



## 6.0 Other CEQA Considerations

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## 6.0 OTHER CEQA CONSIDERATIONS

### 6.1 LONG-TERM IMPLICATIONS OF THE PROPOSED PROJECT

If the proposed project is approved and constructed, a variety of short- and long-term impacts would occur on a local level. During project grading and construction, portions of surrounding uses may be temporarily impacted by dust and noise. Short-term soil erosion may also occur during grading. There may also be an increase in vehicle pollutant emissions caused by grading and construction activities. However, these disruptions would be temporary and may be avoided or lessened to a large degree through mitigation cited in this SEIR and through compliance with the *City of Lake Forest Municipal Code* (Municipal Code); refer to Section 5.0, *Environmental Analysis*, and Section 8.0, *Effects Found Not To Be Significant*.

Ultimate development of the project site would create long-term environmental consequences associated with a transition in land use. Development of the proposed project and the subsequent long-term effects may impact the physical, aesthetic, and human environments. Long-term physical consequences of development include increased traffic volumes, increased noise from project-related mobile (traffic) and stationary (mechanical and landscaping) sources, hydrology and water quality impacts, and increased energy and natural resource consumption. Incremental degradation of local and regional air quality would also occur as a result of mobile source emissions generated from project-related traffic and stationary source emissions generated from the consumption of natural gas and electricity.

### 6.2 IRREVERSIBLE ENVIRONMENTAL CHANGES THAT WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

Approval of the proposed project would cause irreversible environmental changes, resulting in the following:

- Commitment of land, which would be physically altered;
- Soil erosion due to grading and construction activities;
- Alteration of the human environment as a consequence of the development process and the project's commitment to the development of a new community of residential neighborhoods, mixed-use area, parks, and open space, which intensifies land uses in the project area;
- Utilization of various new raw materials, such as lumber, sand and gravel for construction;



- Consumption of energy to develop and maintain the project, which may be considered a permanent investment; and
- Incremental increases in vehicular activity in the surrounding circulation system, resulting in associated increases in air pollutant emissions and noise levels.

## 6.3 GROWTH-INDUCING IMPACTS

Section 15126 of the CEQA Guidelines requires that an EIR discuss the project's potential to foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. The CEQA Guidelines also indicate that it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment. This section analyzes such potential growth-inducing impacts, based on criteria suggested in the CEQA Guidelines.

In general terms, a project may foster spatial, economic, or population growth in a geographic area if it meets any one of the following criteria:

- Removal of an impediment to growth (e.g., establishment of an essential public service and provision of new access to an area);
- Fostering economic expansion or growth (e.g., changes in revenue base and employment expansion);
- Fostering of population growth (e.g., construction of additional housing), either directly or indirectly;
- Establishment of a precedent-setting action (e.g., an innovation, a change in zoning, and general plan amendment approval); or
- Development of or encroachment on an isolated or adjacent area of open space (being distinct from an in-fill project).

Should a project meet any one of the above-listed criteria, it may be considered growth inducing. The potential growth-inducing impacts of the proposed project are evaluated below.

Note that the CEQA Guidelines require an EIR to “discuss the ways” a project could be growth inducing and to “discuss the characteristics of some projects that may encourage...activities that could significantly affect the environment.” However, the CEQA Guidelines do not require that an EIR predict (or speculate) specifically where such growth would occur, in what form it would occur, or when it would occur. The answers to such questions require speculation, which CEQA discourages (refer to CEQA Guidelines Section 15145).



## POPULATION, HOUSING, AND EMPLOYMENT

### Population

County of Orange. The County encompasses approximately 798 square miles. It is bordered by Los Angeles County to the north, San Bernardino County to the northeast, Riverside County to the east, San Diego County to the south, and the Pacific Ocean to the west. As of January 2012, the County of Orange had a population of 3,055,792.<sup>1</sup> This represents an increase of approximately 7.4 percent over the County’s January 2000 population of 2,846,289.<sup>2</sup>

The Southern California Association of Governments (SCAG) serves as the Metropolitan Planning Organization (MPO) for Orange, Los Angeles, San Bernardino, Riverside, Ventura, and Imperial counties. Generally, SCAG serves as the regional planning organization for growth management, transportation, and a range of additional planning and environmental issues within southern California. As part of its *2012 Regional Transportation Plan (RTP)* growth forecast, SCAG projects that the County’s population will reach 3,266,000 by 2020 and 3,421,000 by 2035.<sup>3</sup>

