

## **APPENDIX M**

# **ENERGY TECHNICAL REPORTS**

## ENERGY CONSERVATION

The CEQA Statutes provide that EIRs shall include a detailed statement on significant effects of a project and “mitigation measures proposed to minimize significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy” (Public Resources Code §21000(b)(3)). CEQA Guidelines Section 15126.2 discusses requirements for an EIR to address potentially significant effects, and although it does not include energy specifically, it mentions use of nonrenewable resources. CEQA Guidelines Section 15126.4(a)(1)(C) requires an EIR to discuss energy conservation measures, if relevant. Appendix F to the Guidelines addresses energy conservation goals, notes that potentially significant energy implications of a project should be considered in an EIR, and contains suggested guidance on the contents of EIR discussions on energy.

Energy is consumed during the construction, operation and maintenance of projects, both directly and indirectly. This section describes the existing energy resources, derived from petroleum products, electricity and natural gas available within the project area and analyzes the impacts related to these resources that would result from the implementation of the Proposed Project.

### Environmental Setting

This section addresses the Proposed Sutter Medical Center of Santa Rosa/Luther Burbank Medical Facility’s (SMCSR/LBMF) energy sources, as well as the Project’s efforts to conserve energy and use energy more efficiently. Although these terms are used interchangeably, it is useful to differentiate between energy efficiency and energy conservation. Energy efficiency means using less energy/electricity to perform the same function. Conservation means “doing without” in order to save energy rather than using less energy to do the same thing. For example, turning off lights, turning down the air conditioner, and making fewer vehicle trips are all conservation measures. Installing lighting that uses less electricity, installing additional insulation, and switching to a vehicle with better gas mileage are energy efficiency measures.

### Utility Energy

Pacific Gas & Electric (PG&E) currently provides gas and electric services to the Project site including the existing LBMF facility. PG&E is regulated by the California Public Utilities Commission (CPUC). PG&E’s service area extends from Eureka to Bakersfield (north to south) and from the Sierra Nevada to the Pacific Ocean (east to west).

PG&E obtains its energy supplies from power plants and natural gas fields in northern California and from energy purchased outside its service area and delivered through high voltage transmission lines. PG&E purchases both gas and electrical power from various sources, including utility companies in other western states and Mexico (CEC, 2003). To promote the safe and reliable maintenance and operation of utility facilities, the CPUC has mandated specific clearance requirements between utility facilities and surrounding objects or construction activities.

### *Electricity Energy Consumption*

Based upon data and reports compiled by the California Energy Commission and the Energy Information Administration of the U.S. Department of Energy, in 2000, California used over 1,933 kilowatt hours of electricity. This electricity was produced from power plants fueled by natural gas (37%), coal (21%), hydro (16%), nuclear (15%), and renewables (11%).

Approximately 78% of the electricity was generated within California, with the balance imported from other states, Canada, and Mexico.

Electricity usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. The average annual usage of electricity is roughly 13 kWhr/square foot for all commercial buildings. Electricity supply in California involves a complex grid of power plants and transmission lines located in the Western United States, Canada, and Mexico. The issue is complicated by market forces that have become prominent since 1998, which is when a new regulatory environment commonly referred to as “deregulation” took effect in California. Supply is further complicated by the fact that the peak demand for electricity is significantly higher than the off-peak demand. For example, in August 2004, peak electric demand – due in large part to hot weather – reached a record high of 44,497 megawatts, which is almost double the lowest demand period.

In 2000-2001, electric demand exceeded supply on various occasions, which required utilities to institute systematic rotating outages to maintain the stability of the grid and prevent widespread blackouts. Since that time, additional generating capacity has come on-line and upgrades to various transmission lines are occurring. The California Energy Commission’s 2007 Integrated Energy Policy Report (Integrated Energy Report) provides strategies that will increase efficiencies promoting conservation and reducing energy needs over the next 10-20 years.

### *Natural Gas*

In 2007, California used almost 2.2 trillion cubic feet of natural gas. The natural gas was used electricity production (43%), industrial uses (23%), transportation (1%), commercial uses (10%), residential uses (22%) and with net storage losses (2%). Approximately 14% of the natural gas was produced within California, with the balance imported from other states and Canada.

Natural gas usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all gas-consuming devices within a building. The average annual usage of natural gas is roughly 37 cubic feet/square foot for commercial buildings. According to the Integrated Energy Policy Report, in order to meet peaking demand, Northern California will need gas infrastructure improvements (e.g., additional pipeline capacity) and increased conservation.

