

## 5.16 - Energy Conservation

### 5.16.1 - Introduction

This section describes the existing energy resources that are provided to the City of Fresno Planning Area as well as within the State. Information used for the preparation of this section includes data from the General Plan Update Resource Conservation and Resilience Element, Pacific Gas & Electric Company (PG&E), and California Department of Transportation. Potential impacts associated with energy conservation are assessed.

### 5.16.2 - Environmental Setting

#### Study Area for Project Impacts

The study area for project impacts regarding energy is the City of Fresno Planning Area.

#### Study Area for Cumulative Impacts

The study area for the analysis of cumulative energy impacts is the Pacific Gas and Electric's (PG&E) service area that spans approximately 70,000 square miles from Eureka in the north to Bakersfield in the south and from the Pacific Ocean in the west to the Sierra Nevada in the east.

#### Energy Resources

As discussed in the Resource Conservation and Resilience Element of the proposed General Plan, Pacific Gas and Electric (PG&E) provides almost all the energy for the City of Fresno Planning Area. PG&E provides electricity and natural gas services throughout its service area.

#### *Electricity*

PG&E identifies service territories for their electric transmission system. The Planning Area is located within the Greater Fresno Area service territory. This service area interconnects to the bulk PG&E transmission system by 12 transmission circuits. They include nine 230 kV lines, three 500/230 kv electrical banks, and one 70 kV line. This transmission system connects to the Gates substation in the south, Moss Landing in the west, Los Banos in the northwest, Bellota in the northeast, and Templeton in the southwest. The Greater Fresno area generates approximately 3,987 Megawatts (MW) of electricity through thermo, hydro, solar, and biomass facilities. The largest electrical generating facility is the Helms Pumped Storage Plant that pumps water up and down between two reservoirs located at different elevations. This facility produces and stores up to 1,212 MW of electricity that represents approximately 30 percent of the electricity produced in the Greater Fresno area.

Based on electrical demand factors that were provided by PG&E as shown in Table 5.16-1, the approximate residential demand is approximately 2,610 kWh per person per year and the non-residential demand is approximately 7,503 kWh per employee per year. Based on the Year 2010 residential population of 545,000 and an employment population of 209,261 for the Planning Area, the residential population would result in a demand for approximately 1,422 million kWh/year and

the non-residential demand would be approximately 1,570 million kWh/year for a total of 2,992 million kWh/year.

**Table 5.16-1: Year 2010 Electrical Demand within City of Fresno Planning Area**

Use	Population or Employment	Demand Factor (kWh/person/year) <sup>1</sup>	Total (million kWh/year)
Residential	545,000 <sup>2</sup>	2,610	1,422
Non-Residential	209,261 <sup>3</sup>	7,503	1,570
Total			2,992

<sup>1</sup> Pacific Gas & Electric, 2012.  
<sup>2</sup> Obtained from Table 3-3 in Section 3, Project Description.  
<sup>3</sup> Fehr & Peers, 2013.  
Source: FirstCarbon Solutions 2014

**Natural Gas**

PG&E’s natural gas system encompasses approximately 70,000 square miles in Northern and Central California. Approximately 90 percent of the natural gas supply for PG&E is from out-of-state imports. The primary pipeline that extends through California includes Lines 400 and 401 consisting of 725 miles of 36-inch and 42-inch pipelines. These pipelines extend from the TransCanada’s system that originates in Canada and extends through Malin, Oregon. In addition, there is Line 300 that consists of 1,004 miles of 34-inch pipeline that extends from four interstate pipelines through Topock, Arizona. The natural gas system includes various storage facilities and compressor stations along the transmission lines.

Based on natural gas demand factors that were provided by PG&E as shown in Table 5.16-2, residential demand is approximately 138 therms per person per year and the non-residential demand is approximately 403 therms per employee per year. Based on a 2010 residential population of 545,000 and an employment population of 209,261 for the Planning Area, the residential population would result in a natural gas demand for approximately 75 million therms per year and the non-residential demand would be approximately 84 million therms per year for a total of approximately 159 therms per year.

