ERRATA

City of Irvine 2045 General Plan Update
Program Environmental Impact Report
SCH #2023070463
May 2024

Subsequent to distribution of the Draft PEIR on March 15, 2024, the following revisions to the environmental document were made (changes are shown in strikeout/underline, with moved text shown in double underline).

Summary

S.5.3 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) requires an EIR to identify the environmentally superior alternative. If the No Project Alternative is the environmentally superior alternative, the EIR must identify an environmentally superior alternative from the other alternatives. The project itself may not be identified as the environmentally superior alternative.

The Reduced Project Alternative would be the environmentally superior alternative because it would incrementally reduce significant impacts associated with aesthetics, air quality, biological resources, cultural and tribal cultural resources, geology and soils, greenhouse gases, hazards and hazardous materials, hydrology and water quality, land use, noise, population and housing, public services and recreation, utilities and services, and wildfire compared to the project. However, none of the potentially significant impacts of the project would be completely avoided.

See below for revisions to Table S-1.

3.0 Project Description

3.3 Project Description

Table 3-2
Proposed Housing Units

Focus Area	Project Dwelling Units	Reduced Project Alternative Dwelling Units
Focus Area 1		
PA 19 (Rancho San Joaquin)[1]	2,202	2,111
PA 36 (Irvine Business Complex)	12,798	9,131
Total Focus Area 1	**15,000**	**11,242**
Focus Area 2		
PA 12 (Oak Creek)[2]	4,907	3,670

Table 3-2 Proposed Housing Units		
Focus Area	Project Dwelling Units	Reduced Project Alternative Dwelling Units
PA 13 (Irvine Spectrum 4)[13]	0	0
PA 31 (Irvine Spectrum 6)	2,934	256
PA 32 (Irvine Spectrum 3)	17,817	14,936
PA 33 (Irvine Spectrum Center)	949	949
Total Focus Area 2	**26,607**	**19,811**
Focus Area 3		
PA 51 (Great Park)	5,252	5,252
Total Focus Area 3	**5,252**	**5,252**
Non-Focus Areas		
PA 4 (Lower Peters Canyon)	357	293
PA 6 (Portola Springs)	400	284
PA 8 (Northwood)	899	464
PA 15 (Woodbridge)	2	2
PA 20 (University Park)	152	119
PA 24 (University Town Center)	823	555
PA 34 (Irvine Spectrum 5)	85	0
PA 35 (Irvine Spectrum 2)	5,239	1,562
PA 39 (Los Olivos)	298	298
PA 40 (Cypress Village)	281	498
Non-Focus Areas Total	**8,536**	**4,073**
Total (Focus Areas and Non-Focus Areas)	**55,395**	**40,378**
Unbuilt Units in General Plan (IRWD Site and Market Place Site)	2,261	2,261
OVERALL TOTAL	**57,656**	**42,639**

PA = Planning Area
[1]Does not include the Rancho San Joaquin Golf Course or the Irvine Racquet Club.
[2]Spectrum 7 only.
[13]Overlay applies to PA 13. However, no units are contemplated as part of the project.

4.2 Air Quality

4.2.5 Topic 1: Air Quality Plans

4.2.5.1 Impact Analysis

a. Criterion No. 1

~~The county-wide population would be the same under buildout of both the City's adopted General Plan and the project.~~ As stated above, growth forecasting for the AQMP is based in part on the land uses established by local general plans, which would be the City's adopted General Plan. The growth

projections used by the SCAQMD to develop the AQMP emissions budgets are based on the population, vehicle trends, and land use plans developed in general plans and used by SCAG in the development of the regional transportation plans and sustainable communities strategy. The project would result in an increase in residential and mixed-use development. Overall, buildout of the project would result in an increase in the City's service population (residents + employees) when compared to the existing General Plan. As described in Section 4.11.5.1 below, future development under the project would accommodate increases in population based on SCAG's demographic projections, and would therefore not induce unplanned growth in the Basin. The project would result in land use changes that support implementation of Housing Element programs focused on the City's RHNA obligation. The RHNA obligation is determined through coordination with each region's council of governments, which in the City is SCAG. The RHNA is therefore consistent with SCAG's growth projections for the region and the project would accommodate this projected growth. The City's existing General Plan has a significant amount of unbuilt nonresidential square footage available throughout the City. The project would accommodate the City's RHNA requirement and implement the 2021-2029 Housing Element through the introduction of additional residential and/or mixed-use development throughout the City using residential and residential mixed-use overlay zones that would allow greater flexibility for property owners and developers proposing to develop affordable housing projects. The overlays would promote higher density residential and mixed-use in three focus areas. These nonresidential uses generate higher numbers of vehicle trips than residential uses.

~~Furthermore, t~~The project would reduce VMT per service population compared to buildout of the adopted General Plan. This reduction is due to the fact the City currently is a major employment center with a high jobs-to-population ratio. The City has more jobs than can be sustained by the City's own population. Shifting towards a more balanced jobs/population ratio as would occur under the project due to the introduction of more housing units within the City (a major employment center) can be expected to improve VMT metrics. Most of the future residential growth would occur in the three focus areas which include areas of the City that are most suited for new growth and development as they are located near existing job centers, which would reduce VMT per service population. This reduction in VMT would in turn lead to a reduction in operational air quality emissions Basin-wide. Table 4.2-4 presents a comparison of operations emissions under buildout of the City's adopted General Plan and buildout of the project. Calculations are provided in Appendix B.

Table 4.2-4 Total Operational Emissions for the City						
Source	Pollutant (pounds per day)					
	VOC	NO_X	CO	SO_x	PM_{10}	$PM_{2.5}$
Adopted General Plan (2045)						
Mobile Source	1,068.28	1,839.69	33,999.83	119.11	14,476.88	3,698.14
Area Source	8,723.10	2,194.52	14,295.12	14.68	191.12	187.78
Energy Source	84.10	1,489.51	994.74	9.17	116.20	116.20
TOTAL	**9,875.47**	**5,523.72**	**49,289.69**	**142.96**	**14,784.21**	**4,002.13**
Project (2045)						
Mobile Source	1,124.70 ~~56.42~~	1,936.86 ~~88.80~~	35,795.61 ~~1,795.78~~	125.40 ~~6.29~~	15,241.51 ~~764.63~~	3,893.47 ~~195.33~~
Area Source	10,850.11 ~~2,127.01~~	3,362.13 ~~1,204.91~~	18,856.57 ~~4,561.45~~	22.31 ~~7.63~~	287.40 ~~96.28~~	283.60 ~~95.82~~
Energy Source	105.54 ~~21.44~~	1,856.57 ~~367.06~~	1,154.90 ~~160.16~~	11.51 ~~2.34~~	145.83 ~~29.63~~	145.83 ~~29.63~~
TOTAL	**12,080.35** ~~**2,204.88**~~	**7,155.56** ~~**1,660.77**~~	**55,807.08** ~~**6,517.39**~~	**159.22** ~~**16.26**~~	15,674.75 ~~**890.54**~~	**4,322.91** ~~**320.78**~~
Change (Project – Adopted General Plan)	**2,204.88** ~~**-7,670.59**~~	**1,631.84**- ~~**3,862.95**~~	**6,517.39** ~~**-42,772.30**~~	**16.26** ~~**-126.70**~~	890.54 ~~**-13,893.67**~~	**320.78** ~~**-3,681.35**~~

As shown in Table 4.2-4, buildout of the project would result in an ~~decrease~~ increase in emissions when compared to buildout of the City's adopted General Plan. This is due to the increase in residential and mixed-use development. However, because the project would reduce VMT per service population and would accommodate SCAG's growth projections ~~Therefore~~, buildout of the project would not exceed the assumptions used to develop the AQMP.

b. Criterion No. 2

Construction

As previously stated, the Basin is designated as in attainment or unclassifiable attainment (expected to be meeting the standard despite a lack of monitoring data) for all federal air quality standards except 8-hour ozone and 2.5-micron particulate matter ($PM_{2.5}$) standards. The Basin is designated as in nonattainment for state air quality standards for 8-hour ozone and $PM_{2.5}$, and additionally is in nonattainment of state 10-micron particulate matter (PM_{10}) standards.

Operation

Pollutant emissions from buildout of the project would exceed project level SCAQMD Significance Thresholds (see Table 4.2-3). However, project level standards are not appropriate for a program level analysis, as the thresholds are conservative and intended to ensure many individual projects would not obstruct the timely attainment of the national and state ambient air quality standards. Generally, discretionary, program level planning activities, such as general plans, community plans, specific plans, etc., are evaluated for consistency with the local air quality plan. In contrast, project

level thresholds are applied to individual project-specific approvals, such as a proposed development project.

As shown in Table 4.2-4, buildout of the project would result in an increase in emissions when compared to buildout of the City's adopted General Plan. This is due to the increase in residential and mixed-use development. However, as discussed above, because the project would reduce VMT per service population and would accommodate SCAG's growth projections, buildout of the project would not exceed the assumptions used to develop the AQMP. Most of the future residential growth would occur in the three focus areas that are most suited for new growth and development as they are located near existing job centers, which would reduce VMT per service population and associated Basin-wide vehicle emissions. However, while individual site-specific projects may not exceed the SCAQMD regional significance thresholds, the scale and extent of emissions associated with buildout of the project may result in some instances where future development would exceed the relevant SCAQMD thresholds (see discussion under Impact 2, below). Therefore, the General Plan Update would not be consistent with the AQMP under the second criterion and mitigation requiring project-specific air quality analyses is required (see mitigation measure AQ-2).

4.2.5.2 Significance of Impacts

a. Construction

Although the project would not exceed the assumptions used to develop the 2022 AQMP, construction activities associated with the project would result in an increase in the frequency or severity of existing air quality violations. Therefore, ~~the project~~ construction emissions would conflict with implementation of the AQMP, and impacts would be potentially significant.

b. Operation

The project would not exceed the assumption used to develop the AQMP. However, the scale and extent of emissions associated with buildout of the project may result in some instances where operation of future development would exceed the relevant SCAQMD thresholds. Therefore, operational emissions would conflict with implementation of the AQMP, and impacts would be potentially significant.

4.2.5.3 Mitigation

a. Construction

AQ-1: Applications for future development, wherein the Director of Community Development or their designee has determined a potential for air quality impacts associated with construction, shall prepare and submit a technical assessment evaluating potential project construction-related air quality impacts to the City for review and approval. The Director of Community Development or their designee shall make this determination based on the size of the project, whether the project would require a transportation impact analysis, or other criteria. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (SCAQMD) methodology for assessing air

quality impacts. The City shall require that applicants for new development projects with the potential to exceed the SCAQMD's adopted thresholds of significance to incorporate the measures listed below to reduce air pollutant emissions during construction activities. These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City. Mitigation measures to reduce construction-related emissions could include, but are not limited to:

- Require fugitive-dust control measures that exceed SCAQMD's Rule 403 requirements, such as:
  - Use of nontoxic soil stabilizers to reduce wind erosion.
  - Apply water every four hours to active soil-disturbing activities.
  - Tarp and/or maintain a minimum of 24 inches of freeboard on trucks hauling dirt, sand, soil, or other loose materials.
- Use construction equipment rated by the United States Environmental Protection Agency as having Tier 3 (model year 2006 or newer) or Tier 4 (model year 2008 or newer) emission limits, applicable for engines between 50 and 750 horsepower.
- Ensure that construction equipment is properly serviced and maintained to the manufacturer's standards.
- Limit nonessential idling of construction equipment to no more than five consecutive minutes.
- Limit on-site vehicle travel speeds on unpaved roads to 15 miles per hour.
- Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the project area.
- Use Super-Compliant VOC paints for coating of architectural surfaces whenever possible. A list of Super-Compliant architectural coating manufactures can be found on the SCAQMD's website.

b. Operation

AQ-2: For individual projects that may exceed the daily operational emissions thresholds established by the SCAQMD, the owner/permitee shall conduct an analysis of the project's operational air quality impacts using the latest available CalEEMod mode, or other analytical method determined in conjunction with the City. If such analyses identify potentially significant regional or local air quality impacts, project-level mitigation and/or project design features would be required to reduce operational impacts to less than significant to the extent feasible. Mitigation to reduce operational impacts depends on the specific project, but may include measures such as, but not limited to:

- Demonstrate net zero energy expenditure consistent with the goal of net zero expenditure.
- Implementation of transportation demand management measures.
- Prohibit the installation of woodstoves, hearths, and fireplaces in new construction facilitated by the General Plan Update.

- Expand and facilitate completion of planned networks of active transportation infrastructure for projects that are required to provide public improvements related to that infrastructure.
- Implement electric vehicle charging infrastructure beyond requirements set forth in the 2022 CALGreen mandatory measures, such as Tier 2 voluntary measures set forth in 2022 CALGreen (or future more stringent) standards.
- Implement traffic demand measures, such as unbundling parking fees from rent/lease options, encouraging/developing a ride-share program for the community, and provide car/bike sharing services, that will reduce daily individual car usage and reduce project VMT.

