

7. Alternatives to the Modified Project

7.1 INTRODUCTION

7.1.1 Purpose and Scope

CEQA requires that an EIR include a discussion of a reasonable range of project alternatives that would “feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant effects of the project, and evaluate the comparative merits of the alternatives” (CEQA Guidelines Section 15126.6). This chapter identifies potential alternatives to the Modified Project and evaluates them, as required by CEQA.

Key provisions of the CEQA Guidelines on alternatives (Section 15126.6[a] through [f]) are summarized below to explain the foundation and legal requirements for the alternatives analysis of an EIR.

- “The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly” (CEQA Guidelines 15126.6[b]).
- “The specific alternative of ‘no project’ shall also be evaluated along with its impact” (CEQA Guidelines 15126.6[e][1]).
- “The no project analysis shall discuss the existing conditions at the time the Notice of Preparation (NOP) is published, or if no notice of preparation is published, at the time the environmental analysis is commenced, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives” (CEQA Guidelines 15126.6[e][2]).
- “The range of alternatives required in an EIR is governed by a ‘rule of reason’ that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project” (CEQA Guidelines 15126.6[f]).
- “Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)” (CEQA Guidelines 15126.6[f][1]).
- For alternative locations, “only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR” (CEQA Guidelines 15126.6[f][2][A]).

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- “An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative” (CEQA Guidelines 15126.6[f][3]).

For each development alternative, this analysis:

- Describes the alternative.
- Analyzes the impact of the alternative as compared to the Modified Project.
- Identifies the impacts of the Modified Project that would be avoided or lessened by the alternative.
- Assesses whether the alternative would meet most of the basic project objectives.
- Evaluates the comparative merits of the alternative and the Modified Project.

Per CEQA Guidelines Section 15126.6(d), additional significant effects of the alternatives are discussed in less detail than the significant effects of the Modified Project.

The analyses in this section are based, in part, on the following technical studies which are included in Appendix P to this DSEIR.

- Analysis of Air Quality Impacts for the Proposed Alternatives for Heritage Fields, ENVIRON, May 25, 2011.
- Analysis of Climate Change Impacts for the Proposed Alternatives for Heritage Fields, ENVIRON, May 25, 2011.
- Great Park Neighborhoods – Trails and TOD Hazards and Hazardous Materials Impacts for Project Alternatives, Weston Solutions, Inc., May 19, 2011.
- Hydrology Technical Memo Alternatives to the Modified Project, RBF Consulting, May 26, 2011.
- Supplement to Project Water Quality Technical Report – Project Alternatives, ENGEO Incorporated, May 19, 2011.
- Noise Technical Memo – Project Alternatives, Urban Crossroads, May 23, 2011.
- Transportation Memo - Alternatives to the Modified Project, Urban Crossroads, May 20, 2011.

7.1.2 Project Objectives

As described in Section 3.2, *Statement of Objectives*, of this DSEIR, the following objectives have been established for the Modified Project and will aid decision makers in their review of the Modified Project, the project alternatives, and their respective environmental impacts:

Land Use

- Implement the Approved Project consistent with the City’s General Plan Goals and Policies established for the Orange County Great Park and the project objectives stated in the Certified EIR, including redevelopment of the former MCAS El Toro property.

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- Redevelop and reuse a portion of the former MCAS El Toro property for a mixed-use community adjacent to the Orange County Great Park, consistent with the General Plan.
- Revise the 8.1 zoning designation to provide greater flexibility in meeting City General Plan Goals and the state's and Southern California Association of Governments' ("SCAG") policies to provide sustainable mixed-use development and to reduce trips and vehicle miles traveled in automobiles and light trucks.
- Complete a General Plan amendment and Zone Change for Planning Areas 30 and 51 that provides for a range of housing types in a location that is responsive to current and anticipated demands and is supportive of continued economic growth within the City.
- Establish a revised land use plan in Planning Areas 30 and 51 that recognizes the additional density bonus units granted in 2008 pursuant to State law.
- Establish a revised land use plan in Planning Areas 30 and 51 to create a mixed-use community with neighborhood serving land uses near residences as well as employment centers.
- Better accommodate projected regional growth in an infill location that is adjacent to existing and planned infrastructure, urban services, transit, transportation corridors, and major employment centers and that avoids leapfrog development.
- Establish a revised land use plan that permits a wide range of housing densities, types, styles, prices, and tenancy (sale and rental).
- Create a medium-density, mixed-use community that takes advantage of the open space and recreational opportunities in the Orange County Great Park.
- Provide for a fiscally sound land use plan that includes public and commercial uses to support and enhance the new residential community and other residential communities in the vicinity.
- Provide market rate as well as affordable housing opportunities near existing employment centers, in a manner that is consistent with the City's General Plan Land Use and Housing Elements.

Transportation

- Realign Ridge Valley and "O" Street to provide for safe and efficient transportation routes.
- Provide a safe, efficient, and aesthetically attractive street system with convenient connections to adjoining transportation routes.
- Provide a walkable community through the use of innovative traffic calming techniques such as roundabouts designed to slow traffic and pedestrian pathways.
- Create a highly-livable, pedestrian-friendly environment that encourages alternative means of transportation to the automobile by incorporating unique site designs and enhanced pedestrian access between land uses, trails, and streets.

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Open Space

- Create a medium-density, mixed-use community that takes advantage of the open space and recreational opportunities in the Orange County Great Park.
- Provide new parks, trails and public open space consistent with the ARDA, and complete connections to regional trails in City's General Plan Trails Map.
- Implement the Modified Project to provide for funding for the development of the Orange County Great Park by the City.

7.2 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING/PROJECT PLANNING PROCESS

In accordance with CEQA Guidelines Section 15126.6(c), this section identifies alternatives that were considered by the City of Irvine during the scoping process but that were rejected as infeasible and briefly explains the reasons underlying the City's determination not to analyze them further in this DSEIR.

7.2.1 No Project/ No Development

Under this alternative, no development would occur at the Proposed Project Site and the existing physical conditions would remain, despite the fact that development of the Approved Project has already been approved. This alternative is infeasible because it is contrary to the Applicant's vested rights under the ARDA and under the Approved Project. The Applicant is vested to develop 4,894 units and approximately 6.586 million square feet of non-residential development on the Proposed Project Site, and this alternative would require the City to revoke those entitlements, which the City cannot legally do. For these reasons, the City has determined that the No Project/No Development Alternative is not a legally feasible alternative to the Proposed Modified Project.

7.2.2 Reduction of Dwelling Units

Under this alternative, the number of dwelling units would be reduced to below 4,894. Similar to the No Project/ No Development Alternative, the Applicant has vested rights to develop 4,894 dwelling units on the Proposed Project Site, including 3,625 units analyzed in the Certified EIR and 1,269 density bonus units granted pursuant to state law, the grant of which was not subject to CEQA. Therefore, the City cannot prohibit the Applicant from developing all of these units regardless of whether a reduction in the number of residential units developed would mitigate certain impacts of the Modified Project. For these reasons, the City has determined that the Reduction of Dwelling Units Alternative is not a legally feasible alternative to the Modified Project.

7.2.3 Low Density Alternative

Under this alternative, the 4,894 dwelling units would be spread across the entire Proposed Project Site in a typical suburban sprawl configuration, as opposed to only in PA 51 as proposed, resulting in a density of approximately 4.5 dwelling units per acre. Under this alternative, low-density residential units and limited non-residential development would be located in every District within the Proposed Project Site. While this might increase the amount of greenspace within the Proposed Project Site by increasing the amount of

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landscaping at single family residential units, it would likely create result in greater vehicle miles travelled (VMT), since residents would be forced to drive to jobs, services, and recreational facilities. CAPCOA defines a project characterized by dispersed, low-density, single-use, automobile dependent land use patterns, usually outside of the central city (a suburb) as suburban and states that the maximum amount of VMT reduction for suburban land use patterns is 10 percent. Given that the number of trips and the amount of VMT are large factors in the level of air quality and green house gas impacts, greenhouse gas emissions likely could be a significant impact under this alternative. In addition, this type of low-density development is not consistent with the goals and policies in SCAG's Regional Comprehensive Plan or the goals of SB 375 to provide a mix of land uses to reduce regional VMT. For these reasons, the City has determined that the Low Density Alternative is not a feasible alternative to the Proposed Modified Project. (See CEQA Guidelines § 15126.6(c).)

7.2.4 Different Site Alternative

CEQA requires that the discussion of alternatives include alternatives to the project or its location, which are capable of avoiding or substantially lessening any significant effects of the Modified Project. A key question in the analysis would normally be whether any of the significant effects of the Modified Project could be avoided or substantially lessened by developing the project in another location. However, only locations that would avoid or substantially lessen any of the significant effects of the Modified Project need be considered for inclusion in the EIR (CEQA Guidelines § 15126.6(f)(2)(A)). In addition, only limited new analysis is required when a previous environmental document has analyzed a range of reasonable alternative locations for projects with the same basic purpose. (CEQA Guidelines §. 15126.6(f)(2)(C).) Further, an EIR may rely on the previous document to help it assess the feasibility of potential project alternatives to the extent the circumstances remain substantially the same as they relate to the alternative. (CEQA Guidelines § 15126.6(f)(2)(C))

The Certified EIR concluded:

Development of the Project at an alternative location would likely result in a similar, and in some cases, greater impacts than those identified in this Final Program EIR. Furthermore, it has been determined that no feasible alternative locations exist considering the fact that the project is the reuse of the former MCAS El Toro.

Alternative sites remain an infeasible alternative. Since the closure of the MCAS El Toro base in 1999 and the subsequent voter initiative Measure W, the adopted plans and policies for the Proposed Project Site have focused on redevelopment of the property as a mixed-use community surrounding a regional park. There are no other properties within the City of Irvine or within the City's Sphere of Influence under the ownership or control of the Applicant that would accommodate the Modified Project and that would satisfy the objectives for the Modified Project. Nor is there any land outside the City's jurisdiction which could reasonably be acquired by the Applicant and which would accommodate the Modified Project. CEQA does not require consideration of a site not owned by the landowner of which could not be reasonably acquired as an alternative. (CEQA Guidelines § 15126.6(f)(1).)

In addition, the Applicant has a vested right to develop the Approved Project on the Proposed Project Site. The Modified Project cannot be moved to a different location without moving the Approved Project along with it, which is not legally feasible.

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For these reasons, the City determined that an alternative development site for the Modified Project would not be a feasible alternative. (CEQA Guidelines § 15126.6(f)(2)(B).)

7.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

Based on the criteria set forth in CEQA and the CEQA Guidelines concerning alternatives, the City has determined that the following five alternatives represent a reasonable range of alternatives which have the potential to feasibly attain most of the basic objectives of the Modified Project, but which may avoid or substantially lessen one or more of its effects, in particular those deemed significant. These alternatives are analyzed in detail in the following sections.

- No Project/Density Bonus Units Not Located Alternative
- No Project/Density Bonus Units Located Alternative
- Relocated Residential Units Alternative
- Conversion Alternative
- School Mitigation Alternative

CEQA requires the alternatives analysis to include a No Project Alternative. The purpose of analyzing a No Project Alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project (CEQA Guidelines § 15126.6[e][1]). According to CEQA Guidelines section 15126.6(e)(2), the No Project Alternative "shall discuss the existing conditions at the time the notice of preparation is published... as well as what would reasonably be expected to occur in the foreseeable future if the proposed project were not approved, based on current plans, and consistent with available infrastructure and community services." This chapter analyzes in detail two No Project alternatives—the No Project/Density Bonus Units Not Located Alternative and the No Project/Density Bonus Units Located Alternative. (Section 7.2.1, *No Project/No Development*, discusses why the No Project/No Development scenario is not analyzed in this DSEIR.)

An EIR must identify an “environmentally superior” alternative. Where the No Project Alternative is identified as environmentally superior, the EIR is then required to identify as environmentally superior an alternative from among the others evaluated. (CEQA Guidelines § 15126.6(e).) Each alternative's environmental impacts are compared to the Modified Project and determined to be environmentally superior, neutral, or inferior. The assessment of those alternatives chosen for detailed analysis focuses on the significant impacts of the Modified Project, particularly those determined in this DSEIR to be significant prior to mitigation as analyzed in Chapter 5 of this DSEIR.

Chapter 8 of this DSEIR *Impacts Found Not to Be Significant* substantiates the City’s determination in the Initial Study for the Modified Project (Appendix A to this DSEIR) that effects associated with a variety of impacts would be less than significant for the Modified Project. For the same reasons as described in Chapter 8 of this DSEIR, each of the alternatives analyzed in this section would have the same less than significant impact or no impact as the Modified Project, including, but not limited to, certain impacts in the following CEQA environmental factors: agricultural resources, biological resources, cultural resources, geology and soils, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, transportation and traffic and utilities and service systems. The impacts analyses contained in Chapter 8 are incorporated by reference into the analysis of each of the alternatives below.

Section 7.7 identifies the Environmentally Superior Alternative. Table 7-1 provides a summary of each project alternative analyzed in this chapter.

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The environmental impacts of the Modified Project as compared to the Approved Project are analyzed in detail in Chapter 5 of this DSEIR.

