined to be potentially significant as discussed in the Initial Study completed for this project (see Appendix A).

This DEIR has been prepared pursuant to the requirements of CEQA (California Public Resources Code, Division 13, Section 21000, et seq.) the State CEQA Guidelines (Title 14 of the California Code of Regulations, Division 6, Chapter 3, Section 15000, et seq.), and the City of Irvine's CEQA procedures to determine if approval of the identified discretionary actions and related subsequent development could have a significant impact on the environment. The City of Irvine, as the Lead Agency, has reviewed and revised as necessary all submitted drafts, technical studies, and reports to reflect its own independent judgment, including reliance on applicable City technical personnel and review of all technical subconsultant reports.

Information for this DEIR was obtained from on-site field observations; discussions with affected agencies; analysis of adopted plans and policies; review of available studies, reports, data, and similar literature in the public domain; and specialized environmental assessments (e.g., air quality, cultural resources, hazards and hazardous materials, hydrology and water quality, noise, and transportation and traffic).

1.2 *ENVIRONMENTAL PROCEDURES*

This DEIR has been prepared pursuant to CEQA to assess the environmental effects associated with implementation of the proposed project, as well as anticipated future discretionary actions and approvals. The six main objectives of this document as established by CEQA are:

- 1) To disclose to decision-makers and the public the significant environmental effects of proposed activities.
- 2) To identify ways to avoid or reduce environmental damage.
- 3) To prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.
- 4) To disclose to the public reasons for agency approval of projects with significant environmental effects.
- 5) To foster interagency coordination in the review of projects.
- 6) To enhance public participation in the planning process.

An EIR is the most comprehensive form of environmental documentation identified in CEQA and the CEQA Guidelines and provides the information needed to assess the environmental consequences of a proposed project, to the extent feasible. EIRs are intended to provide an objective, factually supported, full-disclosure analysis of the environmental



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consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts.

An EIR is also one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Prior to approving a proposed project, the lead agency must consider the information contained in the EIR, determine whether the EIR was properly prepared in accordance with CEQA and the CEQA Guidelines, determine that it reflects the independent judgment of the lead agency, adopt findings concerning the project's significant environmental impacts and alternatives, and must adopt a Statement of Overriding Considerations if the proposed project would result in significant impacts that cannot be avoided.

1.2.1 EIR Format

This DEIR has been formatted as described below.

Section 1. Executive Summary: Summarizes the background and description of the proposed project, the format of this DEIR, project alternatives, and the potential environmental impacts and mitigation measures identified for the proposed project. It also includes a discussion of any critical issues remaining to be resolved and areas of controversy.

Section 2. Introduction: Describes the purpose of this EIR, background on the project, the Notice of Preparation/Initial Study, the use of incorporation by reference, Final EIR certification, and mitigation monitoring requirements.

Section 3. Project Description: A detailed description of the proposed project, the objectives of the proposed project, the project area and location, approvals anticipated to be included as part of the proposed project, and the intended uses of this DEIR.

Section 4. Environmental Setting: A description of the physical environmental conditions in the vicinity of the project site as they existed at the time the Notice of Preparation was published, from both a local and regional perspective. The environmental setting provides baseline physical conditions from which the lead agency determines the significance of environmental impacts resulting from the proposed project.

Section 5. Environmental Analysis: For each environmental parameter analyzed, the EIR provides a description of the affected environment, presenting an analysis for each of the environmental resource areas evaluated, a detailed analysis of the environmental impacts, and discussion of mitigation measures to reduce or eliminate any significant environmental impacts associated with the Project. Included for each environmental topic (i.e., Aesthetics, Air Quality, Transportation and Traffic, etc.) addressed in Section 5.0 is the identification and description of specific measures or requirements incorporated into the project that serve to avoid or lessen potential significant impacts. Those measures and requirements fall in to the following three categories:

- **Existing Plans, Programs, and Policies (PPP)** - These measures include existing regulatory requirements or plans and programs that are applicable to the proposed project. For example, existing standard conditions set forth by the City of Irvine, such as the requirement that new structures meet seismic safety requirements (i.e., Uniform Building Code requirements) serve to reduce the potential for new development within the Project site to be significantly affected by possible seismic events.
- **Project Design Features (PDF)** - The analysis of each topic includes a description of any project design features proposed by the Project Applicant (the City of Irvine) that are specifically intended and designed to reduce or avoid impacts.
- **Mitigation Measures (MM)** - For those issue areas where the impacts analysis determines that implementation of the proposed Project would result in significant impacts, mitigation measures are proposed in accordance with the requirements of CEQA.

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It should be noted that the Existing Plans, Programs, and Policies and the Project Design Features were assumed and accounted for in the analysis of impacts for each issue area. The Mitigation Measures were formulated only for those issue areas where the results of the impact analysis identified significant impacts even with the inclusion of PPPs and PDFs. All three types of measures described above will be made requirements to be implemented as part of the project, and will be included in the Mitigation Monitoring and Reporting Program for the Project. In instances where all three types of measures are not feasible, or cannot reduce the impact to a less than significant level, the impact is identified as “Significant and Unavoidable.”

Section 6. Significant Unavoidable Adverse Impacts: Describes the significant unavoidable adverse impacts of the proposed project.

Section 7. Alternatives to the Proposed Project: Describes the impacts of the alternatives to the proposed project, including the No Project/Existing General Plan Alternative, Reduced Intensity Alternative, Increased Residential (20,000 du) Alternative, and Increased Residential (25,000 du) Alternative..

Section 8. Impacts Found Not to be Significant: Briefly describes the potential impacts of the proposed project that were determined not to be significant by the Initial Study and were therefore not discussed in detail in this DEIR.

Section 9. Significant Irreversible Changes Due to the Proposed Project: Describes the significant irreversible environmental changes associated with the proposed project.

Section 10. Growth-Inducing Impacts of the Project: Describes the growth-inducing impacts of the proposed project.

Section 11. Organizations and Persons Consulted: Lists the people and organizations that were contacted during the preparation of this DEIR for the proposed project.

Section 12. Qualifications of Persons Preparing EIR: Lists the people who prepared this DEIR for the proposed project.

Section 13. Bibliography: Provides a bibliography of the technical reports and other documentation used in the preparation of this DEIR for the proposed project.

Appendices. The appendices for this document (presented in PDF format on a CD attached to the front cover) contain the following supporting documents:

- Appendix A: 2007 Initial Study, Notice of Preparation (NOP), and NOP Responses
- Appendix B: 2008 Initial Study, Notice of Preparation (NOP), and NOP Responses
- Appendix C: Draft General Plan Amendment for IBC Residential Mixed-Use Vision Plan
- Appendix D: Draft Amendments to the Zoning and Municipal Codes and Park Standards Manual
- Appendix E: Draft IBC Residential/Mixed Use Design Criteria
- Appendix F: Land Use Methodology
- Appendix G: Air Quality Modeling Data Sheets
- Appendix H: Biological Resources Study
- Appendix I: Paleontological and Archaeological Evaluation Report
- Appendix J: Environmental Data Resources Report
- Appendix K: Hydrology and Water Quality Technical Report
- Appendix L: Noise Modeling Data Sheets
- Appendix M: Public Services Correspondence
- Appendix N: Traffic Study



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- Appendix O: Water Supply Assessment
- Appendix P: Global Climate Change Technical Report
- Appendix Q: Responses to Comments

1.2.2 Type and Purpose of This DEIR

According to Section 15121(a) of the CEQA Guidelines, the purpose of an EIR is to:

Inform public agency decision makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.

Given the multiphase nature of the proposed project and the permitting, planning, and development actions that are related both geographically and as logical parts in the chain of contemplated actions to implement the proposed project, this document has been prepared as a Program EIR for the overall IBC Mixed Use Vision Plan, pursuant to Section 15168 of the CEQA Guidelines, and as a Project EIR for the seven individual pending development projects that are components of the overall proposed project, pursuant to Section 15161 of the CEQA Guidelines.

Program EIR

A Program EIR examines the total scope of environmental effects that would occur as a result of buildout of the entire project site. By examining the full scope of the proposed project and subsequent applications and approvals at this early stage of planning, the Program EIR will provide a full disclosure of the environmental impacts that may occur throughout the project site, together with an analysis of the site-specific and cumulative environmental impacts that will occur throughout the buildout timeframe of the proposed project.

This DEIR fulfills the requirements for a Program EIR. Although the legally required contents of a Program EIR are the same as those of a Project EIR, Program EIRs are typically more conceptual and may contain a more general discussion of impacts, alternatives, and mitigation measures than a Project EIR. As provided in Section 15168 of the State CEQA Guidelines, a Program EIR may be prepared on a series of actions that can be characterized as one large project. Use of a Program EIR provides the City of Irvine (as lead agency) the opportunity to consider broad policy alternatives and program-wide mitigation measures and provides the City with greater flexibility to address project-specific and cumulative environmental impacts on a comprehensive basis.

Once a Program EIR has been prepared, subsequent activities within the program must be evaluated to determine whether additional CEQA documentation needs to be prepared. However, if the Program EIR addresses the program's effects as specifically and comprehensively as possible, many subsequent activities could be found to be within the Program EIR scope and additional environmental documents may not be required (CEQA Guidelines Section 15168[c]). When a Program EIR is relied on for a subsequent activity, the lead agency must incorporate feasible mitigation measures and alternatives developed in the Program EIR into the subsequent activities (CEQA Guidelines Section 15168[c][3]). If a subsequent activity would have effects not within the scope of the Program EIR, the lead agency must prepare a new Initial Study leading to a Negative Declaration, Mitigated Negative Declaration, or an EIR. In this case, the Program EIR still serves a valuable purpose as the first-tier environmental analysis. The CEQA Guidelines (Section 15168[h]) encourage the use of Program EIRs, citing five advantages:

- 1) To provide a more exhaustive consideration of impacts and alternatives than would be practical in an individual EIR.
- 2) To focus on cumulative impacts that might be slighted in a case-by-case analysis.
- 3) To avoid continual reconsideration of recurring policy issues.

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- 4) To consider broad policy alternatives and programmatic mitigation measures at an early stage when the agency has greater flexibility to deal with them.
- 5) To reduce paperwork by encouraging the reuse of data (through tiering).

Project EIR

A Project EIR examines the environmental impacts of a specific development project and should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all seven pending sub-projects of the overall project, for which development applications are currently on file with the City.

1.3 PROJECT LOCATION

The 2,800-acre Irvine Business Complex (IBC) comprises Planning Area 36 in the City of Irvine, in south/central Orange County. More specifically, the IBC is generally bounded by the former Tustin Marine Corps Air Station (MCAS) to the north, the San Diego Creek channel to the east, John Wayne Airport and Campus Drive to the south and State Route 55 (SR-55) to the west. The San Diego Freeway (I-405) traverses the southern portion of the IBC, and the Santa Ana Freeway (I-5) is to the north and east. The IBC is bordered by the cities of Newport Beach to the south, Santa Ana and Costa Mesa to the west, and Tustin to the north.

The IBC consists of a range of industrial, office, commercial, and residential uses covering approximately 2,800 acres in the western portion of the City of Irvine. Adjacent to the IBC, on the north, is the City of Tustin and the former MCAS Tustin, currently being redeveloped with residential and commercial uses as part of the Tustin Legacy Specific Plan. A 40-acre parcel of the IBC is detached and to the south of the main IBC boundary area, which is bounded by Jamboree Road, Fairchild Road, MacArthur Boulevard, and the San Joaquin Marsh and is adjacent to the City of Newport Beach. The most prominent land use in the IBC is office, with substantial amounts of industrial/warehouse uses and 4,524 4,779 medium- and high-density residential units and 45 232 density bonus units for a total of 4,569 5,011 existing dwelling units.



1.4 PROJECT SUMMARY

As shown on Table 1-1, the IBC Vision Plan and Mixed Use Overlay Zoning Code (proposed project) would allow for an increase in total units in the IBC (Planning Area 36) from 9,015 units to 15,000 units. This increase would be a reallocation of existing intensity within current intensity limitations as defined in the Irvine Zoning Code. In addition, a total of 1,598 density bonus units could be allowed (and are therefore assumed as part of the project) in accordance with state law, for a total of 17,038 units. The current General Plan allows for 53,125,389 square feet of office equivalency in Planning Area 36. The total 5,985 additional new units remaining under the 15,000-unit cap would be offset by a reduction of 4,337,727 square feet of nonresidential, office equivalency square footage, reducing the number to 48,787,662 square feet. If approved, the remaining unused nonresidential intensity allowed by the adopted General Plan would be 6,016,662 square feet of office equivalency.