4.2.5.4 Significance of Impacts after Mitigation

a. Construction

The project would not exceed the assumptions used to develop the 2022 AQMP. However, construction activities associated with buildout of the project could generate short-term emissions that exceed the SCAQMD's significance thresholds during this time and cumulatively contribute to the nonattainment designations of the Basin. Implementation of mitigation measure AQ-1 would reduce criteria air pollutant emissions from construction-related activities to the extent feasible. However, construction time frames and equipment for site-specific development projects are not available at this time, and there is a potential for multiple development projects to be constructed at one time, resulting in significant construction-related emissions. Therefore, despite adherence to mitigation measure AQ-1, impacts associated with criteria pollutants would remain significant and unavoidable.

b. Operation

The project would not exceed the assumptions used to develop the AQMP. Buildout of the project would occur over a period of approximately 20 years or longer. Operational emissions associated with buildout of the project could generate emissions that exceed the SCAQMD's significance thresholds during this time and cumulatively contribute to the nonattainment designations of the Basin. Implementation of mitigation measure AQ-2 would reduce criteria air pollutant emissions from operation-related activities to the extent feasible. However, site-specific development projects are not currently available, and there is a potential for operational emissions to exceed the SCAQMD's significance thresholds. Therefore, despite adherence to mitigation measure AQ-2, impacts associated with criteria pollutants would remain significant and unavoidable.

4.2.6 Topic 2: Criteria Pollutants

b. Operation

At the program level, the analysis compares emissions generated by project buildout to emissions generated under buildout of the City's adopted General Plan to determine if the emissions would exceed the emissions estimates included in the AQMP, and to determine whether it would obstruct

attainment, or result in an exceedance of AAQS. Under this approach, the potential for future development within the City to result in a cumulatively considerable net increase in emissions based on the change in pollutant emissions that would result from buildout of the City's existing General Plan (adopted in 2000) in the year 2045 compared to buildout of the project in the year 2045. As shown in Table ~~2.4-4~~4.2-4 above, buildout of the project would result in ~~a decrease~~ an increase in emissions compared to buildout of the City's adopted General Plan. Most of the future residential growth would occur in the three focus areas that are most suited for new growth and development as they are located near existing job centers, which would reduce VMT per service population and associated vehicle emissions Basin-wide.

4.2.6.2 Significance of Impacts

b. Operation

The project would not exceed the assumption used to develop ~~conflict with implementation of~~ the AQMP,. However, the scale and extent of emissions associated with buildout of the project may result in some instances where operation of future development would exceed the relevant SCAQMD thresholds. Therefore, operational impacts would be potentially significant, and mitigation would be required to reduce emissions.

4.2.6.3 Mitigation

a. Construction

See mitigation measure AQ-1 above.

b. Operation

~~Impacts related to operational emissions would be significant, and the following mitigation shall be applied to future development:~~ See mitigation measure AQ-2 above.

~~AQ-2: For individual projects that may exceed the daily operational emissions thresholds established by the SCAQMD, the owner/permitee shall conduct an analysis of the project's operational air quality impacts using the latest available CalEEMod mode, or other analytical method determined in conjunction with the City. If such analyses identify potentially significant regional or local air quality impacts, project-level mitigation and/or project design features would be required to reduce operational impacts to less than significant. Mitigation to reduce operational impacts depends on the specific project, but may include measures such as, but not limited to:~~

- ~~Demonstrate net zero energy expenditure.~~
- ~~Implementation of transportation demand management measures.~~
- ~~Prohibit the installation of woodstoves, hearths, and fireplaces in new construction facilitated by the General Plan Update.~~
- ~~Expand and facilitate completion of planned networks of active transportation infrastructure.~~

- ~~Implement electric vehicle charging infrastructure beyond requirements set forth in the 2022 CALGreen mandatory measures, such as Tier 2 voluntary measures set forth in 2022 CALGreen (or future more stringent) standards.~~
- ~~Implement traffic demand measures, such as unbundling parking fees from rent/lease options, encouraging/developing a ride share program for the community, and provide car/bike sharing services, that will reduce daily individual car usage and reduce project VMT.~~

4.2.6.4 Significance of Impacts after Mitigation

a. Construction

Buildout of the project would occur over a period of approximately 20 years or longer. Construction activities associated with buildout of the project could generate short-term emissions that exceed the SCAQMD's significance thresholds during this time and cumulatively contribute to the nonattainment designations of the Basin. Implementation of mitigation measure AQ-1 would reduce criteria air pollutant emissions from construction-related activities to the extent feasible. However, construction time frames and equipment for site-specific development projects are not available at this time, and there is a potential for multiple development projects to be constructed at one time, resulting in significant construction-related emissions. Therefore, despite adherence to mitigation measure AQ-1, impacts associated with criteria pollutants would remain significant and unavoidable.

b. Operation

The project would not exceed the assumption used to develop ~~conflict with implementation of~~ the AQMP. Buildout of the project would occur over a period of approximately 20 years or longer. Operational emissions associated with buildout of the project could generate emissions that exceed the SCAQMD's significance thresholds during this time and cumulatively contribute to the nonattainment designations of the Basin. Implementation of mitigation measure AQ-2 would reduce criteria air pollutant emissions from ~~construction~~ operation-related activities to the extent feasible. However, site-specific development projects are not currently available, and there is a potential for operational emissions to exceed the SCAQMD's significance thresholds. Therefore, despite adherence to mitigation measure AQ-2, impacts associated with criteria pollutants would remain significant and unavoidable.

4.2.9 Cumulative Analysis

As defined in Section 15130 of the State CEQA Guidelines, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probably future projects within the cumulative impact area for air quality. The cumulative study area would be considered the Basin. The evaluation of consistency with the AQMP was cumulative in nature because it considers project consistency with a regional air quality plan that relies on the land use plans of jurisdictions within the Basin. As discussed in Section 4.2.5.1 above, project buildout would result in an increase in emissions when compared to buildout of the City's adopted General Plan. This is due to the increase in residential and mixed-use development. However, because the

project would reduce VMT per service population and would accommodate SCAG's growth projections, ~~generate fewer emissions compared to buildout of the City's adopted General Plan. T~~the project would not exceed the assumptions used to develop the AQMP.

4.3 Biological Resources

4.3.2 Applicable Regulatory Requirements

4.3.2.4 Local Regulations

f. Existing Plans, Programs, and Policies

Conservation and Open Space Element

Goal 2: Implement the Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) agreement and program to accomplish multi-species and multi-habitat conservation.

Objective COS-2: Continue to ~~E~~effectively implement the Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) agreement and program to achieve comprehensive conservation goals, including the preservation and management of diverse species and habitats across the designated area, ensuring long-term ecological sustainability and biodiversity conservation.

- **Policy (a)**: Review project proposals within the reserve system to assure consistency with the NCCP/HCP implementation agreement and program.
- **Policy (b)**: Assure that nonparticipating landowners provide evidence of payment of mitigation fees.
- **Policy (c)**: Manage all City open space lands enrolled in the NCCP/HCP Reserve System consistent with the terms, conditions and obligations of the NCCP/HCP permit and Implementation Agreement and associated RRMPs, including the City's obligation to restore CSS habitat in exchange for development of the open space trail system authorized in the RRMP.
- **Policy (d)**: Use the NCCP as a Program EIR for CEQA purposes, applying the Coastal Sage Scrub (CSS) mitigation measures applicable to planned activities.
- **Policy (e)**: Adopt fuel modification ordinances and standards consistent with the Fuel Modification Zones established in the NCCP/HCP.
- **Policy (f)**: Encourage and avoid adverse impacts to viable wildlife movement corridors connecting the Santa Ana Mountains to the coast open space areas of Bommer and Shady Canyons, Laguna Coast Wilderness Park and Crystal Cove State Park.

Goal 5: Maintain and preserve large, contiguous areas which contain significant multiple hazards and resources.

Objective COS-5: Continue to ~~S~~safeguard and conserve large, contiguous areas housing significant and diverse hazards and resources, ensuring their preservation and maintenance to mitigate

environmental risks and support ecological sustainability within the City's conservation and open space framework.

- **Policy (d)**: Ensure that riparian vegetation is not significantly modified, except as necessary to provide fire protection, access roads, and flood control, drainage, water, sewer and utility facilities, and except where habitat is to be enhanced as part of a mitigation program approved by the California Department of Fish and Wildlife or Implementation of the NCCP/HCP.
- **Policy (e)**: Participate in cooperative efforts with federal, state, and county agencies and landowners in planning, managing, and restoring regionally significant conservation and open space areas within the City and its sphere of influence (Lomas Ridge, Bommer and Shady Canyons, and San Joaquin Marsh).
- **Policy (g)**: Maintain significant riparian areas within preservation areas as natural corridors, sources of shelter, and water for wildlife.
- **Policy (h)**: Minimize intensive human use in preservation areas which sustain rare or endangered species, including migratory birds and rare plant species. Ensure use patterns and levels remain consistent with the NCCP/HCP and associated Recreation and Resource Management Plan (RRMPs).
- **Policy (i)**: Preserve and enhance the San Joaquin Marsh as a habitat resource and mitigation bank through implementation of the "San Joaquin Marsh Habitat Enhancement and Wetlands Creation Program."
- **Policy (j)**: Seek the least environmentally damaging and feasible alternatives where modifications of the natural topography are necessary in preservation area. Ensure that all impacts to preservation areas enrolled in the NCCP/HCP reserve system are consistent with the Implementation Agreement and associated RRMPs.
- **Policy (k)**: Ensure that any public road, arterial highway, transportation corridor, or utility that must pass through preservation areas outside the NCCP/HCP Reserve is the least environmentally damaging feasible alternative to the preservation area's environmental characteristics.
- **Policy (l)**: Ensure continuity and continued enhancement of the Agua Chinon and Wildlife Corridor in Planning Area 51.
- **Policy (m)**: Encourage special linkages for wildlife corridors, when feasible viable, and suitable, within the City and sphere of influence as well as in non NCCP/HCP Reserve areas containing "target and identified species."

4.3.6.3 Mitigation

Buildout of the project has the potential to adversely affect riparian and sensitive habitats. If no riparian and sensitive habitats have a potential to occur within and/or adjacent to the proposed project, the City may approve the proposed project to proceed without further biological resource analyses. If sensitive riparian and sensitive habitats have potential to occur, mitigation measures BIO-9 and BIO-10 below would apply.

BIO-9: Prior to project approval, if a proposed project has the potential to affect riparian and sensitive habitats and/or jurisdictional resources, a qualified biologist shall conduct a jurisdictional delineation following the methods outlined in the 1987 Corps Wetland

Delineation Manual (USACE 1987) and the Regional Supplement to the Corps Wetland Delineation Manual: Arid West Region (USACE 2008) to map the extent of wetlands and non-wetland waters, determine jurisdiction, and assess potential impacts. The results of the delineation shall be presented in a wetland delineation letter report and shall be incorporated into the California Environmental Quality Act document(s) required for approval and permitting of the proposed project.

4.5 Geology/Soils

4.5.1.1 Surface Rupture

The City and its sphere of influence are affected by both local and regional active faults. Figure 4.5-1 presents the City's location in relation to active faults. According to the U.S. Geological Survey and California Geological Survey, there are several regional faults within Alquist-Priolo Special Study Zones near the City that could result in seismic hazards should an earthquake occur along one of them, including Newport-Inglewood-Rose Canyon fault zone (approximately 1.5 miles west of Irvine), Pelican Hill fault (approximately 1.5 miles west of Irvine), El Modena fault (approximately 5 miles north of Irvine) and Peralta Hills fault (approximately 5 miles north of Irvine). In addition, numerous faults have been identified within the City; however, they are not considered active (shown movement at the surface in the past 13,000 years) and therefore, do not require delineation within a special study zone. Regardless, these faults should be accounted for in future development decisions. Figure 4.5-2 identifies the areas of the City that are considered vulnerable to seismic induced landslides.

4.5.1.2 Ground Shaking

Ground shaking is the effect of surface motion generated by an earthquake that results in the majority of damage during seismic events (City of Irvine 2020). Several factors control how ground motion interacts with structures, making the hazard of ground shaking difficult to predict. Seismic waves propagating through the Earth's crust are responsible for the ground vibrations normally felt during an earthquake. Structures throughout the City could be affected by ground shaking during a seismic event. The City's Local Hazard Mitigation Plan (LHMP) includes a summary of the 2015 Third Uniform California Earthquake Rupture Forecast which provides the most recent assessment of the probability of a major earthquake on various faults between 2015 to 2044. The San Joaquin Hills Fault, located within the City, has a ~~40~~0.40 percent probability of a major earthquake occurring while the Newport-Inglewood Fault, located 8 miles from the City, has a ~~95~~0.95 percent probability of a major earthquake occurring. The 2015 Third Uniform California Earthquake Rupture Forecast classifies the probability of an earthquake occurring on either of these faults as negligible.

4.5.1.3 Liquefaction

Liquefaction is a seismic phenomenon in which loose, saturated, granular soils behave similarly to a fluid when subject to high intensity ground shaking. Liquefaction occurs when three general conditions exist: (1) shallow groundwater; (2) low -density non-cohesive (granular) soils; and (3) high -intensity ground motion. Liquefaction is typified by a buildup of pore-water pressure in the affected soil layer to a point where a total loss of shear strength occurs, causing the soil to behave as a liquid.