*Table 7-1
Summary of Alternatives to the Modified Project*

<i>Alternative</i>	<i>Description</i>	<i>Basis for Selection and Summary of Analysis</i>
MODIFIED PROJECT		
	See Section 1.4, <i>Project Summary</i> , and Chapter 3, <i>Project Description</i> .	Not Applicable
PROJECT ALTERNATIVES		
No Project/Density Bonus Units Not Located Alternative	The Proposed Project Site would be developed as currently approved, including 4,894 dwelling units and approximately 6.5 million square feet of non-residential uses. Both the originally approved 3,625 dwelling units and the approximately 6.5 million square feet of non-residential development would be located as currently entitled, including as set forth in Vesting Tentative Tract Map ("VTM") 17283. The 1,269 density bonus units, granted pursuant to state law, City Zoning Code Section 2-3, and City of Irvine Planning Commission Resolution 08-2926, would remain not yet specifically located on the Proposed Project Site.	This alternative would not avoid or substantially reduce any of the significant impacts of the Modified Project or the Approved Project. In fact, for the reasons detailed below, this alternative's impacts related to greenhouse gas emissions would likely be slightly greater than for the Modified Project. All other impacts of the Modified Project discussed previously, including aesthetics, air quality, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, public services, recreation, transportation and traffic, and utilities and service systems, would be similar for this alternative as for the Modified Project.
No Project/ Density Bonus Units Located Alternative	Under the No Project/ Density Bonus Units Located Alternative, the 1,269 density bonus units would be located on the Proposed Project Site in locations proportionally distributed throughout the Proposed Project Site in the Lifelong Learning District, Park District and Transit Oriented Development zoning designations. As such, this Alternative would locate 1,380 units in the LLD (1,025 + 355), 1,481 units in the Park District (1,100 + 381) and 2,033 units (1,500 + 533) units in the TOD. All other components of the Approved Project would remain the same. In other words, the proposed reconfiguration of the residential development and the changes to the location of the non-residential uses associated with the Modified Project would not occur under this alternative.	Each of the impacts analyzed for this alternative would be similar to those of the Modified Project or the Approved Project; this alternative would not avoid or substantially reduce any of the Modified Project's significant impacts. In fact, as discussed below, this alternative's impacts related to greenhouse gas emissions would likely be slightly greater than for the Modified Project. This alternative would achieve the goals of the City's General Plan for effective non-motorized transportation to a somewhat greater extent by concentrating a somewhat larger fraction of the residential units in the TOD.
Conversion Alternative	The Conversion Alternative would convert approximately one million square feet non-residential development into 1,500 additional residential units, creating more intense residential development around the TOD and a more transit-	This alternative would reduce the Modified Project's population/housing impact because the alternative would reduce the number of jobs and increase the number of housing units in a jobs-

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*Table 7-1
Summary of Alternatives to the Modified Project*

<i>Alternative</i>	<i>Description</i>	<i>Basis for Selection and Summary of Analysis</i>
	oriented development. This would entail converting 951,000 square feet of Medical and Science uses and 56,200 square feet of Institutional uses into 1,500 residential units.	rich city (Irvine). Because the conversion factors between non-residential and residential development have been calculated based on traffic generation, the overall impact of the development on traffic would remain the same as under the Modified Project. In addition, impacts of this alternative to recreation would be approximately the same as those of the Modified Project. This alternative would also slightly reduce impacts to aesthetics and hazards and hazardous materials. However, this alternative would have slightly greater impacts than the Modified Project on public services, and utilities and service systems.
Relocated Residential Units Alternative	This alternative would relocate 125 residential units located in District 4 under the Modified Project to District 1. No changes would be made to the amount or locations of nonresidential development, or to the numbers and locations of residential units in Districts 7 and 8 proposed by the Modified Project. The 125 relocated units would be split between Districts 1 North and 1 South. In this alternative, the total number of residential units developed would be the same as for the Modified Project. The number of residential units that would be relocated is about 2.5 percent of the 4,894 total units that would be developed. All proposed development in this alternative would occur in the same five VTTMs as for the Modified Project.	Most of the impacts of this alternative analyzed would be approximately the same as those of the Approved Project or the Modified Project. However, as discussed below, this alternative's operational GHG emission impacts could be slightly greater than the Modified Project's less than significant impact, and could potentially be significant. This alternative would not avoid or substantially reduce any significant impact of the Modified Project.
School Mitigation Alternative	This alternative was proposed by the Irvine Unified School District. It would include development of a high school for 2,600 students on a 40-acre site on the Proposed Project Site. The precise location of the high school site within the Proposed Project Site has not been determined. In this alternative, two K-8 schools proposed as part of the Modified Project would be retained; thus, this alternative would involve development of three schools on the Proposed Project Site. It is assumed that the student population for the new high school would be made up of students from the Modified Project and from the surrounding area. Besides the addition of a new high school, all other components proposed by the Modified Project would remain the same under this alternative.	Most of the impacts of this alternative analyzed would be greater than the Modified Project including aesthetics, short-term air quality, and utilities and service systems. Additionally, this alternative's operational GHG emission impacts and noise impacts could be slightly greater than the Approved Project's or the Modified Project's less than significant impact, and could potentially be significant. In addition, concentrations of construction GHG emissions could be significant, depending on the location of the school and the additional work involved in its construction. Student-related automobile access and commuting would be reduced compared to the Modified Project, which

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Summary of Alternatives to the Modified Project*

<i>Alternative</i>	<i>Description</i>	<i>Basis for Selection and Summary of Analysis</i>
		could require travel by students in the Proposed Project Site to more distant high schools in the IUSD. Reduced trip lengths could have a positive, although minimal, impact on air quality. This alternative would not avoid or substantially reduce any significant impact of the Modified Project.

7.4 NO PROJECT/DENSITY BONUS UNITS NOT LOCATED ALTERNATIVE

This first No Project Alternative is the circumstance under which the Modified Project would not proceed, and the Approved Project would be built in its place. At the time the Notice of Preparation was published for the Modified Project, the Proposed Project Site was vested for development of the Approved Project, including 4,894 dwelling units (3,625 units that have been located on a programmatic basis and 1,269 units that have not been located on a programmatic basis) and 6,585,594 square feet of nonresidential development.

Under this No Project/Density Bonus Units Not Located Alternative, the originally approved 3,625 dwelling units would be located in their existing locations under the Approved Project (1,025 dwelling units in the Lifelong Learning District ["LLD"], 1,100 dwelling units in the Park District ["PD"] and 1,500 dwelling units in the Transit Oriented District ["TOD"]) and the approximately 6.586 million square feet of non-residential development would be located as currently entitled, as set forth in Vesting Tentative Tract Map ("VTM") 17283. In this alternative, the 1,269 density bonus units granted pursuant to state law, City Zoning Code Section 2-3, and City of Irvine Planning Commission Resolution 08-2926, would remain unlocated on the Proposed Project Site. Additionally, the proposed reconfiguration of the residential development and the changes to the location of the non-residential uses associated with the Modified Project would not occur under this alternative.

Aesthetics

Potential impacts associated with scenic vistas, visual character, and light and glare under this alternative would be similar to those of the Modified Project. As no scenic vistas are present on-site, no significant impacts would occur under this alternative. Likewise, the visual character of the Proposed Project Site, including light and glare, would remain the same because the same quantity and types of residential and nonresidential would be developed under this alternative and under the Modified Project. Therefore, the overall character and development area at buildout of the Proposed Project Site under this alternative would be similar to that of the Modified Project and impacts would be expected to remain at less than significant levels.

Air Quality

Implementation of the No Project/Density Bonus Units Not Located Alternative would allow development of the same number of residential units and the same amount of non-residential uses as the Modified Project.

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This alternative would result in a similar area of disturbance, construction equipment mix, and phasing as the Modified Project. As with the Modified Project, this alternative would result in significant short-term mass criteria air pollutant construction emissions of VOC, NO_x, PM₁₀, PM_{2.5}, and CO. Therefore, as with the Modified Project, the regional construction-related air quality impacts under this alternative would remain significant and unavoidable.

As with the Modified Project, the long-term operation-related mass criteria air pollutant emissions of this alternative would exceed the significance thresholds for VOC, NO_x, CO, and PM_{2.5}. However, as the analysis in Section 5.2, *Air Quality*, demonstrates, this alternative's operational mass criteria pollutant emissions (equivalent to the Approved Project's emissions) would be slightly higher than the Modified Project's. Therefore, as with the Modified Project, operation-related air quality impacts under this alternative would remain significant and unavoidable.

Because this alternative has the same number of residential units and the same amount of non-residential uses as the Modified Project, it would likewise be consistent with the 2007 AQMP.

Overall, the construction- and operation-related air quality impacts associated with this alternative would be similar (i.e., significant and unavoidable) to the Modified Project. Therefore, this alternative would not reduce or avoid any of the Modified Project's significant and unavoidable air quality impacts.

Greenhouse Gas Emissions

As discussed in Section 5.3, *Greenhouse Gas Emissions*, the Modified Project would generate 175,651 metric tons ("MTons") of greenhouse gas ("GHG") emissions (CO₂e) per year, including one-time amortized emissions from construction activities and one-time amortized carbon sequestration from vegetation changes. By contrast, this alternative would likely result in higher GHG emissions because this alternative would not include certain PDFs aimed at reducing GHG emissions that are a part of the Modified Project, including:

- All buildings would be 15 percent better than the 2008 Title 24 Building Code Standards.
- Decrease in landscaped areas or emissions associated with landscaping of 28 percent.
- Installation of low-flow fixtures consistent with the mandatory requirements of CalGreen.
- Installation of smart irrigation systems in landscaped areas.

Because this alternative would not incorporate the above PDFs, this alternative would likely result in a significant impact concerning GHG emissions, based on SCAQMD's proposed efficiency threshold of 4.8 MTons per service population per year. (See Table 5.3-4 which sets forth GHG emissions for the Approved Project.)

Hazards and Hazardous Materials

As the land uses and limits of development would be similar under this alternative as compared to the Modified Project, the potential impacts related to hazards and hazardous materials would be similar. As this alternative would result in the development of the same number of units, the amount of hazardous materials potentially handled and stored on-site would be approximately the same. However, existing regulatory requirements pertaining to the handling, storage, use, transportation and disposal of these materials apply to both the Modified Project and this alternative, and significant health and safety impacts are not expected to occur under this alternative or the Modified Project. Like the Modified Project, this alternative would also cause portions of PA 51 containing existing structures to be developed, resulting in the need to demolish

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existing structures that may contain asbestos containing materials and/or lead-based paint. Development under this alternative would also occur in the same areas as the Modified Project, including areas containing remediation sites. However, as with the Modified Project, demolition and development activities under this alternative would be required to adhere to the already-imposed mitigation measures from the Certified EIR and the applicable PPPs, as well as Navy-imposed use restrictions, outlined in Section 5.5, *Hazards and Hazardous Materials*, of this DSEIR.

Under this alternative, fewer units would be located adjacent to high wildland fire hazard areas. However, the impacts associated with locating structures and population adjacent to wildland fire hazard areas under this alternative would be, like the Modified Project, less than significant with implementation of the already-imposed mitigation measures from the Certified EIR and PPPs outlined in Section 5.5. Furthermore, as with the Modified Project, implementation of this alternative would not significantly interfere with an adopted emergency response plan or emergency evacuation plan or result in an airport safety hazard for people residing or working in the project area.

The Certified EIR found that wildland fire hazard impacts were significant and unavoidable for the originally approved 3,625 dwelling units. No significant impacts associated with hazards and hazardous materials have been identified for the Modified Project that would not be mitigated to less than significant levels through already-imposed mitigation measures from the Certified EIR and through Modified Project design. Impacts of this alternative associated with hazards and hazardous materials would be similar to those of the Modified Project (i.e., less than significant) provided this Alternative incorporates the project design features incorporated into the Modified Project.

Hydrology and Water Quality

As discussed in Section 5.5., *Hydrology/Water Quality*, implementation of this alternative would have similar hydrology and water quality impacts to those of the Modified Project, all of which would be less than significant like those of the Modified Project. Under this alternative, which is the Approved Project scenario, there would be minor differences in the drainage patterns and peak flows, due to the minor differences in impervious surfaces, as compared to the Modified Project. However, these differences would not result in significant impacts, as the analysis of the Approved Project demonstrates. It is therefore expected that development under this alternative would not result in significant hydrology impacts or exceed the capacity of the storm drain system. These impacts would be less than significant, as is the case for the Modified Project.

Similar to the Modified Project, development under this alternative would be required to adhere to existing procedures governing water quality, many of which have already been met for the Approved Project, which would result in less than significant impacts. See Section 5.5., *Hydrology/Water Quality*, for the analysis of the Approved Project's water quality impacts and its compliance with regulatory requirements and the already-imposed mitigation measures from the Certified EIR. In terms of water quality, this alternative would have less than significant impacts on water quality, like the Modified Project.

Current City of Irvine development standards and Zoning Code prohibit the construction of any structure within a 100 year Flood Hazard Area. Per City Zoning Code and previously-adopted Mitigation Measure H/WQ-4 from the Certified EIR, which is necessarily incorporated into both this alternative and the Modified Project, a Letter of Map Revision (LOMR) must be completed prior to building any structure within an area mapped on the Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. The LOMR must be filed upon the completion of the design of the flood control

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improvements required to contain or redirect the 100-year flood hazard. This would ensure that impacts from flooding under this alternative would be similar to the Modified Project.

This alternative would be developed on the same site as the Modified Project, and therefore for the same reasons identified for the Modified Project, it would also have less than-significant impacts resulting from exposure to flooding as a result of a levee or dam, or effects of seiche, tsunami, or mudflow.

Overall hydrology and water quality impacts of this alternative would be less than significant, like those of the Modified Project.

Land Use and Planning

Under this alternative, development would occur throughout the Proposed Project Site as currently entitled. The benefits of providing additional housing opportunities in proximity to existing and future employment centers on-site and in the vicinity of the Proposed Project Site would occur with this alternative, as with the Modified Project. As with the Modified Project, this alternative would also be consistent with SCAG's Regional Comprehensive Plan, Regional Transportation Plan and Compass Growth Vision.

Overall, the land use impacts under this alternative would be similar to those of the Modified Project (i.e. less than significant).

Noise

This alternative would include the same amount of residential and non-residential development as the Modified Project. The Modified Project would result in less than significant construction noise and vibration impacts on nearby off-site and on-site sensitive receptors, the closest of which would be located approximately 100 feet from the construction boundary. Relative to noise, the impacts of this alternative would be generally the same as those of the Modified Project. With implementation of the existing regulations, PPPs as described in Section 5.7, *Noise*, of this DSEIR, potential impacts associated with construction noise and vibration would be less than significant. Therefore, the construction noise impacts associated with this alternative would be similar to those of the Modified Project (i.e. less than significant for construction noise and vibration).

Even though this alternative includes but does not locate the density bonus units, the Noise Impact Analysis (which analyzed the Approved Project's noise impacts without the effects of the 1,269 density bonus units and the Modified Project's noise impacts with those units located) provides a useful comparison for analyzing this alternative's off-site traffic noise level impacts. The analysis of the 363 off-site roadway segments shows that, in each case, the Modified Project's traffic noise increases, when compared with the Approved Project scenario (without the density bonus units), are less than 1.5 dBA and are considered "barely perceptible" in terms of community noise impact assessment. The only significant impact identified in the Noise Impact Analysis was to on-site sensitive receptors, and that impact was reduced to less than significant with the recommended mitigation (including, e.g., sound walls, closed window/mechanical ventilation, dual-glazed windows), as discussed below. Consequently, even with the density bonus units included, but not located, this alternative's off-site traffic noise impacts would be similar to those of the Modified Project, both of which would be less than significant. The Noise Impact Analysis shows that neither this alternative nor the Modified Project would create a substantial permanent increase in traffic-related noise levels.