### *California Energy Supply*

California’s major sources of energy are petroleum products (i.e., gasoline, diesel and oil), electricity, and natural gas. The California Energy Commission (CEC) indicates that California petroleum resources in 2007 came from in-state (39.34%), foreign sources (44.88%), and Alaska (15.79%). In 2006, natural gas resources in California came from the Southwest

(40.3%), Canada (23.4%), in-state (13.5%), and the Rocky Mountains (27.7%). Electricity production by resource type in California in 2007 included natural gas at 45.2%, coal at 16.6%, hydroelectric at 11.7%, nuclear at 14.8%, and renewable at 11.8%. Renewable consisted of geothermal (4.5%), biomass (2.1%), small hydro (2.8%), and solar and wind (2.5%). Imports from the northwest and southwest added 8.17% and 22.4%, respectively.<sup>1</sup>

### *California Energy Use Patterns*

State-level and county trends are relied upon to characterize energy consumption locally.

Currently the top three fossil fuels, coal, oil and natural gas, provide more than 85% of all the energy consumed in the United States, nearly two-thirds of our electricity, and virtually all of our transportation fuels. Petroleum products themselves supply more than 40 % of our total energy demands and more than 99% of the fuel we use in our cars and trucks. As for electricity, more than half of the amount generated in the United States derives from coal. It is estimated that for the foreseeable future coal will continue to be the dominant fuel used for electric power production. The next biggest fuel source of electricity is nuclear power which supplies about 20% of the electricity produced in the United States. On the other hand, natural gas is the fastest growing fuel. More than 90% of the power plants to be built in the next 20 years will likely be fueled by natural gas; virtually all of which will be domestically produced.<sup>2</sup> Northern Sonoma County is the site of the world's more significant geothermal fields, The Geysers. The Geysers generates about 5,000,000 megawatt-hours per year. Additional sources within the County include hydroelectric power, methane gas, and solar photovoltaics. Additional opportunities exist for individual and small scale production from other renewable energy sources, including passive solar collection, wind energy, hot water, and biomass. These sources are associated with lower up-front costs, increased efficiency, and minimal environmental impacts.

In California, total statewide energy consumption was 8,420.4 Trillion BTU<sup>3</sup> for 2006. Petroleum use accounted for approximately 47% of all energy consumption, of which approximately 57% was for motor vehicle fuel. Motor gasoline use accounted for about 24% of total use, or 1,999.4 Trillion BTU. The electric power sector accounted for about 19% of all energy consumption, while natural gas accounted for about 28% of all energy consumption. By end-use sectors, transportation was by far the biggest energy consumer, which accounted for approximately 40% of all energy consumption. The other three sectors, industrial, commercial and residential, were about equal consumers accounting for approximately 23%, 19% and 18% of all energy consumption, respectively.<sup>4</sup> Table 1 illustrates California electricity usage in Sonoma County. Table 2 provides natural gas demand figures Statewide.

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<sup>1</sup> State of California Energy Commission's website. <http://www.energyalmanac.ca.gov>, 2008. Renewable numbers derived from <http://www.energy.ca.gov/research/renewable/>, 2007.

<sup>2</sup> U.S. Department of Energy's website. <http://www.energy.gov/energysources/index.htm>, 2008.

<sup>3</sup> Btu is defined as the quantity of energy necessary to raise the temperature of 1lb. of water 1° Fahrenheit.

<sup>4</sup> U.S. Department of Energy's website. <http://www.eia.doe.gov/emeu/states/seds.html>, 2008.

**Table 1**  
**California Utility Electricity Consumption by County for 2005**  
**kWh (million)**

County	Residential	Non Residential	Total
Sonoma	2,646	5,529	8,175
Kilowatt-hour (kWh): The most commonly used unit of measure telling the amount of electricity consumed over time, which is one kilowatt (1,000 watts) of electricity supplied for one hour.			
Source: California Energy Commission's website, <a href="http://www.ecdms.energy.ca.gov/elecbycounty.asp#results">http://www.ecdms.energy.ca.gov/elecbycounty.asp#results</a> , 2008.			

**Table 2**  
**California Natural Gas Demand 2006 in MMcfd (Million Cubic Feet per Day)**

	State Total
Residential	1,300
Commercial	573
Industrial	1,392
Electric Gen	2,613
Transportation	25
Storage & Losses	129
<b>State Total</b>	<b>6,032</b>

## Regulatory Setting

This section summarizes the federal, State and local laws and regulations applicable to energy resources and energy use.

### Federal Agencies

Federal agencies regulate energy production, transmission and consumption through various regulations and programs. Federal agencies, such as the Environmental Protection Agency (EPA), the U.S. Department of Energy (US-DOE), and the U.S. Department of Transportation (USDOT) affect energy consumption in the transportation sector through fuel economy standards, funding for transportation infrastructure and funding for energy related research and development projects. The USDOE also promotes a diverse supply and delivery of reliable, affordable and environmentally sound energy. The Federal Energy Regulatory Commission (FERC) is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC also reviews proposals to build liquefied natural gas (LNG) terminals and interstate natural gas pipelines as well as licensing hydropower projects.

