

Analysis of Long Term Effects 6.0

CEQA requires the discussion of the cumulative impacts, growth-inducing impacts, and long-term impacts of proposed projects. The following sections address these issues as they relate to implementation of the proposed General Plan Amendments.

Cumulative Impacts 6.1

Sections 15130(a) through 15130(e) of the State CEQA Guidelines require the contents of an EIR to include a discussion of cumulative impacts. Section 15355 of the State CEQA Guidelines defines a cumulative impact as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. Section 15130(b)(1) of the CEQA Guidelines identify two methods to determine the scope of projects for cumulative impact analysis:

List Method. A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency.

Projection Method. A summary of projections contained in an adopted general plan or related planning document or in a prior environmental document that has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the Lead Agency.

Because of the long-term scope of the proposed General Plan, the appropriate method for cumulative impact analysis is the projection method. This method is appropriate because the projections will serve as a guide to determine if the General Plan Amendments are consistent with the long-term population, employment, and household projections of the region. If the proposed General Plan Amendments are generally consistent with regional projections, then they would also generally be consistent with regional efforts to address environment problems such as air quality and traffic. Furthermore, preparing a list of cumulative development projects over the approximate 20-year period the proposed General Plan Amendments would cover is not feasible.

In support of the Regional Transportation Plan (RTP), Sustainable Communities Strategy (SCS), and other regional planning efforts, SCAG developed a series of growth projections utilizing a comprehensive analysis of fertility, mortality, migration, labor force, housing units, and local policies such as land use plans. Population, housing, and employment forecasts for Costa Mesa and neighboring communities, as well as the entire Orange County, are summarized in Table 6.1-1 (SCAG 2008-2035 Growth Forecast).

Table 6.1-1
SCAG 2008-2035 Growth Forecast

	Population			Households			Employment		
	2008	2035	% change	2008	2035	% change	2008	2035	% change
Costa Mesa	109,100	114,000	+4%	39,700	40,900	+3%	94,200	88,800	-6%
Newport Beach	84,200	90,300	+7%	38,400	40,700	+6%	82,500	77,700	-6%
Santa Ana	323,900	336,700	+4%	73,100	74,800	+3%	168,400	149,400	-11%
Orange County	2,989,000	3,421,000	+13%	987,000	1,125,000	+12%	1,624,000	1,779,000	+8%

Source: SCAG 2012 RTP/SCS

Aesthetics

As indicated in Table 6.1-1 above, Costa Mesa's projected population growth is small compared to the entire County. Additionally, only 88 acres of land (less than 4% of the total land area of the City) is undeveloped and would be

subject to new large-scale development; the majority of this land (the Segerstrom Home Ranch and Sakioka Lot 2 properties) already has a General Plan designation for urban development implemented via the North Costa Mesa Specific Plan. In other areas affected by the proposed General Plan Amendments, higher intensity development is proposed and could result in multiple-story structures (generally no more than four stories). However, proposed General Plan policies, implementing zoning regulations, and established City design review practices would ensure that any new development would be consistent with the existing character of the neighborhoods.

Future development within the planning area would be subject to the policies of the proposed General Plan Amendments and existing development standards. This includes policies and programs that support preserving neighborhood character, promoting quality design, and minimizing lighting impacts (Goals and Objectives CD-8-1 and 8.2, Policies CD-8.A to CD-8.I). The proposed policies and programs would ensure that cumulative aesthetic effects would not be considerable.

Agricultural Resources

Analysis of agricultural impacts in Section 4.2 of this EIR indicates that no impact would occur from conversion of the 65 acres of land in current agricultural use, as the conversion is already contemplated in the *North Costa Mesa Specific Plan* prepared in 1994. None of the existing agricultural land is designed as prime agricultural land or as important farmland. The proposed General Plan Amendments could not have a cumulatively considerable effect on agricultural resources.