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To assess noise compatibility associated with the development of the Modified Project, Urban Crossroads evaluated compliance with the City of Irvine's preliminary acoustical analysis criteria for residential development (i.e., 65 dBA CNEL exterior and 45 dBA CNEL interior). Placement of certain of the noise-sensitive land uses proximate to high-volume roadways was identified as a significant impact for the Modified Project in this DSEIR. However, this impact was reduced to a less than significant level with the recommended mitigation measures. Similar noise impacts to on-site sensitive receptors would occur under this alternative as were identified for the Modified Project, and without mitigation would be significant. However, similar mitigation measures as those recommended for the Modified Project could be required for this alternative in order to ensure its compliance with the City of Irvine's design standards for noise compatibility (i.e., 65 dBA CNEL) and the State's interior noise criteria (i.e., 45 dBA CNEL) as prescribed in PPP 7-2, and those mitigation measures would reduce the impact to a less than significant level. Therefore, this alternative after feasible mitigation would have a less than significant noise impact to on-site sensitive receptors, similar the Modified Project's less than significant impact after mitigation.

Because the Modified Project and this alternative contain the same stationary noise sources (e.g., residential, commercial, cultural/institutional/education use and transportation facilities), this alternative would have less than significant noise impacts from these sources, similar to the Modified Project's impacts. Like the Modified Project, this alternative would be required to adhere to PPPs 7-1 and 7-2 and would; therefore, also result in less than significant off-site noise impacts from stationary sources.

Population and Housing

The Certified EIR concluded that development of the originally approved 3,625 dwelling units and approximately 6.586 million square feet of non-residential development would result in a significant impact with respect to the jobs-housing ratio. The same conclusion was reached in Section 5.8, *Population and Housing*, of this DSEIR for the Modified Project, although it was concluded that the level of the Modified Project's impact would be lower (but still significant).

Similar to the Modified Project, this alternative would also have a significant impact with regards to the jobs-housing balance (although less than that of the originally approved development), as it would develop the same amount of residential (4,894 units) and non-residential uses currently entitled. This alternative would provide a contribution to the City's achievement of its RHNA targets that would be similar to the Modified Project's. Therefore, the overall jobs/housing impact of this alternative would be similar to those of the Modified Project (i.e. significant and unavoidable).

Public Services

Under this alternative, development would occur throughout the Proposed Project Site as currently entitled. Impacts associated with fire protection, law enforcement and library services would be generally the same as for the Modified Project, since it would include the same number of residential units at full buildout. As a result, this alternative is considered to have a similar impact in terms of the provision of fire, police and library services, which impacts were identified to be less than significant for the Modified Project.

The same number of students would require school services from IUSD with this alternative as compared to the Modified Project. Impacts to school services would be less than significant for both this alternative and the Modified Project through the provision of SB 50 fees.

7. Alternatives to the Modified Project

Overall, impacts to public services for this alternative would be similar to those of the Modified Project (i.e., less than significant).

Recreation

Under this alternative, the same number of residential units would be developed on the Proposed Project Site as under the Approved Project or the Modified Project. The same population generation associated with this alternative would result in the same need for parkland and recreation facilities to serve the projected population at buildout. As a result, the demands for parkland and recreational facilities would be the same as for the Modified Project under this alternative. Moreover, as with the Modified Project, residential development under this alternative would be required to comply with City's park dedication requirements, and therefore, adequate park and recreation facilities would be provided to meet the needs of the anticipated population of this alternative. Additionally, as with the Modified Project, the open space areas and recreational uses and facilities that are slated for development as a part of the OCGP would be implemented under this alternative. Furthermore, as with the Modified Project, this alternative would include the development of a comprehensive trail system that would not only connect the uses and areas on- and off-site, but would also provide a means of recreation. Therefore, the demand for parkland and recreational facilities would be the same under this alternative as for the Modified Project, and the impacts would be generally similar (i.e., less than significant).

Transportation and Traffic

Implementation of this alternative would develop the same number of residential units as the Modified Project. However, in this alternative it is unknown where the 1,269 density bonus units would be developed; and thus it is unknown which intersections and roadway segments would be impacted by traffic generated by the density bonus units. Because the density bonus units are not located, this alternative would generate approximately 8,439 fewer average daily trips (ADT) than the Modified Project, based on a trip rate of 6.65 for apartment uses. Because this alternative would be developed on the Proposed Project Site, this alternative would have at least the same significant transportation/traffic impacts as were identified in the Certified EIR. And as with impacts of the Modified Project, and consistent with the Certified EIR's conclusions, impacts of this alternative on affected intersections and roadway segments outside the City of Irvine would be significant and unavoidable because implementation of certain mitigation measures for those impacts would be under the control of other cities, the County of Orange, or Caltrans.

Additionally, as with the Modified Project, this alternative would achieve the goals of the City's General Plan for effective non-motorized transportation (Objectives B-3 and B-4¹) through the provision of enhanced local street connectivity, an extensive network of walkways and bikeways, and the arrangement of land uses that would allow for access by various modes of non-motorized transportation.

Overall, the traffic and circulation impacts associated with this alternative would be similar to the Modified Project (i.e., significant and unavoidable).

¹ Objective B-3 states "**Pedestrian Circulation** – Establish a pedestrian circulation system to support and encourage walking as a mode of transportation."; objective B-4 states "**Bicycle Circulation** – Plan, provide and maintain a comprehensive bicycle trail network that together with the regional trail system, encourages increased use of bicycle trails for commuters and recreational purposes."

7. Alternatives to the Modified Project

Utilities and Service Systems

Under this alternative, the same number of residential units and non-residential uses would be developed on the Proposed Project Site as for the Modified Project. The population generation associated with this alternative would result in the same demand for water, electricity, and natural gas services, and the same generation of wastewater and solid waste, as under Modified Project. As with the Modified Project, the appropriate infrastructure and facilities for each service under this alternative would be available and/or built and the provider of each service would be able to effectively supply the necessary utilities and service systems. Additionally, the impacts to utilities and services systems under this alternative would be, similar to the Modified Project, less than significant after implementation of the regulations, PPPs, and already-imposed Approved Project mitigation measures outlined in Section 5.12, *Utilities and Service Systems*, of this DSEIR. Therefore, the impacts to utilities and service systems associated with this alternative would be similar to the Modified Project (i.e., less than significant).

7.4.1 Ability to Reduce Environmental Impacts

This No Project/Density Bonus Units Not Located Alternative would not avoid or substantially reduce any of the impacts of the Modified Project discussed above, and its impacts would generally be of the same level as the Modified Project's impacts, although its GHG impacts would likely be slightly higher. Therefore, this alternative would not represent an improvement as compared to the Modified Project.

7.4.2 Ability to Achieve Project Objectives

The No Project/Density Bonus Units Not Located Alternative would achieve many of the objectives for the Modified Project. However, as specified below in Table 7-2, this alternative would meet one project objective to a lesser degree than the Modified Project.

*Table 7-2
Evaluation of the No Project/Density Bonus Units Not Located Alternative
and the Modified Project Objectives*

<i>Modified Project Objective</i>	<i>Performance of Alternative</i>
Establish a revised land use plan in Planning Areas 30 and 51 that recognizes the additional density bonus units granted in 2008 pursuant to State law..	Although the 1,269 density bonus units would be included as approved residential units under this alternative, the density bonus units would not be located on vesting tentative maps, and therefore this Modified Project objective would not be met in its entirety.

7.5 NO PROJECT/ DENSITY BONUS UNITS LOCATED ALTERNATIVE

Under the No Project/ Density Bonus Units Located Alternative, the 1,269 density bonus units would be located on the Proposed Project Site, but rather than be as configured under the Modified Project, they would be proportionally distributed throughout the Proposed Project Site in the LLD, PD and TOD district designations. Therefore, this alternative would consist of a total of 1,380 residential units in the LLD (1,025 originally approved units + 355 density bonus units), 1,481 residential units in the PD (1,100 + 381) and 2,033 (1,500 + 533) residential units in the TOD. However, all the other approved residential and non-residential uses would remain the same as with the No Project/Density Bonus Units Not Located Alternative.

7. Alternatives to the Modified Project

In other words, the proposed reconfiguration of the residential development and the changes to the location of the non-residential uses proposed by the Modified Project would not occur under this alternative.

Aesthetics

Potential impacts associated with scenic vistas, visual character, and light and glare would be similar as those of the Modified Project under this alternative, as the amount of area to be developed with residential and non-residential uses would be similar in both scenarios. This alternative would develop the Proposed Project Site in accordance with the proposed development plans of the Approved Project, with the exception of locating the 1,269 density bonus units proportionally throughout the Proposed Project Site. Although the density of the LLD, PD and TOD would slightly increase under this alternative, the overall character and development area at buildout of the Proposed Project Site would be similar to that of the Modified Project. Additionally, as no scenic vistas are present on-site, no significant impacts would occur under this alternative. Likewise, the visual character of the Proposed Project Site, including light and glare, would remain the same because the same total intensities of residential and nonresidential development in the two scenarios would be the same, although the location of the 1,269 density bonus units in this alternative would be somewhat different than in the Modified Project. Overall, the aesthetic impacts associated with this alternative would be similar to the Modified Project and impacts would be expected to remain at less than significant levels.

Air Quality

This alternative would result in a similar area of disturbance, construction equipment mix, and phasing as the Modified Project, albeit at slightly different locations within the Proposed Project Site. As with the Modified Project, this alternative would result in significant short-term mass criteria air pollutant construction emissions of VOC, NO_x, CO, PM_{2.5}, and PM₁₀. Therefore, as with the Modified Project, construction-related air quality impacts under this alternative would be significant and unavoidable.

As with the Modified Project, long-term operation-related air emissions of this alternative would also to exceed the significance thresholds for VOC, NO_x, CO, and PM_{2.5}. Therefore, as with the Modified Project, operation-related air quality impacts under this alternative would remain significant and unavoidable, as no mitigation measures would be available to mitigate the impacts. This alternative would place more residential units in the TOD, which would be closer to employment centers and regional transportation facilities than under the Modified Project; on the other hand, the location of some of the units may alter other features that influence the trip lengths and mode shifts for the other districts. However, on balance, it is unlikely that these differences would result in substantial changes to the criteria air pollutant emission inventory enough to be substantially different than the conclusions of the regional air quality impacts for the Modified Project. As shown in Table 5.2-9, operational emissions of VOC, NO_x, and CO would each be several times the SCAQMD thresholds for each respective pollutant. Thus, as with the Modified Project, operational air quality impacts of this alternative would be significant and unavoidable as no mitigation measures would be available to mitigate the impacts.

Because this alternative includes the same number of residential units and the same amount of non-residential uses as the Modified Project, it would likewise be consistent with the 2007 AQMP.

Overall, the construction- and operation-related air quality impacts associated with this alternative would be similar to those of the Modified Project (i.e., significant and unavoidable). For the above reasons, this alternative would not avoid or reduce the Modified Project's air quality impacts.

7. Alternatives to the Modified Project

Greenhouse Gas Emissions

As discussed in Section 5.3, *Greenhouse Gas Emissions*, the Modified Project would generate 175,651 MTons of GHG emissions per year, including one-time amortized emissions from construction activities and one-time carbon sequestration from vegetation changes. This alternative has been explicitly evaluated in the Greenhouse Gas Emissions Technical Report prepared for the Modified Project (see Appendix H). This alternative would result in a significant impact unless the alternative adopted all of the project design features and achieve the same 25 percent VMT reduction as anticipated for the Modified Project. The project design features that would need to be implemented include:

- All buildings would be 15 percent better than the 2008 Title 24 Building Code Standards.
- Decrease in landscaped areas or emissions associated with landscaping of 28 percent.
- Installation of low-flow fixtures consistent with the mandatory requirements of CalGreen.
- Installation of smart irrigation systems in landscaped areas.

If these project design features were implemented, this alternative would result in a less than significant GHG emissions impact, based on the efficiency metric of 4.8 MTons per service population per year. However, because those PDFs are not part of the approved development, GHG emissions impacts are likely to be significant under this alternative.

Hazards and Hazardous Materials

As this alternative would result in the same number of residential units (4,894 units) and the same amount and types of non-residential square footage (approximately 6.5 million square feet) as that of the Modified Project, the amount of hazardous materials potentially handled and stored on-site would be similar. Existing regulatory requirements pertaining to the handling, storage, use, transportation and disposal of these materials apply to both this alternative and the Modified Project, and significant health and safety impacts are not expected to occur under this alternative or the Modified Project. This alternative would also cause portions of PA 51 containing existing structures to be developed, resulting in the need to demolish existing structures that may contain ACMs and/or LBP. Development under this alternative would also occur in the same areas containing remediation sites. However, as with the Modified Project, demolition and development activities under this alternative would be required to adhere to the regulations, mitigation measures from the Certified EIR and PPPs outlined in Section 5.4, *Hazards and Hazardous Materials*, of this DSEIR.

This alternative would develop fewer density bonus units in parts of PA 51 that are within or next to wildfire hazard zones. This alternative would implement the same regulations mitigation measures from the Certified EIR and PPPs, outlined in Section 5.4, *Hazards and Hazardous Materials*, of this DSEIR, as would the Modified Project. Furthermore, as with the Modified Project, implementation of this alternative would not significantly interfere with an adopted emergency response plan or emergency evacuation plan or result in an airport safety hazard for people residing or working in the project area.

Wildfire-related hazards, and hazards and hazardous materials impacts generally, would be the same in this alternative compared to the Modified Project; in each scenario, such impacts would be less than significant.

Hydrology and Water Quality

Implementation of this alternative would have similar hydrology and water quality impacts to those of the Modified Project, as it would include the same number of residential units (4,894, including the 1,269 density

7. Alternatives to the Modified Project

bonus units), the same amount of non-residential square footage (approximately 6.586 million square feet), and approximately the same amount of impervious surface. This alternative would result in differences in the drainage patterns and peak flows and in the impervious surfaces as compared to the Modified Project, but in general, the drainage areas, discharge points, and peak flow discharges would be similar to the conditions under the Modified Project. Any development at the Proposed Project Site would be subject to additional review in order to ensure that the development would not exceed the capacity of the storm drain system. It is therefore expected that the net effect would be similar to that of the Modified Project, and development under this alternative would not exceed the capacity of the storm drain system. Therefore, this alternative's hydrology impacts would be less than significant, as is the case for the Modified Project.

Similar to the Modified Project, development under this alternative would be required to adhere to the existing procedures and regulations governing water quality, which would result in less than significant impacts. For example, prior to the issuance of precise grading permits, project applicants are required submit for review and approval to the Director of Community Development a WQMP that identifies the BMPs that will be used on the Proposed Project Site to control predictable pollutant runoff. If necessary, treatment would be employed to remove excess pollutants from runoff during the construction and operational phases of development. In terms of water quality, this alternative would have less than significant impacts, as is the case for the Modified Project.