Studies indicate that saturated, loose to medium dense, near surface cohesionless soils exhibit the highest liquefaction potential, while dry, dense, cohesionless soils and cohesive soils exhibit low to negligible liquefaction potential. According to the Department of Conservation, the Planning Areas encompass earthquake zones of required investigation for liquefaction as mapped by the California Geologic Survey. ~~Liquefaction zones may also contain areas susceptible to the effects of earthquake-induced landslides. This situation typically exists at or near the toes of existing landslides, downslope from rockfall or debris flow source areas, or adjacent to steep stream banks.~~

4.5.1.4 Soil Stability and Landslides

a. Landslides

There is the potential for landslides in the steeper portions of the foothills of the Santa Ana Mountains to the northeast of the City and the San Joaquin Hills to the southwest of the City. These areas are characterized with steep topography and geologic units that can become unstable. While no definitive scale for measuring landslides exists, landslide events are usually measured using the amount of material that is displaced (i.e., the cubic feet of earth that moved). In addition, to these landslide hazards, the California Geological Survey has mapped deep seated landslide hazards, which uses a scale of landslide susceptibility that is based on slope steepness and the strength of the underlying rock, with 0 being no susceptibility and 10 being the highest susceptibility. Figure ~~4.5-2~~4.5-3 identifies the deep-seated landslide susceptibility within the City. Areas in the foothills of the Santa Ana Mountains and San Joaquin Hills show the greatest susceptibility within the City.

4.5.1.5 Paleontological Resources

Figure ~~4.5-3~~4.5-4 presents the designations of paleontological sensitivity throughout the City. The City classifies paleontological sensitivity based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts within the known extent of geologic units (see Appendix D). Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher potential. The relative abundance of localities is intended to be the major determinant for the value assignment. Thousands of fossils have been recovered within the City boundaries. The following presents a summary of geologic units within the City and their assigned paleontological sensitivity:

4.5.2.3 Local Regulations

The LHMP states that no active faults are located within the City; however, there are several nearby faults that could result in seismic hazards in the event of an earthquake. In addition to the hazards caused by seismic shaking, there is also a risk of liquefication in parts of the City due to the highwater table and types of soil present. THE LHMP documents historic southern California earthquakes that affected the Irvine region. The largest and most recent earthquake to occur within 100 miles of the City of Irvine was the 6.7 magnitude ~~Northbridge~~ Northridge Earthquake in 1994 that occurred approximately 56 miles from the City. Additional earthquakes that have occurred within the region since the beginning of the twentieth century are presented in Table 4.5-2.

4.5.5.1 Impact Analysis

a. Earthquake Fault Rupture and Strong Seismic Ground Shaking

The City and its sphere of influence are affected by both local and regional active faults. As previously stated, the City's LHMP includes a summary of the most recent assessment of the probability of a major earthquake on various faults between 2015 to 2044. The San Joaquin Hills Fault, located within the City, has a ~~40~~0.40 percent probability of a major earthquake occurring while the Newport-Inglewood Fault, located 8 miles from the City, has a ~~95~~0.95 percent probability of a major earthquake occurring. The 2015 Third Uniform California Earthquake Rupture Forecast classifies the probability of an earthquake occurring on either of these faults as negligible. The LHMP also includes the U.S. Geological Survey forecasts regarding the severity of seismic shaking. The scenarios show that the Newport-Inglewood and San Joaquin Hills faults could cause the strongest seismic shaking in Irvine. However, the largest magnitude events are anticipated to come from the more distant San Jacinto and San Andreas faults, which could cause earthquakes that have an overall higher magnitude than the Newport-Inglewood or San Joaquin Hills faults. However, due to distance of the distant of the San Jacinto and San Andreas faults, the shaking intensity felt in Irvine would be reduced compared to the shaking that would be felt nearer the earthquakes' epicenters. The overall magnitude of potential earthquake scenarios occurring along the Newport-Inglewood and San Joaquin Hills faults is lower than some of the more regional faults but their proximity to Irvine means that the City would be subjected to high intensity shaking from these earthquakes. However, the likelihood of a powerful earthquake occurring along these faults within the next 25 years is exceptionally low.

b. Liquefaction, Landslides, Lateral Spreading, Subsidence, and Expansive Soils

Figure 4.5-1 presents where liquefaction zones have been identified throughout the City, and Table 4.5-1 presents the acreage of land within the City designated as a liquefaction zone. Approximately 2,250.26 acres of Focus Area 1, 46.15 acres of Focus Area 2, and 440.28 acres of Focus Area 3, and 9,136.6 acres in the remainder of the City are in the liquefaction susceptibility zone. Figure 4.5-2 identifies the areas of the City that are considered vulnerable to seismic induced landslides. As illustrated by this figure, there is the potential for landslides in the steeper portions of the foothills of the Santa Ana Mountains to the northeast of the City and the San Joaquin Hills to the southwest of the City. These areas are characterized with steep topography and geologic units that can become unstable. ~~Even these areas; h~~ However, the City's LHMP documents that these areas are designated as having a moderately low risk of landslides due to seismic conditions, and a low likelihood of a landslide under other conditions. Additionally, the California Geological Survey has mapped deep seated landslide hazards, which uses a scale of landslide susceptibility that is based on slope steepness and the strength of the underlying rock, with 0 being no susceptibility and 10 being the highest susceptibility. Figure 4.5-3 identifies the deep-seated landslide susceptibility for Irvine. Areas in the foothills of the Santa Ana Mountains and San Joaquin Hills show the greatest susceptibility within the City.

4.5.8.1 Impact Analysis

As shown in Figure ~~4.5-3~~4.5-4, the northeastern and southeastern portion of the city are interspersed with areas of high paleontological sensitivity rating, while the remaining majority of the City classified as having moderate paleontological sensitivity rating. Future development within areas with high and moderate sensitivity would have the potential to disturb native soils, and therefore may impact paleontological resources. Per Standard Condition 2.5 (PPP-GEO-10), prior to the issuance of the first preliminary or precise grading permit for a project that is located on land that includes potentially significant archaeological and/or paleontological sites, and for any subsequent permit involving excavation to increased depth, the applicant must provide letters stating that a qualified archaeologist and paleontologist would be on-site during ground disturbing activities and would provide procedures for cultural/scientific resource surveillance. Despite compliance with Standard Condition 2.5, impacts would remain potentially significant and mitigation requiring a site-specific paleontological assessment and/or monitoring for all soils below 5 feet would be required (mitigation measure GEO-1).

4.6 Greenhouse Gas Emissions

4.6.1.2 GHG Inventories

b. Local

Table 4.6-3
City GHG Emissions in 2019

Source	2019 Baseline Emissions	
	MT CO_2E	%
On-Road Transportation	~~1,144,205~~1,140,206	51
Nonresidential Building Energy	550,138	24
Residential Building Energy	291,405	13
Solid Waste	160,626	7
Off-Road Vehicles and Equipment	68,756	3
Water Supply	30,798	1
Wastewater Treatment	5,665	<1
TOTAL	**~~2,251,593~~2,247,593**	**100**

SOURCE: ~~City of Irvine 2023~~Appendix E.

h. Existing Plans, Programs, and Policies

Environmental Protection and Climate Action Element

Goal 6: Reduce energy consumption and promote energy efficiency in Irvine.

Objective EPCA-6. Achieve significant reductions in per capita energy consumption across residential, commercial, and municipal sectors while promoting the adoption of renewable energy sources and energy-efficient technologies.

- **Policy (a)**: Continue, ~~T~~through the efforts of CALGreen, ~~establish and~~to enforce energy efficiency standards and building codes for new construction and major renovations to improve the energy performance of buildings and reduce energy demand.
- **Policy (b)**: Continue to ~~R~~require energy-efficient building design, insulation, HVAC systems, lighting, and appliances to minimize energy consumption and lower utility costs for residents and businesses.
- **Policy (c)**: Continue to ~~P~~promote the adoption of renewable energy systems, such as solar photovoltaic (PV) panels, wind turbines, and geothermal heat pumps, to generate clean and sustainable electricity for onsite consumption or grid injection.
- **Policy (d)**: Streamline permitting processes and provide incentives, rebates, and financing options to encourage residents, businesses, and municipal facilities to invest in renewable energy installations.
- **Policy (e)**: Continue to ~~I~~implement energy conservation programs and public awareness campaigns to educate residents and businesses about the importance of energy conservation, energy-saving practices, and behavioral changes to reduce energy waste.
- **Policy (f)**: Continue to ~~M~~monitor federal, state, regional, and other local governments, utility companies, Irvine Ranch Water District (IRWD), and other private and public agencies energy programs. Obtain information and technical assistance for energy programs and implement federal and state energy programs.
- **Policy (g)**: Promote energy savings in buildings constructed before 1978.
- **Policy (h)**: Encourage voluntary retrofit energy programs for residential, commercial, and industrial buildings including energy conservation measures.
- **Policy (i)**: Maximize energy efficiency of the City's facilities and operations by use of recycled materials, renewable sources, and conservation measures.

4.6.3 Significance Determination Thresholds

State CEQA Guidelines Section 15064(h)(1) states that "the lead agency shall consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable." A cumulative impact may be significant when the project's incremental effect, though individually limited, is cumulatively considerable. Therefore, for the purposes of this analysis, the significance of impacts was evaluated using criteria (1) and (3) above. ~~Specifically, the following analysis determines that the Proposed Project would not result in a significant GHG impact because it would result in an overall reduction in GHG emissions per service population, and because it would be consistent with state, regional, and local strategies, goals, and policies to reduce GHG emissions.~~

4.6.5.1 Impact Analysis

a. Buildout Year 2045 Emissions Forecast

The 2019 GHG emission inventory reported in Tables 4.6-5 and 4.6-6 establishes the baseline citywide emissions. This inventory was completed as part of development of the City's Draft CAAP and represents the best available source of existing emissions in the City, with detailed methodologies included in Appendix E. The 2019 emissions inventory establishes the baseline emissions in the City for purposes of this PEIR. Furthermore, the 2045 emissions forecast detailed in Tables 4.6-5 and 4.6-6

similarly represents the best available GHG emissions projections for the City. Although the emission ~~inventory and buildout projections detailed in Table 4.6-5~~forecasts did not account for land use allowances under the General Plan Update, the forecasts are conservative because the General Plan Update would allow for residential land uses to occur primarily within areas currently designated for nonresidential development. As a result, due to market conditions and new allowances for residential uses, it is anticipated that buildout of the General Plan Update would result in a shift of existing unbuilt commercial capacity to residential land uses. Adding residential capacity within the City would improve the jobs to housing balance and potentially reduce the number of long commutes that are characteristic of the City's existing employment centers, which could reduce emissions estimates for on-road transportation, the greatest source of GHG emissions in the City. Because the General Plan Update would primarily add residential capacity on sites currently designated for nonresidential use, the 2019 GHG inventory and projections can be considered a reasonable, and potentially conservative, measure of GHG emissions at buildout of the General Plan Update. As detailed in Appendix E, VMT with the General Plan Update is anticipated to decrease by approximately 4 VMT per service population compared to the current General Plan. This demonstrates the General Plan Update would result in a decrease in on-road vehicle emissions compared to the existing plan and the emission projections described in Section 4.6.4.

4.6.5.3 Mitigation

GHG-1: Applications for future development, wherein the Director of Community Development or their designee has determined a potential for GHG impacts the City shall evaluate the project to identify the potential for GHG emissions to exceed the SCAQMD thresholds detailed below. If a project may exceed the thresholds, the City shall require a technical assessment evaluating potential project GHG impacts to the City for review and approval. The significance of project-level GHG impacts shall be evaluated using one of the following criteria:

1. In the absence of a City plan to reduce GHG emissions, the evaluation shall be prepared in conformance with SCAQMD methodology for assessing GHG impacts, which consists of the following tiered approach:
    a. Tier 1 – The project is exempt from the California Environmental Quality Act (CEQA).
    b. Tier 2 – The project is consistent with an applicable regional GHG emissions reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG emissions.
    c. Tier 3 – Project GHG emissions represent an incremental increase below or mitigated to less than a 3,000 MT CO_2E screening level.
    d. Tier 4 – The project achieves performance standards, where performance standards may include a percent emission reduction target or an efficiency target per service population.
    e. Tier 5 – Offsets along or in combination with the above target Significance Screening Level. Offsets must be provided for a 30-year project life, unless the project life is limited by permit, lease, or other legally binding condition.