Air Quality

The context for assessing cumulative air quality impacts is the South Coast Air Basin in terms of national and State criteria pollutant standards. The immediate vicinity of the project site is the context for localized levels of criteria pollutants and toxic emissions. As discussed in Section 4.3, the proposed General Plan Amendments would conflict with the 2012 regional AQMP prepared by SCAQMD, as the proposed project conflicts with SCAG's growth projections within the current City boundaries. Policies have been included to ensure that individual implementing projects would be consistent with the AQMP, emission thresholds, and SCAQMD rules. Proposed mixed-use/residential incentive higher-density development policies would implement an important regional strategy to encourage more compact urban/infill development in areas with good access to transit, which helps reduce total vehicle trips and average trip distances. This would help reduce vehicle emissions. The City would continue to evaluate short-term, construction-related impacts and long-term impacts for discretionary land use projects so that best available control measures can be applied, where warranted, to minimize the effects of individual development projects. Thresholds recommended by the SCAQMD would continue to be the preferred criteria for determining the level of impact significance at the project level of review.

The proposed General Plan Amendments would not authorize any particular project or any exemptions from or conflicts with the AQMP and would not result in any direct air quality impacts. The proposed General Plan Amendments have the potential to conflict with the 2012 Air Quality Management Plan because land use policy does not support the same level of population growth projected. Impacts at the program level would be significant and unavoidable. Therefore, long-term cumulative air quality impacts to the region could be considerable.

Biological Resources

The context for assessing cumulative impacts to biological resources includes sensitive species and their habitat throughout the planning and beyond. Future new development within the planning area, as would be changed by the General Plan Amendments, is restricted to infill properties, except for the Segerstrom Home Ranch and Sakioka Lot 2 properties, which are still in agricultural use. These properties have been and will continue to be designated for urban commercial use; the land use will not change until the landowners are ready to develop the lands. Since these lands have the potential to support burrowing owls, an owl assessment would have to be performed prior to

development. If habitat is found, the landowner would have to mitigate any loss of habitat in accordance with requirements of the California Dept. of Fish and Wildlife.

To address the long-term, cumulative loss of sensitive habitat and associated species in the planning area, the City would continue to implement existing federal and State regulations related to species and habitat protection and conservation. Considering the proposed General Plan consistency with the existing federal and State regulations, the project's contribution to the long-term loss of sensitive habitat and species would not be considerable. In particular, the General Plan provides for continued preservation and restoration of natural coastal habitat and landforms (Goal and Objective CON-1, Policies CON-1.A to E). The project's contribution to the future loss of biological resources would not be cumulatively considerable.

Cultural Resources

Since the planning area is almost entirely built out and development consists of infill, the chance of exposing hidden cultural resources is remote. Additionally, the existing and proposed General Plan policies provide an ongoing program to ensure proper identification, evaluation, and recovery and/or protection of potentially important historical, archaeological, and paleontological resources that may be disturbed during future development activities (Goal and Objective HCR-1, Policies HCR-1.A to F, HCR-2.A to D, HCR-3.A to C). Existing State law requires immediate County Coroner notification upon discovery of human remains and also notification of affected Native American tribes if the remains are suspected to be of Native American origin. Surrounding jurisdictions are subject to similar regulations, including coroner notification upon discovery of human remains. Long-term development throughout Costa Mesa has low potential to impact subsurface archaeological and/or paleontological remains.

With regard to historical properties, General Plan policies recognize the importance of preserving the City's heritage. With continued implementation of City policies and practices, the project's contribution to the future loss of cultural resources would not be cumulatively considerable.

Geology and Soils

Future development within the planning area would increase the number of people exposed to earthquake-induced ground-shaking and other seismically induced ground hazards, such as liquefaction. The context for assessing cumulative geologic impacts is statewide, considering the majority of California is subject to some type of geologic hazard. The specific types and extent of geologic hazards and constraints are due to localized conditions that are routinely addressed at the project-level of analysis. The proposed Safety Element includes policies related to risk management from natural disasters (Goal and Objective S-1, Policies S-1.A to H). Cumulative geologic hazards impacts would be less than significant.