Current City of Irvine development standards and Zoning Code provisions prohibit the construction of any structure within a 100 year Flood Hazard Area. Per City Zoning Code and previously-adopted Mitigation Measure H/WQ-4 from the Certified EIR, which is necessarily incorporated into both this alternative and the Modified Project, a LOMR must be completed prior to building any structure within an area mapped on the Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. The LOMR must be filed upon the completion of the design of the flood control improvements required to contain or redirect the 100 year flood hazard. This would ensure that impacts from flooding under this alternative would be less than significant, as is the case for the Modified Project.

This alternative would be developed on the same site as the Modified Project, and therefore for the same reasons identified for the Modified Project, it would also have less than-significant impacts resulting from exposure to flooding as a result of a levee or dam, or effects of seiche, tsunami, or mudflow.

Hydrology and water quality impacts for this alternative would be similar to those of the Modified Project (i.e., less than significant).

Land Use and Planning

Under this alternative, development throughout the Proposed Project Site would be generally similar to the Modified Project in terms of the amount of residential and non-residential uses; however, the 1,269 density bonus units would be proportionally distributed throughout the Proposed Project Site in the LLD, PD and TOD under this alternative, rather than grouped in the northern portion of the Proposed Project Site. All the other approved residential and non-residential uses would remain the same as with the Approved Project. In other words, the proposed reconfiguration of the residential development and the changes to the location of the non-residential uses associated with the Modified Project would not occur under this alternative.

This alternative would require a General Plan amendment and a Zone Change to locate the density bonus units on the project site, as would the Modified Project. Additionally, as with the Modified Project, this alternative would result in a beneficial impact as it would locate additional housing opportunities (1,269

7. Alternatives to the Modified Project

density bonus units) in proximity to existing and future employment centers on-site and in the vicinity of the Proposed Project Site. Furthermore, as with the Modified Project, this alternative would also be consistent with and further the goals set forth in SCAG's Regional Comprehensive Plan, Regional Transportation Plan and Compass Growth Vision.

Overall, the land use impacts under this alternative would be similar (i.e. less than significant) to the Modified Project.

Noise

Relative to noise, the construction noise and vibration impacts of this alternative would be similar to those of the Modified Project, given that the amount of construction and extent of grading would be similar. With implementation of the existing regulations and PPPs outlined in Section 5.7, *Noise*, of this DSEIR, as well as already-imposed mitigation measures from the Certified EIR, potential impacts associated with construction noise and vibration would be less than significant. As with the Modified Project, development of this alternative would require adherence to these same regulations, PPPs and mitigation.

The No Project/ Density Bonus Units Located Alternative would generate approximately the same ADT as would the Modified Project. Operational traffic noise impacts on off-site roadways were identified as less than significant for the Modified Project in this DSEIR, and would also be less than significant for this alternative.

Placement of noise-sensitive land uses proximate to high-volume roadways was identified as a significant impact for the Modified Project in this DSEIR. However, this impact was reduced to less than significant with the recommended mitigation. This alternative would have a similar noise impact to on-site sensitive receptors and, without mitigation, the impact would also be significant; however, the same mitigation recommended for the Modified Project would be recommended for this alternative to ensure compliance with the City of Irvine's design standards for noise compatibility (i.e., 65 dBA CNEL) and the State's interior noise criteria (i.e., 45 dBA CNEL) as prescribed in PPP 7-2. Therefore, this alternative would have a less than significant impact to on-site sensitive receptors after mitigation, as is the case for the Modified Project.

Because the Modified Project and this alternative contain the same stationary noise sources (e.g., residential, commercial, cultural/institutional/education use and transportation facilities), this alternative would have impacts similar to those of the Modified Project. Like the Modified Project, this alternative would be required to adhere to PPPs 7-1 and 7-2 and would; therefore, also result in less than significant stationary source noise impacts.

Population and Housing

Section 5.8, *Population and Housing*, of this DSEIR concluded that development of the Modified Project would help reduce the jobs-housing imbalance in the City as compared to the project analyzed in the Certified EIR due to location of the density bonus units on the Proposed Project Site, but that even so the overall jobs-housing ratio significant impact identified for the Modified Project would remain significant. Similar benefits would occur under this alternative, although as with the Modified Project the benefits would not reduce the impact to a level of less than significant. Additionally, as with the Modified Project, this alternative would help the City's achievement of its RHNA targets.

For the above reasons, the overall housing impact of this alternative would be similar to the Modified Project.

7. Alternatives to the Modified Project

Public Services

Implementation of this alternative would provide for the same number of residential units and the same amount of non-residential square footage as the Modified Project, resulting in the same amount of development at full buildout. Impacts associated with fire protection, law enforcement and library services would therefore be similar to the Modified Project (i.e. no significant impacts to fire, police and library services).

The same is true for this alternative's impacts on school services. The same quantity of residential units as under the Modified Project would result in an equivalent demand for school services, which could be a potentially significant impact. However, as with the Modified Project, impacts to school services would be less than significant under this alternative through the payment of SB 50 fees.

Overall, impacts of this alternative related to public services would be similar to those of the Modified Project (i.e., less than significant).

Recreation

Under this alternative, the same number of residential units (4,894) would be developed at the Proposed Project Site as under the Approved Project or the Modified Project, and the population generation associated would result in a similar amount of parkland and recreation facilities needed to serve the projected population at buildout as for the Modified Project. Additionally, as with the Modified Project, residential development under this alternative would be required to comply with City's park dedication requirements. Therefore, adequate park and recreation facilities would be provided to meet the needs of the anticipated population of this alternative.

Further, as with the Modified Project, the open space areas and recreational uses and facilities that are slated for development as a part of the OCGP would be implemented under this alternative, and a comprehensive trail system that would not only connect the uses and areas on- and off-site, but would also provide a means of recreation, would also be developed.

Therefore, impacts to parkland and recreational facilities under this alternative would be similar to the Modified Project (i.e., less than significant).

Transportation and Traffic

Implementation of this alternative would provide for the same number of residential units and amount of non-residential square footage as under the Modified Project. This alternative would generate approximately the same average daily trips (ADT) as for the Modified Project. Therefore, it is expected that this alternative, without mitigation, would have significant and unavoidable impacts to a number of intersections and roadway segments, as would the Modified Project (although the location of the impacted intersections and roadway segments might differ slightly). Because this alternative would be developed on the Proposed Project Site, this alternative would have at least the same significant transportation/traffic impacts as were identified in the Certified EIR. And as with impacts of the Modified Project, and consistent with the conclusions in the Certified EIR, impacts of this alternative on affected intersections and roadway segments outside the City of Irvine would be significant and unavoidable because implementation of mitigation measures for those impacts would be under the control of other cities, the County of Orange, or Caltrans.

7. Alternatives to the Modified Project

Additionally, as with the Modified Project, this alternative would achieve the goals of the City's General Plan for effective non-motorized transportation (Objectives B-3 and B-4) through the provision of enhanced local street connectivity, an extensive network of walkways and bikeways, and the arrangement of land uses that would allow for easy access to various modes of non-motorized transportation.

Overall, the traffic and circulation impacts associated with this alternative would be similar to the Modified Project, specifically impacts would be significant and unavoidable because implementation of certain mitigation would be under the control of other jurisdictions and could, therefore, not be guaranteed.

Utilities and Service Systems

Under this alternative, the same number of residential units and amount of non-residential square footage would be developed on the Proposed Project Site as under the Modified Project. Accordingly, the residential and non-residential demand for water, electricity, and natural gas services, and the generation of wastewater and solid waste, would be the same under this alternative as under the Modified Project. Further, as with the Modified Project, the appropriate infrastructure and facilities for each service under this alternative would be available and/or built and the provider of each service would be able to effectively supply the necessary utilities and service systems. Additionally, the same regulations, already imposed mitigation measures from the Certified EIR and PPPs outlined in Section 5.12, *Utilities and Service Systems*, of this DSEIR could be applied to this alternative, which would reduce any impacts to a level of less than significant.

Therefore, the impacts to utilities and service systems associated with this alternative would be similar to the Modified Project (i.e., less than significant).

7.5.1 Ability to Reduce Environmental Impacts

All impacts of this alternative would be similar to those of the Modified Project, although GHG emissions impacts would likely be greater without mitigation. This alternative would not avoid or substantially reduce any of the significant impacts of the Modified Project.

7.5.2 Ability to Achieve Project Objectives

This alternative would achieve all of the Modified Project objectives, except that it would achieve one objective to a lesser degree than would the Modified Project, as shown below in Table 7-3.

*Table 7-3
Evaluation of the No Project/Density Bonus Units Located Alternative and
the Modified Project Objectives*

<i>Modified Project Objective</i>	<i>Performance of Alternative</i>
Create a medium-density, mixed-use community that takes advantage of the open space and recreational opportunities in the Orange County Great Park.	Under this alternative, fewer residential units would be relocated from Districts 5 and 6 to Districts 1, 7, and 8, than under the Modified Project, thereby reducing the benefits of a more integrated mixed-use community. Moreover, more residences would be further from the sports park. Although this alternative would still meet the basic objective, it would do so to a lesser degree than the Modified Project.

7. Alternatives to the Modified Project

7.6 CONVERSION ALTERNATIVE

The Conversion Alternative would include all of the changes to the Approved Project that are proposed by the Modified Project, and in addition would convert approximately one million square feet of non-residential uses (all 951,300 square feet of the of medical and science uses, and 56,200 square feet of the 666,600 square feet of Institutional) into 1,500 additional residential units in District 6, resulting in a higher density of housing near transit facilities. In other words, this alternative would allow a total of 6,394 dwelling units to be developed on the Proposed Project Site. Traffic generation rates were used to calculate the amount of non-residential development to be eliminated due to the creation of new residential development in order to ensure that the overall impact of development under this alternative on traffic, air quality, GHG emissions and noise would be similar to under the Modified Project.

Except as described previously, other characteristics (e.g., lighting, landscaping, etc.) of the Modified Project would be the same in this alternative. The potential environmental impacts associated with this alternative are described in the following analysis and are compared to the environmental impacts associated with the Modified Project with similar mitigations (where applicable) to focus the alternative evaluation on the effects of the conversion option.

It is assumed that housing units added to District 6 would be single-family attached units and/or multifamily units. Both of those types of units have estimated household sizes of 2.29 persons per the City's General Plan. Thus, the 1,500 added residential units would house an estimated 3,435 persons, for total population generation by this alternative of 15,840.

The reduction in estimated employment generation by this alternative is shown below in Table 7-4:

*Table 7-4
Reduction in Estimated Employment Generation by Conversion Alternative
Compared to Modified Project*

<i>Land Use</i>	<i>Quantity, square feet</i>	<i>Employment Generation</i>	
		<i>Per 1,000 square feet</i>	<i>Total</i>
Medical and science	951,300	1.9	1,807
Institutional	56,200	2.0	112
Total Reduction	1,007,500	Not applicable	1,919
Modified Project, Total	6,585,594	Not applicable	16,510
Conversion Alternative, Total	5,557,094	Not applicable	14,591

Aesthetics

Potential impacts associated with visual character and light and glare would be slightly reduced under this alternative in comparison to the Modified Project, as part of the development of the TOD area would be shifted from non-residential to residential uses. Residential uses generally cause less impacts to aesthetics because houses are generally smaller than nonresidential buildings; and houses are generally built of low-glare materials, whereas exteriors of some nonresidential buildings generate substantial glare. Nonresidential uses also often involve more nighttime lighting than do residential uses.

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With regards to scenic vistas, as none are present on-site, no significant impacts would occur under this alternative.

Overall, the localized aesthetic impacts associated with this alternative would be slightly reduced as compared to the Modified Project.

Air Quality

This alternative would develop a larger number of residential units (6,394) and a smaller amount of non-residential square footage (approximately 5.57 million square feet) compared to the Modified Project, but would result in a greater intensification of residential uses in the TOD.

This alternative would result in the same amount of disturbance, construction equipment mix and phasing in comparison to the Modified Project, and the development footprint would be approximately the same since the activity and footprint of the additional 1,500 residential uses would be similar to the approximately 1 million square feet of non-residential which would be converted. The scale of construction effort in this alternative would be generally similar to that of the Modified Project. Therefore, as with the Modified Project, this alternative would result in significant construction mass criteria air pollutant emissions of VOC, NO_x, CO, PM_{2.5}, and PM₁₀. As with the Modified Project, therefore, this alternative's construction impacts would be significant and unavoidable. Additionally, since vertical building construction emissions are small, it is unlikely that there would be any impacts above the localized significance thresholds.

The operational emissions would change for all of the source categories; the relative changes for the area and natural gas categories would be small in comparison to the total criteria pollutant emission inventory, and the traffic emissions could increase or decrease depending on various factors. However, it is unlikely that these differences would result in changes to the criteria pollutant emission inventory enough to substantially change the significance conclusions of the regional air quality evaluation. Therefore, long-term operation-related air emissions of this alternative would be essentially the same as with the Modified Project, and, therefore, these emissions would be significant and unavoidable for VOC, NO_x, CO, and PM_{2.5} (the same four criteria air pollutants as to which the Modified Project would generate significant and unavoidable operational emissions).

Compared to the Modified Project, this alternative would increase residential uses, and decrease non-residential uses, in the TOD near transportation facilities. The conversion of nonresidential to residential development was designed so that total trip generation by this alternative would be the same as for the Modified Project. Therefore, this alternative is expected to have the same VMT as the Modified Project, and is thus expected to be consistent with the 2007 AQMP, like the Modified Project.

Overall, construction- and operation-related air quality impacts associated with this alternative would be similar to the Modified Project; both impacts would remain significant and unavoidable. Therefore, this alternative would not reduce or avoid the Modified Project's significant air quality impacts.

Greenhouse Gas Emissions

As discussed in Section 5.3, *Greenhouse Gas Emissions*, the Modified Project would generate 175,651 MTons of GHG emissions per year, including one-time amortized emissions from construction activities and one-time carbon sequestration from vegetation changes. This alternative would result in the same amount of disturbance, construction equipment mix and phasing as under the Modified Project, and the development

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footprint would be approximately the same since the activity and footprint for the major construction phases would be the same with only minor differences in building construction, which does not vary substantially based on the type of building constructed with similar footprints; in addition, this construction phase has a small amount of emissions associated with it compared to the demolition, site preparation, grading, and paving phases. Therefore, the additional 1,500 residential uses would result in similar emissions compared to the non-residential square footage decrease. Thus, construction GHG emissions impacts for this alternative would be roughly similar to under the Modified Project, namely less than significant.