City of Lake Forest. On a local level, the City of Lake Forest’s January 2012 population was 78,036.<sup>4</sup> This represents an increase of approximately 32.9 percent over the City’s January 2000 population of 58,707.<sup>5</sup> SCAG projects that the City’s population will reach 88,100 by 2020 and 87,400 by 2035.<sup>6</sup> Table 6-1, *Population Estimates*, provides a summary of both 2000 and 2012 population estimates for Orange County and the City of Lake Forest.

**Table 6-1  
Population Estimates**

| Year   | Orange County | City of Lake Forest |
|--|---------------|---------------------|
| Population   |               |                     |
| 2000 <sup>1</sup>  | 2,846,289     | 58,707              |
| 2012 <sup>2</sup>  | 3,055,792     | 78,036              |
| Change   | 7.4%          | 32.9% <sup>3</sup>  |
| Source:  |               |                     |
| 1. State of California, Department of Finance, <i>E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark</i> . Sacramento, California, May 2010.              |               |                     |
| 2. State of California, Department of Finance, <i>E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2011 and 2012, with 2010 Benchmark</i> . Sacramento, California, May 2012. |               |                     |
| 3. It should be noted that this change in population is in part due to the annexation of Foothill Ranch and Portola Hills.   |               |                     |

<sup>1</sup> State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2011 and 2012, with 2010 Benchmark*. Sacramento, California, May 2012.

<sup>2</sup> State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark*. Sacramento, California, May 2010.

<sup>3</sup> Southern California Association of Governments, *Adopted 2012 Regional Transportation Plan Growth Forecast*, By City, <http://www.scag.ca.gov/forecast/index.htm>.

<sup>4</sup> State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2011 and 2012, with 2010 Benchmark*. Sacramento, California, May 2012.

<sup>5</sup> State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark*. Sacramento, California, May 2010.

<sup>6</sup> Southern California Association of Governments, *Adopted 2012 Regional Transportation Plan Growth Forecast*, By City, <http://www.scag.ca.gov/forecast/index.htm>.



Project Site. The site is situated within an urbanized area of the City. The project site currently consists of vacant land. Therefore, there is no population associated with the project site.

## Housing

County of Orange. The County’s housing stock was estimated to be 1,052,361 in January 2012. This represents an increase of approximately 8.5 percent over the estimated 969,484 housing units reported in January 2000. The vacancy rate in January 2012 was estimated to be approximately 5.36 percent, with approximately 3.018 persons per household.<sup>7</sup> SCAG projections indicate that the number of households within the County will increase to 1,049,000 in 2020 and 1,125,000 in 2035.<sup>8</sup>

City of Lake Forest. The City’s housing stock was estimated to be 27,120 in January 2012. This represents an increase of approximately 32.4 percent over the estimated 20,486 housing units reported in January 2000. The vacancy rate in January 2012 was estimated to be approximately 3.19 percent, with 2.953 persons per household.<sup>9</sup> According to SCAG projections, the number of households in the City is expected to be 30,000 in 2020 and 30,100 in 2035.<sup>10</sup> Table 6-2, *Housing Estimates*, provides a summary of both 2000 and 2012 housing estimates for Orange County and the City of Lake Forest.

**Table 6-2  
Housing Estimates**

| Year   | Orange County | City of Lake Forest |
|--|---------------|---------------------|
| <b>Housing</b>   |               |                     |
| 2000 <sup>1</sup>  | 969,484       | 20,486              |
| 2012 <sup>2</sup>  | 1,052,361     | 27,120              |
| Change   | 8.5%          | 32.4% <sup>3</sup>  |
| Source:  |               |                     |
| 1. State of California, Department of Finance, <i>E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark</i> . Sacramento, California, May 2010.              |               |                     |
| 2. State of California, Department of Finance, <i>E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2011 and 2012, with 2010 Benchmark</i> . Sacramento, California, May 2012. |               |                     |
| 3. It should be noted that this change in housing stock is in part due to the annexation of Foothill Ranch and Portola Hills.  |               |                     |

Project Site. The project site is currently vacant. No housing is associated with the property.