Greenhouse Gas Emissions

Climate change is inherently a discussion of cumulative impacts due to its global impacts. Development that occurs as a result of the implementation of the proposed General Plan Amendments would include activities that emit greenhouse gases over the short and long terms. While one project could not be said to cause global climate change, individual projects contribute cumulatively to greenhouse gas emissions that result in climate change. Pursuant to proposed General Plan policies, CEQA, and SCAQMD regulations, individual development projects would be required to perform project-specific air quality analyses to determine potential impacts and mitigation measures to ensure individual projects would not result in short- or long-term climate change impacts (Goal and Objective CON-2, Policies CON-2.A to H, CON-4.E to G). In addition, due to the General Plan's inconsistency with SCAG's population growth projection for Costa Mesa, the potential still remains for an interference with the implementation of SCAG's 2012 RTP/SCS and CARB's Scoping Plan to achieve the required greenhouse gas reductions. Thus, long-term impacts with respect to climate change remain potentially significant and unavoidable.

Hazards and Hazardous Materials

Hazardous Materials

The context for assessing cumulative hazardous materials impacts involves existing and potential development within the planning area and those surrounding areas that could result in the transport, use, or disposal of hazardous materials or wastes. Typical uses would include industrial activities, utility providers, and waste management services. As development occurs within the planning area and surrounding jurisdictions, particularly in industrial land use designations, the use, transport, and disposal of hazardous materials and wastes would increase. Concurrently, as the population and employment base increase in the area, the potential for exposure of people to hazardous materials and wastes becomes greater.

Regulation of hazardous substances and wastes, including manufacturing, storage, processing, transportation, and disposal activities, would continue to be governed mainly by federal and State agencies. The County of Orange Fire Department would continue to conduct inspections and review hazardous materials storage and containment provisions at local businesses. The proposed General Plan Amendments would not conflict with any such authorities or standard practices involving responses to hazardous materials releases. Proposed General Plan land use and circulation policies would not provide for any new or more dangerous types of hazardous materials or wastes to be generated, stored, or transported within the planning area or outside of the planning area. The draft General Plan Safety Element contains policies regarding hazardous materials treatment, transport, handling, and disposal (Goal and Objective S-1, Policies S-2.M to R). The proposed General Plan Amendments would not result in a considerable contribution to the regional increase in the use, transport, disposal, or exposure to hazardous materials or wastes.

Wildfires

Most of the planning area is developed, and areas that are not developed do not contain highly flammable vegetation. The context for assessing wildfire hazards exists wherever the urban environment interfaces with wildlands. The only situation where this occurs is near Fairview Park and Talbert Regional Park. None of the existing urban development that abuts the parks is subject of to land use changes under the General Plan Amendments. Cumulative wildfire impacts can occur as development in fire hazard areas increase, not only because the number of people and structures exposed to wildfires is increasing but also because increased density supports the spreading of wildfires. With implementation of required fire codes, the project would not result in cumulatively considerable impacts related to wildfires.

Hydrology and Water Quality

Groundwater Levels

The planning area is served by the Mesa Consolidated Water District and Irvine Ranch Water District. Groundwater supplies 82% of the City's water needs. Future growth throughout the planning area and the region would increase the need for local and imported water supplies, contributing to cumulative strains on groundwater resources and the potential to substantially lower the water table. Expanding development typically hinders groundwater recharge as well because paving and other impervious surfaces prevent or redirect water from the soil, thereby reducing or eliminating percolation in areas.

As is indicated in Section 4.9 (Hydrology and Water Quality), the groundwater basin of concern is the Lower Santa Ana Groundwater Basin, which is managed by the Orange County Water District. The basin has been adjudicated to determine safe yield pumping limits to prevent over-drafting and substantial decrease in groundwater levels. As further indicated in Section 4.17 (Utilities and Service Systems), the proposed General Plan development capacity is anticipated to be within the anticipated water supply production pursuant to the Mesa Urban Water Management Plan

(UWMP) in accordance with the safe yield amounts. The proposed General Plan Amendments include policies and programs designed to enhance groundwater recharge in the planning area, primarily through conservation and modified drainage practices. In addition, the Conservation Element includes policies to promote water conservation and water recycling (Goal and Objective CON-3, Policies CON-3.A to H). The proposed General Plan Amendments would not have a cumulatively considerable impact on groundwater resources.