If GHG emissions are determined to have the potential to exceed the SCAQMD's recommended thresholds, the City shall require that applicants for new development projects incorporate features to reduce GHG emissions. These identified measures shall be incorporated into all appropriate documents submitted to the City and shall be verified by the City. Measures can include, but are not limited to, the following:

- Affordable Housing. Provide below market rate housing.
- Electric Vehicle Parking. Implement electric vehicle charging infrastructure beyond requirements set forth in the 2022 CALGreen mandatory measures, such as Tier 2 voluntary measures set forth in 2022 CALGreen (or future more stringent) standards.
- Transportation Demand Management. Implementation of transportation demand management measures
- Unbundling Parking. Require residential developers to separate the cost to rent or purchase a parking space from the cost of the unit.
- Transit Subsidies. Require implementation of a transit subsidy program that covers a portion of the cost of transit passes on a per unit basis to residential tenants for a period of five years after issuance of the first occupancy permit. Owner/Permittee shall provide an annual report to the City Engineer in each of the first five years demonstrating how the offer was publicized to residents and documenting the results of the program each year, including number of participants and driveway traffic counts.
- Commute Trip Reduction Program. Develop and implement a commute trip reduction program that requires each homeowner and tenant to be provided with a one-page flyer every year that provides information regarding available transit, designated bicycle routes, local bicycle groups and programs, local walking routes and programs, and rideshare programs.
- Active Transportation Network. Expand and facilitate completion of planned networks of active transportation infrastructure for projects that are required to provide public improvements related to that infrastructure.
- Bicycle Micro-mobility Fleet. Provide bicycles to the first buyer of each unit.
- All Electric Development. Require all-electric development with no sources of natural gas.
- Energy Efficiency. Demonstrate building energy efficiency beyond applicable code requirements.
- Energy Star Appliances. Provide Energy Star rated appliances (clothes washers, dishwashers, refrigerators, and ceiling fans).
- Alternative Water Heating. Incorporate non-gas water heaters (e.g., electric or solar water heating).
- Water Efficient Landscaping. Provide low-water use/drought tolerant plant species with low water use irrigation (e.g., spray head or drip), where required.
- Outdoor Electrical Outlets to Allow for Electric Landscape Equipment. Provide exterior electrical outlets necessary for sufficient powering of electric lawnmowers and other landscaping equipment.

4.6.6.1 Impact Analysis

Table 4.6-8 Project Consistency with 2022 Scoping Plan Key Prioritization Strategies		
Priority Area	Key Project Attribute	Project Consistency
Transportation Electrification	Provides EV charging infrastructure that, at minimum, meets the most ambitious voluntary standard in the California Green Building Standards Code at the time of project approval.	**Consistent.** The project includes the following implementation measure from the Environmental Protection and Climate Action (EPCA) Element: ~~Promote Low-Emission and Electric Vehicles:~~ Establish EV-friendly policies and regulations, such as streamlined permitting processes, dedicated parking spaces, and EV-ready building codes, to facilitate the installation of EV charging infrastructure in new developments and existing buildings.

4.9 Land Use/Planning

4.9.6.1 Impact Analysis

The project is a comprehensive update to the City's existing General Plan in support of the City's RHNA goals. In total, the project would facilitate the future development of up to 57,656 new residential units, with most of these units concentrated in the three focus areas. Additional project-activities include nonresidential improvements to the Great Park area, the extension of Ada (a street in the area near the Irvine ~~Transit Center~~ Station), and the continuation of nonresidential uses permitted at the same intensities as allowed under the existing General Plan.

4.9.6.2 Significance of Impacts

~~Implementation of mitigation measures BIO-1 through BIO-10 would reduce conflicts with the NCCP/HCP to a level less than significant.~~ If sensitive biological resources have potential to occur, future development may have the potential to conflict with the NCCP/HCP, which would be considered potentially significant. Conflicts with all other plans would be less than significant and would not require mitigation.

4.10 Noise

4.10.1.2 Ambient Noise Measurements

Table 4.10-2
Noise Measurements

Measurement	Location	Date	Time	L_{eq}
1	Irvine ~~Transit Center~~Station	2:29 p.m. - 3:29 p.m.	1 hour	57.4
2	Alton Parkway, 30 feet from edge of nearest travel lane	2:02 p.m. - 2:17 p.m.	15 minutes	60.2
3	Culver Drive, 30 feet from edge of nearest travel lane	9:51 a.m. - 10:06 a.m.	15 minutes	62.8
4	Sand Canyon Avenue, western corner of intersection with Burt Road	1:22 p.m. - 1:41 p.m.	19 minutes	72.3
5	Irvine Boulevard, 50 feet from nearest travel lane	12:30 p.m. - 12:45 p.m.	15 minutes	60.2
6	Culver Drive, 100 feet from edge of nearest travel lane	11:54 a.m. - 12:09 p.m.	15 minutes	55.6
7	Barranca Parkway, 50 feet from edge of nearest travel lane	10:45 a.m. - 11:00 a.m.	15 minutes	58.2
8	Jamboree Road, 50 feet from edge of nearest travel lane	8:28 a.m. - 8:43 a.m.	15 minutes	65.3
9	Irvine Boulevard and Sand Canyon Avenue, 25 feet from edge of nearest Irvine Boulevard travel lane	3:47 p.m. - 4:02 p.m.	15 minutes	62.7
10	Main Street, western corner of intersection with Von Karman Avenue	9:05 a.m. - 9:20 a.m.	15 minutes	71.0

L_{eq} = one-hour equivalent noise level.

Measurement 1 was taken at the Irvine ~~Transit Center~~ Station (Metrolink Station) located at 15215 Barranca Parkway #1. The measurement was located at the fence adjacent to the Metrolink tracks, approximately 46 feet from the tracks. The main source of noise at this measurement location was two northbound trains and announcements over the speaker system. Other sources of noise included aircraft flyovers, buses and a garbage truck. The average measured noise level was 57.4 dB(A) L_{eq}.

4.10.5 Topic 1: Increase in Ambient Noise

4.10.5.1 Impact Analysis

a. Traffic Noise

The noise analysis is based on the baseline (year 2016 for which a complete data set exists) and future (year 2045) traffic volume data. Without the project, existing noise levels are up to 79.0 CNEL at the nearest receiving land uses. With the project, future noise levels are expected to range from 53.2 to 79.2 CNEL at the nearest receiving land uses. Off-site traffic noise level impacts would exceed the noise level increase thresholds along 147 roadway segments. Table 4.10-12 summarizes the existing

and future noise levels at the impacted roadway segments under buildout of the project. Based on the significance criteria for off-site traffic noise, land uses adjacent to these study area roadway segments would experience a significant noise level increases due to the Project-related traffic as compared to the existing traffic noise levels.[1]

[1]Table 16 of Appendix G presents a comparison of noise levels under buildout of the Current General Plan with buildout of the project.

For existing land uses exposed to significant increase in noise, the Noise Element Update contains policies under Goal N-3, Noise Abatement, Objective N-3. Policy (i) that would require an examination of the existing and future noise environment when considering amendments to the City's circulation system. It requires the implementation of project features, such as the installation of upgraded windows, to achieve acceptable interior noise standards at affected receptors. Policy (j) seeks to reduce noise impacts from mobile sources by encouraging the use of alternative modes of transportation. Policy (m) reduces community noise levels by continuing to maintain roadways so that the paving is in good condition to reduce noise-generating cracks, bumps, and potholes. However, the increase in ambient noise levels adjacent to the roadway segments listed above would likely remain at levels that would expose existing noise-sensitive receptors to a significant increase in ambient noise levels. Other possible noise-reduction measures would include retrofitting older structures with acoustically rated windows and doors featuring higher Sound Transmission Class ratings, which is a measure of exterior noise reduction performance. However, there is no mechanism in place for implementing such a retrofit program. Because the significant noise impacts would be to existing homes and other noise-sensitive uses in an already urbanized area, there is no feasible mitigation, and impacts would be significant.

Land Use Compatibility

Future vehicle traffic noise contours are shown in Figure 4.10-5. These noise contours account for future traffic generated by development of the project, as well as the extension of Ada roadway. A significant impact would occur if implementation of the project resulted in an exposure of people to current or future motor vehicle traffic noise levels that exceed standards established in the Noise Element Update (see Tables 4.10-8 and 4.10-9).

The project focuses mixed-use development in existing urbanized areas throughout the City using overlay zones. Most of the increased density is proposed in Focus Areas 1, 2 and 3, which are located near existing or planned travel corridors. Focus Area 1 is in the Irvine Business Complex (IBC) and would expand residential and mixed-uses to sites previously designated for nonresidential uses through implementation of the proposed residential and residential mixed-use overlay. Focus Area 2 is in the Greater Spectrum Area and would expand residential uses through the implementation of the new overlay. Focus Area 3 is in the Great Park Neighborhood Transit Village and would also allow for residential uses on nonresidential properties through implementation of the proposed overlay. The Great Park Neighborhood is an existing mixed-use planning area that features a mix of residential uses at varying densities surrounding the Irvine Great Park. The project would increase the number of residential units permitted in the Great Park with a focus on higher density near or adjacent to the Irvine ~~Transit Center~~ Station. Additionally, the project utilizes a customized concept of transit-oriented development to suit the unique context of the Greater Irvine Business Complex Area, the Greater Spectrum Area, and the Great Park Neighborhood Transit Village Area. Transit-

oriented development permits greater residential densities and a wider range of land uses, such as offices, housing, retail, and services, in select geographic areas.

4.10.5.3 Mitigation

c. Stationary Noise

NOI-3: Prior to the issuance of ~~a~~ building permits, a site-specific acoustical/noise analysis of any on-site generated noise sources, including generators, mechanical equipment, and trucks, shall be prepared which identifies all noise-generating equipment, predicts noise levels at property lines from all identified equipment, and recommends mitigation to be implemented (e.g., enclosures, barriers, site orientation), to ensure compliance with the City's noise standards. Noise reduction measures shall include building noise-attenuating walls, limiting the hours of operation, or other attenuation measures. Additionally, future projects shall be required to buffer sensitive receptors from noise sources through the use of open space and other separation techniques as recommended after thorough analysis by a qualified acoustical engineer. Exact noise mitigation measures and their effectiveness shall be determined by the site specific noise analyses.

d. Construction Noise

NOI-4: Construction contractors shall implement the following measures for construction activities conducted in the City of Irvine. Construction plans submitted to the City shall identify these measures on demolition, grading, and construction plans submitted to the City:

- The City of Irvine Community Development Department shall verify that grading, demolition, and/or construction plans submitted to the City include these notations prior to issuance of demolition, grading, and/or building permits.
- Construction activity is limited to the hours: Between 7:00 AM to 7:00 PM Monday through Friday and 9:00 a.m. and 6:00 p.m. on Saturdays as prescribed in Municipal Code Section 66-8-205(A). No construction activities shall be permitted outside of these hours or on Sundays and federal holidays, except Columbus Day, unless a temporary waiver is granted by the Chief Building Official or their authorized representative.
- During the entire active construction period, equipment and trucks used for project construction shall use the best-available noise control techniques (e.g., improved mufflers, equipment re-design, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible.
- Impact tools (e.g., jack hammers and hoe rams) shall be hydraulically or electrically powered wherever possible. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools.

- Stationary equipment, such as generators and air compressors shall be located as far as feasible from nearby noise-sensitive uses.
- Stockpiling shall be located as far as feasible from nearby noise-sensitive receptors.
- Construction traffic shall be limited, to the extent feasible, to approved haul routes established by the City of Irvine Community Development Department.
- At least 10 days prior to the start of construction activities, a sign shall be posted at the entrance(s) to the job site, clearly visible to the public, that includes permitted construction days and hours, as well as the telephone numbers of the City's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, he/she shall investigate, take appropriate corrective action, and report the action to the City.
- Signs shall be posted at the job site entrance(s), within the on-site construction zones, and along queueing lanes (if any) to reinforce the prohibition of unnecessary engine idling. All other equipment shall be turned off if not in use for more than 5 minutes.
- During the entire active construction period and to the extent feasible, the use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. The construction manager shall use smart back-up alarms, which automatically adjust the alarm level based on the background noise level or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws.
- Erect temporary noise barriers (at least as high as the exhaust of equipment and breaking line-of-sight between noise sources and sensitive receptors), as necessary and feasible, to maintain construction noise levels at or below the performance standard of 80 dBA Leq. Barriers shall be constructed with a solid material that has a density of at least 4 pounds per square foot with no gaps from the ground to the top of the barrier. Barriers should be erected to the width and height necessary to maintain construction noise levels at or below the performance standard of 80 dB(A) L_{eq}, and may use blankets and other materials to reduce noise as necessary.

4.12 Public Services and Recreation

4.12.1.3 Schools

IUSD School Facilities and Funding

In March 2011, IUSD developed a 20-year Comprehensive Facilities Master Plan (FMP) which includes Site Master Plans for each school site. IUSD opened six new school sites from 2016 to 2022. In addition to the new school sites, IUSD scheduled improvements to existing school sites funded by Measure E, which is a bond that was passed in 2016 to provide a maximum issuance of $319 million for facilities improvements at 28 existing schools. Improvements included the creation of collaborative learning

spaces and innovation labs; improved accessibility, comfort, and safety; and modernized existing classrooms, science labs, and other school facilities (Irvine Unified School District 2022a).

In addition to Measure E, school funding consists of a contribution of local funding through a Community Facilities District (CFD), State funding, and/or other forms of mitigation negotiated with developers. School Districts rely on School Fees as a funding source for new school facilities required by new development. State law requires a nexus between the projected number of units to be constructed and the amount of fees levied. Non-mitigated units are projected future units that have not had their impacts mitigated. Per the 2022 Fee Justification Study, of the 1,205 Future Units that have not mitigated their impacts on the School District, all 1,205 are expected to be Multifamily Attached units. IUSD analyzed data to provide a student generation rate for new development which establishes a nexus between projected non-mitigated units and fees levied. Table 4.12-4a presents student generation rates for grades K-6, 7-8, and 9-12 provided by IUSD and Table 4.12-4b presents the IUSD student generation rate for elementary, middle, and high school students for non-mitigated multi-family attached dwellings. The 2022 Fee Justification Study shows that 468 students would be generated from non-mitigated dwelling units. By multiplying this number by school facilities cost impacts per residential unit, the report estimated a total unmitigated cost of $9,881,352. The report then establishes a cost per square foot for different uses, and these fees are levied on new development.