The operational emissions would change for all of the source categories. The relative change for the area, energy, water, and waste categories would be small in comparison to the total criteria pollutant emission inventory. The traffic emissions may increase or decrease depending on the exact placement of the residential units, non-residential land uses removed as these would impact the number of trips, average trip lengths, mode shifts, and other project design features that may be built into this Alternative that could result in changes in vehicle miles traveled. For instance if there is a decrease in a low trip generator compared to the residential units, the vehicle miles traveled could increase. On the other hand, if the non-residential land use removed is beneficial to the diversity of the development, this could result in increased trip lengths for the residents seeking this land use. In addition, there would be changes to the service population that would impact the GHG efficiency metric of the alternative. Depending on the changes to the GHG emissions inventory and service population this alternative may or may not result in a significant impact.

Hazards and Hazardous Materials

This alternative would involve greater residential intensity, and lower non-residential intensity, in the TOD compared to the Modified Project. Some nonresidential land uses involve use of greater amounts of hazardous materials than do residential uses. Thus, the total amount and variety of hazardous materials used in operation of this alternative could be lower than that of the Modified Project. Existing regulatory requirements pertaining to the handling, storage, use, transportation and disposal of these materials apply to either scenario, and significant health and safety impacts are not expected to occur under this alternative or under the Modified Project. This alternative would also cause portions of PA 51 that contain existing structures to be developed, resulting in the need to demolish existing structures that may contain ACMs and/or LBP. Development under this alternative would also occur in the same areas containing remediation sites. However, as with the Modified Project, demolition and development activities under this alternative would be required to adhere to the regulations and PPPs outlined in Section 5.4, *Hazards and Hazardous Materials*, of this DSEIR, and the already-imposed mitigation measures from the Certified EIR identified in that Section.

Wildfire hazard impacts of this alternative would be less than significant, as would those of the Modified Project. The TOD, where the additional residential units would be developed in this alternative, is not in or next to a wildfire hazard severity zone, which could slightly reduce wildfire hazard impacts of this alternative as compared to the Modified Project. Furthermore, as with the Modified Project, implementation of this alternative would not significantly interfere with an adopted emergency response plan or emergency evacuation plan or result in an airport safety hazard for people residing or working in the project area.

Overall, the hazards and hazardous materials impacts associated with this alternative would be slightly less as compared to the Modified Project, and would be less than significant in each scenario.

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Hydrology and Water Quality

This alternative would exchange approximately 1 million square feet of non-residential land uses for 1,500 residential units in the TOD, compared to the Modified Project. While there could be small differences in development footprint between this alternative and the Modified Project, any such differences would not be substantial; thus, its impacts on drainage patterns and amounts of drainage would be generally similar to those of the Modified Project. Any development under this alternative, as for the Modified Project, would be subject to additional review in order to ensure that the development would not exceed the capacity of the storm drain system. Therefore, hydrology and runoff impacts under this alternative would be similar as compared to the Modified Project, but would be, like the Modified Project's impacts, less than significant.

Like the Modified Project, development under this alternative would be required to adhere to the existing procedures and regulations governing water quality, which would result in less than significant impacts. For example, prior to the issuance of precise grading permits project applicants are required submit for review and approval to the Director of Community Development a WQMP that identifies the BMPs that will be used on the site to control predictable pollutant runoff. If necessary, treatment would be employed to remove excess pollutants from runoff during the construction and operational phases of development. In terms of water quality, this alternative would have a less than significant impact, as is the case for the Modified Project.

Current City of Irvine development standards and Zoning Code provisions prohibit the construction of any structure within a 100 year Flood Hazard Area. Per City Zoning Code and previously-adopted Mitigation Measure H/WQ-4 from the Certified EIR, which is necessarily incorporated into both this alternative and the Modified Project, an LOMR must be completed prior to building any structure within an area mapped on the Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. The LOMR must be filed upon the completion of the design of the flood control improvements required to contain or redirect the 100 year flood hazard. This would ensure that impacts from flooding under this alternative would be less than significant, as is the case for the Modified Project.

This alternative would be developed on the same site as the Modified Project, and therefore for the same reasons identified for the Modified Project, it would also have less than-significant impacts resulting from exposure to flooding as a result of a levee or dam, or effects of seiche, tsunami, or mudflow.

Hydrology and water quality impacts for this alternative would be similar as for the Modified Project (i.e., less than significant).

Land Use and Planning

Under this alternative, more residential units, but less non-residential development, would be located on the Proposed Project Site. More specifically, 1,500 more residential units would be developed in the TOD, but 1,007,500 fewer square feet of non-residential development would occur in the TOD. As with the Modified Project, a General Plan amendment and zone change for this alternative would be required. Specifically, both the General Plan and Zoning Code would need to be amended to allow the development of a total of 6,394 residential units within the Proposed Project Site. The intensified residential development would promote the goal of locating housing near transit opportunities. While this alternative would place fewer proposed employment-generating land uses onsite near proposed onsite housing, this alternative would place additional proposed housing onsite near off-site employment centers. Thus, this alternative would be neutral compared to the Modified Project with respect to consistency with the SCAG and City policies encouraging housing opportunities in closer proximity to and within walking distance of existing and future employment centers

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on-site and in the vicinity of the Proposed Project Site. Those policies are contained within the City's General Plan, and SCAG's Regional Comprehensive Plan, Regional Transportation Plan and Compass Growth Vision.

Overall, the land use impacts under this alternative would be similar as compared to the Modified Project (i.e. less than significant).

Noise

Implementation of this alternative would provide for a greater intensification of residential land uses in the TOD as compared to the Modified Project. Thus, construction noise impacts could affect slightly different off-site areas, but would still be generally similar to those of the Modified Project. The number of residential uses added, and the amount of nonresidential uses deleted, in this alternative were chosen such that there would be no net change in trip generation by this alternative compared to the Modified Project.

Because this alternative would increase residential development but decrease non-residential development near transportation facilities, regional VMT under this alternative would be generally similar to that of the Modified Project. Operational traffic noise impacts on off-site roadways were identified as less than significant for the Modified Project in this DSEIR, and would also be less than significant for this alternative with similar mitigation.

Residential units in this alternative would be concentrated in the TOD near major roadways, and would also be exposed to noise from the railroad track and from major off-site roadways including I-5. Larger numbers of people could be exposed to noise from traffic and from trains in this alternative than in the Modified Project. These could result in significant impacts. However, mitigation recommended for the Modified Project to reduce these impacts to less than significant would be recommended to ensure this alternative's compliance with the City of Irvine's design standards for noise compatibility (i.e., 65 dBA CNEL) and the State's interior noise criteria (i.e., 45 dBA CNEL) as prescribed in PPP 7-2. Therefore, this alternative would have less than significant impacts to on-site sensitive receptors after mitigation, as is the case for the Modified Project.

With respect to construction, the Modified Project would result in less than significant construction noise and vibration impacts on nearby off-site and on-site sensitive receptors, the closest of which would be located approximately 100 feet from the construction boundary. This alternative's construction noise and vibration impacts would be similar to those of the Modified Project, as approximately the same amount of construction would occur over approximately the same amount of time. With implementation of the existing regulations and PPPs and PDF 7-1 outlined in Section 5.7, *Noise*, of this DSEIR, as well as the already-imposed mitigation measures from the Certified EIR, this alternative's construction noise and vibration impacts would be less than significant. Therefore, this alternative would have less than significant construction noise and vibration impacts, as is the case for the Modified Project.

Because the Modified Project and this alternative include the same stationary noise sources (e.g., residential, commercial, cultural/institutional/education use and transportation facilities), this alternative would have impacts similar to those of the Modified Project. Like the Modified Project, this alternative would be required to adhere to PPPs 7-1 and 7-2 and would, therefore, also result in less than significant off-site noise impacts from stationary sources.

7. Alternatives to the Modified Project

Population and Housing

Section 5.8, *Population and Housing*, of this DSEIR concluded that development of the Modified Project would result in a significant impact with respect to the jobs-housing ratio. This alternative would have a greater number of residential units and a lesser amount of non-residential development as compared to the Modified Project. Moreover, compared to the Modified Project, this alternative would provide a greater number of residential units in closer proximity to and within walking distance of existing and future employment uses, though the overall amount of employment generated would be reduced due to the lower amount of non-residential square footage. Additionally, as with the Modified Project, this alternative would help the City's achievement of its RHNA targets. The jobs-housing balance of this alternative would be 14,591 jobs/6,394 residential units, or 2.28, lower than the City's estimated jobs-housing ratio in 2035 of 2.44.

Therefore, the overall jobs/housing impact of this alternative would be more beneficial than the Modified Project. This alternative would lessen the degree of the Modified Project's significant and unavoidable impact on the jobs/housing ratio, although not to a level of less than significant.

Public Services

Although this alternative would include intensification of residential land uses in the TOD, it would result in less non-residential development. Localized impacts associated with fire protection and law enforcement would be slightly greater as compared to the Modified Project, but still less than significant, since there would be a greater need for their services due to the intensification of residential uses in the TOD.

Under this alternative, a greater number of students would be generated as compared to the Modified Project due to the additional residential development. Using IUSD's student generation factors for single-family attached units, the 1,500 added residential units would generate approximately 506 students, an increase of about 21 percent compared to student generation by the Modified Project. However, the students generated under the Modified Project would all attend schools within the Irvine Unified School District. In contrast, due to the addition of more residential units in the TOD under this alternative, a portion of the students generated by this alternative would be within the attendance boundaries of the Saddleback Valley Unified School District (SVUSD). Therefore, this alternative could result in impacts to both IUSD schools and SVUSD schools. Nevertheless, as is the case with the Modified Project, impacts to school services would be less than significant through the payment of SB 50 fees.

Overall, impacts to public services would be slightly greater than under the Modified Project, but like the Modified Project, they would still be less than significant overall.

Recreation

Under this alternative, a greater number of residential units would be developed on the Proposed Project Site. The population generation associated with this alternative would result in a greater amount of parkland and recreation facilities needed to serve the projected population at buildout as compared to the Approved Project or the Modified Project. As a result, the demand for parkland and recreational facilities would be greater under this alternative. However, as with the Approved Project and the Modified Project, residential development under this alternative would be required to comply with City's park dedication requirements, and therefore, adequate park and recreation facilities would be provided to meet the needs of the anticipated population of this alternative. Additionally, as with the Approved Project and the Modified Project, the open space areas and recreational uses and facilities that are slated for development as a part of the OCGP would be

7. Alternatives to the Modified Project

implemented under this alternative. Furthermore, as with the Modified Project, this alternative would include the development of a comprehensive trail system that would not only connect the uses and areas on- and off-site, but would also provide a means of recreation.

Therefore, impacts to parkland and recreational facilities under this alternative would be similar to the Modified Project (i.e., less than significant).

Transportation and Traffic

This alternative would provide a greater intensification of residential development in order to create a more intense development near Irvine Station, but the overall trip generation for this alternative would be approximately the same as for the Modified Project since the amounts of residential and nonresidential uses that would be added and deleted, respectively, were chosen so that trip generation by this alternative would be equivalent to that of the Modified Project. As with the Modified Project, development of this alternative would also be required to adhere to the regulations and PPPs, as well as already-imposed mitigation measures from the Certified EIR, outlined in Section 5.11, *Transportation and Traffic*, of this DSEIR.

Additionally, as with the Modified Project, this alternative would achieve the goals of the City's General Plan for effective non-motorized transportation (Objectives B-3 and B-4) through the provision of enhanced local street connectivity, an extensive network of walkways and bikeways, and the arrangement of land uses that would allow for easy access to various modes of non-motorized transportation. By locating additional residential uses closer to, and within walking distance of, alternative modes of transportation (i.e., Irvine Station), this alternative would further achieve the goals of the City's General Plan for effective non-motorized transportation.

As this alternative would increase residential development but also decrease non-residential development near transportation facilities, it is expected that regional VMT in this alternative would be generally similar to that of the Modified Project. However, the placement of additional houses near transportation facilities such as the Irvine Train Station could lead to an increase in use of alternative modes of transportation for work trips as well as non-work trips; whereas the reduction of roughly one million square feet of non-residential land uses would be expected to lead to a reduction in use of alternative modes of transportation just for work trips. Thus, this alternative may have some net positive effect on use of alternative modes of transportation, compared to the Modified Project.

Overall, the regional traffic and circulation impacts associated with this alternative would be similar to under the Modified Project, although this alternative could lead to a slight shifting of modes of project-generated trips from private automobiles to alternative modes which could slightly reduce traffic impacts. As with impacts of the Modified Project, traffic impacts of this alternative on affected intersections and roadway segments outside the City of Irvine would be significant and unavoidable because some of the applicable mitigation measures would be within the control of other jurisdictions (e.g. Lake Forest, Caltrans) and there is no guarantee they would be implemented.

Utilities and Service Systems

Estimates of the net differences in water demand, and wastewater and solid waste generation, by this alternative compared with those of the Modified Project are shown below in Table 7-5. As shown, this alternative would generate increased utility demands compared to the Modified Project, ranging from an 8.1 percent increase in solid waste generation to a 15.3 percent increase in water demand; these increases are

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within each utility's projected capacity requirements. The WSA prepared for the Modified Project indicates that IRWD would have adequate water supplies in the future to serve the increased water demand associated with this Alternative (see Appendix N). As stated in Section 5.12, *Utilities and Service Systems*, the Michelson Wastewater Reclamation Plant (MWRP) has a capacity of 18 mgd; expansion of the MWRP to a capacity of 28 mgd is underway, with planned completion in August 2012. With this expansion, IRWD would be able to serve the increased wastewater generated by this Alternative. As stated in Table 5.12-10, the average daily rate of disposal for the Frank R. Bowerman Landfill is 5,500 tpd, with a maximum daily permitted capacity of 11,500 tpd. As a result, adequate landfill capacity would be available to serve the Conversion Alternative. Additionally, as with the Modified Project, the appropriate infrastructure and facilities for each service under this alternative would be available and/or built and the provider of each service would be able to effectively supply the necessary utilities and service systems. Furthermore, as with the Modified Project, development of this alternative would be required to adhere to the regulations, PPPs, and Certified EIR mitigation measures outlined in Section 5.12, *Utilities and Service Systems*, of this DSEIR.