Drainage and Water Quality

Future growth in the planning area and the region would include a variety of land use forms, street improvements, and impervious surfaces that could increase the volume of urban runoff that would need to be captured and discharged into the City's municipal storm drain system, the County's regional flood control facilities, and ultimately into the Pacific Ocean. The proposed General Plan Amendments support low-impact development and appropriate drainage practices to prevent erosion, sedimentation, and flooding. This, coupled with existing regulations such as the National Discharge Elimination System (NPDES) and ongoing implementation of the City *Master Plan of Drainage*, would ensure that long-term changes to the drainage pattern do not substantially impact downstream water bodies or surrounding properties. The project's contribution to regional drainage and water quality impacts would not be cumulatively considerable.

Flooding

The proposed General Plan Amendments and the Municipal Code do not allow the placement of homes within flood zones. All significant structures built within the City would be subject to the Floodplain Management Regulations (Chapter 15.18 of the Municipal Code) that require hydrological evaluation to ensure that minimal diversion of floodwaters occurs and development standards are implemented to prevent flooding of on- and off-site uses. These regulations specifically prohibit construction of structures that could cause or divert floodwaters without appropriate site planning and structural design. Future development, as guided by the policies of the General Plan and the Municipal Code, would ensure there are no considerable cumulative flooding impacts to future homes or other structures (Goal and Objective S-1, Policies S-1.H to L).

Land Use and Planning

As discussed in Section 4.10, the proposed plan would not physically divide any established community within the planning area. Further, there are no new transportation corridors, major flood control facilities, or other elements of the proposed plan that could result in such impacts outside of the planning area. The project would not contribute to cumulative impacts involving physical division of established communities.

Costa Mesa and its unincorporated sphere of influence support a community of approximately 113,500 residents. The California Department of Finance projects an increase of approximately 2,000 residents by the year 2040, an increase of less than two percent. The small percent increase is due to the mature nature of the City that has very little land left for new development. The population increase is relatively small when compared to surrounding the County as a whole (see Table 6.1). On a small level, future growth in Costa Mesa would affect the sub-regional land use and transportation patterns and intensities, thereby contributing to cumulative effects on regional infrastructure, jobs/housing balance, air quality, etc.

Costa Mesa is a member city of SCAG, a Metropolitan Planning Organization (MPO) that prepares and administers regional growth management strategies and allocation of federal transportation funding for a six-county area, including Ventura, Los Angeles, San Bernardino, Riverside, Orange and Imperial Counties. As the designated MPO, SCAG is mandated by the federal government to prepare regional plans for transportation, growth management, hazardous waste management, and air quality. As cited in Table 6.1-1, SCAG projects a smaller population increase for Costa Mesa: 114,00 residents in 2035. With the proposed amended land use policy, the City projects a population of 131,650 in 2035. This projection will be included in SCAG's future updates to the RTP/SCS. Thus, in this light,

the project's contribution to regional cumulative land use impacts is not considerable due to the small increase relative to Orange County as a whole. Importantly, this growth will allow the City to accommodate its share of low-income housing development opportunities in accordance with the Regional Housing Needs Allocation.

Mineral Resources

Available data regarding mineral resources in the planning area indicate the presence of known or potential significant mineral resources including oil and aggregate. As addressed in Section 4.10 (Mineral Resources), the only active oil wells in the planning area are not affected by the proposed land use changes. The aggregate resource areas have not been determined for significance and for the most part are covered by existing urban uses. The proposed General Plan Amendments do not contain policies that conflict with the recovery of future mineral resources; therefore, significant mineral resource deposits, should they be unearthed in the future, would continue to be protected over the long term. The project would not contribute to a significant cumulative loss of mineral resources.

Noise

Implementation of the proposed General Plan Amendments would not generate new stationary noise sources outside of the planning area and would not, therefore, result in cumulatively considerable noise impacts involving stationary sources. Additional traffic volumes associated with future growth in the planning area would combine with regional traffic on major, inter-jurisdictional roads and highways leading to Costa Mesa that would contribute to cumulative effects involving roadway noise. However, as concluded in the noise study conducted for the project (Appendix D), the level of traffic noise attributable to Costa Mesa-based trips would not result in cumulatively considerable changes in roadway noise levels in the context of regional traffic growth.