**Table 5.16-2: Year 2010 Natural Gas Demand within City of Fresno Planning Area**

Use	Population or Employment	Demand Factor (therms/person/year) <sup>1</sup>	Total (million therms/year)
Residential	545,000 <sup>2</sup>	138	75
Non-Residential	209,261 <sup>3</sup>	403	84
Total			159

<sup>1</sup> Pacific Gas & Electric, 2012.  
<sup>2</sup> Obtained from Table 3-3 in Section 3, Project Description.  
<sup>3</sup> Fehr & Peers, 2013  
Source: FirstCarbon Solutions 2014

**Petroleum**

According to the U.S. Energy Information Administration, California is one of the top producers of crude oil in the nation, accounting for almost one-tenth of the production in the United States. Drilling operations are concentrated in the San Joaquin basin in the southern half of the Central Valley and drilling occurs offshore in both State and Federal waters. California ranks third in the U.S. in petroleum refining capacity and accounts for more than one-tenth of the total U.S. capacity (U.S. Energy Information Administration, 2014)

California motorists are required to use a special motor gasoline blend call California Clean Burning Gasoline. In 2004, California completed a transition from methyl tertiary butyl-ether (MTBE) to ethanol as a gasoline oxygenate additive, making California the largest ethanol fuel market in the U.S. There are four ethanol production plants in central and southern California, but most of California’s ethanol supply is transported by rail from corn-based producers in the Midwest.

California’s petroleum consumption for 2012 was approximately 620 million barrels, accounting for approximately 9.2 percent of total U.S. consumption, (motor vehicle gasoline accounted for approximately 29 million barrels or 9.4 percent of total U.S. consumption (Voegelé, 2013). Based on the last version of the California Motor Vehicle Stock, Travel and Fuel Forecast, which was in 2008, the total vehicle miles traveled in California in 2010, was approximately 346 billion, and the total vehicle miles traveled in the County of Fresno in 2010 was approximately 8.576 billion (California Department of Transportation, 2009).

According to the 2008 California Motor Vehicle Stock, Travel and Fuel Forecast, the average fuel consumption by all classes of motor vehicles was projected to be 18.200 miles per gallon in 2010 and 18.754 miles per gallon in 2030.

Based on the vehicle miles traveled within the Planning Area (see Appendix F-1, Greenhouse Gas Emissions Reduction and Modeling Results), the vehicle miles traveled per year for 2010 was approximately 2.987 billion miles by gasoline powered vehicles and 358 million miles by diesel-powered vehicles as shown in Table 5.16-3. Based on an average of 18.2 miles per gallon of gasoline or diesel (average of all vehicle types), approximately 164 million gallons of gasoline and approximately 20 million gallons of diesel were consumed in 2010.

**Table 5.16-3: Year 2010 Fuel Consumption within City of Fresno Planning Area**

Vehicle Fuel	Vehicle Miles Traveled Per Year (in millions) <sup>1</sup>	Average Miles Per Gallon <sup>2</sup>	Total (million gallons/year)
Gasoline	2,987 <sup>3</sup>	18.2	164
Diesel	358 <sup>4</sup>	18.2	20
Total			184

<sup>1</sup> Appendix -, Greenhouse Gas Emissions

<sup>2</sup> California Department of Transportation, June 2009

<sup>3</sup> Derived from the estimated total vehicle miles per year for 2010 (approximately 3,344 million miles per year) and the

Vehicle Fuel	Vehicle Miles Traveled Per Year (in millions) <sup>1</sup>	Average Miles Per Gallon <sup>2</sup>	Total (million gallons/year)
estimated percentage of vehicle miles traveled by a vehicle using gasoline (89.3 percent). <sup>4</sup> Derived from the estimated total vehicle miles per year for 2010 (approximately 3,344 million miles per year) and the estimated percentage of vehicle miles traveled by a vehicle using gasoline (10.7 percent). Source: FirstCarbon Solutions 2014			

### 5.16.3 - Regulatory Setting

Federal and state agencies regulate energy use and consumption through various means and programs. On the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. Generally, federal agencies influence and regulate transportation energy consumption through establishment and enforcement of fuel economy standards for automobiles and light trucks, through funding of energy related research and development projects, and through funding for transportation infrastructure improvements. On the state level, the California Public Utilities Commission (CPUC) and the California Energy Commission (CEC) are two agencies with authority over different aspects of energy.

The CPUC regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies and serves the public interest by protecting consumers and ensuring the provision of safe, reliable utility service and infrastructure at reasonable rates, with a commitment to environmental enhancement and a healthy California economy (California Public Utilities Commission, 2012).