Table 1-1
IBC Development Summary

Residential	Existing General Plan			Proposed Project	
	Existing	Under Construction	Approved	Pending ¹	Potential ²
Base Units	4,779	1,814	2,422	2,035	3,950
Density Bonus Units ³	232	78	130	215	1,383
Subtotal	5,011	1,892	2,552	2,250	5,333

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Total	9,455		7,583
	Total Cap for the IBC		15,000
	Total IBC Units at Buildout including Density Bonus		17,038
Nonresidential			
	Existing General Plan		Proposed Project
	Existing Development	Remaining Buildout Potential	Remaining Buildout Potential
Nonresidential Square Footage	42,771,000	10,354,389	6,016,662
Total Nonresidential	53,125,389		48,787,662
Hotel Rooms			
	Existing General Plan		Proposed Project
	Existing Development	Remaining Buildout Potential	Remaining Buildout Potential
	2,496	610	372
Total Hotel Rooms	3,106		3,478

¹ Pending units are those for which development applications are currently on file with the City.

² Potential units are those remaining to reach the 15,000-unit cap. No development applications have been received for these units.

³ Density bonus units are exempt by state law from local regulatory limitations on development intensity but are included and analyzed in this DEIR.

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1.5 SUMMARY OF PROJECT ALTERNATIVES

The CEQA Guidelines (Section 15126[a]) state that an EIR must address “a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain 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.” The alternatives were based, in part, on their potential ability to reduce or eliminate the following impacts determined to be significant and unavoidable for the proposed project:

- Air Quality
- ~~Land Use~~
- Noise
- Transportation and Traffic

As described in Chapter 7 of this DEIR, five project alternatives were identified and analyzed for relative impacts as compared to the proposed project:

- No Project/Existing General Plan Alternative
- Reduced Intensity Alternative
- Increased Residential (20,000 du) Alternative
- Increased Residential (25,000 du) Alternative

Please refer to Chapter 7 of this DEIR for a complete discussion of how the alternatives were selected and the relative impacts associated with each alternative. The following presents a summary of each of the alternatives analyzed in the DEIR.

1.5.1 No-Project/Existing General Plan Alternative

According to CEQA Guidelines Section 15126.6(e)(3)(A), when the project is the revision of an existing land use or regulatory plan, such as the proposed project, the "no project" alternative will be the continuation of the existing plan, policy or operation into the future. Typically this is a situation where other projects initiated under the existing plan will continue while the new plan is developed. Thus, the projected impacts of the proposed plan or alternative plans would be compared to the impacts that would occur under the existing plan.

Therefore, the No-Project Alternative assumes that the existing General Plan would continue to guide development of the IBC into the future. The current City of Irvine General Plan and Zoning Ordinance designate the area as Urban and Industrial and 5.1 IBC Multi-Use, respectively. Under the No-Project/Existing General Plan Alternative, buildout of the IBC would include a total of 9,455 residential units, 53,125,389 square feet of nonresidential uses, and 3,106 hotel rooms, as outlined in Table 7-2. Under the No-Project/General Plan Alternative, only 2,552 additional dwelling units, which have already been approved (see Table 3-1), would be developed. A buildout potential of 10,354,389 square feet of nonresidential uses would remain (see Table 3-1). This alternative would only include the traffic improvements identified in the current IBC Fee Program since the proposed update to the IBC Fee Program to include neighborhood level amenities would not occur. Under this alternative, the IBC would have a jobs/housing ratio of 11.63 at buildout.



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1.5.2 *Reduced Intensity Alternative*

This alternative would reduce overall intensity within the project area by limiting future residential growth to approved and pending projects and limiting nonresidential square footage to 48,787,662 square feet, the same as the proposed project. As a result, the Reduced Intensity Alternative includes a total of 11,705 dwelling units, 48,787,662 square feet of nonresidential uses and 3,478 hotel rooms. Under the Reduced Intensity Alternative there would be a remaining buildout potential of 2,250 dwelling units (in addition to the 9,455 units that are existing, under construction, or approved) and 6,016,662 square feet of nonresidential uses. This alternative would result in overall reductions in development intensity within the IBC as compared to the existing General Plan. This Alternative was developed to reduce the air quality, noise, and traffic impacts of the project. All other components of the project would remain the same. Under this alternative, the IBC would have a jobs/housing ratio of 8.70 at buildout.

1.5.3 *Increased Residential (20,000 du) Alternative*

This alternative would increase residential intensity and reduce nonresidential intensity within the project area. As a result, the Increased Residential (20,000 du) Alternative includes a total of 20,000 dwelling units (which would include the maximum allowable density bonus units under state law), 46,675,906 square feet of nonresidential uses, and 3,478 hotel rooms. Under the Increased Residential (20,000 du) Alternative there would be a remaining buildout potential of 10,545 dwelling units and 3,904,906 square feet of nonresidential uses. This alternative would maintain the current maximum buildout intensity within the IBC as measured under the current zoning code, although nonresidential intensity would be reduced. The objective of this Alternative is to reduce regional VMT and associated air quality impacts by improving jobs/housing balance within the IBC and Orange County subregion. All other components of the project would remain the same. Under this alternative, the IBC would have a jobs/housing ratio of 4.60 at buildout.

1.5.4 *Increased Residential (25,000 du) Alternative*

This alternative would convert nearly all of the remaining development intensity in the IBC to residential uses. Some non-residential intensity would remain to accommodate approved and pending non-residential projects. As a result, the Increased Residential (25,000 du) Alternative includes a total of 25,000 dwelling units (which would include the maximum allowable density bonus units under state law), 43,897,662 square feet of non-residential uses, and 3,478 hotel rooms. Under the Increased Residential (25,000 du) Alternative there would be a remaining buildout potential of 15,545 dwelling units (including density bonus units) and 1,126,662 square feet of non-residential uses. This alternative would maintain the current maximum buildout intensity within the IBC as measured by the current zoning code, although non-residential intensity would be reduced. The objective of this Alternative is to reduce regional VMT and associated air quality impacts. All other components of the project would remain the same. Under this alternative, the IBC would have a jobs/housing ratio of 3.50 at buildout.

1.6 *ISSUES TO BE RESOLVED*

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR identify issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the proposed project, the major issues to be resolved include decisions by the City of Irvine, as lead agency, related to:

1. Whether this DEIR adequately describes the environmental impacts of the project.
2. Whether the benefits of the project override those environmental impacts that cannot be feasibly avoided or mitigated to a level of insignificance.
3. Whether the proposed land use changes are compatible with the character of the existing area.
4. Whether the identified goals, policies, or mitigation measures should be adopted or modified.

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5. Whether there are other mitigation measures that should be applied to the project besides those Mitigation Measures identified in the DEIR.
6. Whether there are any alternatives to the project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic project objectives.

1.7 AREAS OF CONTROVERSY

In accordance with Section 15123(b)(2) of the CEQA Guidelines, the DEIR is to identify areas of controversy known to the lead agency, including issues raised by agencies and the public. The areas of known controversy concerning the proposed project are: residential development within the IBC, parks and recreation, and transportation/traffic. This DEIR has taken these into consideration and the comments received from the public, various agencies, and jurisdictions in response to the Notice of Preparation (NOP). Written comments received during the NOP period, which extended from January 8 to February 22, 2007, are in Appendix B. The project description was subsequently revised to reduce the number of dwelling units and project details. A new NOP was circulated between September 19, 2008, and October 20, 2008 (see Appendix B). Comments to the 2008 NOP are also contained in Appendix B. A summary of the NOP responses is provided in Section 2.2, *Notice of Preparation and Initial Study*, of this DEIR.

Prior to preparation of the DEIR, three public scoping meetings were held at the City of Irvine to determine the concerns of responsible and trustee agencies, stakeholders, and the community regarding the proposed project:

- Planning Commission: February 1, 2007 5:30, Council Chambers
- Community Services Commission: February 21, 2007, Council Chambers
- City Council: February 27, 2007, Council Chambers

The scoping meetings were attended by various agency representatives, stakeholders, community members, and government officials. Issues raised during the DEIR scoping meetings included air quality, pedestrian and traffic circulation, public transit, land use compatibility, hydrology and water quality, traffic and school facilities. These environmental issues are fully addressed in Chapter 5 of this DEIR.

Issues raised by utilities and service providers/systems in response to information requests transmitted during July 2008 were documented (see Appendix B) and have been fully addressed in Chapter 5 of this DEIR. These issues related primarily to school capacities, the demand and needs for library resources and recreation facilities, the need for additional police personnel, and other general needs and services.

1.8 SUMMARY OF ENVIRONMENTAL IMPACTS, PPPs, PDFs, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Table 1-2 summarizes the conclusions of the environmental analysis contained in this DEIR. Table 1-2 presents a summary of the environmental impacts of the proposed project, mitigation measures, project design features, and existing plans, programs, and policies that reduce potential significant impacts for the proposed project, and the level of significance of each impact after mitigation and/or implementation of the project design features and existing plans, programs, and policies.



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*Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation*

Environmental Impact	Level of Significance Before Mitigation	Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]	Level of Significance After Mitigation
5.1 AESTHETICS			
5.1-1: Future development pursuant to the IBC Vision Plan would not substantially alter the visual character of the IBC area and its surroundings.	Less than significant	No mitigation measures are required. PDF 1-2 Applicants for new development projects in the IBC Vision Plan area that propose buildings 40 feet or higher shall conduct a shade shadow analysis prepared to the satisfaction of the Director of Community Development. The shade shadow analysis shall ensure that building envelope shall not affect more than 50 percent of a sun-sensitive area (i.e., residential backyards/patios and recreational areas) for at least 50 percent for the duration of the season (i.e., three hours between 9:00 AM and 3:00 PM during winter daylight hours).	Less than significant.
5.1-2: Additional light and glare generated by specific development projects in accordance with the IBC Vision Plan would not substantially impact surrounding land uses.	Less than significant	PPP-1-1 As required by Chapter 3-16, Lighting, of the City's Zoning Ordinance, outdoor lighting shall be designed and installed so that all direct rays are confined to the site and adjacent properties are protected from glare. The level of lighting on the site shall comply with the requirements of the City's Uniform Security Code. PPP-1-2 Prior to the issuance of building permits, the applicant shall demonstrate, through the submittal of an electrical engineer's photometric survey, prepared to the satisfaction of the Director of Community Development, that lighting requirements as set forth in the Irvine Uniform Security Code (Irvine Municipal Code, Title 5, Division 9, Chapter 5) are met (City Standard Discretionary Case Condition B.2 and City Standard Subdivision Condition 3.2).	Less than significant
5.1-3: Future development pursuant to the IBC Vision Plan may generate additional light and glare that could impact wildlife in the San Joaquin Freshwater Marsh and the San Diego Creek.	Less than significant	PDF 1-1 For specific development projects that are proposing high-rise office or residential uses within 100 feet of the San Joaquin Freshwater Marsh or the San Diego Creek, in order to minimize the frequency of birds flying into the building surface, the project applicant shall reduce the reflectivity of building surface materials by using angles that are not highly reflective, or through the incorporation of building surface materials that reduce reflectivity.	Less than significant

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Table 1-2
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Environmental Impact	Level of Significance Before Mitigation	Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]	Level of Significance After Mitigation
5.2 AIR QUALITY			
5.2-1: Regional population, housing, and employment growth projections in the Irvine Business Complex were not accounted for in the air quality management plan.	Significant	<p>PPP 2-1 SCAQMD Rule 201 – Permit to Construct: The SCAQMD requires developers who build, install, or replace any equipment or agricultural permit unit, which may cause new emissions of or reduce, eliminate, or control emissions of air contaminants to obtain a permit to construct from the Executive Officer.</p> <p>PPP 2-2 SCAQMD Rule 402 – Nuisance Odors: The SCAQMD prohibits the discharge of any quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health or safety of any such persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property to be emitted within the South Coast Air Basin (SoCAB).</p> <p>PPP 2-3 SCAQMD Rule 403 – Fugitive Dust (PM₁₀ and PM_{2.5}): The SCAQMD prohibits any person to cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that: (a) the dust remains visible in the atmosphere beyond the property line of the emission source; or (b) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook) if the dust emission is the result of movement of a motorized vehicle.</p> <p>PPP 2-4 SCAQMD Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities: This rule specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM). All operators are required to maintain records, including waste shipment records, and are required to use appropriate warning labels, signs, and markings.</p> <p>PDF 2-1 As described in the proposed zoning for the project and based on the recommended buffer distances of the California Air Resources Board, for all residential or residential mixed-use projects within the distances to industrial uses outlined below, the Project Applicant shall submit a health risk assessment (HRA) prepared in accordance with policies and procedures of the state Office of Environmental Health Hazard Assessment (OEHHA) and the South Coast Air Quality Management District (SCAQMD) to the Community Development Director prior to approval of any future discretionary residential or residential mixed use project. If the HRA shows that the incremental cancer risk exceeds one in one hundred thousand (1.0E-05), or the</p>	Significant and Unavoidable

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*Table 1-2
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation*