Table 4.12-4a
IUSD Student Generation Rates

Product Type	K-6	7-8	9-12
High Density Multi-Family (IBC)	0.04	0.007	0.017
High Density Multi-Family (Spectrum)	0.086	0.016	0.026
Multi-Family (Apartments)	0.133	0.038	0.056
Affordable (Apartments)	0.197	0.101	0.176
Single-Family Attached (Condos)	0.263	0.065	0.111
Single-Family Detached (Homes)	0.352	0.09	0.154
SOURCE: IUSD 2024c.			

Table 4.12-4b
Irvine Unified School District
Student Generation Rates for Multi-Family Attached

Non-mitigated Future Dwelling Units[1]	School Type	Student Generation Rate	Students Generated
1,205	Elementary	0.2082	251
1,205	Middle	0.0633	77
1,205	High	0.1168	141
TOTAL		**0.3883**	**468**

SOURCE: Irvine Unified School District 2022b.
[1]As estimated in the Residential and Commercial/Industrial Development School Fee Justification Study for IUSD 2022.

4.12.1.4 Parks/Recreational Facilities

The City's public park system provides more than 400 public recreation facilities including community parks, neighborhood parks, and special use sites (Table 4.12-9). The City provides 22 community parks, more than 40 neighborhood parks, and 6,500 acres of preserved open space. -

4.12.2.2 Local Regulations

f. Existing Plans, Programs, and Policies

Objective COS-10. The City commits to creating and fostering well-integrated and sustainable open space resources available to City residents and visitors.

- Policy (a): Provide a variety of public and private parks to meet resident needs.
- Policy (c): Encourage the creation of dynamic parks as special and unique places, adding or incorporating art and historic resources, innovative features, diverse landscaping, nature, varied color palettes, and welcoming amenities.
- Policy (d): Balance access to open space for outdoor passive and active recreation with conservation needs consistent with City's Open Space management obligations and permit conditions such as the Natural Community Conservation Plan/Habitat Conservation Plan.

4.12.5.1 Impact Analysis

c. Schools

Future site-specific residential development could potentially increase demand for additional school facilities. Actual needs and potential locations would be determined in the future as development occurs, but increases in demand would be greatest in all three focus areas since the majority of new housing would be located there. Table 4.12-4a above presents student generation rates for grades K-6, 7-8, and 9-12 provided by IUSD. Table 4.12-11 applies IUSD's student generation rates to the number of additional dwelling units proposed within each focus area.

Table 4.12-11 Projected Student Generation by Focus Area, Grade Level					
Focus Area	Project Housing Units	Projected Housing Units Within IUSD	K-6	7-8	9-12
Student Generation Rates (High Density Multi-Family)			0.133[1]	0.038[1]	0.056[1]
Focus Area 1	15,000	7,500[2]	998	385	420
Focus Area 2	26,607	26,607	3,539	1,011	1,490
Focus Area 3	5,252	1,313 – 2,626[3]	175-349	50-100	74-147
Remainder Throughout City	8,536	3,092[4]	412	118	173
TOTAL	**55,695**	**39,825**	**5,298**	**1,614**	**2,230**
SOURCE: IUSD 2024c. [1]Multi-Family (Apartments) student generation rates selected as detailed breakdown of unit types Is unavailable. [2]Assumes 50 percent of dwelling units are developed within IUSD boundaries. [3]Assumes 25 to 50 percent of dwelling units are developed within IUSD boundaries. [4]Assumes inclusions of Planning Areas 6, 8, 15, 20, 24, 34, 39, 40.					

Table 4.12-12 compares existing available student capacity within schools located within Focus Area 1 with the project's estimated student generation within Focus Area 1. Table 4.12-12 shows that while capacity is anticipated to be available at existing middle and high schools, it is anticipated that the project would potentially exceed existing elementary school capacity within Focus Area 1.

Table 4.12-13 compares existing available student capacity within schools located within Focus Area 2 with the project's estimated student generation within Focus Area 2. Table 4.12-13 shows that the project would potentially exceed existing capacity for elementary, middle, and high schools within Focus Area 2.

Table 4.12-14 compares existing available student capacity within schools located within Focus Area 3 with the project's estimated student generation within Focus Area 3. Table 4.12-14 shows that the schools within Focus Area 2 are projected to potentially see a smaller potential increase in student population compared to the other focus areas.

Similar increases in student generated may also occur within other school districts serving the City.

Table 4.12-12 Comparison of Available Capacity to Projected Student Generation within Focus Area 1				
Grade Level	Focus Area 1 Schools	Combined Available Seating Capacity	Student Increase[1]	Available Capacity/(Overcapacity)
Elementary Schools	Culverdale, Westpark, University Park	546	998	(452)
Middle Schools	Rancho San Joaquin, South Lake	411	385	26
High Schools	University, Woodbridge	816	420	396
SOURCE: IUSD 2024c. [1]Values taken from Table 4.12-12.				

Table 4.12-13 Comparison of Available Capacity to Projected Student Generation within Focus Area 2				
Grade Level	Focus Area 2 Schools	Combined Available Seating Capacity	Student Increase[1]	Available Capacity/(Overcapacity)
Elementary Schools	Cadence Park (K-6)	0	--	--
	Oak Creek	42	--	--
Total Elementary Schools		**42**	**3,539**	**(3,497)**
Middle Schools	Cadence Park (7-8)	0	--	--
	South Lake	95	--	--
Total Middle Schools		**237**	**1,011**	**(774)**
High Schools	Portola, University, Woodbridge	920	1,490	(570)
Total High Schools		**920**	**1,490**	**(570)**
SOURCE: IUSD 2024c. [1]Values from Table 4.12-12.				

Table 4.12-14 Comparison of Available Capacity to Projected Student Generation within Focus Area 3				
Grade Level	Focus Area 1 Schools	Combined Available Seating Capacity	Student Increase[1]	Available Capacity/(Overcapacity)
K-8 Schools	Beacon Park, Cadence Park, Solis Parki	350	225-349	125-1
High Schools	Portola	104	74-147	30-(43)
SOURCE: IUSD 2024c. [1]Values taken from Table 4.12-12.				

4.12.6.1 Impact Analysis

The City has established a parkland dedication requirement of five acres per 1,000 population, apportioned as follows: two acres for Community parks and three acres for Neighborhood parks. Based on ~~data provided in the most recent Master Park Plan~~the City's current park inventory (~~1,847.6~~1,871.1 acres of neighborhood and community parks, 345 acres of regional parks, and 12,683.7 acres of open space) and current population data (303,051 residents as of 2023) (City of Irvine 2024c), the City is under the required service standard. With a population of 303,051 residents, the required number of acres of park area is 1,515.3 acres, while the current total, excluding undeveloped open space, is 1,145 acres. However, in addition to land dedication, the City also accepts park improvements and park fees to satisfy park dedication requirements. The City's current park inventory only references land dedication and does not factor park improvements or park fees into the calculation of park area. As such, the City is not deficient in parkland requirements since land dedication is one of three ways the City demonstrates compliance. Most of the City is built out, so future park planning efforts will include some new sites but will primarily focus on maintaining and

upgrading existing sites. The Master Park Plan provides the vision for improving parks and recreational opportunities.

4.13 Transportation

4.13.1.2 Public Transit System

- Local Transit: OCTA provides comprehensive transit services throughout Orange County, including Irvine, with routes catering to various needs, from regional commuters to local shuttles. In 2016, OCTA assumed operation and maintenance of the City's iShuttle program. The City offers Transportation for Irvine Residents with Disabilities (TRIPS) service, providing door-to-door transportation for residents aged 18 and above with permanent physical and/or cognitive disabilities. TRIPS operates during evenings, weekends, and holidays based on demand. OCTA Route 76 provides service between John Wayne Airport and Huntington Beach, and operates from 6:00 a.m. to 6:00 p.m., Monday through Friday. The bus stops in front of Terminal B on the Arrival (lower) Level.

4.13.5.1 Impact Analysis

a. Roadway System

The Circulation Element ~~which~~ includes objectives and policies aimed at improving the existing roadway network. For example, Objective C-1 aims to improve an integrated roadway network that accommodates existing and projected local and regional needs, and Objective C-2 aims to develop a high-quality vehicle circulation system. Supporting policies are aimed at designing roadways to be safe and efficient, while minimizing environmental impacts. The proposed project would also be consistent with the Complete Streets Act because the project aims to prioritize multimodal transportation options, with a specific emphasis on reducing vehicle miles travelled through bikeway and/or pedestrian infrastructure improvements. Therefore, the project would not conflict with a plan, ordinance, or policy addressing roadway circulation, and impacts would be less than significant.

d. Conclusion

Implementation of the proposed project would increase the demand for public transit, bicycle, pedestrian, and airport facilities, particularly within the three Focus Areas where most of the planned residential units are located. However, the Circulation Element includes objectives and policies aimed at improving the existing roadway network in order to accommodate ~~T~~this increased demand ~~would require improvements and expansions to the existing circulation system~~. Additionally, ~~T~~the proposed project includes a number of goals, policies, objectives, and implementation actions aimed at supporting transit, bicycles, pedestrians, and airports within and adjacent to the City. These are consistent with regional and local planning efforts supporting these modes of travel.

4.13.6.3 Mitigation

The City's Traffic Study Guidelines contain a two-tier system for the VMT Mitigation Program~~:~~ as presented below in mitigation measure TRA-1 and TRA-2. Future site-specific development would be evaluated against the City's VMT threshold. Future site-specific development that is found to exceed the City's VMT threshold would apply mitigation measure TRA-1 and/or TRA-2 in order to reduce VMT as necessary.

4.14 Utilities and Service System

4.14.2.2 State

p. Model Water Efficient Landscape Ordinance

New development and retrofitted landscape water efficiency standards are governed by the Model Water Efficient Landscape Ordinance (MWELO). The MWELO is also referenced by Title 24, Part 11, Chapters 4 and 5 of the California Green Building Standards Code (CALGreen). All local agencies must adopt, implement, and enforce the MWELO or a local Water Efficient Landscape Ordinance (WELO) that is at least as effective as the MWELO.

b. Municipal Code

Title 6 (Public Works & Transportation: Project Delivery & Sustainability), Division 7 (Solid Waste; Organic Waste Diversion; Construction and Demolition Waste) – Chapter 10 (Recycling and Diversion of Construction and Demolition Waste)

Municipal Code (Title 6, Division 7 – Chapter 10) and ~~the California Green Building Standards Code ("~~CALGreen~~"~~ Sections 4.408, 5.408, and 5.713.8) require that construction development, renovation, and demolition projects recycle or otherwise divert construction and demolition debris from landfills. These requirements promote the reuse of resources and help extend the useful life of landfills in compliance with the CALGreen Code and state laws including the California Integrated Waste Management Act (AB939, Sher) and Mandatory Construction and Demolition Waste Diversion (SB1374, Kuehl).

4.14.2.3 Local

h. Planning Commission Resolution No. 09-2968

- PPP-UTIL-1 Engineering Standard Plans
- PPP-UTIL-2 Title 24 Code Cycles: Net-Zero Buildings (Residential & Non-Residential)
- PPP-UTIL-3 Irvine Sustainability Community Initiative
- PPP-UTIL-4 California Water Code Section 10912 and California Government Code Section 66473.7
- PPP-UTIL-5 Senate Bill 221 (SB 221)
- PPP-UTIL-6 ~~Requirement to~~ Encouraging Use of Recycled Water

- PPP-UTIL-7 City of Irvine Construction and Demolition (C&D) Debris Recycling and Reuse Ordinance

General Plan Update

Goal 6: Reduce energy consumption and promote energy efficiency in Irvine.

Objective EPCA-6. Achieve significant reductions in per capita energy consumption across residential, commercial, and municipal sectors while promoting the adoption of renewable energy sources and energy-efficient technologies.

- Policy (a): Continue ~~T~~through the efforts of CALGreen, ~~establish and~~to enforce energy efficiency standards and building codes for new construction and major renovations to improve the energy performance of buildings and reduce energy demand.

- Policy (b): Continue to ~~R~~require energy-efficient building design, insulation, HVAC systems, lighting, and appliances to minimize energy consumption and lower utility costs for residents and businesses.

- Policy (c): Continue to ~~P~~promote the adoption of renewable energy systems, such as solar photovoltaic (PV) panels, wind turbines, and geothermal heat pumps, to generate clean and sustainable electricity for onsite consumption or grid injection.

Goal 10: Continue to ~~P~~promote sustainable land use practices in Irvine.

Objective EPCA-10: Implement policies and initiatives that prioritize sustainable land management, smart growth principles, and equitable development strategies to ensure the efficient use of land while protecting environmental quality and promoting community well-being.

- Policy (c): Integrate green infrastructure elements, such as parks, greenways, and open spaces, into land use planning and development projects to manage stormwater runoff, improve air and water quality, and enhance ecological connectivity and biodiversity.