The California Energy Commission is the state's primary energy policy and planning agency. The CEC forecasts future energy needs, promotes energy efficiency, supports energy research, develops renewable energy resources and plans for/directs state response to energy emergencies (California Energy Commission, 2012). Some of the more relevant federal and state energy-related laws and plans are discussed below.

#### Federal Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. This Act enabled Congress to establish the first fuel economy standards for on-road motor vehicles in the United States. In compliance with this Act, the National Highway Traffic and Safety Administration has the responsibility for establishing additional vehicle standards and revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 miles per gallon and since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 miles per gallon. Currently, heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not subject to fuel economy standards. Compliance with federal fuel economy standards is determined based on the basis of each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, administered by U.S. EPA, was

created to determine vehicle manufacturers' compliance with the fuel economy standards. The CAFE value is calculated by the U.S. EPA for each manufacturer based on city and highway fuel economy test results and vehicle sales. Using the information generated under the CAFE program, the United States Department of Transportation has the authority to assess penalties for noncompliance (South Coast Air Quality Management District, 2012).

### **Energy Policy Act of 2005**

This Act addresses energy efficiency; renewable energy requirements; oil, natural gas and coal; alternative-fuel use; tribal energy, nuclear security; vehicles and vehicle fuels, hydropower and geothermal energy, and climate change technology. The Act provides revised annual energy reduction goals (two percent per year beginning in 2006), revised renewable energy purchase goals, federal procurement of Energy Star or Federal Energy Management Program-designated products, federal green building standards, and fuel cell vehicle and hydrogen energy system research/demonstration (South Coast Air Quality Management District, 2012).

### **Corporate Average Fuel Economy (CAFE) Program**

The Corporate Average Fuel Economy (CAFE) Program was enacted by Congress in 1975. The purpose of the program is to reduce the consumption of energy by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) has set standards to increase CAFE levels rapidly over the next several years, which will improve the nation's energy security and save consumers money on fuel (NHTSA, 2012). The United States' CAFE Program is administered by the United States Environmental Protection Agency (U.S. EPA). The program was created to determine vehicle manufacturers' compliance with the fuel economy standards. The CAFE value for each manufacturer is calculated based on city and highway fuel economy test results and vehicle sales. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the U.S. The United States Department of Transportation has the authority to assess penalties for non-compliance, based on information that is generated under the CAFE program (South Coast Air Quality Management District, 2012).

### **Energy Independence and Security Act of 2007 (EISA)**

In December 2007 the Energy Independence and Security Act of 2007 was signed into law. The objectives of the Act are to stage the United States for greater energy independence and security, increase the production of clean renewable fuels, protect consumers, increase the efficiency of products, buildings and vehicles, promote greenhouse gas research, improve the energy efficiency of the Federal government, and improve vehicle fuel economy (South Coast Air Quality Management District, 2012).

The Act contains a renewable fuel standard that requires 36 billion gallons of ethanol per year by 2022, and corn ethanol is limited to 15 billion gallons. Additionally, this Act establishes appliance energy efficiency standards for: boilers, dehumidifiers, dishwashers, clothes washers, external power supplies, commercial walk-in coolers and freezers, federal buildings; lighting energy efficiency

standards for general service incandescent lighting in 2012; and standards for industrial electric motor efficiency (South Coast Air Quality Management District, 2012).

### **Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)**

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) was enacted to promote the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs), such as Fresno COG, were to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process for specific projects would then address these policies. Another requirement was to consider the consistency of transportation planning with federal, state, and local energy goals. Through this requirement, energy consumption was expected to become a decision criterion, along with cost and other values that determine the best transportation solution.

### **The Transportation Equity Act for the 21st Century (TEA-21)**

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation, discussed above. The Transportation Equity Act for the 21st Century was enacted June 1998 and authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 1998-2003 period.

### **The TEA 21 Restoration Act**

The TEA 21 Restoration Act, enacted July 1998, provided technical corrections to the original law. TEA-21 builds on the initiatives established in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). TEA-21 provides initiatives to address the goals of improving safety, protecting and enhancing communities and the natural environment, and advancement of America's economic growth and competitiveness through efficient and flexible transportation (U.S. Department of Transportation, 2012).