<sup>7</sup> State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2011 and 2012, with 2010 Benchmark*. Sacramento, California, May 2012.

<sup>8</sup> Southern California Association of Governments, *Adopted 2012 Regional Transportation Plan Growth Forecast*, By City, <http://www.scag.ca.gov/forecast/index.htm>.

<sup>9</sup> State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2011 and 2012, with 2010 Benchmark*. Sacramento, California, May 2012.

<sup>10</sup> Southern California Association of Governments, *Adopted 2012 Regional Transportation Plan Growth Forecast*, By City, <http://www.scag.ca.gov/forecast/index.htm>.



## Employment

County of Orange. According to the California Employment Development Department, the annual average civilian labor force within Orange County totals approximately 1,635,900 as of March 2013. An estimated 6.5 percent of the County's workforce (107,100 persons) was unemployed.<sup>11</sup> SCAG projections indicate that the number of employees within the County will be 1,626,000 in 2020 and 1,779,000 in 2035.<sup>12</sup>

City of Lake Forest. According to the California Employment Development Department, the annual average civilian labor force within the City of Lake Forest totals approximately 35,900 persons as of March 2013. An estimated 4.5 percent of the City's workforce (1,700 persons) was unemployed.<sup>13</sup> SCAG projections indicate that the number of employees within the City will be 40,600 in 2020 and 45,800 in 2035.<sup>14</sup>

Project Site. As stated above, the project site is currently vacant and does not generate employment.

## IMPACT ANALYSIS

A project could induce population growth in an area either directly or indirectly. More specifically, the development of new residences or businesses could induce population growth directly, whereas the extension of roads or other infrastructure could induce population growth indirectly.

The project is located within a primarily developed, urbanized area. Project implementation would result in the development of a new community of residential neighborhoods, mixed-use area, parks, and open space; refer to Section 3.0, Project Description.

Based on the factors discussed below, project implementation would not result in significant growth-inducing impacts:

- Removal of an Impediment to Growth. The area surrounding the project site is primarily developed and urbanized with the exception of areas designated as Open Space and Regional Park/Open Space, such as Aliso Creek and Whiting Ranch Wilderness Regional Park. Transportation and infrastructure exist to serve the residential, business park, and open space uses in the project vicinity. New roadways, sewer lines, and storm drain facilities to serve the project site would complete a geographical gap in infrastructure and would not represent a removal of an impediment to growth.

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<sup>11</sup> California Employment Development Department, *Labor Force and Unemployment Rate for Cities and Designated Places*, with March 2012 Benchmark, March 29, 2013.

<sup>12</sup> Southern California Association of Governments, *Adopted 2012 Regional Transportation Plan Growth Forecast*, By City, <http://www.scag.ca.gov/forecast/index.htm>.

<sup>13</sup> California Employment Development Department, *Labor Force and Unemployment Rate for Cities and Designated Places*, with March 2012 Benchmark, March 29, 2013.

<sup>14</sup> Southern California Association of Governments, *Adopted 2012 Regional Transportation Plan Growth Forecast*, By City, <http://www.scag.ca.gov/forecast/index.htm>.



- *Economic Growth.* As stated above, the project involves the development of a new community of residential neighborhoods, mixed-use area, parks, and open space. During project construction, construction-related jobs would be created. However, these jobs would be temporary and would not be growth-inducing. The mixed-use area would contain a small commercial component consisting of 10,000 square feet of neighborhood-serving commercial/retail uses. The non-residential uses are estimated to generate a total of 20 new employees. The proposed commercial/retail uses would serve existing and proposed neighborhoods and would not result in significant jobs or economic growth in the City.
  
- *Population Growth.* The project proposes a maximum of 930 dwelling units (plus 18 attached accessory living quarters/second units) and 10,000 square feet of commercial/retail uses. The population growth associated with the project's proposed residential development would be approximately 2,759 persons.<sup>15</sup> Additionally, employment generated by the proposed non-residential development could result in direct growth in the City's population, as the potential exists that future employees (and their families) would choose to relocate to the City. The non-residential uses are estimated to generate a total of 20 new employees and an employment-related population increase of approximately 15 persons in the City. Overall, implementation of the proposed project could result in an increase in the City's population of approximately 2,744 persons. Population growth within the project site was considered in the OSA PEIR, since its forecasts were based on a maximum of 1,132 dwelling units and 178,720 square feet of commercial uses and a resultant population growth of approximately 3,554 persons. Given the proposed project would occur in accordance with the OSA PEIR's anticipated development, project implementation would be consistent with the OSA PEIR growth forecasts and would result in no greater impacts associated with population growth than previously analyzed. Therefore, the project would not result in substantial population growth in the City.
  