4.14.6.1 Impact Analysis

As described in Section 4.14.5.1a above, implementation of the project would have the potential to increase water demand over existing conditions by approximately 2,093 AFY. However, Appendix I determined that IRWD is projected to have a water supply capacity of 178,727 AFY through 2040, which far exceeds IRWD's project water supply demand of 88,023 AFY through 2040. Consequently, IRWD would have a water supply surplus of 90,704 AFY through 2040, which would exceed the project's projected increase in water demand of 2,093 AFY. Furthermore, future development under the project would comply with the requirements to prepare a water supply assessment as applicable (PPP UTIL-4 and PPP UTIL-5) and utilize recycled water to the extent possible (PPP UTIL-6) as applicable. Additional goals, objectives, and policies in the updated Conservation and Open Space and Environmental Protection and Climate Action Elements would further the City's goal of reducing

water demand on a citywide basis. Therefore, sufficient water supplies would be available to serve the project, and impacts would be less than significant.

7.0 Project Alternatives

Table 7-1 Matrix Comparison of the Project and Alternatives Impacts			
Environmental Issue Area	Project	No Project (Adopted Plan) Alternative	Reduced Project Alternative
Aesthetics	LTS	LTS/LESS	LTS/LESS
Agricultural and Forestry Resources	LTS	LTS/LESS	LTS/LESS
Air Quality	SU	SU/~~GREATER~~LESS	SU/~~GREATER~~LESS
Biological Resources	SM	SM/LESS	SM/LESS
Cultural and Tribal Cultural Resources	SU	SU/LESS	SU/LESS
Energy	LTS	LTS/LESS	LTS/LESS
Geology and Soils	SU	SU/LESS	SU/LESS
Greenhouse Gas Emissions	SU	SU/~~GREATER~~LESS	SU/~~GREATER~~LESS
Hazards and Hazardous Materials	LTS	LTS/LESS	LTS/LESS
Hydrology and Water Quality	LTS	LTS/LESS	LTS/LESS
Land Use and Planning	~~LTS~~SM	SU/GREATER	SM/LESS
Mineral Resources	NI	NI/SAME	NI/SAME
Noise	SU	SU/LESS	SU/LESS
Population and Housing	LTS	LTS/LESS	LTS/LESS
Public Services and Recreation	LTS	LTS/LESS	LTS/LESS
Transportation	SU	SU/GREATER	SU/GREATER
Utilities and Service System	LTS	LTS/LESS	LTS/LESS
Wildfire	LTS	LTS/LESS	LTS/LESS
NI = no impact; LTS = less than significant; SM = significant and mitigated; SU = significant and unavoidable			

7.2.1.2 Environmental Analysis of the No Project Alternative

c. Air Quality

Development would continue under the No Project Alternative consistent with the City's adopted General Plan land use plan, and without guidance provided by the Environmental Protection and Climate Action (EPCA) Element. Therefore, impacts related to air quality would remain significant and unavoidable at this program level of review, ~~greater~~less than the project.

h. Greenhouse Gas Emissions

The No Project Alternative would not include the new objectives and policies associated with the EPCA Element described above would not be certified. Development would continue under the No Project Alternative consistent with the City's adopted General Plan land use plan, and without guidance provided by the EPCA Element. Therefore, impacts related to GHG would remain significant and unavoidable, and would be ~~greater~~less than the project.

7.2.1.3 Conclusion Regarding the No Project Alternative

As described in Section 7.2.1.2 above, the No Project Alternative would not identify additional residential sites necessary to meet the City's RHNA allocation, and thereby would result in development of fewer residential units. The No Project Alternative would not include necessary improvements within the Great Park or the extension of Ada roadway. Development would continue under the No Project Alternative consistent with the City's adopted General Plan land use plan. Therefore, impacts associated with aesthetics, agricultural and forestry resources, biological resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, population and housing, public services and recreation, utilities and services, and wildfire would be less than significant, the same as the project, but the intensity of those impacts would be less than the project due to development of fewer residential units. Impacts associated with air quality, GHG, historic resources, paleontological resources, and noise would remain significant and unavoidable, the same as the project, but the intensity of those impacts would be less than the project due to development of fewer residential units. Impacts associated with ~~air quality, GHG, and~~ transportation would be significant and unavoidable, the same as the project, but the intensity of those impacts would be greater than the project. This is because the No Project Alternative would not introduce the housing overlays that would allow for increased residential development necessary to meet the City's RHNA allocation, and therefore would not reduce the jobs/housing imbalance that exists in the City resulting in greater vehicle miles traveled ~~and associated air quality and GHG emissions~~. In the absence of adopting the General Plan Update prepared under the project, this alternative would not implement State Housing Law requirements and would not implement the updates of the general plan elements. Therefore, impacts associated with land use would be significant and unavoidable, greater than the project. This alternative would not satisfy the project objectives stated in Chapter 3.0, Project Description, because buildout of the No Project Alternative would not provide enough residential units to meet the City's RHNA allocation, would not satisfy legislative mandates to implement State Housing Law requirements, would not enhance development or provide development opportunities within the three focus areas, would not include improvements to the Great Park, and would not extend the Ada roadway.

7.2.2 Reduced Project Alternative

7.2.2.2 Environmental Analysis of the Reduced Project Alternative

c. Air Quality

The reduced amount of development under this alternative would be subject to the objectives and policies associated with the EPCA Element aimed at improving air quality. Although mitigation would be required to reduce construction emissions (AQ-1), operational emissions (AQ-2), and reduce exposure of sensitive receptors to TACs (AQ-3), no specific projects have been identified at this time, and it is not possible to ensure that every future project could fully mitigate potentially significant impacts. ~~Furthermore~~ Additionally, the Reduced Project Alternative would develop less housing in the City, and therefore would not reduce the jobs/housing imbalance that exists in the City to the same degree as the project. Therefore, the VMT per service population would be greater than the project resulting in greater mobile source emissions regionally. However, the overall VMT within the

City limits would be less when compared to the project because of the reduced number of housing units so mobile source emissions within City limits would be less than the project.~~,~~ Other operational sources of emissions (area sources and energy sources) would be less when compared to the project. ~~and therefore would generate greater vehicle emissions than the project.~~Therefore, impacts related to air quality would remain significant and unavoidable at this program level of review and would be ~~greater~~ less than the project.

h. Greenhouse Gas Emissions

The reduced amount of development under this alternative would be subject to the objectives and policies associated with the Land Use and EPCA Elements. Although mitigation requiring identification of potential measures that would reduce GHG emissions below the applicable South Coast Air Quality Management District (SCAQMD) thresholds (mitigation measure GHG-1) would be feasible under the Reduced Project Alternative, no specific projects have been identified at this time, and it is not possible to ensure that every future project could fully mitigate potentially significant impacts. ~~Furthermore~~ Additionally, the Reduced Project Alternative would develop less housing in the City, and therefore would not reduce the jobs/housing imbalance that exists in the City to the same degree as the project.~~,~~ As with air quality, the VMT per service population would be greater than the project resulting in greater mobile source GHG emissions regionally. However, the overall VMT within the City limits would be less when compared to the project because of the reduced number of housing units so mobile source GHG emissions within City limits would be less than the project. Other operational sources of GHG emissions (energy, area, water/wastewater, and solid waste sources) would be less when compared to the project. ~~and therefore would generate greater vehicle emissions than the project.~~ Therefore, impacts related to GHG would remain significant and unavoidable at this program level of review and would be ~~greater~~ less than the project.

7.2.2.3 Conclusion Regarding the Reduced Project Alternative

As described in Section 7.2.2.2 above, the Reduced Project Alternative would result in the same significance conclusions as the project, but the intensity of the impacts would be different. Impacts associated with aesthetics, agricultural and forestry resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, population and housing, public services and recreation, utilities and services, and wildfire would be less than significant, the same as the project, but the intensity of those impacts would be less than the project due to development of fewer residential units. Impacts associated with biological resources and land use would be mitigated to a level less than significant, the same as the project, but the intensity of those impacts would be less than the project due to development of fewer residential units. Impacts associated with air quality, GHG, historic resources, paleontological resources, and noise would be mitigated but remain significant and unavoidable, the same as the project, but the intensity of those impacts would be less than the project due to development of fewer residential units. Impacts associated with ~~air quality, greenhouse gases (GHGs), and~~ transportation would be significant and unavoidable, the same as the project, but the intensity of those impacts would be greater than the project. This is because the Reduced Project Alternative would develop less housing in the City, and therefore would not reduce the jobs/housing imbalance that exists in the City to the same degree as the project, resulting in greater vehicle miles traveled and associated air quality and GHG emissions.

7.3 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) requires an EIR to identify the environmentally superior alternative. If the No Project Alternative is the environmentally superior alternative, the EIR must identify an environmentally superior alternative from the other alternatives. The project itself may not be identified as the environmentally superior alternative. The no project alternative is the superior alternative due to a lower cumulative impact on the environment than is expected for the proposed project and the Reduced Project Alternative.

The Reduced Project Alternative would be the environmentally superior alternative, other than the No Project Alternative, because it would incrementally reduce significant impacts associated with aesthetics, air quality, biological resources, cultural and tribal cultural resources, geology and soils, GHG, hazards and hazardous materials, hydrology and water quality, land use, noise, population and housing, public services and recreation, utilities and services, and wildfire compared to the project. However, none of the potentially significant impacts of the project would be completely avoided.

8.0 References Cited

Irvine Unified School District

2024c Comments on the Draft Program Environmental Impact Report, Irvine 2045 Focused General Plan Update.

~~Irvine, City of~~

~~2023 Draft Greenhouse Gas Emissions Inventory Report for the City of Irvine Climate Action and Adaptation Plan. Prepared by Ascent. June 2023.~~

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
4.2 Air Quality				
Would the project conflict with or obstruct implementation of the applicable air quality plan?	Construction: Potentially Significant Operation: Potentially Significant	Criterion No. 1 Future development under the project would accommodate increases in population based on the Southern California Association of Governments' (SCAG's) demographic projections, and would therefore not induce unplanned growth in the Basin. Buildout of the project would result in ~~a decrease~~an increase in emissions when compared to buildout of the City's adopted General Plan ~~because it would~~. ~~Therefore,~~This is due to the increase in residential and mixed-use development. However, because the project would reduce VMT per service population and would accommodate SCAG's growth projections buildout of the project would not exceed the assumptions used to develop the AQMP. Criterion No. 2: *Construction* The South Coast Air Basin is designated as in nonattainment for 8-hour ozone and 2.5-micron particulate matter ($PM_{2.5}$) standards. Because the proposed General Plan Update involves long-term growth associated with buildout of the City, cumulative emissions generated from operation of individual development projects would exceed the South Coast Air Quality Management District (SCAQMD) regional and localized thresholds. Future development would be required to adhere to the requirements of California Code of Regulations, Title 13, Section 2449 to reduce nonessential idling (PPP 2-1), the construction requirements of SCAQMD rules and regulations (PPP 2-2), and the requirements of the City's grading code (PPP 2-3). Despite adherence to these policies and compliance with Standard Conditions and PPPs,	• PPP 2-1 Construction activities will be conducted in compliance with California Code of Regulations, Title 13, Section 2449, which requires that nonessential idling of construction equipment be restricted to five minutes or less. • PPP 2-2 Construction activities will be conducted in compliance with any applicable SCAQMD rules and regulations, including but not limited to: o Rule 403, Fugitive Dust, for controlling fugitive dust and avoiding nuisance. o Rule 402, Nuisance, which states that a project shall not "discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property." o Rule 1113, which limits the volatile organic compound content of architectural coatings. o Rule 1466, Soil Disturbance. Projects that involve earth-moving activities of more than 50 cubic yards of soil with applicable toxic air contaminants are subject to this rule. • PPP 2-3: Compliance with the City of Irvine's Grading Code.	Construction: Significant and Unavoidable Operation: Significant and Unavoidable

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
		buildout of the project could contribute to an increase in frequency or severity of air quality violations and delay attainment of the AAQS or interim emission reductions in the AQMP, and emissions generated from buildout would result in a significant air quality impact. Therefore, the General Plan Update would not be consistent with the AQMP under the second criterion and mitigation requiring project-specific air quality analyses is required. *Operation* Buildout of the project would result in an increase in emissions when compared to buildout of the City's adopted General Plan. This is due to the increase in residential and mixed-use development. However, because the project would reduce VMT per service population and would accommodate SCAG's growth projections, buildout of the project would not exceed the assumptions used to develop the AQMP. Most of the future residential growth would occur in the three focus areas that are most suited for new growth and development as they are located near existing job centers, which would reduce VMT per service population and associated Basin-wide vehicle emissions. However, while individual site-specific projects may not exceed the SCAQMD regional significance thresholds, the scale and extent of emissions associated with buildout of the project may result in some instances where future development would exceed the relevant SCAQMD thresholds (see discussion under Impact 2, below). Therefore, the General Plan Update would not be consistent with the AQMP under the second criterion and mitigation	• PPP 2-4: Compliance with the City of Irvine's Municipal Code guidance to reduce air pollution from motor vehicles. **AQ-1:** Applications for future development, wherein the Director of Community Development or their designee has determined a potential for air quality impacts associated with construction, shall prepare and submit a technical assessment evaluating potential project construction-related air quality impacts to the City for review and approval. The Director of Community Development or their designee shall make this determination based on the size of the project, whether the project would require a transportation impact analysis, or other criteria. The evaluation shall be prepared in conformance with South Coast Air Quality Management District (SCAQMD) methodology for assessing air quality impacts. The City shall require that applicants for new development projects with the potential to exceed the SCAQMD's adopted thresholds of significance to incorporate the measures listed below to reduce air pollutant emissions during construction activities. These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City. Mitigation measures to reduce construction-related emissions could include, but are not limited to: • Require fugitive-dust control measures that exceed SCAQMD's Rule 403 requirements, such as:	

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
		requiring project-specific air quality analyses is required.	o Use of nontoxic soil stabilizers to reduce wind erosion. o Apply water every four hours to active soil-disturbing activities. o Tarp and/or maintain a minimum of 24 inches of freeboard on trucks hauling dirt, sand, soil, or other loose materials. • Use construction equipment rated by the United States Environmental Protection Agency as having Tier 3 (model year 2006 or newer) or Tier 4 (model year 2008 or newer) emission limits, applicable for engines between 50 and 750 horsepower. • Ensure that construction equipment is properly serviced and maintained to the manufacturer's standards. • Limit nonessential idling of construction equipment to no more than five consecutive minutes. • Limit on-site vehicle travel speeds on unpaved roads to 15 miles per hour. • Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the project area. • Use Super-Compliant VOC paints for coating of architectural surfaces whenever possible. A list of Super-Compliant architectural coating manufactures can be found on the SCAQMD's website. AQ-2: For individual projects that may exceed the daily operational emissions thresholds established by the SCAQMD, the owner/permitee shall conduct an analysis of the project's operational air quality impacts using the latest available CalEEMod mode.	