### **Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21)**

On July 6, 2012, President Obama signed into law P.L. 112-141, the Moving Ahead for Progress in the 21st Century Act (MAP-21). Funding surface transportation programs at over \$105 billion for fiscal years (FY) 2013 and 2014, MAP-21 is the first long-term highway authorization enacted since 2005. MAP-21 provides funds and a policy and programmatic framework to guide development of the country's transportation infrastructure. MAP-21 creates a program to address improving safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and freight movement, protecting the environment, and reducing delays in project delivery.

### **California Solar Initiative**

In January 2006, the California Public Utilities Commission (CPUC) approved the California Solar Initiative (CSI), which provides \$2.9 billion in incentives between 2007 and 2017. The CPUC oversees

the California Solar Initiative, and includes a \$2.5 billion program for commercial and existing residential customers, funded through revenues and collected from gas and electric utility distribution rates. Additionally, the California Energy Commission (CEC) will manage \$350 million targeted for new residential building construction, using funds, which were already allocated to the CEC to foster renewable projects between 2007 and 2011 (South Coast Air Quality Management District, 2012).

### **State of California Energy Action Plan**

The CEC initially adopted the Energy Action Plan in 2003, which identified emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The CEC's goal for the Energy Action Plan is to ensure that adequate, reliable, and reasonably-priced electrical power and natural gas supplies, including prudent reserves, are achieved and provided through policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers (California Energy Commission, California Public Utilities Commission, and Consumer Power and Conservation Financing Authority, 2003). The plan called for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identified a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

### **Integrated Energy Policy Report**

In 2002, Senate Bill 1389 was passed that requires the California Energy Commission to prepare the Integrated Energy Policy Report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources, protect the environment, ensure reliable, secure, and diverse energy supplies. The report is required to be prepared every two years. Information from the Energy Action Plan was incorporated into this policy report and the Energy Action Plan was no longer updated.

### **Title 24, Energy Efficiency Standards**

Title 24, which was promulgated by the CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption, provides energy efficiency standards for residential and nonresidential buildings.

First adopted in 1977, the Standards have been periodically updated approximately on a three-year cycle. The most recent update, the 2013 Building Energy Efficiency Standards, went into effect on July 1, 2014. A copy of the 2013 Energy Efficiency Standards may be reviewed on-line at <http://www.energy.ca.gov/2012publications/CEC-400-2012-004/CEC-400-2012-004-CMF-REV2.PDF>.

According to the CEC, reducing energy use has been a benefit to all. Building owners save money, Californians have a more secure and healthy economy, the environment is less negatively impacted, and our electrical system can operate in a more stable state. The 2013 Standards (for residential and nonresidential buildings) are expected to reduce the growth in electricity use by 613 gigawatt-hours

per year (GWh/yr) and reduce the growth in natural gas use by 10 million therms per year (therms/yr).

### City of Fresno 2025 General Plan Resource Conservation Element

**G-9-a Policy.** The city shall continue its leadership role in energy conservation through its own facilities and operations.

- The city shall continue its existing beneficial energy conservation programs.
- All new construction and major renovations in municipal buildings shall conform to applicable Title 24 energy standards.

**G-9-b Policy.** The city shall periodically consult with utilities and regulatory, and state-level planning agencies to refine service demand estimates and to facilitate area-wide energy distribution.

**G-9-c. Policy.** Through its regulation of land use planning and development, the city will provide for energy conservation.

- Current energy-efficient planning and construction guidelines will be maintained.
- Environmental review of development projects (including changes in land use designations) will include a description of energy consumption and conservation features that are, or feasibly could be, incorporated into these projects.
- Siting, building orientation, structural design, and landscaping of a proposed land use or development project will be considered in relation to energy efficiency. Energy efficiency will be a factor that is considered in the decision process for projects.
- In regard to the Solar Rights and Solar Shade Acts of 1978, the city shall observe provisions in state law regarding solar access and shall continue to study whether further legislation is necessary.
- At the interface of commercial or industrial and residential land uses, or the interface of multi-family with single-family residential land uses, height restrictions and/or setbacks should be used at the common boundary to ensure solar access to structures on both sides of the boundary.
- Updated information on California Title 24 and other energy conservation guidelines and measures will be made available to staff and the area construction industry.