Table 7-5
Estimated Differences in Water Demand and Wastewater and Solid Waste Generation, Conversion Alternative versus Modified Project

Land Use	Quantity	Water Demand, gallons per day		Wastewater Generation, gallons per day		Solid Waste Generation, pounds per day	
		Per Unit	Total	Per Unit	Total	Per Unit	Total
Residential Uses Added							
Residential	1,500 units	200 per DU	300,000	150 per DU	225,000	12.23 per DU	18,345
Less Nonresidential Uses Deleted							
Medical and Science	951,300 square feet	0.07 per square foot	66,591	0.052 per square foot	49,468	0.007 per square foot	6,659
Institutional	56,200 square feet	0.07 per square foot	3,934	0.03 per square foot	1,686	0.01 per square foot	562
Subtotal	1,007,500 square feet	0.07 per square foot	70,525	Not applicable	51,154	Not applicable	7,221
Net Increase or (Decrease), Conversion Alternative versus Modified Project							
Net Difference		Not applicable	229,475	Not applicable	173,846	Not applicable	11,124
Total, Conversion Alternative		Not applicable	1,729,567	Not applicable	1,511,721	Not applicable	147,644
Total, Modified Project		Not applicable	1,500,092	Not applicable	1,337,875	Not applicable	136,520
Net Percent Increase, Conversion Alternative		Not applicable	15.3	Not applicable	13.0	Not applicable	8.1

In addition, localized impacts to utilities and service systems (i.e., need for greater sewer infrastructure) in the TOD area would be slightly greater under this alternative as there would be an intensification of residential uses. Therefore, impacts to utilities and service systems associated with this alternative would be slightly greater than the Modified Project; even so, the impacts of this alternative on utilities and services systems would be less than significant, like the Modified Project.

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7.6.1 Ability to Reduce Impacts

This alternative would reduce the Modified Project's impacts to population and housing since more residential dwelling units and less non-residential development would be constructed. This alternative would also slightly reduce impacts to aesthetics and hazards and hazardous materials. However, this alternative would have slightly greater impacts than the Modified Project on public services, and utilities and service systems.

7.6.2 Ability to Achieve Project Objectives

As described below in Table 7-6, this alternative would achieve all but two of the objectives of the Modified Project, and would achieve other objectives to a lesser extent. This alternative would convert approximately 1 million square feet of non-residential development to 1,500 dwelling units which would be located in the TOD. Thus, while there would still be residences located near employment and local serving retail within Districts 1 North and South, 4, 7 and 8, the residential development in the TOD would lack the same synergy of land use. However, the additional residences that would be developed in the TOD would be near off-site employment centers.

*Table 7-6
Evaluation of Evaluation of the Conversion Alternative and the Modified
Project Objectives*

<i>Project Objective</i>	<i>Performance of This Alternative</i>
Revise the 8.1 zoning to provide greater flexibility in meeting City General Plan Goals and the state's and Southern California Association of Governments' ("SCAG") policies to provide sustainable mixed-use development and to reduce trips and vehicle miles travelled in automobiles and light trucks.	Although additional residential dwelling units would be developed under this alternative, the conversion of these residential units in the TOD would reduce non-residential development in the TOD. Therefore, residents would not have the same opportunities to walk or take public transportation to jobs and neighborhood services. However, the additional residences in the TOD would be near off-site employment centers.
Better accommodate projected regional growth in an infill location that is adjacent to existing and planned infrastructure, urban services, transit, transportation corridors, and major employment centers and that avoids leapfrog development.	This alternative would have less synergy between residential and non-residential uses because it proposes to convert 951,300 square feet of Research and Development and 56,200 square feet of Institutional to 1,500 dwelling units. As such, there would be fewer jobs and neighborhood serving commercial within the TOD and adjacent to the existing rail infrastructure. However, this alternative would place 1,500 additional housing units close to the existing train station and to off-site employment centers.

7.7 RELOCATED RESIDENTIAL UNITS ALTERNATIVE

This alternative would relocate 125 single-family detached residential units that are located in District 4 under the Modified Project to District 1; no changes would be made to the amount or location of non-residential development, or to the numbers and locations of residential units in Districts 7 and 8 under the Modified Project. The relocated residential units would be split between Districts 1 North and 1 South. In this alternative, the total number of residential units developed would be the same as for the Modified Project

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(4,894 units). The number of residential units that would be relocated is about 2.5 percent of the 4,894 total units that would be developed. All proposed development in this alternative would occur in the same five VTTMs as proposed by the Modified Project. All other components of the Modified Project are the same in this alternative.

The total numbers of proposed residential units in this alternative in Districts 1 North, 1 South, and 4 in this alternative compared to the Modified Project are shown below in Table 7-7.

<i>Table 7-7</i>			
<i>Relocate Residential Units Alternative Compared to Modified Project</i>			
<i>District</i>	<i>Relocated Residential Units Alternative</i>	<i>Modified Project</i>	<i>Net Change, Alternative – Modified Project</i>
1 North	1,868	1,797	+71
1 South	483	429	+54
4	977	1,102	-125

As the total numbers of residential units by unit type in this alternative would be the same as that of the Modified Project, the buildout population projection for this alternative would be the same as that of the Modified Project.

The overall development footprint in this alternative would be shifted slightly, compared to that of the Modified Project, from District 4 to Districts 1 North and 1 South. However, the total development footprint would remain within the five VTTMs proposed under the Modified Project and would not change substantially under this alternative as compared to the Modified Project.

Aesthetics

This alternative would differ from the Modified Project in that 125 single-family detached residential units would be developed in District 1 rather than District 4. Impacts associated with visual character and light and glare would be generally similar under this alternative compared to those of the Modified Project.

With regards to scenic vistas, as none are present on-site, no significant impacts would occur under this alternative.

Overall, the localized aesthetic impacts associated with this alternative would be the same as compared to the Modified Project.

Overall, the impacts associated with this alternative would be similar (i.e., less than significant) to those of the Modified Project.

Air Quality

Because this alternative would include the same number of residential units (4,894) and the same amount of non-residential square footage (approximately 6.586 million square feet) as under the Modified Project, the total development footprint and overall intensity of development in this alternative would be generally similar to the Modified Project. Thus, construction air quality impacts for this alternative would be roughly similar to

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those under the Modified Project, and would be significant and unavoidable. Additionally, since vertical building construction emissions are small, it is unlikely that there would be any impacts above the localized significance thresholds.

The operational emissions would remain the same for all of the source categories except traffic. The traffic emissions may increase or decrease depending on the exact placement of the residential units and the impact this would have on average trip lengths, mode shifts, and other project design features that may be built into this Alternative that could result in changes in vehicle miles traveled. However, it is unlikely that these differences would result in changes to the criteria air pollutant emission inventory substantial enough to alter the significance conclusions of the regional air quality evaluation. Therefore, as with the Modified Project, long-term operation-related air emissions of this alternative would exceed the significance thresholds for VOC, NO_x, CO, and PM_{2.5}. The relocation of residential units would not affect the operation-related air quality impacts. Therefore, as with the Modified Project, operation-related air quality impacts under this alternative would be significant and unavoidable.

Because this alternative has the same number of residential units and the same amount of non-residential uses as the Modified Project, it would similarly be consistent with the 2007 AQMP.

Overall, construction- and operation-related air quality impacts associated with this alternative would be similar to the Modified Project (i.e., significant and unavoidable).

Greenhouse Gas Emissions

As discussed in Section 5.3, *Greenhouse Gas Emissions*, the Modified Project would generate 175,651 MTons of GHG emissions per year, including one-time amortized emissions from construction activities and carbon sequestration from vegetation changes. The total development footprint and overall intensity of development in this alternative would be generally similar to the Modified Project. Thus, construction GHG emissions impacts for this alternative would be roughly similar to under the Modified Project, namely less than significant.

The operational emissions would remain the same for all of the source categories except traffic. The traffic emissions may increase or decrease depending on the exact placement of the residential units and the impact this would have on average trip lengths, mode shifts, and other project design features that may be built into this Alternative that could result in changes in vehicle miles traveled. If there is a net decrease in emissions associated with total vehicle miles traveled as a result of the change in location and types of residential units built on the Proposed Project Site, then this alternative would result in a less than significant impact for GHG emissions similar to the Modified Project. However, if the vehicle miles traveled increase, this alternative may result in a significant impact for GHG emissions.

Hazards and Hazardous Materials

This alternative would include the same number of residential units (4,894) and the same quantity of non-residential square footage (approximately 6.586 million square feet) as the Modified Project. Therefore, the amount of hazardous materials potentially handled and stored on-site would be similar to under the Modified Project. Existing regulatory requirements pertaining to the handling, storage, use, transportation and disposal of these materials apply to either scenario, and significant health and safety impacts would not be expected to occur under this alternative or the Modified Project. Further, like the Modified Project, demolition and

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development activities under this alternative would be required to adhere to the regulations and PPPs specified in this DSEIR, and the mitigation measures set forth in the Certified EIR.

Districts 1 North, 1 South, and 4 are not in fire hazard severity zones as mapped by the California Department of Forestry and Fire Prevention (Cal Fire 2010). However, the northeast corner of District 4 is located next to a Very High Fire Hazard Severity Zone. Therefore, shifting 125 residential units from District 4 to District 1 would serve to reduce impacts related to potential fire hazards as compared to the Modified Project, although the impacts for both scenarios would be less than significant. In addition, as with the Modified Project, implementation of this alternative would not significantly interfere with an adopted emergency response plan or emergency evacuation plan or result in an airport safety hazard for people residing or working in the project area.

Overall, because this alternative would result in slightly reduced impacts related to potential fire hazards than in the Modified Project, the hazards and hazardous materials impacts associated with this alternative would be slightly less as compared to the Modified Project, although both this alternative and the Modified Project would have less than significant impacts.

Hydrology and Water Quality

In this alternative, the overall development footprint, total development intensity and the amount of impervious surface groundcover would be similar to the Modified Project, although there would be greater residential density in District 1. However, as is true for the Modified Project, any development on the Proposed Project Site under this alternative would be subject to additional review in order to ensure that the development would not result in significant hydrology impacts and would not exceed the capacity of the storm drain system. Therefore, hydrology and runoff impacts under this alternative would be less than significant, similar to the Modified Project.

Further, like the Modified Project, development under this alternative would be required to adhere to the existing procedures and regulations governing water quality, which ensure that its water quality impacts would be less than significant. For example, prior to the issuance of precise grading permits project applicants are required submit for review and approval to the Director of Community Development a WQMP that identifies the BMPs that will be used on the site to control predictable pollutant runoff. If necessary, treatment would be employed to remove excess pollutants from runoff during the construction and operational phases of development. Accordingly, this alternative would have less than significant water quality impacts, similar to those of the Modified Project.

Current City of Irvine development standards and the City Zoning Code prohibit the construction of any structure within a 100 year Flood Hazard Area. Per City Zoning Code and previously-approved Mitigation Measure H/WQ-4 from the Certified EIR, which is incorporated into both this alternative and the Modified Project, a LOMR must be completed prior to building any structure within an area mapped on the Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. The LOMR must be filed upon the completion of the design of the flood control improvements required to contain or redirect the 100 year flood hazard. This would ensure that impacts from flooding under this alternative would be less than significant, like those of the Modified Project.

This alternative would be developed on the same site as the Modified Project, and therefore for the same reasons identified for the Modified Project, it would also have less-than-significant impacts resulting from exposure to flooding as a result of a levee or dam, or effects of seiche, tsunami, or mudflow.

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Overall, hydrology and water quality impacts for this alternative would be similar to the Modified Project, and both would have less than significant impacts.

Land Use and Planning

Under this alternative, development throughout the Proposed Project Site would generally be similar to the Modified Project in terms of the amount of residential and nonresidential uses. In this alternative, 125 residential units, or about 2.5 percent of the total residential units that would be developed, would be shifted from District 4 to District 1. That shift would not affect consistency with SCAG's Regional Comprehensive Plan, Regional Transportation Plan and Compass Growth Vision. This alternative would require a General Plan amendment and zone change, as would the Modified Project.

Overall, the land use impacts under this alternative would be similar to the Modified Project, with both having less than significant impacts.

Noise

As the ADT generated by this alternative would be the same as for the Modified Project, just shifted slightly westward, it is expected that operational traffic noise impacts on off-site roadways would be the essentially same for this alternative as for the Modified Project, that is, less than significant.

Placement of on-site noise-sensitive land uses proximate to high-volume roadways was identified as a significant impact for the Modified Project in this DSEIR. However, this impact was reduced to less than significant by mitigation. This alternative similarly place sensitive receptors near such roadways and would also shift the 125 units closer to nonresidential land uses in District 1, which could result in significant noise impacts. Similar mitigation as recommended for the Modified Project would be recommended to ensure that this alternative would comply with the City of Irvine's design standards for noise compatibility (i.e., 65 dBA CNEL) and the State's interior noise criteria (i.e., 45 dBA CNEL) as prescribed in PPPs 7-1 and 7-2. Therefore, this alternative would have similar impacts to on-site sensitive receptors from traffic and stationary sources as compared to the Modified Project, which are less than significant.

With respect to construction, the Modified Project would result in less than significant construction noise and vibration impacts on nearby off-site and on-site sensitive receptors, the closest of which would be located approximately 100 feet from the construction boundary. PPPs and PDF 7-1 applied to the Modified Project would also result in the alternative having less than significant construction noise and vibration impacts. Therefore, this alternative would have the same level of construction noise and vibration impacts as the Modified Project, both of which would be less than significant

Population and Housing

Section 5.8, *Population and Housing*, of this DSEIR concluded that development of the Modified Project would result in a significant impact with respect to the jobs-housing ratio. This alternative would generate the same population on the Proposed Project Site as the Modified Project. Impacts on the jobs-housing ratio of this alternative would therefore remain significant and unavoidable. Additionally, as with the Modified Project, this alternative would help the City's achievement of its RHNA targets.

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Overall, the impacts associated with this alternative would be significant and unavoidable, similar to the Modified Project. This alternative would not reduce or avoid the Modified Project's impact on the jobs/housing ratio.

Public Services

This alternative would develop the same number of residential units (4,894) and the same quantity of non-residential square footage (approximately 6.586 million square feet) as the Modified Project. The mix of residential unit types, and thus the buildout population, would be the same for this alternative as for the Modified Project. Therefore, demands on public services including police and fire protection, schools, parks, and libraries would be the same for this alternative as for the Modified Project.

The students generated under this alternative would all be located within the IUSD attendance boundaries, as would be the case under the Modified Project. Impacts to school services would be less than significant under this alternative and under the Modified Project through the payment of SB 50 fees.

Overall, this alternative's impacts to public services would be similar to the Modified Project, and both this alternative and the Modified Project would have less than significant impacts.

Recreation

Under this alternative, the same number of residential units (4,894) would be developed on the Proposed Project Site as under the Approved Project or the Modified Project. The amount of parkland needed to serve a project varies with the project's population generation. Thus, this alternative would result in the same number of parkland and recreation facilities needed to serve the projected population at buildout as compared to the Modified Project.