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
			or other analytical method determined in conjunction with the City. If such analyses identify potentially significant regional or local air quality impacts, project-level mitigation and/or project design features would be required to reduce operational impacts to less than significant. Mitigation to reduce operational impacts depends on the specific project, but may include measures such as, but not limited to: • Demonstrate net zero energy expenditure. • Implementation of transportation demand management measures. • Prohibit the installation of woodstoves, hearths, and fireplaces in new construction facilitated by the General Plan Update. • Expand and facilitate completion of planned networks of active transportation infrastructure. • Implement electric vehicle charging infrastructure beyond requirements set forth in the 2022 CALGreen mandatory measures, such as Tier 2 voluntary measures set forth in 2022 CALGreen (or future more stringent) standards. • Implement traffic demand measures, such as unbundling parking fees from rent/lease options, encouraging/developing a ride-share program for the community, and provide car/bike sharing services, that will reduce daily individual car usage and reduce project VMT.	
Would the project result in a cumulatively considerable net increase of any criteria	**Construction:** Potentially Significant	**Construction:** Approval of the project would not specifically permit the construction of an individual project,	• PPP 2-1 Construction activities will be conducted in compliance with California Code of Regulations, Title 13, Section	**Construction:** Significant and Unavoidable

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	**Operation:** Potentially Significant	and no specific development details are available at this program level of analysis. Future development would be required to implement construction Best Management Practices (BMPs) at all construction sites consistent with SCAQMD rules and regulations. Future construction activities would also be required to comply with PPP 2-1, which outlines compliance with California Code of Regulations, Title 13, Section 2449, which itself requires that nonessential idling of construction equipment be restricted to five minutes or less. Future construction activities would also be conducted in compliance with any applicable SCAQMD rules and regulations, as outlined in PPP 2-2. While individual site-specific projects may not exceed the SCAQMD regional significance thresholds, the scale and extent of construction activities associated with buildout of the City may result in some instances where future development would exceed the relevant SCAQMD thresholds. Therefore, construction-related regional air quality impacts would be potentially significant and mitigation requiring project-specific air quality analyses would be required. **Operations:** Buildout of the project would result in a decrease <u>an increase</u> in emissions compared to buildout of the City's adopted General Plan. Most of the future residential growth would occur in the three focus areas that are most suited for new growth and development as they are located near existing job centers, which would reduce VMT <u>per service population</u> and associated vehicle emissions <u>Basin-wide.</u> While individual site-specific projects may not exceed the SCAQMD regional significance thresholds, the scale and extent of emissions associated with	2449, which requires that nonessential idling of construction equipment be restricted to five minutes or less. • PPP 2-2 Construction activities will be conducted in compliance with any applicable SCAQMD rules and regulations, including but not limited to: o Rule 403, Fugitive Dust, for controlling fugitive dust and avoiding nuisance. o Rule 402, Nuisance, which states that a project shall not "discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property." o Rule 1113, which limits the volatile organic compound content of architectural coatings. o Rule 1466, Soil Disturbance. Projects that involve earth-moving activities of more than 50 cubic yards of soil with applicable toxic air contaminants are subject to this rule. • PPP 2-3: Compliance with the City of Irvine's Grading Code. • PPP 2-4: Compliance with the City of Irvine's Municipal Code guidance to reduce air pollution from motor vehicles.	**Operation:** Significant and Unavoidable

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
		buildout of the project may result in some instances where future development would exceed the relevant SCAQMD thresholds. Therefore, operational regional air quality impacts would be potentially significant, and mitigation requiring project-specific air quality analyses would be required.	See AQ-1 and AQ-2 above. ~~AQ-2: For individual projects that may exceed the daily operational emissions thresholds established by the SCAQMD, the owner/permitee shall conduct an analysis of the project's operational air quality impacts using the latest available CalEEMod mode, or other analytical method determined in conjunction with the City. If such analyses identify potentially significant regional or local air quality impacts, project-level mitigation and/or project design features would be required to reduce operational impacts to less than significant. Mitigation to reduce operational impacts depends on the specific project, but may include measures such as, but not limited to:~~ ~~• Demonstrate net zero energy expenditure.~~ ~~• Implementation of transportation demand management measures.~~ ~~• Prohibit the installation of woodstoves, hearths, and fireplaces in new construction facilitated by the General Plan Update.~~ ~~• Expand and facilitate completion of planned networks of active transportation infrastructure.~~ ~~• Implement electric vehicle charging infrastructure beyond requirements set forth in the 2022 CALGreen mandatory measures, such as Tier 2 voluntary measures set forth in 2022 CALGreen (or future more stringent) standards.~~ ~~• Implement traffic demand measures, such as unbundling parking fees from rent/lease options, encouraging/developing a ride-share program for the community, and~~	

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
			~~provide car/bike sharing services, that will reduce daily individual car usage and reduce project VMT.~~	
4.3 Biological Resources				
Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Less than Significant	Future development under the project would not be within the Orange County Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) areas, which have been placed over regional and local wildlife corridors. Much of the City's open space has already been reserved or designated as special linkages, including through the Irvine Open Space Initiative. Future development under the project would be required to demonstrate compliance with the Orange County Central and Coastal NCCP/HCP (PPP BIO-5) and CESA (PPP BIO-6), as applicable, including with respect to wildlife movement. Due to the anticipated location of development, combined with existing PPPs, the project would not substantially interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident migratory wildlife corridors, including linkages identified in the Irvine Open Space Initiative, and impacts would be less than significant.	• PPP BIO-5: Compliance with the Orange County Central and Coastal NCCP/HCP • PPP BIO-6: Compliance with CESA	~~No mitigation is required.~~Less than Significant
Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by CDFW or USFWS?	Potentially Significant	The project has been designed to minimize impacts to riparian and sensitive habitats by primarily focusing future development and redevelopment within the proposed Focus Areas. However, future development may occur throughout the City as part of the project, including on vacant parcels with riparian and sensitive habitats. These vacant parcels may possess riparian and other sensitive habitats. Future development would be required to demonstrate compliance with the Orange County Central and Coastal NCCP/HCP (PPP	• PPP BIO-5: Compliance with the Orange County Central and Coastal NCCP/HCP • PPP BIO-6: Compliance with CESA • PPP BIO-9: Compliance with Municipal Code Title 5 (Planning), Division 7 (Sustainability in Landscaping), Chapter 4 (Urban Forestry) • PPP BIO-10: Compliance with Standard Condition 2.20 (Wildlife Habitat Clearance) **BIO-9:** Prior to project approval, if a proposed project has the potential to affect riparian	Less than Significant

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
		BIO-5) and CESA (PPP BIO-6), as applicable. However, at a program level of analysis, it cannot be known with certainty that impacts to riparian and sensitive habitats could be fully avoided, which would be considered a potentially significant impact and would require mitigation.	and sensitive habitats and/or jurisdictional resources, a qualified biologist shall conduct a jurisdictional delineation following the methods outlined in the 1987 Corps Wetland Delineation Manual (USACE 1987) and the Regional Supplement to the Corps Wetland Delineation Manual: Arid West Region (USACE 2008) to map the extent of wetlands and non-wetland waters, determine jurisdiction, and assess potential impacts. The results of the delineation shall be presented in a wetland delineation letter report and shall be incorporated into the California Environmental Quality Act document(s) required for approval and permitting of the proposed project. **BIO-10:** If the results of mitigation measure BIO-9 above determine that a proposed project would impact riparian and sensitive habitats and/or jurisdictional features, permits and authorizations shall be obtained from the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and/or Regional Water Quality Control Board prior to project approval. The regulatory agency authorization(s) would include specific avoidance, minimization, and mitigation measures for impacts to riparian and sensitive habitats and/or jurisdictional resources, which may include monetary contributions to a mitigation bank or habitat creation, restoration, and/or enhancement.	
4.4 Cultural and Tribal Cultural Resources				

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
Would the project result in a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	Potentially Significant	Although there are no site-specific plans that would affect an identified historic resource, future developments, both within the focus areas and outside of those areas, may have the potential to affect a historic resource at the project level. Although future projects that would potentially affect historic resources would be required to comply with the National Historic Preservation Act (NHPA) and CEQA (when applicable and required (PPPs CUL-1 and CUL-2), mitigation would be required.	• PPP CUL-1: Compliance with the NHPA • PPP CUL-2: Compliance with CEQA **CUL-1:** The City of Irvine Director of Community Development, or designee, shall require applicants for future proposed projects proposing to renovate, alter, or demolish intact extant building(s) more than 45 years old or otherwise qualifying as a historical resource under CEQA Guidelines Section 15064.5 to provide a historic resource technical study evaluating the significance and data potential of the resource. If significance criteria are met, detailed mitigation recommendations are required as part of the technical study, which must be implemented to reduce impacts on the historical resource(s) to a less than significant level. All work shall be performed by a qualified architectural historian meeting Secretary of the Interior Standards.	~~Less than Significant~~ Significant and Unavoidable
Would the project result in the disturbance of any human remains, including those interred outside of formal cemeteries?	~~Potentially Significant~~Less than Significant	There are no known burial sites or cemeteries within the focus areas or any other locations within the City. However, future development associated with the project could disturb native soils and therefore could have the potential to encounter human remains, especially within areas that have been categorized as having a high sensitivity for cultural resources. Therefore, although considered unlikely, the project would have the potential to impact human remains. All development in the City must comply with all applicable laws related to the discovery of human remains, including but not limited to Health and Safety Code Section 7050.5 (PPP CUL-6) and Public Safety Code Section 5097.98 (PPP CUL-7). Future projects would also be required to comply with the City's Municipal Code and Standard Condition 2.5 to further	• PPP CUL-4: Compliance with Municipal Code Sections 3-4-132 (Protection of Natural, Cultural, Structural and Archaeological Resources) and 9-10-7 (special development standards) • PPP CUL-5: Compliance with Standard Condition 2.5 (construction monitoring) • PPP CUL-6: Compliance with California Health and Safety Code Sections 7050.5, 7051, and 7054 • PPP CUL-7: Compliance with Native American Historic Cultural and Sanctified Cemetery Sites (PRC Section 5097 et seq.)	Less than Significant

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
		avoid impacts to the discovery of human remains (PPP CUL-4 and CUL-5).		
4.5 Geology/Soils				
Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Potentially Significant	Future development within areas with high and moderate sensitivity would have the potential to disturb native soils, and therefore may impact paleontological resources. Per Standard Condition 2.5 (PPP-GEO-10), prior to the issuance of the first preliminary or precise grading permit for a project that is located on land that includes potentially significant archaeological and/or paleontological sites, and for any subsequent permit involving excavation to increased depth, the applicant must provide letters stating that a qualified archaeologist and paleontologist would be on-site during ground disturbing activities and would provide procedures for cultural/scientific resource surveillance. Despite compliance with Standard Condition 2.5, impacts would remain potentially significant and mitigation requiring a site-specific paleontological assessment and/or monitoring for all soils below 5 feet would be required (mitigation measure GEO-1).	• PPP-GEO-2 Compliance with California Public Resources Code Section 5097.5(a) regarding paleontological resources • PPP-GEO-10 Compliance with Standard Condition 2.5 Archaeologist/Paleontologist **GEO-1:** Prior to issuance of grading permits, applicants for future proposed ground disturbing projects in undisturbed sediments ranked moderate or above shall be required to either (1) provide a technical paleontological assessment consisting of a record search, survey, background context and project specific recommendations performed by a qualified paleontologist (with a graduate degree and a specialization in vertebrate paleontology) to the City of Irvine Department of Community Development or (2) agree to monitoring all excavations below five feet. If resources are known or reasonably anticipated the recommendations shall provide a detailed mitigation plan requiring monitoring during grading and other earthmoving activities in undisturbed sediments. The plan will establish a fossil recovery protocol that includes data to be collected, requires professional identification, radiocarbon dates and other special studies as appropriate, requires curation at local curation facility such as such as the John D. Cooper Center operated by the County of Orange for fossils meeting significance criteria. A comprehensive final mitigation compliance report including a catalog of	Significant and Unavoidable