## 5.16.4 - Thresholds of Significance

### CEQA Thresholds

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in significant adverse impacts on the environment. The criteria used to determine the significance of an energy conservation impact is based on Appendix F of the State CEQA Guidelines as identified

below. Accordingly, energy conservation impacts associated with the proposed project are considered significant if the project would:

- a) Result in the inefficient, wasteful and unnecessary consumption of energy? (See Energy Consumption, Impact EC-1)

## 5.16.5 - Project Impacts and Mitigation Measures

### Energy Consumption

**Impact EC-1            The project would not result in the inefficient, wasteful and unnecessary consumption of energy.**

#### ***Project Specific Impact Analysis***

Development in accordance with the proposed General Plan and Development Code Update would increase the population within the Planning Area from 545,000 persons to a projected 970,000 persons as well as result in an approximately 88 percent increase in non-residential employment. This increase in development will increase the demand for electricity and natural gas and increase the consumption of fuel by motor vehicles.

#### *Electricity*

As shown in Table 5.16-4, the approximate residential demand for electricity at buildout is projected to be approximately 2,532 million kWh/year and the non-residential demand is projected to be approximately 2,950 million kWh/year for a total of approximately 5,482 million kWh/year. Based on a 2010 consumption of approximately 2,992 kWh per year, development in accordance with the General Plan and Development Code Update would result in an incremental increase of approximately 2,490 million kWh/year within the Planning Area. This estimate was based on electrical demand factors for residential and non-residential uses (i.e., persons and employees) identified in Table 5.16-1 and Table 5.16-4.

**Table 5.16-4: Buildout (Year 2056) Electrical Demand within City of Fresno Planning Area**

Use	Population or Employment	Demand Factor (kWh/person/year) <sup>1</sup>	Total (million kWh/year)
Residential	970,000 <sup>2</sup>	2,610	2,532
Non-Residential	393,200 <sup>3</sup>	7,503	2,950
Total Year 2056 Electrical Demand			5,482
2010 Electrical Demand			2,992
Incremental Increase in Electrical Demand			2,490

<sup>1</sup> Pacific Gas & Electric, 2012.

<sup>2</sup> Obtained from Table 3-3 in Section 3, Project Description.

<sup>3</sup> Fehr & Peers, 2013.

Source: FirstCarbon Solutions 2014

*Natural Gas*

As shown in Table 5.16-5, the approximate residential demand for natural gas at buildout is projected to be approximately 134 million therms/year and the non-residential demand is projected to be approximately 158 million therms/year for a total of approximately 292 million therms/year. Based on a 2010 consumption of approximately 159 million therms per year, development in accordance with the General Plan and Development Code Update would result in an incremental increase of approximately 133 million therms/year within the Planning Area. This estimate was based on natural gas factors for residential and non-residential uses (i.e., persons and employees) identified in Table 5.16-2 and Table 5.16-5.

**Table 5.16-5: Buildout (Year 2056) Natural Gas Demand within City of Fresno Planning Area**

Use	Population or Employment	Demand Factor (therms/person/year) <sup>1</sup>	Total (million therms/year)
Residential	970,000 <sup>2</sup>	138	134
Non-Residential	393,200 <sup>3</sup>	403	158
Total Year 2056 Natural Gas Demand			292
Year 2010 Natural Gas Demand			159
Incremental Increase in Natural Gas Demand			133
<sup>1</sup> Pacific Gas & Electric, 2012. <sup>2</sup> Obtained from Table 3-3 in Section 3, Project Description. <sup>3</sup> Fehr & Peers, 2013 Source: FirstCarbon Solutions 2014			

*Fuel*

As shown in Table 5.16-6, the approximate demand for gasoline at buildout is projected to be approximately 334 million gallons/year, and the demand for diesel is projected to be approximately 47 million gallons/year for a total of approximately 381 million gallons/year. Based on a 2010 fuel demand of approximately 184 million gallons per year, development in accordance with the General Plan and Development Code Update would result in an incremental increase in fuel demand of approximately 197 million gallons/year within the Planning Area. This estimate was based on the projected vehicles miles traveled for 2056 for vehicles powered by gasoline and diesel.