As with the Approved Project and the Modified Project, residential development under this alternative would be required to comply with City's park dedication requirements, and therefore, adequate park and recreation facilities would be provided to meet the needs of the anticipated population of this alternative. Additionally, as with the Modified Project, the open space areas and recreational uses and facilities that are slated for development as a part of the OCGP would be implemented under this alternative. Furthermore, as with the Modified Project, this alternative would include the development of a comprehensive trail system that would not only connect the uses and areas on- and off-site, but would also provide a means of recreation.

Therefore, impacts to parkland and recreational facilities under this alternative would be similar to the Modified Project (i.e., less than significant).

Transportation and Traffic

The locations and amount of non-residential development in this alternative would be the same as for the Modified Project; the total number of residential units would also be the same.

This alternative would involve development of the same number of single family attached units as would the Modified Project. However, trips would be shifted slightly westward in this alternative due to the shift of 125 residential units from District 4 to District 1. The number of units relocated is only about 2.5 percent of the total units that would be developed. This alternative would slightly redistribute project-generated traffic westward. Thus, this alternative could result in small changes as to which roadway segments and intersections

7. Alternatives to the Modified Project

would be significantly impacted, compared to the Modified Project. Traffic impacts of the Modified Project are significant and unavoidable because some mitigation measures would need to be implemented by jurisdictions other than the City of Irvine; traffic impacts of this alternative would also be significant and unavoidable for those same reasons.

Additionally, as with the Modified Project, this alternative would achieve the goals of the City's General Plan for effective non-motorized transportation (Objectives B-3 and B-4) through the provision of enhanced local street connectivity, an extensive network of walkways and bikeways, and the arrangement of land uses for access by various modes.

Overall, the regional traffic and circulation impacts associated with this alternative would be similar to those of the Modified Project, but the localized impacts would be shifted slightly. Even so, the impacts of both this alternative and of the Modified Project would be significant and unavoidable.

Utilities and Service Systems

This alternative would develop the same number of residential units (4,894,) and the same quantity of non-residential square footage (approximately 6.586 million square feet) as the Modified Project. Population generation would remain the same in this alternative. Overall, the residential and non-residential development associated with this alternative would result in the same demand for water, electricity, and natural gas services, and generation of wastewater and solid waste, as compared to the Modified Project. Additionally, as with the Modified Project, the appropriate infrastructure and facilities for each service under this alternative would be available and/or built and the provider of each service would be able to effectively supply the necessary utilities and service systems. Furthermore, as with the Modified Project, development of this alternative would be required to adhere to the regulations, mitigation measures from the Certified EIR, and PPPs outlined in Section 5.12, *Utilities and Service Systems*, of this DSEIR.

Therefore, impacts to utilities and service systems under this alternative would be similar to the Modified Project (i.e., less than significant).

7.7.1 Ability to Reduce Impacts

This alternative would slightly reduce the hazards and hazardous materials impacts compared to those of the Modified Project due to slightly reduced wildfire hazards. All other impacts of this alternative would be similar to those of the Modified Project.

7.7.2 Ability to Achieve Project Objectives

This alternative would achieve all of the project objectives, and to roughly the same degree as would the Modified Project.

7.8 SCHOOL MITIGATION ALTERNATIVE

In response to IUSD's response to the NOP for the Modified Project, this alternative has been developed to include development of a high school for 2,600 students on a 40-acre site. The precise location of the high school site has not been determined, but would be somewhere in the Proposed Project Site. In this alternative the two K-8 schools proposed as part of the Modified Project would be retained; thus, this alternative would

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involve development of three schools on the Proposed Project Site. The high school would be within the boundaries of the IUSD, and IUSD would operate the school.

The high school has not yet been designed; however, based on other school planning projects, an average of 125 square feet of building area per student is considered reasonable for a high school. Thus, it is estimated that the high school would comprise roughly 325,000 square feet in building area. As the high school in this alternative would be developed in addition to other non-residential land uses in the Modified Project, the total amount of non-residential development in this alternative would be approximately 6,911,000 square feet; that is, about five percent greater than in the Modified Project.

Aside from development of the additional high school, all characteristics of this alternative (total residential units developed, density bonus units developed, intensity of non-residential development, and distribution of development among Districts, etc.) would be the same as the Modified Project. In addition, this alternative would incorporate the already-imposed mitigation measures from the Certified EIR, and all mitigation measures recommended for the Modified Project would similarly be recommended for this alternative.

The attendance boundaries of the proposed high school have not been determined. The five Districts (and VTTMs) that would be developed under the Modified Project, and under this alternative, are all in the current attendance areas of either Northwood High School or Irvine High School, which are both IUSD high schools. Thus, the simplest way for IUSD to create an attendance area for the proposed high school would be to reallocate parts of the existing attendance areas of Northwood and Irvine High Schools to the new attendance area for the new high school. Both the Modified Project and this alternative at buildout are estimated to generate 805 high school students, which alone is not enough to make a new high school feasible for IUSD. Therefore, it is assumed that the current attendance boundaries for IUSD high schools would be modified to generate the balance of the students for the new high school.

It is assumed in this alternative that the overall district boundaries of IUSD and Saddleback Valley Unified School District would remain in their current locations.

Aesthetics

Potential impacts associated with visual character would be slightly greater under this alternative in comparison to the Modified Project, as the overall development intensity of this alternative would be slightly greater. Daytime or nighttime glare impacts from the school are not expected, as the exteriors of public school buildings are constructed of low-glare materials.

With regards to scenic vistas, as none are present on-site, no significant impacts would occur under this alternative.

Overall, the localized aesthetic impacts associated with this alternative would be slightly greater as compared to the Modified Project, but still less than significant.

Air Quality

This alternative would develop the same number of residential units (4,894, including the 1,269 density bonus units) as the Modified Project, and slightly more non-residential square footage, roughly 6,911,000 square feet.

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Construction emissions of this alternative would be increased slightly as compared to those of the Modified Project due to construction of the high school. Those extra emissions would be in addition to the significant and unavoidable construction mass criteria air pollutant emissions of VOC, NO_x, CO, PM_{2.5}, and PM₁₀ identified for the Modified Project. As with the Modified Project, therefore, this alternative's construction impacts would be significant and unavoidable. Depending on the amount of additional site preparation, grading, or excavation that may be required for the school, the LST may or may not be significant depending on the school's location and the amount of equipment and material involved. This impact is unclear without an LST evaluation incorporating this construction explicitly.

The operational emissions would change for all of the source categories due to the additional emissions associated with the high school; the relative changes for the area and natural gas categories would be small in comparison to the total criteria pollutant emission inventory, and the traffic emissions could increase or decrease depending on various factors. For example, this alternative would result in fewer high school students having to travel offsite for school, but at the same time would likely result in offsite high school students having to travel to the new high school rather than another high school that might be closer to their homes. However, on balance, it is unlikely that these differences would result in net changes to the criteria pollutant emission inventory substantial enough to alter the significance conclusions of the regional air quality evaluation. Therefore, like the Modified Project's operational emissions of criteria pollutants, this alternative's impacts would be significant and unavoidable.

Because this alternative has the same number of residential units and only a slightly greater intensity of non-residential uses, this alternative would be consistent with the 2007 AQMP, like the Modified Project.

Overall, construction-related air quality impacts associated with this alternative would be slightly increased, and operation-related impacts would generally be the same, compared to the Modified Project; both impacts would remain significant and unavoidable. Therefore, this alternative would not reduce or avoid the Modified Project's significant and unavoidable air quality impacts.

Greenhouse Gas Emissions

As discussed in Section 5.3, *Greenhouse Gas Emissions*, the Modified Project would generate 175,651 MTons of GHG emissions per year, including one-time amortized emissions from construction activities and carbon sequestration from vegetation changes. Construction emissions of this alternative would be increased slightly compared to those of the Modified Project because the new high school would need to be built. These extra vertical building construction emissions would be in addition to the emissions already estimated, but would be small in comparison to the total project. Furthermore, once amortized by 30 years, this increase in construction emissions would be small.

The operational emissions would change for all of the source categories due to the additional emissions in all source categories associated with the high school and its supporting facilities. The relative change for the area, energy, water, and waste categories would be small in comparison to the total GHG emission inventory. The traffic emissions may increase or decrease depending on the change in trips and trip length associated with the high school. While the students of the high school may decrease their vehicle miles traveled by taking advantage of mode shift opportunities, the impact of these reductions is unclear without an evaluation of the change in distances and the amount of carpooling or bussing of students that would take place if a high school is located off-site. There will also be a slight increase in the service population due to the employees of the school. If there is a net decrease in total vehicle miles traveled as a result of placing the high school on the Proposed Project Site and the associated increased emissions with the other source categories (including the

7. Alternatives to the Modified Project

amortized construction increases) are less than the emissions associated with the decrease in total vehicle miles traveled, then this alternative would result in a less than significant impact for GHG emissions. However, if the vehicle miles traveled are not decreased enough to offset the increased GHG emissions from the other source categories, this alternative may result in a significant impact for GHG emissions.

Hazards and Hazardous Materials

This alternative would include the same number of residential units (4,894, including the 1,269 density bonus units) and slightly more non-residential square footage (approximately 6.911 million square feet) as compared to the Modified Project. Therefore, the amount of hazardous materials potentially handled and stored on-site would be slightly greater for this alternative. However, operation of a school involves use of only small amounts of hazardous materials for cleaning and maintenance purposes. Existing regulatory requirements pertaining to the handling, storage, use, transportation and disposal of these materials apply to either scenario. This alternative would also cause portions of PA 51 containing existing structures to be developed, resulting in the need to demolish existing structures that may contain ACMs and/or LBP. Development under this alternative would also occur in the same areas containing remediation sites. However, as with the Modified Project, demolition and development activities under this alternative would be required to adhere to the regulations, already-imposed mitigation measures from the Certified EIR and PPPs outlined in Section 5.4, *Hazards and Hazardous Materials*, of this DSEIR.

In addition to compliance with the regulations mentioned above, the IUSD would be required to obtain clearance from the Department of Toxic Substances Control (“DTSC”) before the California Department of Education (“CDE”) would approve expenditure of State funds for construction of a public school.

Wildfire hazard impacts of this alternative are expected to be the same as those of the Modified Project, namely, less than significant.

Overall, the hazards and hazardous materials impacts associated with this alternative would be slightly greater in degree than those of the Modified Project due a potential slight increase in the amount of hazardous materials handled and stored on-site; however, impacts would be less than significant in both of these scenarios.

Hydrology and Water Quality

It is unknown whether this alternative’s proposed high school would be developed within the total 1,132.78 acres of the five VTTMs proposed by the Modified Project. As a conservative estimate, it is assumed that the new high school would be developed on 40 acres outside of the five VTTMs, but within the Proposed Project Site. Under those assumptions, this alternative would result in a slight increase in development area and quantity of impervious surfaces as compared to the Modified Project; the increase in development area would be about 3.5 percent of that of the Modified Project.

Drainage patterns and drainage flows in this alternative would be generally similar to those of the Modified Project, except that in this alternative the development area would be slightly larger than in the Modified Project. However, any development at the Proposed Project Site under this alternative, as for the Modified Project, would be subject to additional review in order to ensure that the development would not result in significant hydrology impacts and would not exceed the capacity of the storm drain system. Therefore, hydrology and runoff impacts under this alternative would be slightly greater than the Modified Project, but like the Modified Project's impacts, would overall be less than significant.

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Similar to the Modified Project, development under this alternative would be required to adhere to the existing procedures and regulations governing water quality, which would result in less than significant impacts. For example, prior to the issuance of precise grading permits project applicants are required to submit to the Director of Community Development for review and approval a WQMP that identifies the BMPs that will be used on the site to control predictable pollutant runoff. If necessary, treatment would be employed to remove excess pollutants from runoff during the construction and operational phases of development. Accordingly, in terms of water quality, this alternative is expected to have less than significant impacts, as is the case under the Modified Project.

Current City of Irvine development standards and the City's Zoning Code prohibit the construction of any structure within a 100 year Flood Hazard Area. Per the City Zoning Code and the previously-approved Mitigation Measure H/WQ-4 from the Certified EIR, which is necessarily incorporated into both this alternative and the Modified Project, a LOMR must be completed prior to building any structure within an area mapped on the Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. The LOMR must be filed upon the completion of the design of the flood control improvements required to contain or redirect the 100-year flood hazard. This would ensure that impacts from flooding under this alternative would be similar to the Modified Project, and less than significant.

This alternative would be developed on the same site as the Modified Project, and therefore for the same reasons identified for the Modified Project, it would also have less than significant impacts resulting from exposure to flooding as a result of a levee or dam, or effects of seiche, tsunami, or mudflow. Title 5 of the California Education Code ("CEC") prohibits development of public schools in flood hazard zones, and development of the proposed school would not increase project-related flood hazards.

For the reasons explained above, overall hydrology and water quality impacts of this alternative would be slightly greater for this alternative than for the Modified Project, but both this alternative and the Modified Project would have less than significant impacts.

Land Use and Planning

Under this alternative, development on the Proposed Project Site would be almost identical to development under the Modified Project. The only difference in this alternative would be a new high school site within the Proposed Project Site. Because of the virtual identical nature of this alternative and the Modified Project, this alternative would also be consistent with SCAG's Regional Comprehensive Plan, Regional Transportation Plan and Compass Growth Vision.

The CEC prohibits development of public schools on sites where zoning of surrounding land could create a substantial hazard for persons on the school site. This prohibition applies to zoning for land uses that emit hazardous air emissions, such as some industrial uses and agricultural uses. The Modified Project does not propose zoning for industrial uses or agricultural uses within the five VTTMs; thus, development of the school is not expected to conflict with local land use regulations.

This alternative would require a General Plan amendment and Zone Change, as would the Modified Project.

Overall, the land use impacts under this alternative would be similar as compared to the Modified Project, and the impacts of both this alternative and the Modified Project would be less than significant.

7. Alternatives to the Modified Project

Noise

As discussed in Section 5.7, *Noise*, of this DSEIR, the Modified Project would result in less than significant construction noise and vibration impacts on nearby off-site and on-site sensitive receptors, the closest of which would be located approximately 100 feet from the construction boundary. Construction noise and vibration impacts of this alternative could be slightly greater than those of the Modified Project due to the slightly greater construction effort; however, construction noise and vibration impacts of this alternative are expected to be less than significant, like those of the Modified Project.