### *Energy Policy Act of 2005 (EPACT)*

The EPACT is intended to establish a comprehensive, long-range energy policy, and the USDOE is responsible for its implementation. It provides incentives for traditional energy production as well as newer, more efficient energy technologies and conservation. Those

incentives come in the form of various tax credits and deductions, which include automobile tax credits, home energy efficiency improvement tax credits, energy efficient commercial building deduction and business tax credits for businesses that produce biodiesel/alternative fuels and manufacture or purchase energy-efficient appliances.<sup>5</sup>

#### *Power Plant and Industrial Fuel Use Act*

The Power Plant and Industrial Fuel Use Act is administered by the USDOE. In summary, the purpose of the Act is to reduce the importation of petroleum and increase the Nation's capability to use indigenous energy resources of the United States to the extent such reduction and use further the goal of national energy self-sufficiency and otherwise are in the best interests of the United States; to encourage and foster the greater use of coal and other alternate fuels, in lieu of natural gas and petroleum, as a primary energy source; and to the extent permitted by the Act, to encourage the use of synthetic gas derived from coal or other alternate fuels.<sup>6</sup>

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

TEA-21 builds on the initiatives established in the *Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)*, which was the last major authorizing legislation for surface transportation. TEA-21, enacted on June 9, 1998, authorizes highway, highway safety, transit, and other surface transportation programs for a six-year period (1998-2003). However, because Congress could not agree on funding levels, the Act has continued past 2003 by means of temporary extensions.<sup>7</sup> TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

#### State and Local Agencies

##### *California Energy Commission (CEC)*

The CEC is the State's primary energy policy and planning agency. Created by the Legislature in 1974, the Commission has five major responsibilities: forecasting future energy needs and keeping historical energy data; licensing thermal power plants 50 megawatts or larger; promoting energy efficiency through appliance and building standards; developing energy technologies and supporting renewable energy; and planning for and directing state response to energy emergency. With the signing of the Electric Industry Deregulation Law in 1998 (Assembly Bill 1890), the Commission's role includes overseeing funding programs that support public interest energy research; advance energy science and technology through research, development and demonstration; and provide market support to existing, new and emerging

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<sup>5</sup> Federal Energy Regulatory Commission's website. <http://www.ferc.gov/>, 2008.

<sup>6</sup> Cornell Law School, United States Code Collection. <http://www4.law.cornell.edu/uscode/42/ch92.html>, 2007.

<sup>7</sup> Transportation Equity Act for the 21<sup>st</sup> Century. [http://en.wikipedia.org/wiki/Transportation\\_Equity\\_Act\\_for\\_the\\_21st\\_Century](http://en.wikipedia.org/wiki/Transportation_Equity_Act_for_the_21st_Century), 2008.

renewable technologies. California is preempted under federal law from setting state fuel economy standards for new on-road motor vehicles.<sup>8</sup>

#### *California Public Utilities Commission (PUC)*

The PUC regulates privately owned electric, telecommunications, natural gas, water and transportation companies, in addition to household goods movers and rail safety. The PUC is responsible for ensuring that customers have safe, reliable utility service at reasonable rates, protecting against fraud, and promoting the health of California's economy.<sup>9</sup>

#### State and Local Regulations

##### *State of California Energy Action Plan (EAP)*

Administered by the California Energy Commission, the EAP was initially created in 2003 and updated in 2005. The EAP established shared goals and specific actions to ensure that adequate, reliable, and reasonably-priced electrical power and natural gas supplies are achieved and provided through policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers. Also incorporated in the EAP are specific actions reflecting the importance of transportation fuels to California's economy and the need to mitigate the environmental impacts caused by their use, as well as the importance of taking actions in the near term to mitigate California's contributions to climate change from the electricity, natural gas and transportation sectors.<sup>10</sup>

##### *California's Energy Efficiency Standards for Residential and Non-residential Buildings of 2005 (Title 24 Building Standards)*

The California Energy Commission administers Title 24 Building Standards, which were established in 1978 in response to a legislative mandate to California's energy consumption. Last updated in October 2005, the standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.<sup>11</sup>

##### *Sonoma County General Plan 2020<sup>12</sup>*

The following goals and policies are from Sonoma County's General Plan Open Space and Resource Conservation Element and are applicable to the Proposed Project:

**GOAL OSRC-14:**                   **Promote energy conservation and contribute to energy demand reduction in the County.**

**Objective OSRC-14.1:**   Increase energy conservation and improve energy efficiency in County government operations.

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<sup>8</sup> California energy commission's website. <http://www.energy.ca.gov/commission/index.html>, 2009.