<i>Environmental Impact</i>	<i>Level of Significance Before Mitigation</i>	<i>Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]</i>	<i>Level of Significance After Mitigation</i>
		<p>appropriate noncancer hazard index exceeds 1.0, the applicant will be required to identify and demonstrate that Best Available Control Technologies for Toxics (T-BACTs) are capable of reducing potential cancer and noncancer risks to an acceptable level, including appropriate enforcement mechanisms. T-BACTs may include, but are not limited to, scrubbers at the industrial facility, or installation of Minimum Efficiency Reporting Value (MERV) filters rated at 14 or better at all residential units.</p> <ul style="list-style-type: none"> • 1,000 feet from the truck bays of an existing distribution center that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units, or where transport refrigeration unit operations exceed 300 hours per week. • 1,000 feet from an existing chrome plating facility or facility that uses hexavalent chromium. • 300 feet from a dry cleaning facility using perchloroethylene using one machine and 500 feet from a dry cleaning facility using perchloroethylene using two machines. • 50 feet from gas pumps within a gas-dispensing facility and 300 feet from gas pumps within a gasoline-dispensing facility with a throughput of 3.6 million gallons per year or greater. <p>PDF 2-2 As described in the proposed zoning for the project, applicants for new residential developments in the Irvine Business Complex within 500 feet of Interstate 405 shall be required to install high efficiency Minimum Efficiency Reporting Value (MERV) filters of MERV 14 or better in the intake of residential ventilation systems. MERV 14 filters have a Particle Size Efficiency rating of 90 percent for particulates 1.0 micron to 3.0 microns in size and a Particle Size Efficiency rating of 75 to 85 percent for particles 0.30 to 1.0 micron in size. A MERV 14 filter creates more resistance to airflow because the filter media becomes denser as efficiency increases. Heating, air conditioning and ventilation (HVAC) systems shall be installed with a fan unit power designed to force air through the MERV 14 filter. To ensure long-term maintenance and replacement of the MERV 14 filters in the individual units, the following shall occur:</p> <ol style="list-style-type: none"> a) Developer, sale, and/or rental representative shall provide notification to all affected tenants/residents of the potential health risk from I-405 for all affected units. b) For rental units within 500 feet of the I-405, the owner/property manager shall maintain and replace MERV 14 filters in accordance with the manufacture's 	

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Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]	Level of Significance After Mitigation
		<p>recommendations. The property owner shall inform renters of increased risk of exposure to diesel particulates from I-405 or SR-55 when windows are open.</p> <p>c) For residential owned units within 500 feet of I-405, the Homeowner's Association (HOA) shall incorporate requirements for long-term maintenance in the Covenant Conditions and Restrictions and inform homeowners of their responsibility to maintain the MERV 14 filter in accordance with the manufacturer's recommendations. The HOA shall inform homeowner's of increased risk of exposure to diesel particulates from I-405 when windows are open.</p> <p>PDF 2-3 As described in the proposed design criteria for the project, all outdoor active-use public recreational areas associated with development projects shall be located more than 500 feet from the nearest lane of traffic on the Interstate 405.</p> <p>PDF 2-4 For all residential projects located within 1,000 feet of an industrial facility which emits toxic air contaminants, the Project Applicant shall submit a health risk assessment prepared in accordance with policies and procedures of the state Office of Environmental Health Hazard Assessment and the South Coast Air Quality Management District to the Community Development Director prior to approval of any future discretionary residential or mixed-use project. If the HRA shows that the incremental cancer risk exceeds one in one hundred thousand (1.0E-05), or the appropriate noncancer hazard index exceeds 1.0, the applicant will be required to identify and demonstrate that Best Available Control Technologies for Toxics are capable of reducing potential cancer and noncancer risks to an acceptable level, including appropriate enforcement mechanisms. T-BACTs may include, but are not limited to, scrubbers at the industrial facility, or installation of Minimum Efficiency Reporting Value filters rated at 14 or better at all residential units.</p> <p>PDF 2-5 Prior to issuance of building permit for any For all residential projects located within 1,000 feet of an industrial facility that emits substantial odors, including which includes but is not limited to</p> <ul style="list-style-type: none"> • wastewater treatment plants • composting, greenwaste, or recycling facilities • fiberglass manufacturing facilities • painting/coating operations • coffee roasters 	

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		<ul style="list-style-type: none"> • food processing facilities, <p>the Project Applicant shall submit an odor assessment to the Community Development Director prior to approval of any future discretionary action that verifies that the South Coast Air Quality Management District (SCAQMD) has not received three or more verified odor complaints from any facility located within 1,000 feet of the site proposed for residential development. If the Odor Assessment identifies that the facility has received three such complaints, the applicant will be required to identify and demonstrate that Best Available Control Technologies for Toxics (T-BACTs) are capable of reducing potential odors to an acceptable level, including appropriate enforcement mechanisms. T-BACTs may include, but are not limited to, scrubbers at the industrial facility, or installation of Minimum Efficiency Reporting Value (MERV) filters rated at 14 or better at all residential units.</p> <p>PDF 2-6 Applicants for new developments in the Irvine Business Complex shall require that the construction contractor utilize off-road construction equipment that conforms to Tier 3 of the United States Environmental Protection Agency, or higher emissions standards for construction equipment over 50 horsepower that are commercially available. The construction contractor shall be made aware of this requirement prior to the start of construction activities. Use of commercially available Tier 3 or higher off-road equipment, or:</p> <ul style="list-style-type: none"> • of year 2006 or newer construction equipment for engines <u>rated equal to 175 horsepower (hp) and greater;</u> • <u>year 2007 and newer construction equipment for engines rated equal to 100 hp but less than 175 hp; and</u> • <u>2008 and newer construction equipment for engines rated equal to or greater than over 50 hp horsepower.</u> <p>The use of such equipment shall be stated on all grading plans. The construction contractor shall maintain a list of all operating equipment in use on the project site. The construction equipment list shall state the makes, models, and numbers of construction equipment on-site.</p> <p>PDF 2-7 Applicants for new developments in the Irvine Business Complex shall require that the construction contractor to properly service and maintain construction equipment in accordance with the manufacturer's recommendations. Nonessential idling of</p>	

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		<p>construction equipment shall be restricted to five minutes or less in compliance with California Air Resources Board's Rule 2449.</p> <p>PDF 2-8 Applicants for new developments in the Irvine Business Complex shall require that the construction contractor prepare a dust control plan and implement the following measures during ground-disturbing activities in addition to the existing requirements for fugitive dust control under South Coast Air Quality Management District Rule 403 to further reduce PM₁₀ and PM_{2.5} emissions. To assure compliance, the City shall verify compliance that these measures have been implemented during normal construction site inspections:</p> <ul style="list-style-type: none"> • During all grading activities, the construction contractor shall reestablish ground cover on the construction site through seeding and watering. This would achieve a minimum control efficiency for PM₁₀ of 5 percent. • During all construction activities, the construction contractor shall sweep streets with Rule 1186 compliant PM₁₀-efficient vacuum units on a daily basis if silt is carried over to adjacent public thoroughfares or occurs as a result of hauling. • During all construction activities, the construction contractor shall maintain a minimum 24-inch freeboard on trucks hauling dirt, sand, soil, or other loose materials and tarp materials with a fabric cover or other suitable means. This would achieve a control efficiency for PM₁₀ of 91 percent. • During all construction activities, the construction contractor shall water exposed ground surfaces and disturbed areas a minimum of every three hours on the construction site and a minimum of three times per day. This would achieve an emissions reduction control efficiency for PM₁₀ of 61 percent. • During all construction activities, the construction contractor shall limit on-site vehicle speeds on unpaved roads to no more than 15 miles per hour. This would achieve a control efficiency for PM₁₀ of 57 percent. • The construction contractor shall apply chemical soil stabilizers to reduce wind erosion. This would achieve a control efficiency of up to 80 percent. <p>PDF 2-9 Applicants for new developments in the Irvine Business Complex shall require that the construction contractor use coatings and solvents with a volatile organic compound (VOC) content lower than required under Rule 1113 (i.e., Super Compliant Paints). All architectural coatings shall be applied either by (1) using a high-volume, low-pressure</p>	

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		spray method operated at an air pressure between 0.1 and 10 pounds per square inch gauge to achieve a 65 percent application efficiency; or (2) manual application using a paintbrush, hand-roller, trowel, spatula, dauber, rag, or sponge, to achieve a 100 percent application efficiency. The construction contractor shall also use pre-coated/natural colored building, where feasible. Use of low-VOC paints and spray method shall be included as a note on architectural building plans.	
5.2-2: Construction emissions associated with buildout of the Irvine Business Complex would generate short-term emissions that exceed the South Coast Air Quality Management District's regional significance thresholds for VOC, NO _x , CO, PM ₁₀ , and PM _{2.5} , and would significantly contribute to the nonattainment designations of the South Coast Air Basin for O ₃ and particulate matter (PM ₁₀ and PM _{2.5}).	Significant	Refer to PPP 2-1 through PPP 2-4 and PDF 2-6 through PDF 2-9.	Significant and Unavoidable
5.2-3: Buildout of the IBC would generate long-term stationary- and mobile-source emissions that exceed the South Coast Air Quality Management District's regional significance threshold and significantly contribute to the nonattainment designations of the South Coast Air Basin for O ₃ and particulate matter (PM ₁₀ and PM _{2.5}).	Significant	Refer to Global Climate Change PPP 15-2 through PPP 15-13 and PDF 15-3 through PDF 15-17.	Significant and Unavoidable
5.2-4: Project-related construction activities could expose sensitive receptors to substantial pollutant concentrations of NO _x , PM ₁₀ , and PM _{2.5} .	Potentially Significant	Refer to PPP 2-1 through PPP 2-4 and PDF 2-6 through PDF 2-9.	Significant and Unavoidable
5.2-5: Operation of the IBC would not expose off-site sensitive receptors to substantial concentrations of NO ₂ , CO, PM ₁₀ , or PM _{2.5} .	Less than significant	No mitigation measures are required.	Less than significant

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5.2-6: Development of residential uses within the IBC could be located within the California Air Resources Board's recommended buffer distances from I-405 or existing distribution centers, chrome platers, dry cleaners, or gas stations.	Less than significant	Refer to PDF 2-1 through 2-5.	Significant and Unavoidable
5.2-7: New land uses within the IBC would not create objectionable odors; however, new residential land uses could be proximate to existing odor generators.	Less than significant	Refer to PDF 2-5.	Less than significant

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5.3 BIOLOGICAL RESOURCES			
<p>5.3-1: The project would not have a direct substantial adverse effect on any species identified as a sensitive or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service.</p>	<p>Less than Significant</p>	<p>PPP 3-1 Prior to any installation of any new storm drain connections to and/or discharges into the San Diego Creek or San Joaquin Marsh, the City or other project applicants shall 1) obtain a permit or other authorization from the US Army Corps of Engineers pursuant to Section 404 of the Clean Water Act; 2) obtain a Section 401 Water Quality Certification from the California Regional Water Quality Control Board, Santa Ana Region, pursuant to Section 401 of the federal Clean Water Act, which requires any applicant for a federal permit, such as a Clean Water Act Section 404 permit, to provide the licensing agency a certification from the California Regional Water Quality Control Board that the project will comply with adopted water quality standards; and 3) provide notification to the California Department of Fish and Game (CDFG) of the project pursuant to Section 16-2 of the Fish and Game Code and comply with any further actions required by CDFG.</p> <p>PDF 3-1 Prior to approval of the design for the San Diego Creek Trail improvements/extension, the City shall examine alternative locations of the proposed trail and methods that could be used to minimize potential impacts (e.g., fencing and buffers). The design shall consider an alternative that excludes a trail segment along the most sensitive part of San Diego Creek (the northwestern side of the creek between Campus Drive and MacArthur Boulevard).</p> <p>PDF 3-2 Prior to issuance of grading permits for the San Diego Creek Trail, a note shall be placed on all grading plans that construction activities involving the use of heavy equipment are prohibited during the bird nesting season (March 15 to September 15). If minor construction activities are carried out during the bird nesting season, a qualified biologist shall conduct a preconstruction survey in the off-site habitat 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 are found. During construction, active nesting sites shall be monitored to ensure that construction levels do not exceed 60 dBA _{L_{eq}}. Should these noise levels be exceeded, the City 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</p>	<p>Less than significant</p>

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		<p>approved by the wildlife agencies.</p> <p>PDF 3-3 Prior to issuance of building permits for high-rise buildings within 100 feet of the San Joaquin Marsh or San Diego Creek, the project applicant shall demonstrate that architectural plans prohibit the use of highly reflective glass windows, and utilize angles that are not highly reflective in order to reduce light and glare impacts on the marsh and creek environment and to reduce the incidence of bird collisions, to the satisfaction of the Community Development Director.</p> <p>PDF 3-4 Prior to approval of final landscape plans for areas located within 100 feet of the San Joaquin Marsh or San Diego Creek, the project applicant shall ensure that development landscaping does not include exotic plant species that may be invasive to native habitats. Exotic plant species not to be used include those species listed on Lists A and B of the California Invasive Plant Council's (Cal-IPC) list of "Exotic Pest Plants of Greatest Ecological Concern in California as of October 1999." A copy of the complete list can be obtained from Cal-IPC's web site at http://www.cal-ipc.org.</p>	
5.3-2: The project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service.	Less than significant	Refer to PPP 3-1.	Less than significant
5.3-3: The project would not 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.	Less than significant	Refer to PPP 3-1.	Less than significant
5.3-4: The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory	Less than significant	No mitigation measures are required	Less than significant