High schools are estimated to generate 1.71 daily vehicle trips per student²; therefore, the proposed high school is estimated to generate 4,446 daily trips, or about 3.4 percent more trips than the Modified Project. Consequently, noise generated on roadway segments in the vicinity of the proposed high school could be slightly greater. However, based on the Modified Project's nominal increase in noise levels (less than 1.5 dB), operational noise from traffic is also expected to be less than significant for this alternative.

Placement of on-site noise-sensitive land uses proximate to high-volume roadways was identified as a significant impact for the Modified Project in this DSEIR. However, that impact was reduced to less than significant with mitigation. This alternative could also result in a significant impact. However, similar mitigation measures to those recommended for the Modified Project would be recommended to ensure this alternative's compliance with the City of Irvine's design standards for noise compatibility (i.e., 65 dBA CNEL) and the State's interior noise criteria (i.e., 45 dBA CNEL) as prescribed in PPP 7-2. Therefore, this alternative would have less than significant impacts to on-site sensitive receptors, as is the case for the Modified Project.

This alternative would create localized noise impacts from school events. As the location of the school site is unknown, operational noise impacts of the school on surrounding land uses cannot be assessed in any detail. The noise level impacts expected from the proposed high school alternative will likely include those from sources such as school bells, increased on-site traffic before and shortly after school. A focused noise impact analysis would be required to identify the specific high school noise level impacts and mitigation would be required to satisfy the City of Irvine noise standards. Although this alternative would introduce several new stationary noise level impacts that are not part of the Modified Project, based on impacts of other proposed schools, school-generated noise impacts would be reduced to less than significant within several hundred feet of the school site and would not impact a large part of the Proposed Project Site or surrounding land.

Population and Housing

Section 5.8, *Population and Housing*, of this DSEIR concluded that development of the Modified Project would result in a significant impact with respect to the jobs-housing ratio. This alternative would have the same number of residential units and slightly more non-residential development as compared to the Modified Project; therefore, it would generally create the same population on the Proposed Project Site. The high school would employ an estimated 175 faculty and staff, based employment generation rates of other school projects. Thus, project-generated employment for this alternative would be roughly 16,685, about one percent more than that of the Modified Project. The jobs-housing ratio of this alternative would be very slightly higher, though not substantially different, from that of the Modified Project. Additionally, as with the Modified Project, this alternative would help the City's achievement of its RHNA targets. Impacts of this alternative to population and housing in general would be the same as those of the Modified Project; in both scenarios, impacts to jobs/housing balance would be significant and unavoidable.

² Institute of Transportation Engineers 2008.

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This alternative would not reduce or avoid the Modified Project's significant and unavoidable impact on the jobs/housing ratio.

Public Services

This alternative would develop the same number of residential units (4,894) and slightly more non-residential square footage (approximately 6.911 million square feet) as the Modified Project. Impacts of this alternative associated with fire protection and law enforcement would be slightly greater as compared to the Modified Project due to the additional demand that would be created by the new high school. However, the minimal increase in demand would not be enough to change the impact from being less than significant.

Under this alternative, the same number of students would be generated as under the Modified Project. However, development of a high school for 2,600 students in this alternative would reduce impacts to IUSD school services caused by the students generated by the residential development. However, any impacts to school services under either this alternative or the Modified Project would be reduced to a less than significant level through the required payment of SB 50 fees.

As impacts to police and fire protection would be increased slightly in this alternative but impacts to schools would be decreased, overall impacts to public services would be slightly reduced in comparison to the Modified Project. Impacts would be less than significant in each scenario.

Recreation

Under this alternative, the same number and types of residential units (4,894) would be developed on the Proposed Project Site as under the Modified Project. Thus, the population generation associated with this alternative would result in the same amount of parkland and recreation facilities needed to serve the projected population at buildout as under the Modified Project. As with the Approved Project and the Modified Project, residential development under this alternative would be required to comply with City's park dedication requirements, and therefore, adequate park and recreation facilities would be provided to meet the needs of the anticipated population of this alternative. Additionally, as with the Modified Project, the open space areas and recreational uses and facilities that are slated for development as a part of the OCGP would be implemented under this alternative. Furthermore, as with the Modified Project, this alternative would include the development of a comprehensive trail system that would not only connect the uses and areas on- and off-site, but would also provide a means of recreation.

Therefore, impacts to parkland and recreational facilities under this alternative would be similar to the Modified Project (i.e., less than significant).

Transportation and Traffic

Trip generation by the proposed high school in this alternative is estimated at 1.71 trips per student per day.³ Multiplied by the 2,600 students of the new high school, there would be approximately 4,446 additional trips per day under this alternative as compared to the Modified Project, which would amount to an increase of approximately 3.4 percent over estimated trip generation by the Modified Project. As the location of the proposed high school site has not been determined, distribution of high school-generated trips on roadways, and impacts of this alternative on specific roadway segments and intersections, cannot be estimated. However, the high school would be located within the Proposed Project Site, meaning that the trips under the Modified

³ Institute of Transportation Engineers 2008.

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Project reflecting students living on the Proposed Project Site but commuting to schools off the Site would be significantly reduced under this alternative. Such a reduction in trips however would likely be partially offset by students and faculty commuting to the new high school from off-site locations.

As with the Modified Project, development of this alternative would also require adherence to the regulations, PPPs and already-imposed mitigation measures from the Certified EIR outlined in Section 5.11, *Transportation and Traffic*, of this DSEIR. This alternative could result in small changes as to which roadway segments and intersections would be significantly impacted, compared to the Modified Project. Traffic impacts of the Modified Project are significant and unavoidable because some mitigation measures would need to be implemented by jurisdictions other than the City of Irvine; traffic impacts of this alternative would also be significant and unavoidable for those same reasons.

Additionally, as with the Modified Project, this alternative would achieve the goals of the City's General Plan for effective non-motorized transportation (Objectives B-3 and B-4) through the provision of enhanced local street connectivity, an extensive network of walkways and bikeways, and the arrangement of land uses for access by various modes.

Overall, the regional traffic and circulation impacts associated with this alternative would likely be slightly reduced as compared to the Modified Project. Traffic impacts of this alternative would be significant and unavoidable, as would those of the Modified Project.

Utilities and Service Systems

This alternative would develop the same number of residential units (4,894) and a slightly greater amount of non-residential square footage (approximately 6.9 million square feet) as would the Modified Project. Overall, the residential and non-residential development associated with this alternative would result in slightly increased demand for water, electricity, and natural gas services, and generation of wastewater and solid waste, as compared to the Modified Project. However, as with the Modified Project, the appropriate infrastructure and facilities for each service under this alternative would be available and/or built and the provider of each service would be able to effectively supply the necessary utilities and service systems. Furthermore, as with the Modified Project, development of this alternative would be required to adhere to the regulations, Certified EIR mitigation measures, and PPPs, outlined in Section 5.12, *Utilities and Service Systems*, of this DSEIR.

Overall, impacts to utilities and service systems would be slightly greater for this alternative than for the Modified Project, but would still be less than significant in either case.

7.8.1 Ability to Reduce Impacts

This alternative would not reduce any impact of the Modified Project except impacts to school services, which would nevertheless be less than significant for the Modified Project and traffic. All other impacts of this alternative would either be slightly greater or similar to those of the Modified Project.

7.8.2 Ability to Achieve Project Objectives

This alternative would achieve all of the objectives of the Modified Project.

7. Alternatives to the Modified Project

7.9 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires a lead agency to identify the “environmentally superior alternative” when significant environmental impacts result from the Modified Project. In cases where the “No Project” Alternative is environmentally superior to the Modified Project, an environmentally superior development alternative should be identified as well.

An impact comparison is provided on Table 7-8 and a summary of the ability of each alternative to meet the project objectives is provided on Table 7-9. The Conversion Alternative is the environmentally superior alternative since it would likely have a slightly lesser impact with respect to the jobs/housing balance, aesthetics, and hazards and hazardous materials.

Table 7-8
Impacts Comparison: Alternatives versus Approved Project/Modified Project

<i>Environmental Impact</i>	<i>Modified Project (without/with mitigation)</i>	<i>No Project/Density Bonus Units Not Located Alternative</i>	<i>No Project/Density Bonus Units Located Alternative</i>	<i>Conversion Alternative</i>	<i>Relocated Residential Units Alternative</i>	<i>School Mitigation Alternative</i>
Aesthetics	LS/LS	=	=	<	=	>
Air Quality						
Short-Term	S/S	=	=	=	=	>
Long-Term	S/S	=	=	=	=	=
Greenhouse Gas Emissions	LS/LS	>	>	=/>	=/>	>
Hazards and Hazardous Materials	LS/LS	=	=	<	<	=/>
Hydrology and Water Quality	LS/LS	=	=	=	=	>
Land Use and Planning	LS/LS	=	=	=	=	=
Noise						
Short-Term	LS/LS	=	=	=	=	>
Long-Term	S/LS	=	=	=	=	>
Population and Housing	S/S	=	=	<	=	=
Public Services	LS/LS	=	=	>	=	<
Recreation	LS/LS	=	=	=	=	=
Transportation/Traffic						
Local	S/S	=	=	=	=	>
Regional	S/S	=	=	=	=	>
Utilities and Service Systems	LS/LS	=	=	>	=	>

LS: Less than Significant without mitigation

S: Significant without mitigation

= Impact of alternative is similar to impact of Modified Project

< Impact of alternative is reduced as compared to impact of Modified Project

> Impact of alternative is greater as compared to impact of Modified Project

7. Alternatives to the Modified Project

*Table 7-9
Ability of Each Alternative to Meet the Project Objectives*

<i>Project Objective</i>	<i>Modified Project</i>	<i>No Project/Density Bonus Units Not Located Alternative</i>	<i>No Project/Density Bonus Units Located Alternative</i>	<i>Conversion Alternative</i>	<i>Relocated Residential Units Alternative</i>	<i>School Mitigation Alternative</i>
Land Use						
Implement the approved development consistent with the City's General Plan Goals and Policies established for the Orange County Great Park and the project objectives stated in the Certified EIR, including redevelopment of the former MCAS El Toro Property	Yes	Yes	Yes	Yes	Yes	Yes
Redevelop and reuse a portion of the former MCAS El Toro Property for a mixed-use community adjacent to the Orange County Great Park, consistent with the General Plan.	Yes	Yes	Yes	Yes	Yes	Yes
Revise the 8.1 zoning to provide greater flexibility in meeting City General Plan Goals and the state's and Southern California Association of Governments' ("SCAG") policies to provide sustainable mixed-use development and to reduce trips and vehicle miles travelled in automobiles and light trucks.	Yes	Yes	Yes	Less by this alternative than by the MP	Yes	Yes
Complete a general plan amendment and zone change for Planning Areas 30 and 51 that provide for a range of housing types in a location that is responsive to current and anticipated demands and is supportive of continued economic growth within the City.	Yes	Yes	Yes	Yes	Yes	Yes

7. Alternatives to the Modified Project

*Table 7-9
Ability of Each Alternative to Meet the Project Objectives*

<i>Project Objective</i>	<i>Modified Project</i>	<i>No Project/Density Bonus Units Not Located Alternative</i>	<i>No Project/Density Bonus Units Located Alternative</i>	<i>Conversion Alternative</i>	<i>Relocated Residential Units Alternative</i>	<i>School Mitigation Alternative</i>
Establish a revised land use plan in Planning Areas 30 and 51 that recognizes the additional density bonus units granted in 2008 pursuant to State law..	Yes	Less by this alternative than by the MP	Yes	Yes	Yes	Yes
Establish a revised land use plan in Planning Areas 30 and 51 to create a mixed-use community with neighborhood serving land uses near residences as well as employment centers.	Yes	Yes	Yes	Yes	Yes	Yes
Better accommodate projected regional growth in an infill location that is adjacent to existing and planned infrastructure, urban services, transit, transportation corridors, and major employment centers and that avoids leapfrog development.	Yes	Yes	Yes	Less by this alternative than by the MP		Yes
Establish a revised land use plan that permits a wide range of housing densities, types, styles, prices, and tenancy (for sale and rental).	Yes	Yes	Yes	Yes	Yes	Yes
Create a medium-density, mixed-use community that takes advantage of the open space and recreational opportunities in the Orange County Great Park.	Yes	Yes	Less by this alternative than by the MP	Yes	Yes	Yes
Provide for a fiscally sound land use plan that includes public and commercial uses to support and enhance the new residential community and other residential communities in the vicinity.	Yes	Yes	Yes	Yes	Yes	Yes

7. Alternatives to the Modified Project

*Table 7-9
Ability of Each Alternative to Meet the Project Objectives*

<i>Project Objective</i>	<i>Modified Project</i>	<i>No Project/Density Bonus Units Not Located Alternative</i>	<i>No Project/Density Bonus Units Located Alternative</i>	<i>Conversion Alternative</i>	<i>Relocated Residential Units Alternative</i>	<i>School Mitigation Alternative</i>
Provide market rate as well as affordable housing opportunities near existing employment centers, consistent with the City's General Plan Land Use and Housing Elements.	Yes	Yes	Yes	Yes	Yes	Yes
Transportation						
Realign Ridge Valley and "O" Street to provide for a safe and efficient transportation routes.	Yes	Yes	Yes	Yes	Yes	Yes
Provide a safe, efficient, and aesthetically attractive street system with convenient connections to adjoining transportation routes.	Yes	Yes	Yes	Yes	Yes	Yes
Provide a walkable community through the use of innovative traffic calming techniques such as roundabouts designed to slow traffic, and pedestrian pathways.	Yes	Yes	Yes	Yes	Yes	Yes
Create a highly livable, pedestrian-friendly environment that encourages alternative means of transportation to the automobile by incorporating unique site designs and enhanced pedestrian access between land uses, trails, and streets.	Yes	Yes	Yes	Yes	Yes	Yes
Open Space						
Create a medium-density, mixed-use community that takes advantage of the open space and recreational opportunities in the Orange County Great Park.	Yes	Yes	Less by this alternative than by the MP	Yes	Yes	Yes

7. Alternatives to the Modified Project

*Table 7-9
Ability of Each Alternative to Meet the Project Objectives*

<i>Project Objective</i>	<i>Modified Project</i>	<i>No Project/Density Bonus Units Not Located Alternative</i>	<i>No Project/Density Bonus Units Located Alternative</i>	<i>Conversion Alternative</i>	<i>Relocated Residential Units Alternative</i>	<i>School Mitigation Alternative</i>
Provide new parks, trails and public open space consistent with the ARDA, and complete connections to regional trails in City's General Plan Trails Map.	Yes	Yes	Yes	Yes	Yes	Yes
Implement the Modified Project to provide for funding for the development of the Orange County Great Park by the City.	Yes	Yes	Yes	Yes	Yes	Yes