Population and Housing

Under the General Plan Amendments, no permanent or temporary housing units would need to be or are proposed to be removed, relocated, or otherwise displaced to implement the proposed plan. This project would not contribute to cumulative impacts involving displacement of housing or persons since proposed General Plan policies allow for an increase in new housing construction relative to current conditions, and much of that housing could be constructed at densities of 30 units per acre or more, densities which the State Department of Housing and Community Development considers capable of incentivizing construction of housing for lower-income households (see discussion in Section 4.14 – Population and Housing). Based on the proposed General Plan land use plan and the intensity levels specified therein, the ultimate population, employment capacity, and number of dwelling units would increase when compared to existing conditions, as shown in Table 6.1-2 (General Plan Potential Capacity Comparison).

**Table 6.1-2
General Plan Potential Capacity Comparison**

	Existing Conditions -- 2015	Proposed General Plan Potential Capacity	Change
Dwelling Units	42,600	51,900	+11,300
Population	113,500	116,400	+2,900
Employees	87,100	93,600	+6,500

Rates of growth would occur in response to a variety of regional and national socioeconomic factors, including birth rates, migration from other states and other countries, land values, employment opportunities, interest rates, housing supply, demand and pricing, and broad regional and national economic conditions. Growth forecasts have been developed by SCAG and were summarized in Table 6.1-1. The proposed General Plan Amendments can accommodate a population of approximately 131,650 residents. By increasing housing development capacity above

that projected by regional agencies, the City would be able to accommodate projected growth within the City and additional demand from the region, particularly for housing at higher densities that could be affordable housing.

Proposed General Plan land use policy could accommodate an employment level of 93,600 jobs, which would meet and exceed its anticipated employment growth of 88,800 by 2035 projected by SCAG (Table 6.1-1). While the capacity for jobs growth under the proposed General Plan Amendments exceeds that projected in regional plans, the effect is not cumulatively considerable since the sites designated for jobs-related uses by the General Plan Amendments are already so designated; the proposed project modestly increases capacity and thus would not induce growth directly or indirectly.

Public Services

The context for analyzing impacts related to public services is the relationship between local and regional population and urban growth and the concurrent need of individual service providers to expand facilities to meet the increasing demand. The draft General Plan Safety Element includes policies designed to ensure that appropriate levels of service are provided by requiring funding, facilities expansion, and service enhancements commensurate with long-term development in the planning area (Goal and Objective S-2, Policies S-2.A to L). The General Plan Amendments would not result in a considerable contribution to cumulative impacts associated with the expansion of and need for public services.

Recreation

Local and community recreation resources are provided for the benefit of the immediate vicinity and generally are not subject to cumulative impacts. The context for assessing cumulative impacts to parks and recreation resources are at the regional level, where multi-jurisdictional growth would put pressure on the availability and condition of parks and recreation facilities. Incremental residential growth in the planning area and in its outskirts would increase the demand for local, community, and regional recreation resources. Regional facilities would be required to expand to meet growing demand as the planning area and in Orange County. The proposed General Plan land use plan does not allocate specific land for parks and recreation uses, but includes policies for collecting fees from new development to develop and maintain community park facilities (Policies LU-3.A.3 and OSR-1.H). Also, the General Plan includes a policy directing the City to target parks in underserved neighborhoods, as identified in the Open Space and Recreation Element. As was detailed in Section 4.15, given the City's record of commitment to park facilities maintenance and the considerable acreage of regional and institutional parkland nearby (Fairview Park and Talbert Regional Park, school playgrounds) that supplement City-owned parks, the potential impact of the General Plan Amendments on recreation is not considered significant. Considered cumulatively, the lack of community parks in the Planning Area could cumulatively lead to impacts on the regional recreation facilities to the degree that other communities rely on such facilities to make up for the lack of community-based facilities.

Transportation and Traffic

The context for assessing the cumulative contribution of the proposed project to conditions on the local and regional transportation network is addressed through the assumptions inherent in the regional traffic model used to assess project-specific impacts (Appendix C of this EIR). Future traffic volumes were based on buildout of the proposed General Plan and were determined using the Costa Mesa Traffic Model (CMTM). As noted in the traffic study, the CMTM is derived from the Orange County Transportation Analysis Model, Version 3.4 (OCTAM 3.4), which is maintained by the Orange County Transportation Authority (OCTA), and has been developed according to OCTA's Orange County sub-area traffic modeling guidelines. The CMTM has been certified by the OCTA as being consistent with the OCTAM regional model. Thus, assumptions regarding cumulative growth, meaning future traffic on the road network not attributable to the proposed project, are inherent in the analysis.