- *Precedent-Setting Action.* With approval of GPA 2008-02 and ZC 2008-01, the General Plan, Zoning Code, and applicable Planned Communities were amended to address future buildout of the OSA project, thereby, ensuring that no inconsistencies existed between the OSA project and any applicable land use plan, policy, or regulation. Approval of GPA 2008-02B established the project site's land use designations as Low Density Residential, Medium Density Residential, Mixed-Use, Community Park/Open Space, and Open Space. The *Lake Forest Planned Community Map* illustrates the City's planned communities and indicates the project site is located within Planned Community 9, *Portola Hills Planned Community* (Portola Hills Planned Community). The Planned Community Text established the zoning for the site and required consistency with the General Plan. Approval of ZC 2008-02 changed the project site's zoning to Single-Family, Multi-Family, Mixed-Use, Park, and Open Space. The proposed project involves the Portola Center Area Plan 2008-01 (Area Plan) and TTM Nos. 15353 and 17300. The Area Plan would provide a comprehensive set of guidelines, regulations, and implementation plans that would govern development of the project site. TTM Nos. 15353 and 17300 propose to subdivide the project site for the purpose of creating individual lots for residential, mixed-use (commercial/residential), park, open space, and other land uses, in accordance with the proposed Area Plan. The Portola Center project proposes a maximum of 930 dwelling units (plus 18 attached accessory living

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<sup>15</sup> Based on 948 dwelling units and 2.91 persons per household, consistent with the OSA PEIR.



quarters/secondary units), 10,000 square feet of commercial/retail uses, parks, and open space. The proposed Area Plan and project would be consistent with the City's General Plan designation and zoning for the project site. No impacts would result with regard to a precedent-setting action.

- Development or Encroachment of Open Space. The proposed project would not be growth-inducing with respect to development or encroachment into an isolated or adjacent area of open space. Although currently undeveloped, development of the project site has been anticipated by the City's General Plan. As stated, the General Plan designates the project site as Low Density Residential, Medium Density Residential, Mixed-Use, Community Park/Open Space, and Open Space. Glenn Ranch Road and Saddleback Ranch Road currently provide access to the project site and surrounding development. Proposed development would be contained within the project site and would not encroach into surrounding areas designated as Open Space and Regional Park/Open Space. No impacts would result with regard to development or encroachment of open space.

Overall, project implementation would not be considered growth inducing, inasmuch as it would not foster significant unanticipated economic expansion and growth opportunities. The project would not remove an existing impediment to growth and would not develop or encroach into an isolated or adjacent area of open space. The proposed project would not foster significant unanticipated population growth in the project area, as described above. Development within the project site would not require substantial development of unplanned and unforeseen support uses and services.

In addition to inducing growth, a project may create a significant environmental impact if it would displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere and/or displace substantial numbers of people, necessitating the construction of replacement housing elsewhere. Implementation of the proposed project would not displace substantial numbers of existing housing or persons, as no dwelling units are currently located at the project site. Therefore, the project would not result in an impact with regard to the displacement of persons, housing, and businesses.

## 6.4 ENERGY CONSERVATION

Public Resources Code Section 21100(b)(3) and *CEQA Guidelines* Appendix F requires a description (where relevant) of the wasteful, inefficient, and unnecessary consumption of energy caused by a project. In 1975, the California State Legislature adopted Assembly Bill 1575 (AB 1575) in response to the oil crisis of the 1970s. Appendix F of the State CEQA Guidelines provides guidance for assessing potential impacts that a project could have on energy supplies, focusing on the goal of conserving energy by ensuring that projects use energy wisely and efficiently. Because Appendix F does not include specific significance criteria, this threshold is based on the goal of Appendix F. Therefore, an energy impact is considered significant if the proposed project would:

*Develop land uses and patterns that cause wasteful, inefficient, and unnecessary consumption of energy or construct new or retrofitted buildings that would have excessive energy requirements for daily operation.*