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wildlife corridors, or impede the use of native wildlife nursery sites.			
5.3-5: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Less than significant	PPP 3-2 If any trees are removed, the Applicant shall carry out a tree survey and obtain a permit for their removal in accordance with the City's tree preservation ordinance (including 1:1 replacement).	Less than significant
5.3-6: The proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan.	Less than significant	No mitigation measures are required	Less than significant
5.4 CULTURAL RESOURCES			
5.4-1: Development of the project could impact prehistoric archaeological sites with burials.	Less than significant	PPP 4-1 Prior to the issuance of the first preliminary or precise grading permits for each planning area, and for any subsequent permit involving excavation to increased depth, the applicant shall provide letters documenting retention of an archaeologist and a paleontologist for the project. The letters shall state that the applicant has retained these individuals, and that the consultants will be on call during all grading and other significant ground-disturbing activities. These consultants shall be selected from the roll of qualified archaeologists and paleontologists maintained by the County of Orange. 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, 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. Unanticipated discoveries shall be evaluated for significance by an Orange County Certified Professional Archaeologist/Paleontologist. If significance criteria are met, then the project shall be required to perform data recovery, professional identification, radiocarbon dates, and other special studies; submit materials to a museum for permanent curation; and provide a comprehensive final report including catalog with museum numbers. Persons performing this work shall be Orange County Certified Professional Archaeologists/Paleontologists (City of Irvine	Less than significant

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		Modified Standard Subdivision Condition 2.1).	
5.4-2: The proposed project could destroy paleontological resources or a unique geologic feature.	Less than significant	Refer to PPP 4-1 above.	Less than significant
5.4-3: Grading activities could potentially disturb human remains.	Less than significant	<p>PPP 4-2 In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, one of the following steps shall be taken (City of Irvine Standard Conditions 2.1 and A-6):</p> <p>a. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains 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 descendent from the deceased Native American. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, 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.</p> <p>b. Where the following conditions occur, the land owner or his/her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendent or on the property in a location not subject to further subsurface disturbance:</p> <ul style="list-style-type: none"> • The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission. • The identified descendent fails to make a recommendation; or • The landowner or his/her authorized representative rejects the recommendation of the descendent, and mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner. (CEQA Guidelines Section 15064.5[e]) 	Less than significant

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5.5 GEOLOGY AND SOILS			
5.5-1: Future residents and employees could be subjected to strong earthquakes.	Less than significant	<p>PPP 5-1 Revegetation of cut and fill slopes shall be required in accordance with the City of Irvine Grading Code (Municipal Code Title 5, Division 10) and Grading Manual.</p> <p>PPP 5-2 All grading operations and construction will be conducted in conformance with the applicable City of Irvine Grading Code (Municipal Code Title 5, Division 10) and Grading Manual, the most recent version of the California Building Code, and consistent with the recommendations included in the most current geotechnical reports for the project area prepared by the engineer of record.</p> <p>PPP 5-3 In accordance with the City of Irvine Grading Code (Municipal Code Title 5, Division 10) and Grading Manual, detailed geotechnical investigation reports for each Rough Grading Plan shall be submitted to further evaluate faults, subsidence, slope stability, settlement, foundations, grading constraints, liquefaction potential, issues related to shallow groundwater, and other soil engineering design conditions and provide site-specific recommendations to mitigate these issues/hazards. The geotechnical reports shall be prepared and signed/stamped by a Registered Civil Engineer specializing in geotechnical engineering and a Certified Engineering Geologist. The City of Irvine Geotechnical Engineer/Engineering Geologist shall review the rough grading plan to ensure conformance with recommendations contained in the reports.</p> <p>PPP 5-4 In accordance with the City of Irvine Grading Code (Municipal Code Title 5, Division 10) and Grading Manual, grading and earthwork shall be performed under the observation of a Registered Civil Engineer specializing in Geotechnical Engineering in order to achieve proper subgrade preparation, selection of satisfactory fill materials, placement and compaction of structural fill, stability of finished slopes, design of buttress fills, subdrain installation, and incorporation of data supplied by the engineering geologist.</p> <p>PPP 5-5 In accordance with the City of Irvine Grading Code (Municipal Code Title 5, Division 10) and Grading Manual, grading and earthwork shall also be performed under the observation of a Certified Engineering Geologist to provide professional review and written approval of the adequacy of natural ground for receiving fills, the stability of cut slopes with respect to geological matters, and the need for subdrains or other groundwater drainage devices. The geologist shall geologically map the exposed earth units during grading to verify the anticipated conditions, and if necessary, provide</p>	Less than significant

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		findings to the geotechnical engineer for possible design modifications. PPP 5-6 Future buildings and structures (e.g., houses, retaining walls) shall be designed in accordance with the City of Irvine Building Code and the most recent Uniform Building Code and/or California Building Code. The concrete utilized shall take into account the corrosion and soluble sulfate soil conditions at the site. The structures shall be designed in accordance with the seismic parameters included in the UBC/CBC.	
5.5-2: Future development could potentially be subjected to seismic-related ground failure, including landslides, lateral spreading, subsidence, liquefaction, or collapse, resulting in risks to life and property.	Less than significant	Refer to PPP 5-1 through 5-6.	Less than significant
5.5-3: The project would not result in substantial soil erosion or the loss of topsoil.	Less than significant	No mitigation measures are required	Less than significant
5.5-4: The project could have corrosive or expansive soil.	Less than significant	Refer to PPP 5-1 through 5-6.	Less than significant
5.6 HAZARDS AND HAZARDOUS MATERIALS			
5.6-1: Project construction and/or operations would involve the transport, use, and/or disposal of hazardous materials.	Less than significant	PPP 6-1 If any underground storage tanks (USTs) are encountered during site grading and excavation activities, they shall be removed in accordance with the existing standards and regulations of, and oversight by, the Orange County Health Care Agency (OCHCA), based on compliance authority granted through the California Code of Regulations, Title 23, Division 3, Chapter 16, Underground Tank Regulations. The process for UST removal is detailed in the OCHCA's "Underground Storage Tanks: The Basics." Soil samples from areas where storage tanks have been removed or where soil contamination is suspected shall be analyzed for hydrocarbons including gasoline and diesel in accordance with procedures set forth by OCHCA. If hydrocarbons are identified in the soil, the appropriate response/remedial measures will be implemented as directed by OCHCA with support review from the RWQCB until all specified requirements are satisfied and a Tank Closure Letter is issued. Any aboveground storage tank (AST) in existence at the commencement of site development shall be removed in accordance with all applicable regulations under the oversight of Orange County Fire Authority. Compliance requirements relative to the removal/closure of storage tanks are set forth through the California Health and Safety	Less than significant

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		Code, Sections 25280 through 25299.	
		PPP 6-2 During demolition, grading, and excavation, workers shall comply with the requirements of Title 8 of the California Code of Regulations Section 1532.1, which provides for exposure limits, exposure monitoring, respiratory protection, and good working practice by workers exposed to lead. Lead-contaminated debris and other wastes shall be managed and disposed of in accordance with the applicable provision of the California Health and Safety Code.	
		PPP 6-3 Prior to approval of a conditional use permit, project applicants shall prepare a Fire Master Plan for submittal to the Orange County Fire Authority (OCFA) consistent with OCFA Guideline B-09 (Fire Master Plans for Commercial and Residential Development).	
		PPP 6-4 Federal law requires compliance with Rule 29 of the Code of Federal Regulations (CFR) Part 1926. Prior to site demolition activities, building materials shall be carefully assessed for the presence of lead-based paint, and its removal, where necessary, must comply with state and federal regulations, including Occupational Safety and Health Administration (OSHA) 29 CFR Part 1926. The OSHA rule establishes standards for occupational health and environmental controls for lead exposure. The standard also includes requirements addressing exposure assessment, methods of compliance, respiratory protection, protective clothing and equipment, hygiene facilities and practices, medical surveillance, medical removal protection, employee information and training, signs, recordkeeping, and observation of monitoring. Furthermore, the requirements of California Code of Regulations, Title 17, Division 1, Chapter 8, identify procedures that must be followed for accreditation, certification, and work practices for lead-based paint and lead hazards. Section 36100 thereof specifically sets forth requirements for lead-based paint abatement in public and residential buildings.	
		PPP 6-5 Prior to site demolition activities, building materials must be carefully assessed for the presence of asbestos-containing materials (ACM), and removal of this material, where necessary, must comply with state and federal regulations, including SCAQMD Rule 1403, which specifies work practices with the goal of minimizing asbestos emissions during building demolition and renovation activities, including the removal and associated disturbance of ACMs. The requirements for demolition and renovation activities include asbestos surveying; notification; ACM removal procedures and time schedules; ACM handling and cleanup procedures; and storage, disposal, and landfill	

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		<p>disposal requirements for asbestos-containing waste materials.</p> <p>PPP 6-6 During site decommissioning and demolition activities, hazardous wastes must be managed in accordance with the requirements of Title 22, Division 4.5 of the California Code of Regulations. Title 22 sets forth the requirements with which hazardous-waste generators, transporters, and owners or operators of treatment, storage, or disposal facilities must comply. These regulations include the requirements for packaging, storage, labeling, reporting, and general management of hazardous waste prior to shipment. In addition, the regulations identify standards applicable to transporters of hazardous waste such as the requirements for transporting shipments of hazardous waste, manifesting, vehicle registration, and emergency accidental discharges during transportation.</p> <p>PPP 6-7 During demolition, grading, and excavation, workers shall comply with the requirements of Title 8 of the California Code of Regulations, Section 1529, which provides for exposure limits, exposure monitoring, respiratory protection, and good working practices by workers exposed to asbestos. Asbestos-contaminated debris and other wastes shall be managed and disposed of in accordance with the applicable provision of the California Health and Safety Code.</p> <p>PPP 6-8 Evidence of soil and/or groundwater contamination (e.g. chemical odors, staining) unrelated to above/underground storage tank releases may be encountered during site development. The appropriate agency (i.e. the OCHCA, DTSC, or the Regional Water Quality Board) shall be notified if these conditions are encountered during construction or grading activities. With their oversight, an environmental site assessment would be completed and a determination shall be made as to whether a cleanup is required. Cleanup activities would be consistent with all applicable State and local rules, regulations, and laws. A cleanup would not be considered complete until confirmatory samples of soil and/or groundwater reveal levels of contamination below the standards established by the oversight agency. Alternatively, a risk assessment may be prepared for the site to determine that there are no human or environmental risks associated with leaving contamination below specific levels in place. Construction in the impacted area shall not proceed until a "no further action" clearance letter or similar determination is issued by the oversight agency, or until a land use covenant is implemented.</p>	
5.6-2: Various hazardous material sites are	Less than significant	Refer to PPP 6-1 through 6-8.	Less than Significant

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located within the proposed project area.		<p>PDF 6-2 As described in the proposed zoning related to residential disclosures, all discretionary applications for residential or residential mixed use shall include a condition of approval for disclosure to residents clearly outlining the issues associated with living in a mixed-use environment. The language for this disclosure shall be as specified by the Community Development Director. Copies of each signed disclosure shall be made available for review upon written request by the City.</p> <p>PDF 6-3 As described in the proposed zoning code related to hazardous material standards, individual development sites may have existing facilities, such as <u>underground storage tanks</u>, transformers or clarifiers, that <u>contain hazardous materials</u> would be demolished as part of a proposed development. To mitigate any hazardous-materials-related impacts during the removal of such related to these facilities, <u>the project applicant shall submit a Site Assessment prior to the City deeming the development application complete</u> the Director of Community Development, in conjunction with the Orange County Fire Authority, shall include specific project conditions of approval as part of the discretionary review process for the proposed development. If hazardous materials are identified during the site assessment, the appropriate response/remedial measures will be implement in accordance with the directives of the Orange County Fire Authority (OCFA), Orange County Health Care Agency (OCHCA) and/or the Regional Water Quality Control Board (RWQCB), as appropriate. If soils are encountered during site development that are suspected of being impacted by hazardous materials, work will be halted and site conditions will be evaluated by a qualified environmental professional. The results of the evaluation will be submitted to OCFA, OCHCA, and/or RWQCB, and the appropriate response/remedial measures will be implemented, as directed by OCFA, OCHCA, RWQCB, or other applicable oversight agencies, until all specified requirements of the oversight agencies are satisfied and a no-further-action status is attained.</p> <p>PDF 6-4 As required by the proposed zoning code, applications for new residential and/or residential mixed-use development shall submit data, to the Director of Community Development, to evaluate compatibility with surrounding uses with respect to issues including but not limited to: noise, odors, truck traffic and deliveries, hazardous materials handling/storage, air emissions, and soil/groundwater contamination, <u>heliports/helistops and John Wayne Airport compatibility. Structures that penetrate the 100:1 Notification Surface shall file a Form 7460-1 Notice of Proposed Construction or Alternation with Federal Aviation Administration. Residential land uses shall be</u></p>	