The results of the traffic analysis indicate that the Costa Mesa Master Plan of Streets and Highways, which the City will ensure is consistent with the Orange County Master Plan of Arterial Highways, and the planned and funded future roadway and intersection improvements described Section 4.16 of this EIR will adequately accommodate projected future traffic volumes associated the proposed General Plan Amendments and background cumulative traffic volumes. Cumulative impacts would be less than significant.

Utilities and Service Systems

The context for assessing cumulative impacts to utilities and service systems varies depending on the service area and capacity of the utility which may vary from the planning area, Orange County, or (in terms of water) even statewide. Long-term maintenance and potential expansion of water, wastewater, flood control, and solid waste disposal facilities will be required as the region continues to grow and existing infrastructure ages. Utility providers currently impose development impact fees, connection fees, and service fees designed to maintain and incrementally expand infrastructure to meet existing and growing demand. Future development in the project vicinity and throughout the region would be subject to such fees in accordance with applicable ordinances and service master plans. The proposed General Plan Amendments would not have a cumulatively considerable impact on these facilities because the General Plan Amendments include policies that support water conservation, wastewater reuse, and recycling that would reduce impacts on regional utilities (Goals and Objectives CON-2 and 3). These policies, coupled with existing regulations, would provide for cumulatively considerable impacts to utilities and service systems to be less than significant.

Growth-Inducing Impacts 6.2

Growth-inducing effects include ways in which the proposed General Plan Amendments could foster economic or population growth, either directly or indirectly, in the surrounding environment. A prime example is a major infrastructure project or road extension which provides urban service capacities to currently undeveloped areas, thus removing an obstacle to population growth.

The proposed General Plan Amendments are specifically intended to provide for the orderly growth within the planning area to achieve economic, environmental, and quality of life benefits. Nothing in the General Plan Amendments propose new infrastructure systems to facilitate growth of undeveloped areas that were not proposed in the existing General Plan. There are no proposed policies, regulations, or ordinances that are part of the project or implied by the General Plan Amendments that would encourage or enable significantly higher levels of growth than currently envisioned. The General Plan Amendments include the Residential Incentive Overlay, which would increase allowed residential densities in Costa Mesa to 40 units per acre on targeted properties along transit-oriented routes. This policy may be considered growth inducing as it may incentivize the private redevelopment of commercial properties. However, infrastructure currently exists to support the level of growth. Also, the planning of denser development near transit is consistent with City, regional, and State policies—implemented in part by the provisions of Senate Bill 375—to encourage integration of land use and transit planning.

Projects permitted pursuant to amended land use policy would provide for additional housing for all income levels, create a better balance of residential and non-residential uses in the community, promote organized and pedestrian-friendly commercial development, and protect natural resources. Implementation of the General Plan Amendments would result in a more inclusive community, maintain a balance between housing and employment, and foster a stable economic base and diverse employment opportunities.

Energy Conservation 6.3

Introduction

This energy conservation analysis has been prepared pursuant to California Public Resources Code Section 21100(b)(3) and Appendix F of the CEQA Guidelines.

The purpose of this analysis is to assess the short- and long-term energy demand of the proposed project, identify proposed and required conservation measures, and assess the extent to which the proposed project would conserve energy. Project energy demand would not be wasteful, inefficient, or unnecessary if it does not increase energy demand over typical construction and operating requirements.

Appendix F of the State CEQA Guidelines states that the goal of assessing energy conservation in a project is to ensure the wise and efficient use of energy. Energy efficiency is achieved by decreasing energy consumption, decreasing reliance on fossil fuels, and increasing reliance on renewable energy sources. The guidelines for analysis of energy conservation provided in Appendix F of the State CEQA Guidelines are provided herein.

CEQA Appendix F: Energy Conservation

I. Introduction

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

- (1) decreasing overall per capita energy consumption,*
- (2) decreasing reliance on fossil fuels such as coal, natural gas and oil, and*
- (3) increasing reliance on renewable energy sources.*

In order to assure that energy implications are considered in project decisions, the California Environmental Quality Act requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy (see Public Resources Code section 21100(b)(3)). Energy conservation implies that a project's cost effectiveness be reviewed not only in dollars, but also in terms of energy requirements. For many projects, cost effectiveness may be determined more by energy efficiency than by initial dollar costs. A lead agency may consider the extent to which an energy source serving the project has already undergone environmental review that adequately analyzed and mitigated the effects of energy production.