**Table 5.16-6: Buildout (Year 2056) Fuel Consumption within City of Fresno Planning Area**

Vehicle Fuel	Vehicle Miles Traveled Per Year (in millions) <sup>1</sup>	Average Miles Per Gallon <sup>2</sup>	Total (million gallons/year)
Gasoline	6,273 <sup>3</sup>	18.754	334
Diesel	888 <sup>4</sup>	18.754	47
Total Year 2056 Fuel Consumption			381
Year 2010 Fuel Consumption			184
Incremental Increase in Fuel Consumption			197

<sup>1</sup> Appendix -, Greenhouse Gas Emissions

<sup>2</sup> California Department of Transportation, June 2009. The average miles per gallons for the year 2030 was used because there were no further projections beyond the year 2030.

<sup>3</sup> Derived from the estimated total vehicle miles per year for 2056 (approximately 7,161 million miles per year) and the estimated percentage of vehicle miles traveled by a vehicle using gasoline (87.6 percent).

<sup>4</sup> Derived from the estimated total vehicle miles per year for 2056 (approximately 7,160 million miles per year) and the estimated percentage of vehicle miles traveled by a vehicle using gasoline (12.4 percent).

Source: FirstCarbon Solutions 2014

To reduce the potential use of electricity, natural gas and fuel, the City has various objectives and policies within the General Plan Update. These objectives and policies are identified below.

**Objective UF-12:** Locate roughly one-half of future residential development in infill areas — defined as being within the 2012 city limits—including the Downtown core area and surrounding neighborhoods, mixed-use centers and transit-oriented development along major BRT corridors, and other non-corridor infill areas, and vacant land.

**Policy UF-12-a:** Bus Rapid Transit Development Corridors. Design land uses and integrate development site plans along BRT corridors, with transit-oriented development that supports transit ridership and convenient pedestrian access to bus stops and BRT station stops.

**Policy UF-12-b:** Intensive Activity Centers. Mixed-use designated areas along BRT corridors are appropriate for more intensive concentrations of urban uses. Typical uses could include commercial areas; employment centers; schools; compact residential development; religious institutions; parks; and other gathering points where residents may interact, work, and obtain goods and services in the same place.

**Policy UF-12-d:** Appropriate Mixed-Use. Facilitate the development of vertical and horizontal mixed-uses to blend residential, commercial, and public land uses on one site or adjacent sites. Ensure land use compatibility between mixed-use districts in Activity Centers and the surrounding residential neighborhoods.

**Policy UF-12-e:** Access to Activity Centers. Promote adoption and implementation of standards supporting pedestrian activities and bicycle linkages from surrounding land uses and neighborhoods into Activity Centers and to transit stops. Provide for priority transit routes and facilities to serve the Activity Centers.

**Objective UF-14:** Create an urban form to facilitate multi-modal connectivity.

**Policy UF-14-a:** Design Guidelines for Walkability. Develop and use design guidelines and standards for a walkable and pedestrian-scaled environment with a network of streets and connections for pedestrians and bicyclists, as well as transit and autos.

**Policy LU-3-c:** Zoning for High Density on Major BRT Corridors. Encourage adoption of supportive zoning regulations for compact development along BRT corridors leading to the Downtown Core that will not diminish the long-term growth and development potential for Downtown.

**Policy LU-5-f:** High Density Residential Uses. Promote high-density residential uses to support Activity Centers and BRT Corridors, affordable housing, and walkable access to transit stops.

**Policy LU-6-b:** Commercial Development Guidelines. Adopt commercial development guidelines to assure high quality design and site planning for large commercial developments, consistent with the Urban Form policies of this Plan.

**Policy LU-6-g:** Lodging Facilities Location. Site lodging facilities and related accommodations near major transportation facilities.

**Policy LU-8-b:** Access to Public Facilities. Ensure that major public facilities and institutions have adequate multi-modal access and can be easily reached by public transit.

**Policy RC-4-e:** Support Employer-Based Efforts. Support and promote employer implementation of staggered work hours and employee incentives to use carpools, public transit and other measures to reduce vehicular use and traffic congestion.

**Policy RC-4-f:** Municipal Operations and Fleet Actions. Continue to control and reduce air pollution emissions from vehicles owned by the City and municipal operations and facilities by undertaking the following:

- Expand the use of alternative fuel, electric, and hybrid vehicles in City fleets.
- Create preventive maintenance schedules that will ensure efficient engine operation.
- Include air conditioning recycling and charging stations in the City vehicle maintenance facilities, to reduce freon gases being released into the atmosphere and electrostatic filtering systems in City maintenance shops, when feasible or when required by health regulations.
- Use satellite corporation yards for decentralized storage and vehicle maintenance.
- Convert City-owned emergency backup generators to natural gas fuels whenever possible, and create an advanced energy storage system.