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		<p><u>prohibited in Safety Zone 3.</u></p> <p>PDF 6-5 For all residential projects located within 1,000 feet of an industrial facility which emits toxic air contaminants, the Project Applicant shall submit a health risk assessment prepared in accordance with policies and procedures of the state Office of Environmental Health Hazard Assessment and the South Coast Air Quality Management District to the Community Development Director prior to approval of any future discretionary residential or mixed-use project. If the HRA shows that the incremental cancer risk exceeds one in one-hundred thousand (1.0E-05), or the appropriate noncancer hazard index exceeds 1.0, the applicant will be required to identify and demonstrate that Best Available Control Technologies for Toxics are capable of reducing potential cancer and noncancer risks to an acceptable level, including appropriate enforcement mechanisms. T-BACTs may include, but are not limited to, scrubbers at the industrial facility, or installation of Minimum Efficiency Reporting Value filters rated at 14 or better at all residential units.</p> <p>PDF 6-6 Residential development shall not be permitted within a one-parcel buffer surrounding the property at 17451 Von Karman, based on existing parcelization as of the date of the certification of the Environmental Impact Report. The area within the one parcel buffer is depicted in Figure 1 in the City of Irvine Zoning Code Chapter 5-8.</p>	
5.6-3: The project site is located in the vicinity of John Wayne Airport and within the jurisdiction of an airport land use plan.	Less than significant	<p>PDF 6-1 As described in the proposed zoning for the project, related to building height limitations, recordation of aviation easements, obstruction lighting and marking, and airport proximity disclosures and signage shall be provided per Orange County <u>consistent with the Airport Environs Land Use Plan standards</u> for John Wayne Airport.</p> <p>PDF 6-2 As described in the proposed zoning related to residential disclosures, all discretionary applications for residential or residential mixed use shall include a condition of approval for disclosure to residents clearly outlining the issues associated with living in a mixed-use environment. The language for this disclosure shall be as specified by the Community Development Director. Copies of each signed disclosure shall be made available for review upon written request by the City.</p>	Less than significant
5.6-4: Project development would not affect the implementation of an emergency response or evacuation plan.	Less than significant	Refer to PPP 6-1 through 6-8.	Less than significant

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Environmental Impact	Level of Significance Before Mitigation	Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]	Level of Significance After Mitigation
5.7 HYDROLOGY AND WATER QUALITY			
<p>5.7-1: Development pursuant to the proposed project would not increase the amount of impervious surfaces on the site and would therefore not impact opportunities for groundwater recharge.</p>	<p>Less than significant</p>	<p>PPP 7-1 Prior to the issuance of precise grading permits, the applicant shall submit a hydrology and hydraulic analysis of the entire site. The analysis shall be prepared by a professional civil engineer versed in flood control analysis and shall include the following information and analysis (Standard Condition A.6):</p> <ul style="list-style-type: none"> a. Hydrology/hydraulic analysis of 100-year surface water elevation at the project site to determine building elevation or flood proofing elevation. b. Analysis of existing and postdevelopment peak 100-year storm flow rates including mitigation measures to reduce peak flows to existing conditions c. An analysis demonstrating that the volume of water ponded on the site and stored underground in the drainage system outside of the building envelope in the proposed condition is greater than or equal to the corresponding volume in the existing condition. The water surface used to determine the ponded volume shall be based on the water surface in the major flood control facility that the site is tributary to. <p>PPP 7-2 Prior to the issuance of precise grading permits, the applicant shall submit a groundwater survey of the entire site. The analysis shall be prepared by a geotechnical engineer versed in groundwater analysis and shall include the following information and analysis (Standard Condition A.7):</p> <ul style="list-style-type: none"> a. Potential for perched groundwater intrusion into the shallow groundwater zone upon buildout. b. Analysis for relief of groundwater buildup and properties of soil materials on-site. c. Impact of groundwater potential on building and structural foundations. d. Proposed mitigation to avoid potential for groundwater intrusion within five feet of the bottom of the footings. <p>PPP 7-3 This project will result in soil disturbance of one or more acres of land that has not been addressed by an underlying subdivision map. Prior to the issuance of preliminary or precise grading permits, the applicant shall provide the City Engineer with evidence that a Notice of Intent (NOI) has been filed with the State Water Resources Control</p>	<p>Less than significant</p>

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		<p>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 A.10).</p> <p>PPP 7-4 Prior to the issuance of precise grading permits, the applicant shall submit, and the Director of Community Development shall have approved, a project water quality management plan (WQMP). The WQMP shall identify the best management practices that will be used on the site to control predictable pollutant runoff (Standard Condition A.13).</p>	
5.7-2: Development pursuant to the proposed project would slightly alter the existing drainage pattern of the site, but would not result in erosion or siltation on- or off-site.	Less than significant	No mitigation measures are required	Less than significant
5.7-3: Development pursuant to the proposed project would not increase the amount of impervious surfaces on the site and would therefore not increase surface water flows into drainage systems within the watershed.	Less than significant	No mitigation measures are required	Less than significant

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Environmental Impact	Level of Significance Before Mitigation	Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]	Level of Significance After Mitigation
5.7-4: Portions of the project site proposed for development are located within a 100-year flood hazard area.	Less than significant	No mitigation measures are required	Less than significant
5.7-5: Development pursuant to the proposed project would not violate any water quality standards or waste discharge requirements.	Less than significant	Refer to PPP 7-3.	Less than significant
5.7-6: During the construction phase of the proposed project, there is the potential for short-term unquantifiable increases in pollutant concentrations from the site. After project development, the quality of storm runoff (sediment, nutrients, metals, pesticides, pathogens, and hydrocarbons) may be altered.	Less than significant	No mitigation measures are required	Less than significant
5.8 LAND USE AND PLANNING			
5.8-1: The proposed project would not divide an established community.	Less than significant	<p>PDF 8-1 To ensure a consistent standard of residential mixed-use design quality throughout the IBC, the City of Irvine has established a set of Residential Mixed-Use Design Criteria. These Design Criteria are intended to guide the physical development of any residential or mixed-use project that contains a component of residential use located within the boundaries of the IBC. This document establishes the framework through which design continuity can be achieved while accommodating varying tastes, materials, and building methods. It provides standards and criteria for new construction and for remodels or additions.</p> <p>PDF 8-2 As described in the proposed zoning code relating to compatibility with surrounding uses, the IBC mixed-use environment is an urbanized area, and land use compatibility issues are expected to occur. Therefore, applications for new residential and/or residential mixed-use development shall submit data, as determined by the Director of Community Development, for the City to evaluate compatibility with surrounding uses with respect to issues including, but not limited to: noise, odors, truck traffic and deliveries, hazardous materials handling/storage, air emissions, and soil/groundwater contamination. <u>Compatibility with adjacent uses shall be determined through</u></p>	Less than significant

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		consistency with local, state, and federal regulations including but not limited to the City of Irvine Municipal Code, South Coast Air Quality Management District, Orange County Fire Authority (OCFA), Orange County Health Care Agency (OCHCA) and/or the Regional Water Quality Control Board (RWQCB).	
5.8-2: Project implementation could potentially be in conflict with an applicable adopted land use plan.	Less than significant	No mitigation measures are required.	Less than significant
5.9 NOISE			
5.9-1: Construction activities could result in temporary noise increases in the vicinity of the proposed project.	Potentially significant	<p>PPP 9-1 Control of Construction Hours: Construction activities occurring as part of the project shall be subject to the limitations and requirements of Section 6-8-205(a) of the Irvine Municipal Code which states that construction activities may occur between 7:00 AM and 7:00 PM Mondays through Fridays, and 9:00 AM and 6:00 PM on Saturdays. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the Chief Building Official or his or her authorized representative. Trucks, vehicles, and equipment that are making, or are involved with, material deliveries, loading, or transfer of materials, equipment service, maintenance of any devices or appurtenances for or within any construction project in the City shall not be operated or driven on City streets outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the City. Any waiver granted shall take impact upon the community into consideration. No construction activity will be permitted outside of these hours except in emergencies including maintenance work on the City rights-of-way that might be required.</p> <p>PDF 9-2 Prior to issuance of grading permits, the project applicant shall incorporate the following measures as a note on the grading plan cover sheet to ensure that the greatest distance between noise sources and sensitive receptors during construction activities has been achieved.</p> <ul style="list-style-type: none"> • Construction equipment, fixed or mobile, shall be equipped with properly operating and maintained noise mufflers consistent with manufacturer's 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 project site, 	Significant and unavoidable

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Environmental Impact	Level of Significance Before Mitigation	Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]	Level of Significance After Mitigation
		whenever feasible. <ul style="list-style-type: none"> Construction of sound walls that have been incorporated into the project design prior to construction of the building foundation; or installation of temporary sound blankets (fences typically composed of poly-vinyl-chloride-coated outer shells with adsorbent inner insulation) placed along the boundary of the project site during construction activities. 	
5.9-2 Construction of the proposed project may generate perceptible levels of vibration at adjacent vibration-sensitive land uses.	Potentially significant	Refer to PPP 9-1 and PDF 9-2 above. PDF 9-1 As described in the proposed zoning for the project, applicants for individual projects that involve vibration-intensive construction activities, such as pile drivers, jack hammers, and vibratory rollers, occurring near sensitive receptors shall submit a noise vibration analysis prior to their application being deemed complete by the City. If construction-related vibration is determined to exceed the Federal Transit Administration vibration-annoyance criteria of 78 VdB during the daytime, additional requirements, such as use of less vibration intensive equipment or construction techniques shall be implemented during construction (e.g., drilled piles to eliminate use of vibration-intensive pile driver).	Significant and unavoidable
5.9-3 Project-related vehicle trips would substantially increase ambient noise at noise-sensitive receptors in the vicinity of the project site on McGaw Avenue between Jamboree Road and Murphy Avenue and cumulatively on Valencia Avenue between Newport Avenue and Red Hill Avenue, Warner Avenue between SR-55 and Red Hill Avenue, McGaw Avenue between Jamboree Road and Murphy Avenue, and Birch Street between Mesa Drive and Bristol Street.	Potentially significant	No mitigation measures are available to reduce impacts associated with a substantial increase in traffic noise generated by project-related traffic and the project's contribution to cumulative growth in traffic levels.	Significant and unavoidable
5.9-4: Stationary-source noise generated by land uses within the IBC would comply with the	Less than significant	No mitigation measures are required	Less than significant

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City of Irvine Municipal Code and would not substantially elevate the ambient noise environment.			
5.9-5 Sensitive land uses could be exposed to noise levels that exceed 65 dBA CNEL from transportation or stationary sources.	Potentially significant	<p>PPP 9-2 Acoustical Report: Prior to the 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 show that the development will be sound attenuated against present and projected noise levels, including roadway, aircraft, helicopter and railroad, 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). In order to demonstrate that all mitigation measures have been incorporated into the project, the report shall be accompanied by a list identifying the sheet(s) of the building plans that include the approved mitigation measures (Standard Condition B.1).</p> <p>PDF 9-3 As described in the proposed zoning for the project, prior to issuance of certificate of occupancy, the project applicant shall submit evidence to the satisfaction of the Director of Community Development that occupancy disclosure notices for units with patios and/or balconies that do not meet the 65 dBA CNEL are provided to all future tenants pursuant to the City's Noise Ordinance.</p>	Significant and unavoidable
5.9-6: Noise-sensitive habitable rooms in structures within the 60 dBA CNEL noise contour of the John Wayne Airport would be exposed to substantial levels of airport-related noise.	Less than significant	<p>See PPP 9-2 and PDF 9-3 above.</p> <p>PDF 9-4 As described in the proposed zoning for the project, residential and active recreational areas shall be prohibited in the 65 dBA CNEL noise contour of the John Wayne Airport. In addition, as described in the proposed zoning for the project, prior to issuance of building permits, the project applicant for any project within the 60 dBA CNEL contour of the John Wayne Airport shall retain an acoustical engineer to prepare an acoustic analysis that identifies required building acoustical improvements (e.g., sound transmission class rated windows, doors, and attic baffling) to achieve the 45 dBA CNEL interior noise standard of Title 21 and Title 24 of the California Building Code. In addition to the 24-hour interior noise standard, the acoustic report shall detail compliance with the City's interior noise standard of 55 dBA L_{max} (10) for single-event noise generated by the loudest 10 percent of aircraft overflights at the John Wayne Airport. Parks within the 60 dBA CNEL noise contour shall include signage indicating their proximity to John Wayne Airport and related airport noise. The acoustic analysis</p>	Less than significant