II. EIR Contents

Potentially significant energy implications of a project shall be considered in an EIR to the extent relevant and applicable to the project. The following list of energy impact possibilities and potential conservation measures is designed to assist in the preparation of an EIR. In many instances specific items may not apply or additional items may be needed. Where items listed below are applicable or relevant to the project, they should be considered in the EIR.

A. Project Description may include the following items:

- 1. Energy consuming equipment and processes which will be used during construction, operation and/or removal of the project. If appropriate, this discussion should consider the energy intensiveness of materials and equipment required for the project.*

2. *Total energy requirements of the project by fuel type and end use.*
 3. *Energy conservation equipment and design features.*
 4. *Identification of energy supplies that would serve the project.*
 5. *Total estimated daily vehicle trips to be generated by the project and the additional energy consumed per trip by mode.*
- B. *Environmental Setting may include existing energy supplies and energy use patterns in the region and locality.*
- C. *Environmental Impacts may include:*
1. *The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.*
 2. *The effects of the project on local and regional energy supplies and on requirements for additional capacity.*
 3. *The effects of the project on peak and base period demands for electricity and other forms of energy.*
 4. *The degree to which the project complies with existing energy standards.*
 5. *The effects of the project on energy resources.*
 6. *The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.*
- D. *Mitigation Measures may include:*
1. *Potential measures to reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, maintenance and/or removal. The discussion should explain why certain measures were incorporated in the project and why other measures were dismissed.*
 2. *The potential of siting, orientation, and design to minimize energy consumption, including transportation energy, increase water conservation and reduce solid waste.*
 3. *The potential for reducing peak energy demand.*
 4. *Alternate fuels (particularly renewable ones) or energy systems.*
 5. *Energy conservation which could result from recycling efforts.*
- E. *Alternatives should be compared in terms of overall energy consumption and in terms of reducing wasteful, inefficient and unnecessary consumption of energy.*
- F. *Unavoidable Adverse Effects may include wasteful, inefficient and unnecessary consumption of energy during the project construction, operation, maintenance and/or removal that cannot be feasibly mitigated.*
- G. *Irreversible Commitment of Resources may include a discussion of how the project preempts future energy development or future energy conservation.*
- H. *Short-Term Gains versus Long-Term Impacts can be compared by calculating the project's energy costs over the project's lifetime.*
- I. *Growth Inducing Effects may include the estimated energy consumption of growth induced by the project.*

Energy Demand

Short-term energy demand would result from development construction pursuant to implementation of the proposed General Plan Amendments. This would include energy demand from worker and vendor vehicle trips and construction equipment usage. Long-term energy demand would result from operation of various development types pursuant to implementation of the proposed General Plan Amendments. This would typically include energy demand from vehicle trips, electricity and natural gas usage, and water and wastewater conveyance. This section generally describes the energy needs of these activities.

Construction Activities

The proposed General Plan Amendments would not directly result in construction of any development or infrastructure; however, future development supported by the policies of the General Plan Amendments would result in short-term energy demand. Short-term energy demand would occur during site preparation, grading, building construction, paving, and painting activities associated with new development. Energy demand results from use of equipment, worker, vendor, and hauling trips.

Operational Activities

The proposed General Plan Amendments would not directly result in operation of any development or infrastructure; however, future development supported by the policies of the General Plan Amendments would result in long-term energy demand. Long-term energy demand would occur primarily from mobile sources, electricity and natural gas use, and water use and wastewater generation.

Mobile Sources

Mobile source energy demand primarily is associated with individual vehicle energy demand and therefore gasoline and diesel fuel primarily as well as electricity increasingly for electric vehicles. Mobile source energy demand may also be associated with public transportation such as buses and trains associated with natural gas, diesel fuel, or electricity. Of all operational energy demands, the proposed General Plan Amendments seek most to reduce the energy demand of mobile sources through improved land use and circulation network planning to reduce reliance on individual vehicles and promote use of public transportation as well as non-motorized transportation such as walking and biking. By seeking to reduce the amount of individual vehicle usage, the proposed General Plan Amendments would achieve reductions in mobile source operational energy demand.