**Policy RC-4-g:** FAX Actions. Continue efforts to improve Fresno Area Express (FAX) bus transit system technical performance, reduce emission levels, streamline system operations, and implement

Bus Rapid Transit (BRT) where supportive land uses are proposed by the General Plan Land Use Diagram (Figure LU-1).

**Objective RC-8.** Reduce the consumption of non-renewable energy resources by requiring and encouraging conservation measures and the use of alternative energy sources.

**Policy RC-8-a.** Existing Standards and Programs. Continue existing beneficial energy conservation programs, including adhering to the California Energy Code in new construction and major renovations.

**Policy RC-8-b.** Energy Reduction Targets. Strive to reduce per capita residential electricity use to 1,800 kWh per year and non-residential electricity use to 2,700 kWh per year per capita by developing and implementing incentives, design and operation standards, promoting alternative energy source, and cost-effective savings.

**Policy RC-8-c.** Energy Conservation in New Development. Consider providing an incentive program for new buildings that exceed California Energy Code requirements by fifteen percent.

**Policy C-8-d.** Incentives. Establish an incentive program for residential developers who commit to building all of their homes to ENERGY STAR performance guidelines.

**Policy RC-8-e.** Energy Use Disclosure. Promote compliance with State law mandating disclosure of a building's energy data and rating of the previous year to prospective buyers and lessees of the entire building or lenders financing the entire building.

**Policy RC-8-f.** City Heating and Cooling. Reduce energy use at City facilities by updating heating and cooling equipment and installing "smart lighting" where feasible and economically viable.

**Policy RC-8-g.** Revolving Energy Fund. Create a City Energy Fund which uses first year savings and rebates from completed City-owned energy efficiency projects to provide resources for additional energy projects. Dedicate this revolving fund to the sole use of energy efficiency projects that will pay back into the fund.

**Policy RC-8-h.** Solar Assistance. Identify and publicize information about financial mechanisms for private solar installations and provide over-the-counter permitting for solar installations meeting specified standards, which may include maximum size (in kV) of units that can be so approved.

**Policy RC-8-i.** Renewable Target. Adopt and implement a program to increase the use of renewable energy to meet a given percentage of the City's peak electrical load within a given time frame.

**Policy RC-8-j.** Alternative Fuel Network. Support the development of a network of integrated charging and alternate fuel station for both public and private vehicles, and if feasible, open up municipal stations to the public as part of network development.

**Policy RC-8-k. Energy Efficiency Education.** Provide long-term and on-going education of homeowners and businesses as to the value of energy efficiency and the need to upgrade existing structures on the regular basis as technology improves and structures age.

With the implementation of the above objectives and policies, the proposed project would result in no impacts related to the inefficient, wasteful and unnecessary consumption of energy.

### ***Cumulative Impact Analysis***

Development of cumulative projects within the PG&E service area which encompasses 70,000 square miles would result in a substantial increase in electricity and natural gas demand as well as an increase in the consumption of fuel for vehicles. The jurisdictions throughout the PG&E service area are working with the state to reduce the consumption of energy. Given that development within the Planning Area would be required to adhere to the policies identified in the General Plan Update, future development in the Planning Area would not contribute to potential cumulative impacts associated with the potential inefficient, wasteful and unnecessary consumption of energy within other parts of the PG&E service area. The project would not contribute because compliance with the objectives and policies identified above would not result in the inefficient, wasteful and unnecessary consumption of energy. As an example, Policy RC-8-b includes reducing residential and non-residential electricity use. In addition, there are various other policies to reduce the demand for electricity and natural gas. Furthermore, the General Plan Update includes intensive land uses and transit opportunities to reduce fuel consumption. The implementation of the project would result in no cumulative impacts related to the inefficient, wasteful and unnecessary consumption of energy.

### **Mitigation Measures**

#### ***Project Specific***

No mitigation measures are required.

#### ***Cumulative***

No mitigation measures are required.

### **Level of Significance After Mitigation**

#### ***Project Specific***

No impact.

#### ***Cumulative***

No impact.