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		shall be submitted to the Director of Community Development to ensure compliance.	
5.10 POPULATION AND HOUSING			
5.10-1: The proposed project would directly result in population and employment growth in the project area.	Less than significant	PPP 10-1 Compliance with the City's Housing Element policies, which provide a strategic blueprint to ensure the siting of new very low, low, and moderate income housing units in future development projects to help the City continue to meet its state fair share housing requirements.	Less than significant
5.11 PUBLIC SERVICES			
FIRE PROTECTION AND EMERGENCY SERVICES			
5.11-1: The proposed project would introduce new structures, residents, and workers the Orange County Fire Authority service boundaries, thereby increasing the requirement for fire protection facilities and personnel.	Less than significant	<p>PPP-11-1 Every project applicant shall comply with all applicable Orange County Fire Authority codes, ordinances, and standard conditions regarding fire prevention and suppression measures relating to water improvement plans, fire hydrants, automatic fire extinguishing systems, fire access, access gates, combustible construction, water availability, and fire sprinkler systems.</p> <p>PPP-11-2 Prior to the issuance of the first grading permit for the individual development within the IBC, the applicant shall have executed a Secured Fire Protection Agreement with the Orange County Fire Authority. (Standard Condition A.15).</p> <p>PPP-11-3 Prior to the issuance of the first building permit, all fire protection access easements shall be approved by the Orange County Fire Authority and irrevocably dedicated in perpetuity to the City (Standard Condition B.6).</p> <p>PPP 11.4 A Click2Enter radio frequency access system shall be installed at any vehicle and pedestrian access point controlled by privacy gates within the project area (proposed Zoning Code).</p> <p>PDF-11-1 An Opticom traffic light control system shall be installed at signalized intersections through the proposed IBC Infrastructure Improvement Program.</p> <p>PPP 11.4 PDF 11-3 A Click2Enter radio frequency access system shall be installed at any vehicle and pedestrian access point controlled by privacy gates within the project area (proposed Zoning Code).</p>	Less than significant

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POLICE PROTECTION			
5.11-2: The proposed project would introduce new structures, residents, and workers into the Irvine Police Department service boundaries, thereby increasing the requirement for police protection facilities and personnel.	Less than significant	PPP-11-5 The project applicant shall comply with all applicable requirements of the City of Irvine Uniform Security Code (Municipal Code Title 5, Division 9, Chapter 5). Refer to PPP 11-4 and PDF 11-1. PDF 11-2 Utilize the concepts of Crime Prevention through Environmental Design in the design and layout of any project to reduce criminal opportunity and calls for service, as specified in the proposed zoning code.	Less than significant
SCHOOL SERVICES			
5.11-3: The proposed project would generate a total of 5,480 new students, which would impact the school enrollment capacities of the local school districts.	Less than significant	PPP-11-6 Pursuant to Government Code Section 65995, the individual applicants shall pay developer fees to the appropriate school districts at the time building permits are issued; payment of the adopted fees would provide full and complete mitigation of school impacts. Alternatively, the applicant may enter into a school finance agreement with the school district(s) to address mitigation to school impacts in lieu of payment of developer fees. The agreement shall establish financing mechanisms for funding facilities to serve the students from the project. If the applicant and the affected school district(s) do not reach a mutually satisfying agreement, then project impacts would be subject to developer fees.	Less than significant
LIBRARY SERVICES			
5.11-4: The proposed project would generate approximately 9,858 residents, increasing the service needs for the local libraries.	Less than significant	PDF-11-3 In the event that a Citywide library impact fee is adopted and in force, the developer shall pay this fee prior to issuance of building permits for new development.	Less than significant

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5.12 RECREATION			
5.12-1: The proposed project would generate approximately 9,858 additional residents, which would increase the use of existing park and recreational facilities.	Less than significant	PPP 12-1 All park fees shall be paid directly to the City cashier prior to issuance of any residential building permits for the building site or sites from which fees are to be derived. These fees are to be used only for the purpose of developing new or rehabilitating existing park or recreational facilities to serve the subdivision (Section 5-5-1004.E.2 of the Irvine Municipal Code). PPP 12-2 This development includes public trails as identified in the City's General Plan. Prior to the issuance of the first preliminary or precise grading permit, an irrevocable offer of dedication for the nonexclusive easements for public use of any public trails shall be recorded. Improvements and dedication of public trails shall be subject to the approval of the Director of Community Services (Standard Condition A.2).	Less than significant
5.13 TRANSPORTATION/TRAFFIC			
15.13-1: Buildout of the IBC pursuant to the proposed project would generate additional traffic volumes and impact levels of service for the existing area roadway system.	Potentially Significant	PPP 13-1 A Development Fee program was established to fund area-wide circulation improvements within the IBC area. The improvements are required due to potential circulation impacts associated with buildout of the IBC area. Fees are assessed when there is new construction or when there is an increase in square footage within an existing building or the conversion of existing square footage to a more intensive use. The development fees collected are used strictly for circulation improvements right-of-way acquisition and transportation monitoring measures in the IBC area. Fees are calculated by multiplying the proposed square footage, dwelling unit or hotel room by the appropriate rate. The IBC Fees are included with any other applicable fees payable at the time the building permit is issued. PDF 13-1 Transportation Management Association: As part of the proposed project, the City shall form of a Transportation Management Association (TMA) for the Irvine Business Complex. The goals and objectives of the TMA are as follows: <ul style="list-style-type: none"> • Monitor travel demand at employment sites and provide reports on trip generation to the City of Irvine. • Offer employers and property owners assistance with transportation services on a voluntary basis. • Deliver transportation services to commuters. Services include: <ol style="list-style-type: none"> a) Provide ridematching, transit and Metrolink information b) Inform commuters of incentives that may be available from public agencies 	Significant and Unavoidable

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		<p>c) Formation of vanpools</p> <ul style="list-style-type: none"> • Represent the IBC in local transportation matters • Oversee and fund the implementation and expansion of The i Shuttle, a clean fuel rubber tire shuttle system. <p>MM 13-1 Prior to the issuance of the first building permit pursuant to the proposed project, the City of Irvine shall prepare a "nexus" study that will serve as the basis for requiring development impact fees under AB 1600 legislation, as codified by California Code Government Section 66000 et seq, for the Irvine Business Complex to support General Plan and Zoning changes under consideration for the Irvine Business Complex Vision Plan. The established procedures under AB 1600 require that a "reasonable relationship" or nexus exist between the traffic improvements and facilities required to mitigate the traffic impacts of new development pursuant to the proposed project. The following traffic improvements and facilities are necessary to mitigate project impacts and shall be included, among other improvements, in the AB 1600 nexus study:</p> <p>Costa Mesa</p> <p>Intersection #12: SR-55 Southbound Frontage Road at Baker Street</p> <ul style="list-style-type: none"> • Improve the southbound approach to one left turn lane, one shared through left, one through lane, and one right turn lane. Restripe the eastbound approach to two through lanes and a shared through right turn lane. <p>Intersection #13: SR-55 Northbound Frontage Road at Baker Street</p> <ul style="list-style-type: none"> • Restripe the eastbound approach to include a single left turn lane, three through lanes, and no right turn lane, plus the addition of a northbound defacto right turn lane. <p>Irvine</p> <p>Intersection #141: Jamboree Road and Main Street</p> <ul style="list-style-type: none"> • Improve the northbound and southbound approaches to 2 left turn lanes, 5 through lanes, and 1 right turn lane. Additionally, as part of this improvement, convert the 	

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		<p style="text-align: center;">westbound free right turn lane to a single right turn lane.</p> <p>Intersection #188: Harvard Avenue and Michelson Drive</p> <ul style="list-style-type: none"> • Add a second southbound left turn lane. <p>Intersection #232: Culver Drive and I-405 Northbound Ramps</p> <ul style="list-style-type: none"> • Restripe the westbound approach of this intersection to one left turn lane, one right turn lane, and a shared left-right turn lane. <p>Intersection #136: Jamboree Road and Barranca Parkway</p> <ul style="list-style-type: none"> • Convert the existing free northbound right-turn lane to a standard right turn lane and add a fifth northbound through lane. <p>Newport Beach</p> <p>Intersection #62: Campus Drive at Bristol Street NB</p> <ul style="list-style-type: none"> • In 2015, the required improvement is the implementation of the already planned addition of a fifth westbound through lane, consistent with the City of Newport Beach's General Plan buildout. For the buildout scenario, an additional improvement of a third southbound right turn lane is required. Implementation of the identified improvements results in acceptable operations under both scenarios and the mitigation appears to be physically feasible although potentially cost prohibitive due to potential impacts to a structure adjacent to the intersection. The addition of a 5th westbound through lane was identified by the City of Newport Beach as part of the Newport Beach General Plan Update Traffic Study (Urban Crossroads, 2006). The addition of a 3rd southbound right turn lane was identified in the John Wayne Airport (JWA) Improvement Program as an ancillary improvement to support the growth of the Airport. The City shall coordinate with Newport Beach and JWA to determine the timing and funding availability for this improvement. <p>Intersection #85: MacArthur Boulevard and Birch Street</p> <ul style="list-style-type: none"> • Improve the eastbound approach to two eastbound left-turn lanes and two southbound eastbound through lanes. 	

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		<p>Santa Ana</p> <p>Intersection #543 Bristol Street and Segerstrom Avenue</p> <ul style="list-style-type: none"> Two alternative improvements are proposed and outlined below. The City of Irvine shall coordinate with the City of Santa Ana to determine the most appropriate future improvement at this location. Alternative 1: Add 3rd eastbound through and westbound through lanes on Segerstrom Avenue. Alternative 2: Add 4th northbound through and southbound through lanes on Bristol Street. <p>Intersection #723 Main Street and Dyer Road (Segerstrom)</p> <ul style="list-style-type: none"> Add a third northbound through lane and a defacto northbound right-turn lane. <p>Intersection #730 Grand Avenue and Warner Avenue</p> <ul style="list-style-type: none"> Add a third westbound through lane. <p>Tustin</p> <p>Intersection #24: Newport Avenue and Walnut Avenue</p> <ul style="list-style-type: none"> Add a defacto westbound right turn lane and defacto northbound right turn lane. <p>Intersection #93: Tustin Ranch Road and El Camino Real</p> <ul style="list-style-type: none"> Add a fourth southbound through lane and restripe the eastbound approach to one left turn lane, a shared through right turn lane and a right turn lane. <p>Intersection #134: Loop Road/Park Avenue at Warner Avenue</p> <ul style="list-style-type: none"> Add a third eastbound through lane. <p>Intersection #754: Red Hill Avenue at Carnegie Avenue/A Street</p> <ul style="list-style-type: none"> This intersection has a project impact under the Post-2030 scenario. The project impact is largely due to heavy traffic on the northbound through movement. 	

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		<p style="text-align: center;">Widening the northbound approach to provide a fourth northbound through lane on Red Hill. This intersection is expected to be substantially expanded as a result of development of the Tustin Legacy project and shall be monitored to observe if any additional improvements are warranted when that project nears buildout.</p> <p>MM 13-2 Prior to the issuance of the first building permit pursuant to the proposed project, the City of Irvine shall update the IBC Development Fee program pursuant to the AB 1600 Nexus Study identified in Mitigation Measure 5.13-1. The IBC Development Fee program was established to fund area-wide circulation improvements within the IBC and adjoining areas. The improvements are required due to potential circulation impacts associated with buildout of the IBC. Fees are assessed when there is new construction or when there is an increase in square footage within an existing building or the conversion of existing square footage to a more intensive use. The development fees collected are applied toward circulation improvements and right-of-way acquisition in the IBC and adjoining areas. Fees are calculated by multiplying the proposed square footage, dwelling unit or hotel room by the appropriate rate. The IBC Fees are included with any other applicable fees payable at the time the building permit is issued. The City will use the IBC development fees to, among other things, fund construction (or to recoup fees advanced to fund construction) of the transportation improvements identified in Mitigation Measure 5.13-1.</p> <p>MM 13-3 Prior to issuance of the first building permit pursuant to the proposed project, the City shall update the Irvine Business Complex Land Use and Trip Monitoring Data base (IBC Database) to reflect the land use changes associated with the proposed project. The City maintains this database for tracking development intensity within the IBC. This data base is an important tool to help ensure the circulation system serving the IBC area is adequate and to ensure roadway improvements are provided at the appropriate time. The data base tracks the amount of square footage built (Existing), the available square footage (Additional Zoning Potential and/or Remaining Approval) and the maximum amount of square footage allocated (Total Development Potential and/or Buildout + Existing) to each parcel within the IBC.</p> <p>MM 13-4 Prior to adoption of the AB 1600 nexus study identified in MM 13-1, <u>issuance of a building permit for the 12,000th unit within the IBC, the City and Caltrans shall jointly identify feasible operational and physical improvements and the associated fair-share funding contribution necessary to mitigate project-related impacts to state</u></p>	