Electricity and Natural Gas Use

Electricity and natural gas would be required to provide energy to the proposed development of residential, commercial, industrial and other land uses provided for in the proposed General Plan Amendments. All new development and redevelopment would be subject to current California Building Code (CBC) requirements for building energy efficiency. In addition, the proposed General Plan Amendments encourage energy conservation for development, including facilitating green building standards and LEED (or similar) certification. Other opportunities would also continue to be available to existing and new development to incorporate energy saving features or renewable energy sources into buildings.

Water and Wastewater

Electricity would indirectly be required to treat and convey water to and convey wastewater away from development that implements the proposed General Plan Amendments. Pursuant to the City's landscape irrigation requirements and the Water Conservation in Landscaping Act, outdoor water use would continue to be regulated for new development to plan landscaping accordingly and conserve water.

Energy Conservation

The project would be subject to state water efficiency regulations pursuant to the CBC that would reduce long-term project energy demand. These requirements would reduce wasteful, inefficient, and unnecessary consumption of energy over the long-term.

California Building Code

Pursuant to the 2010 CBC CALGREEN requirements, the project would be subject to the following requirements (CBSC 2011):

- 20 percent reduction in water demand (5.303.2)
- 20 percent reduction in wastewater discharges (5.303.4)

Reduce Water and Wastewater Demand (5.303.2 & 5.303.4)

The minimum 20 percent reduction in water demand and wastewater discharges would decrease indoor water demand. This would result in a concurrent reduction in energy demand to supply, treat, and convey water and wastewater.

Conclusion

The conservation of energy would result from implementation of the California Building Code, the City's landscape irrigation regulations, Regional Greenhouse Gas Inventory and Reduction Plan, and General Plan policies seeking to reduce individual vehicle use. With implementation of existing regulations and proposed policies, energy demand for development that implements the proposed General Plan Amendments would not be wasteful, inefficient, or unnecessary.

Significant Irreversible Environmental Changes 6.4

The General Plan Amendments provide a policy and regulatory framework to guide future growth into both infill sites and undeveloped areas. Once land is developed with a certain type of land use, reversion to open space for conservation, resource management, or other purposes is highly unlikely.

An irreversible commitment of non-renewable natural resources is inherent in any development project, or in the case of the General Plan Amendments, numerous development projects over a long period of time. Such resources would include, but are not limited to, lumber and other related forest products; sand and gravel, native topsoil, a variety of metals used in the manufacture of building materials such as steel, copper piping and wiring, etc., along with hydrocarbon-based fuel sources that require extraction and chemical alteration and/or combustion of natural resources such as oil, natural gas, coal, and shale.

Implementation of the General Plan Amendments represent a long-term commitment to the consumption of energy for electricity, water and space heating, water supply and treatment, industrial processes, as well as fuels to power various modes of mechanized transportation. Impacts associated with long-term energy consumption would depend on the energy sources and methods of producing energy. Typical hydrocarbon-based sources produce higher volumes of various criteria air pollutants and greenhouse gasses than renewable energy sources such as wind and solar power or alternative fuel sources such as biodiesel and cellulosic ethanol. To the extent that hydrocarbon based fuel sources are replaced with less polluting, renewable sources; the irreversible commitment of non-renewable resources would be reduced.

Unavoidable Significant Environmental Impacts 6.5

The analyses of the various environmental issues presented in Sections 4.1 to 4.17 conclude that the proposed General Plan Amendments would not result in any significant environmental impacts that cannot be avoided or reduced to less than significant through some mitigation strategy or compliance with an existing or proposed regulatory program with the exception of those impacts dealing with:

- air quality
- greenhouse gas emissions

For both of the above issues, the proposed General Plan Amendments have the potential to conflict with the 2012 Air Quality Management Plan and with the 2012 SCAG RTP/SCS and CARB Scoping Plan (and thereby not attain GHG reductions targets) because land use policy does not support the same level of population growth projected.

References

California Building Standards Commission. 2011 California Building Code. January 2011.