<sup>9</sup> California Public Utilities Commission's website. <http://www.cpuc.ca.gov/PUC/aboutus/>, 2009.

<sup>10</sup> California Energy Commission's website. [http://www.energy.ca.gov/energy\\_action\\_plan/index.html](http://www.energy.ca.gov/energy_action_plan/index.html), 2008.

<sup>11</sup> California Energy Commission's website. <http://www.energy.ca.gov/title24>, 2009.

<sup>12</sup> Sonoma County General Plan 2020. <http://www.sonoma-county.org/PRMD/gp2020/index.html>, 2008.

- Objective OSRC-14.2:** Encourage County residents and businesses to increase energy conservation and improve energy efficiency.
- Objective OSRC-14.3:** Reduce the generation of solid waste and increase solid waste reuse and recycling.
- Objective OSRC-14.4:** Reduce greenhouse gas emissions by 25% below 1990 levels by 2015.
- Policy OSRC-14d:** Support Project applicants in incorporating cost effective energy efficiency that may exceed State standards.
- Policy OSRC-14f:** Use the latest green building certification standards, such as the Leadership in Energy and Environmental Design (LEED) standards, for new development.

### Standards of Significance

The Proposed Project would have a significant energy impact if it would result in:

- Wasteful, inefficient and unnecessary usage of energy as identified by CEQA Section 21100(b)(3) and CEQA Guidelines 15126(a)(1); or
- A substantial increase in demand or transmission service, resulting in the need for new or expanded sources of energy supply or new or expanded energy delivery systems or infrastructure.

### Impacts and Mitigation Measures

This section discusses the potential impacts of the Proposed Project on overall energy consumption and mitigation processes proposed by the Project.

#### Impact 1 – Construction Energy Use

##### *Construction*

Construction-related energy consumption would result from Project construction and the use of secondary facilities. A secondary facility is defined as any facility that would produce any construction materials that would be used during the construction and maintenance of the Proposed Project. Energy consumed for Project construction would be that used during the construction of the hospital campus (Sutter Medical Center Santa Rosa, Physicians Medical Center, Central Utility Plant and Medical Office Building) and for the transportation of building materials and equipment to and from the work site.

The construction period for the total hospital campus could approach 48 months, and as a result, any energy consumption from construction and transportation of building materials and equipment to and from the work site will be potentially significant. These impacts relate primarily to importation of fill (8,695 truck loads) and roadway completion. Mitigation measures are listed below that will reduce these impacts to less than significant levels.

### *Secondary facilities*

It is assumed that secondary facilities, such as those that would produce construction materials for the Proposed Project would utilize all reasonable energy conservation practices in order to minimize the costs associated with energy use. As such, it can be assumed that construction-related energy consumption by secondary facilities during the construction of the Proposed Project would not result in a wasteful, inefficient and unnecessary usage of energy; or placement of a significant demand on regional energy supply or requirement of substantial additional capacity with regards to energy consumption during the construction phase.

### *Indirect Consumption*

The Proposed Project would generate approximately 328 AM peak hour trips and 467 trips during the PM peak hour.

Based upon the traffic analysis, at least 15% (and possibly as many as 50%) of traffic trips to the Project are diverted trips – trips which occur to the existing Sutter facility in Santa Rosa. The hospitals at full build out would house 127 beds (similar to the current 135 licensed beds at the Chanate Campus in Santa Rosa). Medical offices would likely off set many of the existing medical offices in the Santa Rosa area, and those offices (especially at Sutter's Warrack and Chanate facilities) would like be replaced by non-medical uses, based upon City of Santa Rosa Zoning.

### Mitigation Measure for Impact 1:

Fossil fuels used for construction vehicles and other energy consuming equipment would be used during site clearing, grading, and construction for the Project. Fuel energy consumed during construction would be temporary in nature and would not represent a significant demand upon energy resources upon completion of the following measures:

#### *Energy Conservation During Construction*

Some incidental energy conservation would occur during construction through implementation of the noise mitigation measures identified in the noise section. For example, there would be some fuel savings resulting from the prohibition of unnecessary idling of vehicles and equipment, and from the requirement that equipment be properly maintained. In addition, the mitigation measures listed in the Air Quality section include several measures that will result in energy conservation including:

- restructuring idling times;
- finding source material for fill that is closest to the site

. Also, the construction materials could include recycled materials and products originating from nearby sources in order to reduce costs of transportation. Also, given current high fuel prices, contractors have a strong financial incentive to avoid wasteful, inefficient and unnecessary consumption of energy during construction.