## 6.4.1 PROJECT ENERGY CONSUMPTION

### SHORT-TERM CONSTRUCTION

In 1994, the U.S. Environmental Protection Agency (EPA) adopted the first set of emission standards (Tier 1) for all new off-road diesel engines greater than 37 kilowatts (kW). The Tier 1 standards were phased in for different engine sizes between 1996 and 2000, reducing NO<sub>x</sub> emissions from these engines by 30 percent. The EPA Tier 2 and Tier 3 standards for off-road diesel engines are projected to further reduce emissions by 60 percent for NO<sub>x</sub> and 40 percent for particulate matter from Tier 1 emission levels. In 2004, the EPA issued the Clean Air Non-road Diesel Rule. This rule will cut emissions from off-road diesel engines by more than 90 percent, and will be fully phased in by 2014.

Depending on market conditions, the project is expected to be constructed in phases generally over a period of five years, starting from approximately 2013 to approximately 2017. Table 6-3, Construction Fuel Consumption, provides an estimate of construction fuel consumption based on information provided by the CalEEMod air quality computer model; refer to Appendix 11.6, Air Quality and Greenhouse Gas Data. Project construction would occur over three phases, with Phase 1 utilizing the most construction equipment. Table 6-3 depicts the “worst-case” construction phase with regards to the highest amount of fuel utilized during construction. As shown in Table 6-3, Phase 1 construction would consume a total of approximately 323,358 gallons of fuel. The remaining two phases would each consume less than Phase 1. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or State. Additionally, OSA PEIR Mitigation Measure 3.3-1 requires the project to use low emission mobile construction equipment, maintain construction equipment in proper tune, use low sulfur fuel, and utilize existing power sources and all diesel fueled construction vehicles would be required to meet the latest emissions standards. Therefore, it is expected that construction fuel consumption associated with the proposed project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

### LONG TERM OPERATIONS

#### Transportation Energy Demand

Pursuant to the Federal Energy Policy and Conservation Act of 1975, the National Highway Traffic and Safety Administration (NHTSA) is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 miles per gallon (mpg). Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with Federal fuel economy standards is not determined for each individual vehicle model. Rather, compliance is determined based on each manufacturer’s average fuel economy for the portion of their vehicles produced for sale in the United States.