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		<p>transportation facilities. The City shall fund said improvements on pro-rata "fair-share" basis in accordance with the terms and conditions of an Agreement to be prepared and agreed to by both agencies. These fair-share contributions for feasible improvements shall be included in the AB 1600 nexus study enter into a mitigation agreement with Caltrans which identifies transportation or operational improvements necessary to mitigate project related impacts to state transportation facilities.</p>	
5.13-2 The proposed project would not increase hazards due to a design feature or incompatible uses.	Less than significant	No mitigation measures are required.	Less than significant
5.13-3: Adequate parking would be provided for the proposed project.	Less than significant	No mitigation measures are required.	Less than significant
5.13-4: The proposed project complies with adopted policies, plans, and programs for alternative transportation.	Less than significant	No mitigation measures are required.	Less than significant
5.14 UTILITIES AND SERVICE SYSTEMS			
5.14-1: There are adequate water supply and delivery systems to meet project requirements.	Less than significant	<p>PPP 14-1 Requirement to Use Recycled Water: IRWD will identify customers in a zone identified in the Plan ("the Plan" collectively refers to the Water Resources Master Plan, Sewer Master Plan, Natural Treatment System Master Plan, and addenda thereto) as an area capable of receiving service from the IRWD's recycled water system and will determine the feasibility of providing recycled water service to these customers. IRWD will also review applications for new permits to determine the feasibility of providing recycled water service to these applicants. If recycled water service is determined by IRWD to be feasible, applicants for new water service shall be required to install on-site facilities to accommodate both potable water and recycled water service in accordance with these Rules and Regulations. IRWD may also require existing customers to retrofit existing on-site water service facilities to accommodate recycled water service. If IRWD does not require the use of recycled water service, the customer may obtain recycled water service upon request but only if IRWD has determined that recycled water service to the customer is feasible and authorizes such use.</p> <p>PPP 14-2 Connection Fees: Future project applicants in the IBC shall enter into agreement or agreements as necessary with IRWD to establish the appropriate financial fair share costs to be borne by the project proponent. Fair share costs may include, but are not</p>	Less than significant

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Environmental Impact	Level of Significance Before Mitigation	Plans, Programs, and Policies [PPPs], Project Design Features [PDFs], and Mitigation Measures [MM]	Level of Significance After Mitigation
		<p>limited to, those associated with the preparation of studies and infrastructure expansion necessary to analyze and serve the project.</p> <p>PPP 14-3 Fire Flow Analysis: In accordance with IRWD requirements, each redevelopment project in the IBC must provide a fire flow analysis. If the analysis identifies any deficiencies, the developer will be responsible for any water system improvements associated with the development project required to rectify the deficiencies and meet IRWD fire flow requirements</p>	
5.14-2: Project-generated wastewater could be adequately treated by the wastewater service provider for the project.	Less than significant	Refer to PPP 14-2.	Less than significant
5.14-3: Existing facilities would be able to accommodate project-generated solid waste and comply with related solid waste regulations.	Less than significant	PPP 14-4 This project will result in new construction that will generate solid waste. Prior to the issuance of precise grading permits, the applicant shall show on the site plans the location of receptacle(s) to accumulate on-site-generated solid waste for recycling purposes. At the discretion of the Director of Community Development the developer of a nonresidential project may be permitted to contract with a waste recycler for off-site materials recovery. In this case the applicant must provide a letter verifying that recycling will be conducted off site in an acceptable manner (City of Irvine Standard Condition A.12).	Less than significant
5.14-4: Existing and/or proposed facilities would be able to accommodate project-generated utility demands.	Less than significant	PPP 14-5 The proposed project shall comply with all State Energy Insulation Standards and City of Irvine codes in effect at the time of application for building permits. (Commonly referred to as Title 24, these standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Title 24 covers the use of energy efficient building standards, including ventilation, insulation and construction and the use of energy saving appliances, conditioning systems, water heating, and lighting.) Plans submitted for building permits shall include written notes demonstrating compliance with energy standards and shall be reviewed and approved by the Public Utilities Department prior to issuance of building permits.	Less than significant
5.15 GLOBAL CLIMATE CHANGE			
5.15-1: Project-related greenhouse gas emissions could significantly contribute to global climate change impacts or conflict with the	Less than significant	PPP 15-1 City of Irvine Construction and Demolition (C&D) Debris Recycling and Reuse Ordinance: The C&D ordinance requires that 1) all residential projects of more than one unit, 2) nonresidential developments on 5,000 square feet or larger, and 3)	Less than significant

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California Air Resources Board–adopted scoping plan.		<p>nonresidential demolition/renovations with more than 10,000 square feet of building recycle or reuse a minimum of 75 percent of concrete and asphalt and 50 percent of nonhazardous debris generated.</p> <p>PPP 15-2 2008 Building and Energy Efficiency Standards (CCR Title 24): Prior to the issuance of a building permit for residential, commercial, or office structures in the Irvine Business Complex, development plans for these structures shall be required to demonstrate that the project meets the 2008 Building and Energy Efficiency Standards. Commonly known as Title 24, these standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2008 standards are approximately 15 percent more energy efficient than the 2005 Building and Energy Efficiency Standards. Plans submitted for building permits shall include written notes demonstrating compliance with the 2008 energy standards and shall be reviewed and approved by the Public Utilities Department prior to issuance of building permits. Design strategies to meet this standard may include maximizing solar orientation for daylighting and passive heating/cooling, installing appropriate shading devices and landscaping, utilizing natural ventilation, and installing cool roofs. Other techniques include installing insulation (high R value) and radiant heat barriers, low-e window glazing, or double-paned windows.</p> <p>PPP 15-3 Title 24 Code Cycles: Net-Zero Buildings (Residential & Non-Residential): The California Public Utilities Commission adopted its Long-Term Energy Efficiency Strategic Plan on September 18, 2008, presenting a roadmap for all new residential and commercial construction to achieve a zero-net energy standard. This Plan outlines the goal of reaching zero net energy in residential construction by 2020 and in commercial construction by 2030. Achieving this goal will require increased stringency in each code cycle of California’s Energy Code (Title 24).</p> <p>PPP 15-4 California Renewable Portfolio Standard: CARB’s Renewable Portfolio Standard (RPS) is a foundational element of the State’s emissions reduction plan. In 2002, Senate Bill 1078 established the California RPS program, requiring 20 percent renewable energy by 2017. In 2006, Senate Bill 107 advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II. On September 15, 2009, Governor Arnold Schwarzenegger signed Executive Order S-21-09 directing CARB to adopt regulations increasing RPS to 33 percent by 2020. These mandates apply directly to investor-owned utilities, in this case Southern</p>	

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		<p>California Edison (SCE).</p> <p>PPP 15-5 California Low Carbon Fuel Standard: On January 18, 2007, Governor Arnold Schwarzenegger issued Executive Order S-1-07 requiring the establishment of a Low Carbon Fuel Standard (LCFS) for transportation fuels. This statewide goal requires that California’s transportation fuels reduce their carbon intensity by at least 10 percent by 2020. Regulatory proceedings and implementation of the LCFS have been directed to CARB. The LCFS has been identified by CARB as a discrete early action item in the Scoping Plan. CARB expects the LCFS to achieve the minimum 10 percent reduction goal; however, many of the early action items outlined in the Scoping Plan work in tandem with one another. To avoid the potential for double-counting emission reductions associated with AB 1493 (Pavley), the Scoping Plan has modified the aggregate reduction expected from the LCFS to 9.1 percent.</p> <p>PPP 15-6 Federal Corporate Average Fuel Economy (CAFE) Standards: The 2007 Energy Bill creates new federal requirements for increases in fleetwide fuel economy for passenger vehicles and light trucks. The federal legislation requires a fleetwide average of 35 miles per gallon (mpg) to be achieved by 2020. The National Highway Traffic Safety Administration is directed to phase in requirements to achieve this goal. Analysis by CARB suggests that this will require an annual improvement of approximately 3.4 percent between 2008 and 2020.</p> <p>PPP 15-7 California Assembly Bill 1493 – Pavley Standards: On July 22, 2002, Governor Gray Davis signed Assembly Bill 1493 requiring CARB to develop and adopt regulations designed to reduce greenhouse gases emitted by passenger vehicles and light-duty trucks beginning with the 2009 model year. The standards set within the Pavley regulations are expected to reduce GHG emissions from California passenger vehicles by about 22 percent in 2012 and about 30 percent in 2016. California had petitioned the USEPA in December 2005 to allow these more stringent standards and California executive agencies have repeated their commitment to higher mileage standards. On July 1, 2009, the USEPA granted California a waiver that will enable the state to enforce stricter tailpipe emissions on new motor vehicles.</p> <p>PPP 15-8 SB 375: SB 375 requires the reduction of GHG emissions from light trucks and automobiles through land use and transportation efforts that will reduce vehicle miles traveled (VMT). In essence, SB 375’s goal is to control GHGs by curbing urban sprawl and through better land use planning. SB 375 essentially becomes the land use</p>	

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		<p>contribution to the GHG reduction requirements of AB 32, California's global warming bill enacted in 2006. The proposed project is consistent with SB 375 strategies to reduce VMT and associated GHG emissions in that it represents a compact, mixed-use development, improves jobs/housing balance in the City and Orange County Council of Governments Subregion, and provides access to mass transit. According to the 2008 Regional Comprehensive Plan, SCAG's Land Use and Housing Action Plan can be expected to result in a 10 percent reduction in VMT in 2035 when compared to current trends.</p> <p>PPP 15-9 Transit Service to LAX: Although the City of Irvine is serviced by John Wayne Airport, Los Angeles International Airport (LAX) is the regional air transportation hub. Providing direct transit service from the City to LAX can reduce single passenger trips to this destination. The Los Angeles World Airports operates three Flyaway shuttles that provide nonstop airport service to and from Westwood, Van Nuys, and Downtown Los Angeles via the Flyaway program. Since November 16, 2009, a Flyaway shuttle from the Irvine Metrolink Station to LAX provides nonstop service. Based on the ITAM model, a 0.25 percent reduction in VMT is achieved through implementation of this program.</p> <p>PPP 15-10 Comprehensive Signal Retiming and Coordination Program: Emissions are highest at the lowest travel speeds. The City is currently retiming and coordinating signals throughout Irvine under its ITEMS (Irvine Traffic Engineering System) program. The City plans to enhance signal coordination in the IBC area by the end of 2011. A program to retime and coordinate traffic signals would produce more even traffic flows, so that vehicles are not staring and stopping constantly. These types of programs can improve vehicular level of service (LOS), thereby decreasing emissions for the same volume of vehicles. Based on the ITAM model, a 1 percent citywide reduction in VMT is achieved through implementation of this program.</p> <p>PPP 15-11 Additional Fixed Route Shuttle System to Complement The i Shuttle: In March 2008, the City introduced The i Shuttle service, which complements regional bus service and provides direct express transportation to and from the nearby Tustin Metrolink Station, John Wayne Airport, and throughout the IBC. The i Shuttle currently operates 12 fully accessible, compressed natural gas (CNG) buses and is funded by the City of Irvine and the Orange County Transportation Authority. The City's shuttle system has the potential to further decrease VMT in the City by encouraging</p>	

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		<p>employees not living in the IBC to commute to work using mass transit. Fehr & Peers is currently preparing a comprehensive study of additional local shuttles designed to complement the existing fixed route bus service operated by OCTA and the existing The i Shuttle. This report (Irvine Transit Vision, June 2009) identified six new shuttle routes for within the City of Irvine that would connect from either the Irvine Metrolink Station or the Tustin Metrolink Station to various destinations in Irvine. The City will provide additional shuttle service using the Irvine Transit Vision as a guide.</p> <p>PPP 15-12 Energy Efficient Traffic Lights: New traffic signals installed within the Irvine Business Complex will have light emitting diodes. The City is implementing a program to convert all traffic lights in the City to traffic light emitting diodes.</p> <p>PPP 15-13 Waste Reduction: The City adopted a Zero Waste program in 2007 to approach waste management. The City recovers approximately 66 percent of its waste for recycling and composting, which exceeds the state's AB 939 waste diversion goals. Furthermore, waste haulers establish rate schedules according to bin size and frequency of collection. Commercial customers that subscribe to smaller bins (e.g., 2 cubic-yard bins) are routinely charged less by haulers. This pricing structure encourages waste reduction and recycling, and tends to minimize hauler pickups.</p> <p>PPP 15-14 Renewable Energy and Existing Buildings Retrofit Program: Pursuant to City Council Resolution 09-52, the City has received federal funding from the U.S. Department of Energy to establish a Renewable Energy and Existing Retrofit Program. Retrofitting is designed to improve a building's energy consumption by using cost-effective measures that do not require extensive remodeling work. The City of Irvine is proposing to use the "whole building approach" meaning that the City will look at the following:</p> <ul style="list-style-type: none"> • <u>Thermal envelope (i.e. the shell insulation and air leakage)</u> • <u>Mechanical systems (i.e. HVAC and domestic hot water)</u> • <u>Appliances and lighting that may need replacing</u> <p><u>The approach will evaluate these areas and their interaction given usage rates, building site, and climate to assess the building's overall energy efficiency and performance and to make targeted recommendations for improvement and ultimately reduce residential demand. The City of Irvine will create a financing district to help property owners finance energy efficiency improvements and renewable energy</u></p>	