The Traffic Demand Management (TDM's) incorporated with the Project include on site bike and shower facilities, telecommuting, flexible schedules, off – on-site paths and sidewalks, bikeways, priority for van pools, carpools, recharge stations for electric

vehicles (and possibly natural gas) and convenient public transit (including upgraded bus stop adjacent to the site).

All of these measures will reduce vehicle use and increase efficiencies. Additionally, transit ride time to the new hospital is less than to the existing Chanate facility (based upon SCT and SRT schedules).

## **Impact 2 – Operational Energy Use**

The Proposed Project consists of four main components of a medical office complex including the 162,000sf Sutter Medical Center (99 beds after Phase III) and 100,000sf Physicians Medical Center (28 beds), a 11,500sf Central Utility Facility and an 80,000sf Medical Office Building. The LMBF main facilities are not being modified. The auxiliary functions (maintenance shed, parking areas and play fields) will be relocated.

The preliminary electrical and natural gas usage estimates (in annual kWh, therms and cubic feet) for the Sutter Santa Rosa Medical Center campus (Sutter Hospital – 162,000sf, Physicians Medical Center – 100,000sf, MOB – 80,000sf) have been estimated by the mechanical engineers to use 109,337 therms of gas and 6,520,577 kWh of electricity per year.

Although the Proposed Project would result in the consumption of large quantities of energy (typical for a project of this size), several aspects of the Project would help manage the amount and efficiency of energy consumption and would ensure that the related consumption is not inefficient, wasteful or unnecessary or place a significant demand on regional energy supplies.

### Mitigation Measures For Impact 2

The following energy conservation measures shall be implemented in order to minimize inefficient energy usage and promote conservation of energy resources throughout the life of the Project:

#### Daylighting of all buildings 100,000 sf or greater

Each interior public space with access to daylight shall be equipped with a “daylighting system” to reduce use of electricity for area lighting. The daylighting system shall include switching mechanisms to automatically and continuously dim all lights as the daylight contribution increases through use of properly placed windows and skylights.

#### Night Dimming

Each interior public corridor shall be equipped with an automatic switching system to dim lighting within the corridor to between 60% and 70% illumination between the hours of 10:00 pm and 7:00 am (standard time).

### Energy Efficient HVAC Systems

All mechanical equipment provided for the purpose of heating and cooling interior public spaces shall satisfy all California title 24 requirements; in addition, all such equipment shall achieve a minimum EER (energy efficiency ratio) of rating of 10.0 or equivalent.

### Central Energy Management for all buildings 100,000 sf or greater

Each campus building as identified on the approved development plan shall be equipped with energy management systems. The direct digital control system for the campus buildings will be networked and meet the typical requirements of an "energy management system."

### Water Heating for buildings 100,000 sf or greater

If applicable or feasible, waste heat shall be captured in order to preheat water for uses requiring heated water.

### Cool Roofs

All flat roof surfaces (excluding decorative architectural elements and canopies) shall be provided with a high albedo membrane roof, also known as a cool roof. The solar reflectivity of such roof membrane systems are intended to lower interior cooling loads in the Sonoma County climate zone by roughly 10%, compared to conventional roofing. Solar reflectivity on roofs also reduces the amount of conversion of UV rays to infrared heat, possibly reducing the heat island effect created by most large, developed parcels of land.

### Interior Lighting Systems

All interior public spaces shall be provided with lighting systems that utilize high efficiency T-8 or T-5 fluorescent lamps and electronic ballasts, or approved equivalent systems. Fluorescent lamps shall be of the "low-mercury" variety.

### LED Interior Signage Illumination for all buildings 100,000 sf or greater

Light emitting diode (LED) lighting, or an approved equivalent, shall be used for all internally illuminated building signage. LED lighting technology is recognized as consuming substantially less electricity than fluorescent or other illumination sources. In addition, the longer lamp life afforded by LED technology substantially reduces need to manufacture and dispose of fluorescent lamps.

Recycled Materials in Building Construction for all buildings 200,000 sf or greater

Recycled Steel: when possible and not resulting in out of area sourcing, a minimum of 80% of the structural steel used in the construction of buildings shall be comprised of recycled materials.

UBC

In addition to the above design features of the Project, the California Building Standards Code, energy conservation requirements in the most current edition of Title 24, Part 6, California Code of Regulations, for non-residential buildings would be applied. The Commission also wanted to emphasize energy efficiency measures that save energy at peak periods and seasons and to improve the quality of installation of energy efficiency measures.

Savings By Design

The Project will participate in PG&E's Savings by Design program which will ensure additional energy efficient measures will be incorporated into the Project.