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
			fossil specimens with museum numbers and an appendix containing a letter from the museum stating that they are in possession of the fossils shall be required.	
4.6 Greenhouse Gas Emissions 4.6 GHG				
Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs.	Potentially Significant	Although the General Plan policy framework includes various objectives and implementation measures that would supports GHG emission reductions, the City is not able to demonstrate whether the policy framework would be sufficient to meet state GHG emission reduction goals despite compliance with existing regulations (PPPs GHG-1 through GHG-5) aimed at minimizing GHG emissions. Impacts related to conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs would be considered significant and would require mitigation to identify potential measures that would reduce GHG emissions below the applicable SCAQMD thresholds.	• PPP GHG-1: Compliance with Title 24, Part 6 – Energy Code • PPP GHG-2: Compliance with Title 24, Part 11 – California Green Building Standards Code • PPP GHG-3: Compliance with SCAQMD Regulations • PPP GHG-4: Compliance with SCAQMD CEQA Thresholds • PPP GHG-5: Compliance with Irvine Sustainable Community Initiative **GHG-1:** Applications for future development, wherein the Director of Community Development or their designee has determined a potential for GHG impacts the City shall evaluate the project to identify the potential for GHG emissions to exceed the SCAQMD thresholds detailed below. If a project may exceed the thresholds, the City shall require a technical assessment evaluating potential project GHG impacts to the City for review and approval. The significance of project-level GHG impacts shall be evaluated using one of the following criteria: 1. In the absence of a City plan to reduce GHG emissions, the evaluation shall be prepared in conformance with SCAQMD methodology for assessing GHG impacts, which consists of the following tiered approach:	Significant and Unavoidable

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
			a. Tier 1 – The project is exempt from the California Environmental Quality Act (CEQA). b. Tier 2 – The project is consistent with an applicable regional GHG emissions reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG emissions. c. Tier 3 – Project GHG emissions represent an incremental increase below or mitigated to less than a 3,000 MT CO_2E screening level. d. Tier 4 – The project achieves performance standards, where performance standards may include a percent emission reduction target or an efficiency target per service population. e. Tier 5 – Offsets along or in combination with the above target Significance Screening Level. Offsets must be provided for a 30-year project life, unless the project life is limited by permit, lease, or other legally binding condition. If GHG emissions are determined to have the potential to exceed the SCAQMD's recommended thresholds, the City shall require that applicants for new development projects incorporate features to reduce GHG emissions. These identified measures shall be incorporated into all appropriate documents submitted to the City and shall be verified by the City. Measures can include, but are not limited to, the following:	

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
			• **Affordable Housing.** Provide below market rate housing. • **Electric Vehicle Parking.** Implement electric vehicle charging infrastructure beyond requirements set forth in the 2022 CALGreen mandatory measures, such as Tier 2 voluntary measures set forth in 2022 CALGreen (or future more stringent) standards. • **Transportation Demand Management.** Implementation of transportation demand management measures • **Unbundling Parking.** Require residential developers to separate the cost to rent or purchase a parking space from the cost of the unit. • **Transit Subsidies.** Require implementation of a transit subsidy program that covers a portion of the cost of transit passes on a per unit basis to residential tenants for a period of five years after issuance of the first occupancy permit. Owner/Permittee shall provide an annual report to the City Engineer in each of the first five years demonstrating how the offer was publicized to residents and documenting the results of the program each year, including number of participants and driveway traffic counts. • **Commute Trip Reduction Program.** Develop and implement a commute trip reduction program that requires each homeowner and tenant to be provided with a one-page flyer every year that provides information regarding available transit, designated bicycle routes, local bicycle groups and	

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
			programs, local walking routes and programs, and rideshare programs. • **Active Transportation Network.** Expand and facilitate completion of planned networks of active transportation infrastructure for projects that are required to provide public improvements related to that infrastructure. • **Bicycle Micro-mobility Fleet.** Provide bicycles to the first buyer of each unit. • **All Electric Development.** Require all-electric development with no sources of natural gas. • **Energy Efficiency.** Demonstrate building energy efficiency beyond applicable code requirements. • **Energy Star Appliances.** Provide Energy Star rated appliances (clothes washers, dishwashers, refrigerators, and ceiling fans). • **Alternative Water Heating.** Incorporate non-gas water heaters (e.g., electric or solar water heating). • **Water Efficient Landscaping.** Provide low-water use/drought tolerant plant species with low water use irrigation (e.g., spray head or drip), where required. • **Outdoor Electrical Outlets to Allow for Electric Landscape Equipment.** Provide exterior electrical outlets necessary for sufficient powering of electric lawnmowers and other landscaping equipment.	
4.10 Noise				

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	**Traffic Noise:** Potentially Significant **Railroad Noise:** Potentially Significant **Stationary Noise:** Potentially Significant **Construction Noise:** Potentially Significant	**Traffic Noise:** <u>Ambient Noise</u> Under buildout of the adopted General Plan, off-site traffic noise level impacts would exceed noise level increase thresholds along 86 segments. Future development would be required to prepare noise studies in accordance with the City's environmental review procedure for all projects that are not "clearly compatible" with the future noise level at the site. These studies are required to identify all measures necessary to reduce noise levels to meet the City's interior and exterior noise compatibility standards and Single Event Noise Standard. Through implementation of these policies, noise levels at new noise-sensitive land uses would be evaluated and noise reduction techniques would be implemented to reduce noise exposure. However, the increase in ambient noise levels adjacent to the roadway segments specified in the Noise analysis would likely remain at levels that would expose existing noise-sensitive receptors to a significant increase in ambient noise levels, and impacts would be significant. <u>Land Use Compatibility</u> Future development would be required to prepare noise studies in accordance with the City's environmental review procedure for all projects that are not "clearly compatible" with the future noise level at the site. These studies are required to identify all measures necessary to reduce noise levels to meet the City's interior and exterior noise compatibility standards and Single Event Noise Standard. Conditional use permits would be required for noise-sensitive land uses such as hospitals, libraries, churches, and schools located in areas not "clearly compatible" to demonstrate how exterior noise exposure would be minimized, such as building	• PPP NOS-1: Compliance with the California Code of Regulations interior noise standards. • PPP NOS-2: Compliance with Orange County ALUCP noise compatibility standards for John Wayne Airport. • PPP NOS-3: Compliance with the City's Municipal Code. **NOI-1:** Prior to the issuance of building permits, site-specific exterior noise analyses that demonstrate that the project would not place residential receptors in locations where the exterior existing or future noise levels would exceed the City's noise compatibility standards shall be required as part of the review of future residential development proposals. Noise reduction measures, including but not limited to building noise barriers, increased building setbacks, speed reductions on surrounding roadways, alternative pavement surfaces, or other relevant noise attenuation measures, may be used to achieve the noise compatibility standards. Exact noise mitigation measures and their effectiveness shall be determined by the site-specific exterior noise analyses. **NOI-2:** Prior to the issuance of building permits, site specific interior noise analyses demonstrating compliance with the City's interior noise compatibility standards and other applicable regulations shall be prepared for noise sensitive land uses located in areas where the exterior noise levels exceed the City's noise compatibility standards. Noise control measures, including but not limited to increasing roof, wall, window, and door sound attenuation ratings, placing HVAC in noise reducing	**Traffic Noise:** Significant and Unavoidable **Railroad Noise:** Less than Significant. **Stationary Noise:** Less than Significant **Construction Noise:** Less than Significant

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
		orientation, shielding, or limiting outdoor programs. Additionally, mixed-use and multi-family residential developments are required to demonstrate noise compatibility between uses. However, traffic noise would likely remain at levels that that would exceed exterior and interior standards, and impacts would be significant. However, noise associated with railroad operations would likely remain at levels that would expose existing noise-sensitive receptors to a significant increase in ambient noise levels, and impacts would be significant and would require mitigation. **Railroad Noise:** Focus Areas 2 and 3 are exposed to significant railroad noise level. Noise-sensitive receivers in the vicinity of the railroad tracks could be exposed to noise levels that exceed the compatibility standards and would require mitigation. Noise associated with railroad operations would likely remain at levels that would expose existing noise-sensitive receptors to a significant increase in ambient noise levels. Therefore, because specific project details are not yet known, railroad noise impacts associated with new development would be significant. **Stationary Noise:** While noise-sensitive residential land uses would be exposed to noise associated with the operation of commercial and industrial uses, future development would be required to show compliance with the Municipal Code. However, noise associated with stationary noise would likely remain at levels that would expose existing noise-sensitive receptors to a significant increase in ambient noise levels, and impacts would be significant and would require mitigation. **Construction Noise:** Implementation of the project would increase development capacity within the City.	enclosures, or designing buildings so that no windows face freeways or major roadways may be used to achieve the noise compatibility standards. Exact noise mitigation measures and their effectiveness shall be determined by the site specific exterior noise analyses. **NOI-3:** Prior to the issuance of ~~a~~ building permits, a site-specific acoustical/noise analysis of any on-site generated noise sources, including generators, mechanical equipment, and trucks, shall be prepared which identifies all noise-generating equipment, predicts noise levels at property lines from all identified equipment, and recommends mitigation to be implemented (e.g., enclosures, barriers, site orientation), to ensure compliance with the City's noise standards. Noise reduction measures shall include building noise-attenuating walls, limiting the hours of operation, or other attenuation measures. Additionally, future projects shall be required to buffer sensitive receptors from noise sources through the use of open space and other separation techniques as recommended after thorough analysis by a qualified acoustical engineer. Exact noise mitigation measures and their effectiveness shall be determined by the site specific noise analyses. **NOI-4**: Construction contractors shall implement the following measures for construction activities conducted in the City of Irvine. Construction plans submitted to the City shall identify these measures on demolition, grading, and construction plans submitted to the City: • The City of Irvine Community Development Department shall verify	

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
		Construction noise levels are variable and depend on specific locations, site plans, and construction details relative to specific projects. Significant noise impacts may occur associated with individual projects which have not yet been developed, particularly if construction techniques (e.g., pile driving) are proposed. However, construction would be localized and would occur intermittently for varying periods of time in accordance with the City's Municipal Code, Zoning Ordinance, and Noise Element. Because project-level information is not yet available, it is not possible to quantify construction noise impacts at noise-sensitive receptors. In most cases, construction of individual projects would temporarily increase the ambient noise environment, potentially affecting existing and future sensitive receptors. However, because construction activities may occur near noise-sensitive uses and because noise disturbances could occur for prolonged periods of time or during noise-sensitive hours of the day, construction noise impacts associated with future development would be significant and would require mitigation.	that grading, demolition, and/or construction plans submitted to the City include these notations prior to issuance of demolition, grading, and/or building permits. • Construction activity is limited to the hours: Between 7:00 AM to 7:00 PM Monday through Friday and 9:00 a.m. and 6:00 p.m. on Saturdays as prescribed in Municipal Code Section 66-8-205(A). No construction activities shall be permitted outside of these hours or on Sundays and federal holidays, except Columbus Day, unless a temporary waiver is granted by the Chief Building Official or their authorized representative. • During the entire active construction period, equipment and trucks used for project construction shall use the best-available noise control techniques (e.g., improved mufflers, equipment re-design, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible. • Impact tools (e.g., jack hammers and hoe rams) shall be hydraulically or electrically powered wherever possible. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools. • Stationary equipment, such as generators and air compressors shall be located as far as feasible from nearby noise-sensitive uses.	

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
			• Stockpiling shall be located as far as feasible from nearby noise-sensitive receptors. • Construction traffic shall be limited, to the extent feasible, to approved haul routes established by the City of Irvine Community Development Department. • At least 10 days prior to the start of construction activities, a sign shall be posted at the entrance(s) to the job site, clearly visible to the public, that includes permitted construction days and hours, as well as the telephone numbers of the City's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, he/she shall investigate, take appropriate corrective action, and report the action to the City. • Signs shall be posted at the job site entrance(s), within the on-site construction zones, and along queueing lanes (if any) to reinforce the prohibition of unnecessary engine idling. All other equipment shall be turned off if not in use for more than 5 minutes. • During the entire active construction period and to the extent feasible, the use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. The construction manager shall use smart back-up alarms, which automatically adjust the alarm level based on the background	

Table S-1 Summary of Environmental Impacts				
Threshold	Level of Significance Before Mitigation	Environmental Impact	Plans, Programs, and Polices [PPPs], Project Design Features, and Mitigation Measures	Significance After Mitigation
			noise level or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws. • Erect temporary noise barriers (at least as high as the exhaust of equipment and breaking line-of-sight between noise sources and sensitive receptors), as necessary and feasible, to maintain construction noise levels at or below the performance standard of 80 dBA Leq. Barriers shall be constructed with a solid material that has a density of at least 4 pounds per square foot with no gaps from the ground to the top of the barrier. Barriers should be erected to the width and height necessary to maintain construction noise levels at or below the performance standard of 80 dB(A) L_{eq}, and may use blankets and other materials to reduce noise as necessary.	