**Table 6-3  
Construction Fuel Consumption**

| Phase  | Equipment                 | Quantity | Horsepower | Load Factor | Fuel Consumption Rate <sup>1</sup><br>(gallons per hour) | Duration <sup>2</sup><br>(total hours) | Total Fuel Consumption <sup>3,4</sup><br>(gallons) |
|--|---------------------------|----------|------------|-------------|--|--|--|
| <b>PHASE 1</b>   |                           |          |            |             |  |  |  |
| Site Preparation   | Crawler Tractors          | 3        | 82         | 0.43        | 1.41   | 552                                    | 779  |
|  | Off-Highway Trucks        | 1        | 250        | 0.38        | 3.80   | 184                                    | 699  |
|  | Tractors/Loaders/Backhoes | 2        | 75         | 0.37        | 1.11   | 368                                    | 408  |
| Mass Grading   | Crawler Tractors          | 4        | 82         | 0.43        | 1.41   | 6,240                                  | 8,801  |
|  | Excavators                | 1        | 157        | 0.38        | 2.39   | 1,560                                  | 3,723  |
|  | Graders                   | 2        | 162        | 0.41        | 2.66   | 3,120                                  | 8,289  |
|  | Off-Highway Trucks        | 1        | 250        | 0.38        | 3.80   | 1,560                                  | 5,928  |
|  | Scrapers                  | 10       | 356        | 0.48        | 6.84   | 15,600                                 | 106,629  |
|  | Tractors/Loaders/Backhoes | 1        | 75         | 0.37        | 1.11   | 1,560                                  | 1,732  |
| Precise Grading  | Excavators                | 2        | 157        | 0.38        | 2.39   | 8,400                                  | 20,046   |
|  | Off-Highway Trucks        | 1        | 250        | 0.38        | 3.80   | 4,200                                  | 15,960   |
|  | Skid Steer Loaders        | 1        | 37         | 0.37        | 0.55   | 4,200                                  | 2,300  |
|  | Tractors/Loaders/Backhoes | 1        | 75         | 0.37        | 1.11   | 4,200                                  | 4,662  |
|  | Tractors/Loaders/Backhoes | 1        | 75         | 0.37        | 1.11   | 4,200                                  | 4,662  |
| Paving   | Graders                   | 1        | 162        | 0.41        | 2.66   | 3,672                                  | 9,756  |
|  | Off-Highway Trucks        | 1        | 250        | 0.38        | 3.80   | 3,672                                  | 13,954   |
|  | Pavers                    | 1        | 89         | 0.42        | 1.50   | 3,672                                  | 5,490  |
|  | Rollers                   | 2        | 84         | 0.38        | 1.28   | 7,344                                  | 9,377  |
| Building   | Forklifts                 | 9        | 149        | 0.20        | 1.19   | 37,872                                 | 45,143   |
|  | Generator Sets            | 3        | 84         | 0.74        | 2.49   | 12,624                                 | 31,388   |
| Architectural Coating  | Air Compressors           | 5        | 78         | 0.48        | 1.50   | 15,780                                 | 23,632   |
| <b>TOTAL PHASE 1</b>   |                           |          |            |             |  |  | <b>323,358</b>                                     |
| Notes:   |                           |          |            |             |  |  |  |
| 1. Derived using the following equation:<br>Fuel Consumption Rate = Horsepower x Load Factor x Fuel Consumption Factor<br>Where:<br>Fuel Consumption Factor for a diesel engine is 0.04 gallons per horsepower per hour (gal/hp/hr) and a gasoline engine is 0.06 gal/hp/hr. |                           |          |            |             |  |  |  |
| 2. Total hours of duration derived from CalEEMod modeling results; refer to <a href="#">Appendix 11.6, Air Quality and Greenhouse Gas Data</a> .   |                           |          |            |             |  |  |  |
| 3. Total Fuel Consumption calculated using the following equation:<br>Total Fuel Consumption = Duration in Hours x Fuel Consumption Rate   |                           |          |            |             |  |  |  |
| 4. Values may be slightly off due to rounding.   |                           |          |            |             |  |  |  |
| Source: Refer to <a href="#">Appendix 11.6, Air Quality and Greenhouse Gas Data</a> , for CalEEMod assumptions used in this analysis.  |                           |          |            |             |  |  |  |

Trip generation rates and the daily vehicle miles traveled (VMT) provided in [Appendix 11.6, Air Quality and Greenhouse Gas Data](#), were used to estimate vehicle fuel consumption associated with trips generated by the proposed project. [Table 6-4, Project Operational Fuel Consumption](#), provides an estimate of the mitigated annual fuel consumed by vehicles traveling to and from the proposed project.



**Table 6-4  
 Project Operational Fuel Consumption**

| Vehicle Type             | Percent of Annual Vehicle Miles Traveled <sup>1</sup> | Daily Trips <sup>2</sup>  | Daily Vehicle Miles Traveled <sup>3</sup> | Average Fuel Economy (miles per gallon) <sup>4</sup> | Total Annual Fuel Consumption (gallons) <sup>5</sup> |
|--------------------------|---|---------------------------|---|--|--|
| Passenger Cars           | 82  | 8,528                     | 67,789                                    | 21.6   | 3,138  |
| Light/Medium Trucks      | 14  | 1,456                     | 10,549                                    | 17.2   | 613  |
| Heavy Trucks/Other       | 4   | 416                       | 3,014                                     | 6.1  | 494  |
| <b>Total<sup>6</sup></b> | <b>100</b>  | <b>10,400<sup>7</sup></b> | <b>75,353<sup>8</sup></b>                 | <b>--</b>  | <b>4,245</b>   |

Notes:  
 1. Percent of Vehicle Trip distribution based on trip characteristics within the CalEEMod model.  
 2. Daily Trips calculated by multiplying the total daily trips by percent vehicle trips (i.e., Daily Trips x percent of Vehicle Trips).  
 3. Daily Vehicle Miles Traveled (VMT) calculated by multiplying percent vehicle trips by total VMT (i.e., VMT x percent of Vehicle Trips).  
 4. Average fuel economy derived from the Department of Transportation.  
 5. Total Daily Fuel Consumption calculated by dividing the daily VMT by the average fuel economy (i.e., VMT/Average Fuel Economy).  
 6. Values may be slightly off due to rounding.  
 7. Based upon data within the *Portola Center Project Traffic Impact Study*, prepared by Wilson and Company, dated January 2013; refer to [Appendix 11.5, Traffic Study](#).  
 8. Total VMT are the reduced VMT (from project design features) obtained from the CalEEMod model.