OSHPD Review

Pursuant to the California Building Standards Code and the Energy Efficiency Standards, both OSHPD and the County shall review the design components of the Project's energy conservation measures when the Project's building plans are submitted. Energy efficient measures could include: insulation; the use of energy efficient heating, ventilation and air conditioning equipment (HVAC); solar-reflective roofing materials; energy-efficient indoor and outdoor lighting systems; the incorporation of skylights, high performance glazing, etc.

Colocation

In terms of energy consumption related to vehicle use, the colocation of the medical services of the Proposed Project would focus the destination of vehicle trips and benefit fuel consumption. The proposed mix of medical services would encourage multi purpose trips and reduce fuel consumption by reducing the number of trips some people might otherwise make between different medical facilities. The Sutter Hospital Project was registered for the Leadership in Energy and Environmental Design (LEED) in 2008. Pursuing LEED certification will further the incorporation of energy conservation and sustainability measures into the Project design. These are summarized in Table 3.

Table 3 lists all pertinent measures included in CARB's Scoping Plan for the state's compliance with AB 32, and presents Sutter's sustainability policies, programs, Project design features and how they comply with the AB 32 Scoping Plan measures.

**Table 3**  
**Consistency of the Sutter Project Features with AB 32 Scoping Plan Measures**

Scoping Plan Measure	Sutter Policy/Project Feature
<b>SPM-1:</b> California Cap-and-Trade Program linked to Western Climate Initiative	Not applicable.
<b>SPM-2:</b> California Light-Duty Vehicle GHG Standards	Not applicable.
<b>SPM-3:</b> Energy Efficiency	Aggressive conservation efforts and development of renewable power will be fundamental to Project design. Buildings will be designed to consume reduced levels of energy and demand over the current hospital. LEED: The Project has been registered for LEED certification.
<b>SPM-4:</b> Renewables Portfolio Standard	Not applicable
<b>SPM-5:</b> Low Carbon Fuel Standard	Not applicable
<b>SPM-6:</b> Regional Transportation-Related Greenhouse Gas Targets	<p>Develop a coordinated master plan to guide design and implementation of the principal circulation infrastructure, including plans that address streets, on and off site roads, bikeways, pedestrian ways, transit and parking; created a comprehensive, interconnected bicycle and pedestrian circulation system that provides access to major buildings.</p> <p>Work with local and regional transit providers to coordinate transit service, and establish convenient transfers between transit and other modes of travel.</p> <p>Provide priority parking for vanpools, carpools, and energy efficient and low-pollution vehicles, with recharge stations for electric vehicles and provide a natural gas vehicle charging stations, if possible.</p>
<b>SPM-7:</b> Vehicle Efficiency Measures	Not applicable.
<b>SPM-8:</b> Goods Movement	Not applicable.
<b>SPM-9:</b> Million Solar Roofs Program	Sutter is working with PG&E in its Savings By Design program to design feasible methods that optimize solar and thereby minimizing grid connected peak electricity loads by shifting electricity used for cooling away from peak electricity demand periods through a variety of methods that include solar power.
<b>SPM-10:</b> Heavy/Medium-Duty Vehicles	Minimize construction emissions.

Scoping Plan Measure	Sutter Policy/Project Feature
SPM-11: Industrial Emissions	Not applicable.
SPM-12: High Speed Rail	Not applicable.
SPM-13: Green Building Strategy	<p>Buildings will be designed to consume less energy and demand than the existing hospital and surpass Title 24 minimum efficiency standards, and achieve LEED certification.</p> <p>There is a relationship between indoor environmental quality and materials, lighting, thermal comfort, human health &amp; productivity. Accordingly, Sutter Health as a community role model has a vested interest in delivering environments that optimize patient outcomes and provide a “best place to work and practice” environment for its employees. Minimizing and controlling sources of allergens, mutagens, carcinogens and endocrine disruptors, while providing access to daylight and comfortable indoor climate in an accessible setting are fundamental building design goals. Exposure conditions that adversely affect health can only be evaluated in the light of the benefits received and the alternatives available.</p> <p><b>Environmental Air Quality Guidelines</b></p> <ul style="list-style-type: none"> <li>• Establish minimum indoor air quality (IAQ) performance to enhance indoor air quality in buildings, thus contributing to the comfort and well-being of the occupants</li> <li>• Minimize production, distribution and exposure to pollutants- provide risk group specific protection where elimination is impossible</li> <li>• Provide occupants with access to natural daylight and healing views</li> <li>• Provide energy efficient thermal comfort within acceptable ranges</li> <li>• Provide occupant controlled zoned environmental controls (light, view, thermal, ventilation)</li> <li>• Manage pathogens and infection transmission with appropriate barriers, air flow, discharge and refresh rates</li> </ul> <p><b>Environmental Air Quality Strategies</b></p> <ul style="list-style-type: none"> <li>• Ensure high quality indoor air and thermal comfort by meeting or exceeding ASHRAE 62-1999 and ASHRAE 55-1992 as the minimum basis of design</li> <li>• Baseline design with minimum impact methods and materials including low VOC / low toxic finishes and materials i.e. Green Seal-certified paints; composite wood and agrifiber products without urea-formaldehyde resins; carpet systems certified by Carpet &amp; Rug Institute Green Label Program; adhesives meeting local Air Quality Management District guidelines.</li> <li>• Design and specify systems that prevent trapping of water and microbial growth</li> <li>• Define and implement ICRA Infection control plan for all construction</li> </ul>