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		<p><u>installations. The City of Irvine is forming a Property Assessed Clean Energy (PACE) District under the Mello-Roos Community Facilities Act of 1982 and its powers as a charter city. Eligible improvements may include energy efficiency, water conservation, and renewable energy improvements to privately owned buildings or property. Potential funding for initial improvements may come from various sources including American Recovery and Reinvestment Act grants, taxable bonded indebtedness, other external financing arrangements, or City funds.</u></p> <p><u>PPP 15-15</u></p> <p><u>PDF 15-10</u> Safe Route to Schools: The Safe Routes to School program is a federal and state grant program intended to increase the percentage of students walking or cycling to school. Funding is awarded to cities to construct engineering improvements and to start educational, encouragement, and enforcement programs. The City of Irvine has been successful in obtaining grant funding to implement a citywide program that includes walking school buses—groups of students who meet at a designated location and walk to school together, with a parent at the front and back of the group. This encourages students to walk to school and assuages parents' fears of traffic and crime safety risks that are impediments to walking alone. Based on the ITAM model, a 0.2 percent reduction in VMT is achieved through implementation of this program.</p> <p><u>PPP 15-16</u></p> <p><u>PDF 15-14</u> Circulation Phasing Analysis: The amount of emissions increase exponentially as arterial travel speeds decrease. As is the case with many cities in Southern California, there are often defined congestion locations (such as the major intersections along Jamboree Road) where a majority of congestion and delay occurs. The City currently has a Circulation Phasing Analysis program in place. They collect traffic counts at congested locations on a bi-annual basis and monitor locations every three years. The results of the analysis are used to determine future Capital Improvement Projects.</p> <p><u>PDF 15-1</u> Alternate Transportation Incentives: As described in the proposed zoning for the project, applicants for new developments in the Irvine Business Complex shall require that the construction contractor provide alternative transportation mode incentives such</p>	

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		<p>as bus passes and/or carpooling for workers to and from the worksite on days that construction activities require 200 or more workers. These requirements shall be noted on the grading plan cover sheet.</p> <p>PDF 15-2 Recycled Materials: As described in the proposed zoning for the project, applicants for new developments in the Irvine Business Complex shall submit evidence to the satisfaction of the Director of Community Development or the Director of Public Works that the project uses recycled materials for at least 20 percent of construction materials. Recycled materials may include salvaged, reused, and recycled content materials. Recycled and/or salvaged building materials shall be shown on building plans and product cut sheets submitted to the City.</p> <p>PDF 15-3 Compact/Mixed-Use Development: The California Energy Commission (CEC) considers compact development forms beneficial for minimizing energy consumption that leads to greenhouse gas emissions. In fact, the CEC's report on the connections between land use and climate change identifies density as the project feature most predictive of the number of vehicle trips and VMT by project occupants. The project locates additional housing opportunities near major employment and transportation centers. On a regional basis, this Land Use PDF will reduce regional VMT.</p> <p>PDF 15-4 High Rate of Internal Trip Capture: With the inclusion of a mix of land uses including office, commercial, industrial, and residential in the project area, the proposed project significantly reduces trips outside the project area. This reduces trip length and congestion on the local circulation system outside the project area.</p> <p>PDF 15-5 Office/Commercial Development Heat Island Standards: New parking lots serving retail and office developments shall include tree plantings designed to result in 50 percent shading of parking lot surface areas within 15 years. These shading requirements shall apply to all impervious surfaces on which a vehicle can drive, including parking stalls, driveways, and maneuvering areas within parking areas. Commercial developments shall provide landscapes with drought-resistant species and groundcovers, rather than pavement, to reduce heat reflection. Additionally: 1) Buildings are encouraged to be oriented to the south or southwest, where feasible; 2) deciduous trees are encouraged to be planted on the west and south sides of structures.</p> <p>PDF 15-6 Urban Infill Near Multiple Transit Modes: The project would develop high-density housing in an area being served by at least two modes of transit. On March 31, 2008,</p>	

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		<p>The i Shuttle, which is operated by the City of Irvine and designed for the IBC community, began operating. The shuttle allows residents and employees to have an alternative way to commute to jobs and locations throughout the IBC. The shuttle offers three routes to accommodate residents and employees traveling within the area and to and from the IBC (see Figure 4-2, The i Shuttle Route). Route A connects the Tustin Metrolink Station to the John Wayne Airport via Von Karman Avenue. Route B connects the Tustin Metrolink Station to the heart of the IBC via Jamboree Road and Michelson Drive. Route C is a midday service in the busiest section of the IBC. Therefore, the project would facilitate walking and nonmotor travel to a greater extent than would be the case for similar development in outlying areas without extensive transit availability. In addition, the high-density development would include a greater number of potential residents that could use or engage in alternative modes of travel than in a lower density development on the project site.</p> <p>PDF 15-7 Transportation Management Association (TMA): The City anticipates establishment of a TMA for the IBC by Spring 2010. Based on the ITAM model establishment of the TMA for the IBC Vision Plan area would result in a reduction of 8 percent of projected VMT. As described in the proposed zoning for the project, future applicants of new commercial, office, and retail development within the Irvine Business Complex area shall provide the following features to reduce project-related mobile source air pollutant emissions:</p> <ul style="list-style-type: none"> • Preferential parking for carpools and vanpools totaling 5 percent of all spaces on-site. • Preferential parking for alternative fuel vehicles (e.g., compressed natural gas or hydrogen) totaling 5 percent of all spaces on-site. • Secure bicycle parking and storage facilities for employees and visitors that can accommodate 15 percent of employees on-site. • Commuter information boards identifying bicycle paths and public transit routes and schedules. <p>PDF 15-8 Pedestrian Improvements: The IBC Vision Plan creates funding mechanisms to provide for the implementation of community-orientated pedestrian infrastructure improvements to increase walkability. New streets incorporated into the IBC would reduce the size of the city blocks to a pedestrian scale and pedestrian paseos would connect to the arterials at key locations. In addition, many of the streets in the IBC</p>	

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		<p>currently do not have sidewalks. The sidewalk improvement program would be expanded to provide connectivity, and incorporate several new pedestrian bridges, and many existing sidewalks would be moved away from the curb into the setback area. The Creekwalk system is also envisioned adjacent to the San Diego Creek to provide a trail to connect the Great Park from the IBC and the Civic Center.</p> <p>PDF 15-9 Bicycle Improvements: The IBC would provide linkages to the City regional bicycle trail system. Currently continuous on-street bicycle lanes exist only along Main Street. Bicycle lanes are proposed along parts of Jamboree Road, Red Hill Avenue, Von Karman Avenue, Michelson Avenue, Carlson Avenue, Barranca Parkway, and Alton Parkway. Furthermore, the sidewalk system would be shared between pedestrians and bicycles. As part of the Vision Plan, bicycle connections to the San Marco Park, adjacent to the San Diego Creek, would be improved with a new pedestrian bridge. Also refer to PDF 13-1 and PDF 15-7, which <u>require allow</u> for the creation of a Transportation Management Association (TMA) for the IBC area.</p> <p>PDF 15-10 Safe Route to Schools: The Safe Routes to School program is a federal and state grant program intended to increase the percentage of students walking or cycling to school. Funding is awarded to cities to construct engineering improvements and to start educational, encouragement, and enforcement programs. The City of Irvine has been successful in obtaining grant funding to implement a citywide program that includes walking school buses—groups of students who meet at a designated location and walk to school together, with a parent at the front and back of the group. This encourages students to walk to school and assuages parents' fears of traffic and crime safety risks that are impediments to walking alone. Based on the ITAM model, a 0.2 percent reduction in VMT is achieved through implementation of this program.</p> <p>PDF 15-11 Circulation Phasing Analysis: The amount of emissions increase exponentially as arterial travel speeds decrease. As is the case with many cities in Southern California, there are often defined congestion locations (such as the major intersections along Jamboree Road) where a majority of congestion and delay occurs. The City currently has a Circulation Phasing Analysis program in place. They collect traffic counts at congested locations on a bi-annual basis and monitor locations every three years. The results of the analysis are used to determine future Capital Improvement Projects.</p>	

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		<p>PDF 15-42 Ultra-Low-Flow Fixtures: Applicants for new developments in the Irvine Business Complex shall submit evidence to the satisfaction of the Director of Community Development that toilets, urinals, sinks, showers, and other water fixtures installed on-site are ultra-low-flow water fixtures that exceed the Uniform Plumbing Code. Examples are: 1.28 average gallons per flush high efficiency toilets, 2 gallon per minute (gpm) efficient bathroom faucets, 2.2 gpm efficient kitchen faucets, and 2.2 gpm efficient shower heads.</p> <p>PDF 15-43 Landscaping and Irrigation Systems: Applicants for new developments in the Irvine Business Complex shall submit evidence to the satisfaction of the Director of Community Development that landscaping irrigation systems installed in the project are automated, high-efficient irrigation systems that reduce water use, such as an evapotranspiration “smart” weather-based irrigation controller, dual piping for recycled water, and bubbler irrigation; low-angle, low-flow spray heads; moisture sensors; and use of a California-friendly landscape palette. These features will make the project consistent with the intent of the California Water Conservation in Landscaping Act of 2006 (AB 1881), including provisions to reduce the wasteful, uneconomic, inefficient, and unnecessary consumption of water.</p> <p>PDF 15-44 Use of Reclaimed Water on All Master Landscaped Areas: If recycled water service is determined by IRWD to be feasible (see PPP 14-1), applicants for new developments in the Irvine Business Complex shall use reclaimed water in all master landscaped areas. This will include master landscaped commercial, multifamily, common, roadways, and park areas. Master landscapes will also incorporate weather-based controllers and efficient irrigation system designs to reduce overwatering, combined with the application of a California-friendly landscape palette.</p> <p>PDF 15-45 Material Recovery: To reduce waste generated in the IBC and encourage recycling of solid wastes, the Orange County Integrated Waste Management Department operates material recovery facilities to recycle glass, plastic, cans, junk mail, paper, cardboard, greenwaste (e.g., grass, weeds, leaves, branches, yard trimmings, and scrap wood), and scrap metal. Future employees, residents, and customers would participate in these programs. On-site recycling facilities will be required for all commercial, retail, industrial, and multifamily residential developments.</p> <p>PDF 15-46 GreenPoint Rated Residential Buildings: Applicants for new residential developments in the Irvine Business Complex shall submit evidence to the satisfaction of the Director of Community Development that proposed buildings are designed and</p>	

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		<p>constructed to be GreenPoint Rated. GreenPoint Rated developments must achieve a minimum of 50 total points and meet the category-specific point thresholds as specified in the current GreenPoint Rated Builder Handbook. Developments that exceed this minimum are rewarded by a higher grade on their projects. The GreenPoint Rated program is updated every three years to coincide with changes to the California Building Energy Efficiency Standards.</p> <p>PDF 15-47 Designed to Earn the Energy Star Non-Residential Buildings: Applicants for new non-residential developments in the Irvine Business Complex shall submit evidence to the satisfaction of the Director of Community Development that proposed buildings are designed and constructed to achieve the 'Designed to Earn the Energy Star' rating. In order to achieve the 'Designed to Earn the Energy Star' rating, the architect/design firm must demonstrate that the final estimate of the building's energy use corresponds to a rating of 75 or better using the US EPA's Energy Performance Rating from the Internet-based tool, Target Finder.</p> <p>MM 15-1 Prior to the issuance of building permits in the IBC Vision Plan Area, the City shall establish a renewable energy and existing building retrofit program that will establish a framework for funding and implementing renewable energy projects and energy efficiency retrofits of existing buildings within the IBC Vision Plan area or the City as a whole. Applicants for new development projects within the IBC Vision Plan area shall submit evidence to the satisfaction of the Director of Community Development that the retrofits and/or renewable energy (which may include solar thermal, solar photovoltaic, wind, or other sources approved by the City) of existing buildings equates to the reduction of greenhouse gas (GHG) emissions by 32 percent of nontransportation sources. Applicants for new development projects shall first attempt to accomplish renewable energy production or energy efficiency retrofits of existing buildings within the IBC Vision Plan area. If deemed acceptable to the Director of Community Development, applicants for new development projects can implement new renewable energy production or energy efficiency retrofits of existing buildings within the City of Irvine to reduce GHG emissions. However, all renewable energy production or energy efficiency retrofits must be within the City limits.</p>	

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