As indicated in [Table 6-4](#), the operation of project is estimated to consume approximately 4,245 gallons of fuel daily. However, the project would not result in any unusual characteristics that would result in excessive long-term operational fuel consumption. The project is located in close proximity to existing transit. Additionally, OSA PEIR Mitigation Measures GCC3, GCC8, and additional Mitigation Measure GHG-1 would reduce fuel consumption. OSA PEIR Mitigation Measure GCC3 requires prioritized parking for electric and alternative fuel vehicles and GCC8 requires signage for limitation of commercial vehicle idling. Additional Mitigation Measure GHG-1 would require the project to provide pedestrian connections to the off-site circulation network, include a trip reduction program, and implement a ride sharing program, which would in turn result in reduced fuel consumption. Therefore, incorporation of OSA PEIR Mitigation Measures GCC3, GCC8 and additional Mitigation Measure GHG-1 would result in fuel savings. Fuel consumption associated with vehicle trips generated by the project would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region.

### Other Non-Motorized Transportation Options

The project site is served by bus transit lines operated by the Orange County Transportation Authority (OCTA) along various roadways surrounding the project site including Portola Parkway, Pauling Drive, and Lake Forest Drive. OCTA Routes 82 and 206 run along Portola Parkway and also serve the business parks within a half mile of the project site. Routes 82 and 206 connect Lake Forest to surrounding locations within the City as well as regional locations throughout Orange County. The proximity of the project site to OCTA Routes would reduce the number of trips to and from the project. The proposed project would not result in the inefficient, wasteful, or unnecessary consumption of transportation energy.



## **Building Energy Demand**

With implementation of OSA PEIR Mitigation Measure GCC2 and additional Mitigation Measure GHG-1, the proposed project would be expected to demand approximately five million kilowatt hours (kWh) of electricity per year and approximately 28 million British Thermal units (BTU) of natural gas per year. These figures were obtained from Appendix 11.6, *Air Quality and Greenhouse Gas Data*.

The project would involve operations typical of residential and civic uses, requiring electricity and natural for typical lighting, climate control, and day-to-day activities. Additionally, as stated in Section 5.7, *Greenhouse Gas Emissions*, the proposed project would incorporate several energy efficiency measures, including exceeding Title 24 requirements, high efficiency lighting, shade trees, and high efficiency heating and cooling systems. Therefore, the project would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region.

## **Energy Efficiency Measures**

Title 24, California's Energy Efficiency Standards for Residential and Non-residential Buildings, was established by the California Energy Commission (CEC) in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption, and provide energy efficiency standards for residential and non-residential buildings. In 2010, the CEC updated Title 24 standards with more stringent requirements. The 2010 Standards are expected to substantially reduce the growth in electricity and natural gas use. Additional savings result from the application of the Standards on building alterations. For example, requirements for cool roofs, lighting, and air distribution ducts are expected to save about additional of electricity. These savings are cumulative, doubling as years go by.

Implementation of the project design features, OSA PEIR Mitigation Measures GCC2 through GCC8, and additional Mitigation Measure GHG-1 would result in reduced project-related GHG emissions. For example, OSA PEIR Mitigation Measure GCC2 would require the project to comply with the Tier 1 requirements of Title 24, Part 11 (California Green Building Standards Code) of the California Code of Regulations. Additionally, the project would implement the following efficiency measures required by additional Mitigation Measure GHG-1:

- Install Energy Star appliances.
- Install high efficiency heating ventilation and air conditioning (HVAC) equipment with a Seasonal Energy Efficiency Rating (SEER) of 13 or higher and thermostatic expansion (TXV) valve.
- Install vinyl frame windows with dual pane low emissivity glass.
- Reduce unnecessary outdoor lighting.

The project would adhere to all Federal, State, and local requirements for energy efficiency. The proposed project would not result in the inefficient, wasteful, or unnecessary consumption of building energy.



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