Scoping Plan Measure	Sutter Policy/Project Feature
	<p>and renovation projects</p> <ul style="list-style-type: none"> <li>• Install entryway systems (e.g., walk off tiles) to trap dirt and particulates</li> <li>• Position building air intakes to prevent contamination from vehicle exhaust and other sources</li> <li>• Assure easy access to inspect and clean filters and ductwork in Air handling systems</li> <li>• Ventilate source areas (smoking areas, housekeeping, copying rooms, hazardous waste)</li> <li>• Buildings not non smoking</li> <li>• Design environments including materials, products, mechanical systems and design features to attenuate sound and vibration within tolerances outlined in Hospital guidelines in ASHRAE Application Handbook.</li> </ul>
<b>SPM-14:</b> High GWP Gases	Not applicable.
<b>SPM-15:</b> Recycling and Waste	<p><b>Materials Conservation and Resource Efficiency</b>                      The healthcare delivery environment is first and foremost concerned with the health and welfare of the patients and staff. Although use of sustainable materials can significantly enhance a building's environmental impacts, there is no room in a critical care setting to compromise the health of our patients. Products and materials used in the healthcare delivery setting must be the best available that is appropriate for the use intended. Total Life Cycle costs associated with operating and maintaining the products and materials proposed must be balanced with the first cost and life cycle environmental impacts of the products considered. Hospital designs must seek to include sustainable harvest material, minimize production of persistent and bioaccumulative toxics (PBTs) and reduce waste.</p> <p><b>Materials Conservation and Resource Efficiency Guidelines</b></p> <ul style="list-style-type: none"> <li>• Balance resource depletion reduction objectives with service specific requirements</li> <li>• Reduce embodied energy (use lowest energy density product available)</li> <li>• Reduce toxics generated throughout the life cycle of materials</li> <li>• Reduce waste by including waste evaluations in design choices</li> <li>• Reduce impact of reuse or disposal of building</li> </ul> <p><b>Materials Conservation and Resource Efficiency Strategies</b></p> <ul style="list-style-type: none"> <li>• Reuse existing structures with minimum demolition practical</li> <li>• Specify materials and methods with reduced (or free from) ozone depleting substances and/or equipment using CFCs, HCFCs, and halons, balancing ozone depletion potential (ODP) with global warming potential (GWP)</li> </ul>

Scoping Plan Measure	Sutter Policy/Project Feature
	<ul style="list-style-type: none"> <li>• Review design alternatives that consider materials that;                             <ul style="list-style-type: none"> <li>❖ are free from toxic chemicals</li> <li>❖ do not release toxic byproducts throughout their life cycle</li> <li>❖ do not include toxins that are carcinogenic, persistent or bioaccumulative. (e.g. mercury, arsenic, urea formaldehyde, plasticizers in PVC and asbestos)</li> <li>❖ are recycled, reused/salvaged, remanufactured or from sustainable sources</li> <li>❖ are sustainably harvested</li> <li>❖ are from local sources when available</li> <li>❖ are easily reusable, recyclable, or biodegradable on disposal</li> <li>❖ are design for efficient material use (less material use and less waste)</li> <li>❖ are design for adaptability of building design as needs change (reusable movable)</li> <li>❖ are designed for disassembly and recycle or reuse at end of building life.</li> </ul> </li> <li>• Exterior envelope materials that;                             <ul style="list-style-type: none"> <li>❖ The thermal performances of the buildings are being evaluated including high performance glass and exterior insulating systems. An energy model has been erected to empirically evaluate and optimize the energy performance of the design.</li> </ul> </li> <li>• Life cycle costs are being discussed and evaluated throughout the design process.</li> </ul>
<b>SPM-16:</b> Sustainable Forests	Not applicable
<b>SPM-17:</b> Water	<p><b>Water Efficiency and Conservation</b>                      Water efficient design balances water quality and quantity availability and demand, both inside and outside of the building/campus. Water efficient design incorporates available resources and is responsive to the watershed and utility systems capacity as both source and sink. Limitation in utility system capacity and effectiveness demand that water be treated as a constrained and precious resource. Storm and Sanitary Sewer effluent flows can be dramatically impacted by environmentally sound planning and design.</p> <p><b>Water Efficiency and Conservation Guidelines</b></p> <ul style="list-style-type: none"> <li>• Optimize the use of potable water resources to conserve water and maintain water quality</li> <li>• Minimize operational impacts to off site treatment of wastewater by avoiding harshest and most problematical chemicals and processes</li> </ul>

Scoping Plan Measure	Sutter Policy/Project Feature
	<ul style="list-style-type: none"> <li>• Minimize storm water peak releases from the site, (capture and stage/ meter/ re-use)</li> <li>• Maximize use of on-site water resources, (e.g., rainwater, gray water) where appropriate</li> <li>• Enhance water quality through SWPPP</li> </ul> <p><b>Water Efficiency and Conservation Strategies</b></p> <ul style="list-style-type: none"> <li>• Use high performance fixtures and equipment: e.g., low flow and pressure assist toilets and urinals; low-flow showerheads and faucets; automatic use activation on sinks, toilets and urinals; Water saving “Energy Star” labeled (or such as an equivalent Dolphin system), dietary housekeeping laundry and mechanical systems equipment.</li> <li>• Minimize boiler, mechanical and cooling tower water blow down chemical loading on sanitary sewer by eliminating water treatment chemicals. When possible evaluate use of non-evaporative condenser heat rejection equipment (air cooled, or ground source – large air cooled systems are not likely to be included in this Project)</li> <li>• Specify native plants that are tolerant of local climate, soils and water</li> <li>• Install drip irrigation and high efficiency irrigation control with moisture sensors, weather based controllers.</li> <li>• Collect and store storm water runoff from roofs and site and use for irrigation, sewage conveyance, toilet flushing and/or HVAC/process makeup water or aquifer recharge</li> <li>• Minimize hardscapes and install site water runoff control and metering systems including permeable peak storage, specialty paving and other pervious surface materials</li> <li>• Create managed wetlands systems to locally recharge underground water flows.</li> </ul>
SPM-18: Agriculture	Not applicable.

The SMCSR/LBMF Medical Plan ensures that development within the Project area would be subject to the above identified guidelines to ensure that the Project as well as Title 24 guidelines and regulations are met if not exceeded. Therefore, the Project would be expected to have **less-than-significant** impact regarding the wasteful, inefficient or unnecessary consumption of energy.

**Impact 3 - Increased Demand on Electric and Natural Gas Infrastructure**

The Project site is currently served by electric and gas services. Overhead electric lines with a 12Kv capacity currently extend along the Mark West Springs Road frontages. A 3” natural gas line also extends along the Project frontage.

PG&E has indicated they have adequate power to serve the Proposed Project.

Because the Project would require the extension of existing gas and electric facilities to adequately service the development associated with the Proposed Project it could have a **potentially significant** impact. The implementation of the mitigation measures included below would reduce the impacts associated with electric and natural gas services to a **less-than-significant** level.

Mitigation Measure for Impact 3:

The improvement plans shall show the location and method of connection to the existing natural gas supply line located along the Mark West Springs Road frontage of the site.

The improvement plans shall provide for underground installation of all onsite utilities. In addition, improvement plans shall be prepared to provide for the undergrounding of existing overhead utility lines along Mark West Springs Road frontage, as required by the County and utility pole owners.

**Cumulative Impacts Related to Increased Energy Consumption from the Proposed Project in Combination with other Foreseeable Projects in the Region**

The Project in combination with other future development projects would result in an increased demand on energy resources. Gas and electric service providers would be subject to increased pressure to supply additional energy resources, which could result in the need to expand existing facilities or to build new power plants. PG&E has adequate gas and electric facilities in the area to serve the Proposed Project and that the Proposed Project would not result in any major conflicts with PG&E's existing gas and electric facilities.

As indicated above, the Project would be subject to the minimum energy conservation requirements of Title 24 of the California Code of Regulations and will participate in PG&E's "Savings by Design" program, which would serve to reduce the amount of energy resources needed to operate the Project. The Project would also be required to fund the necessary infrastructure improvements to ensure that the Project receives adequate energy resources. Because other future developments would also be required to comply with Title 24 and fund the construction of the necessary utility infrastructure improvements, and as this is no evidence indicating that PG&E, through its long-term planning, would not be able to keep pace with increasing demands, cumulative energy impacts would be considered **less-than-significant**.