

3.16 UTILITIES AND SERVICE SYSTEMS

This section analyzes the effects of providing water and wastewater utilities to the proposed project facilities based on existing use and projected demand, capacity, availability of water supplies and wastewater treatment, and other anticipated development in the service area. This section also analyzes the amount of solid waste that would be generated by the proposed project and the implications of this waste on solid waste disposal capacity in the County. This section includes information from the *Water and Wastewater Services Report* (Brelje & Race Consulting Engineers 2009b), which is included as **Appendix L** in the Technical Appendices, Vol. 2 of this document.

3.16.1 Environmental Setting

3.16.1.1 Water Supply

California American Water (CalAm), a private company, currently provides water to the Larkfield-Wikiup area, including the WFC. CalAm has provided water to the Larkfield service area since purchasing Citizens Utility Company in 2002. The Larkfield service area is in the unincorporated area of Sonoma County approximately 4 miles north of downtown Santa Rosa. Water service is provided to approximately 2,373 customers. About 80 percent of the customers are residential (EPS and Coastland Civil Engineering 2007).

CalAm obtains water from four wells with a total capacity of approximately 1.43 mgd (equal to 990 gallons per minute [gpm]), and from a connection to the nearby SCWA aqueduct, which provides a maximum capacity of 0.8 mgd (556 gpm) by written agreement, subject to an annual limit of 700 acre-feet.

The California Department of Public Health (CDPH) regulates water systems and requires them to provide adequate supply to meet the maximum day demand. CDPH defines the maximum day demand to be equal to the highest annual peak day of the past 10 years. The 10-year historic maximum day usage for the Larkfield service area (2.19 mgd) occurred in 2003, which is just below the estimated system capacity of 2.28 mgd (1,585 gpm) (EPS and Coastland Civil Engineering 2007). **Table 3.16-1** summarizes the projected number of service connections and corresponding water demand in Larkfield (based upon the Sonoma County General Plan land use designations) in 5-year increments and for ultimate service area build-out.

Table 3.16-1. Summary of Projected Population and Customer and Demand in the CalAm Larkfield Service Area that Includes the Proposed Sutter Hospital¹

Project Year	Population Estimate	Projected Number of Connections	Required Firm Capacity		Required Additional Capacity
			(mgd)	(gpm)	(gpm)
2010	8,562	2,508	2.37	1,646	61
2015	8,830	2,584	2.44	1,696	111
2020	9,096	2,659	2.51	1,745	160
2030	9,370	2,733	2.58	1,794	209
Ultimate at build-out	10,063	2,936	2.77	1,926	341

¹ Projections from the *Preliminary Feasibility Study for the Formation of a Community Services District to Provide Water Services to the Mark West Area* (EPS and Coastland Engineering 2007).

The increase in demand between 2010 and 2020 shown in **Table 3.16-1** equates to 148 gpm, or 239 acre-feet. Based on the estimated increase in the number of households (286 households), this corresponds to an average demand per household of approximately 0.8 acre-feet per year.

Future water demand was also estimated within a portion of the area overlying the aquifer that could be used to supply groundwater for the project. This is the study area used in the groundwater study included in Appendix H-2 (ENGEO, 2009c) and shown along with the Larkfield service area in **Figure 3.9-5**. The increase in annual demand by 2030 was estimated to be 239 acre-feet, based on an increase of 467 households within the ENGEO study area, including the demand for the proposed project, and only including the conservation required to offset the wastewater that would be produced by the project. When additional conservation was included, the increase in annual demand by 2030 was determined to be 168 acre-feet (ENGEO, 2009c). This corresponds to an average demand per household of approximately 0.5 acre-feet per year at existing consumption rates, or approximately 0.4 acre-feet per year when demand is decreased by 20% due to conservation.

The 2007 and 2008 annual water quality reports for the CalAm Larkfield service area did not report any exceedances of primary or secondary MCLs.¹ However, the average level of arsenic in the treated water was 5 parts per billion (ppb) in 2007 and 4 ppb in 2008, which exceeds the public health goal of 0.004 ppb (CalAm 2009) but not the MCL for arsenic of 10 ppb.

3.16.1.2 Wastewater Treatment

The project site is located along the southern boundary of the Airport-Larkfield-Wikiup Sanitation Zone (Sanitation Zone), which is operated by the Sonoma County Water Agency (SCWA). The current rated capacity of the Sanitation Zone treatment plant is 0.900 mgd.

¹ MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the USEPA. PHG (Public Health Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California EPA.

According to the Sonoma County Water Agency 2005 Urban Water Management Plan this treatment plant is already operating at capacity (SCWA 2006, see Table 5-3).

Wastewater treatment at the Sanitation Zone treatment plant has recently been improved from secondary to tertiary standards by the addition of filtration and chlorination facilities. The treated wastewater from the Sanitation Zone is recycled and used for irrigation (SCWA 2009a). SCWA has plans for upgrades to the plant that would increase its treatment capacity to an ADWF of 1.2 mgd, the permitted capacity of the plant. These upgrades are currently scheduled for implementation in 2015.

Effluent storage and disposal are not considered by SCWA staff to be capacity-limiting issues at the plant. There are three effluent storage ponds in the Sanitation Zone system with a total storage capacity of 290 million gallons. This is more storage than is needed by the Sanitation Zone so the Sanitation Zone has entered into an agreement with the City of Windsor to allow the City to share or use up to 50 million gallons of storage annually.

3.16.1.3 Wells Fargo Center for the Arts

The LBMF currently operates on-site wastewater treatment and disposal facilities that serve the WFC. The wastewater volume currently generated at the WFC averages approximately 4,900 gallons per day (gpd) (Brelje & Race Consulting Engineers 2009b) (Appendix L). This flow was derived from metered water use data for the period from October 2007 to October 2008.

3.16.1.4 Solid Waste Disposal

The Sonoma County Department of Transportation and Public Works owns and operates five transfer stations throughout Sonoma County. Approximately 367,000 of the total 495,000 tons of waste generated in the county passed through this system in 2006.

Landfill operations at the County's Central Landfill on Meham Road were suspended in 2005. During the interim closure of the landfill, all waste received at county disposal sites is being transported to out-of-county landfill(s) with sufficient permitted capacity for disposal.

Contracts with four out-of-county landfills have been established to ensure sufficient disposal capacity for County waste: Redwood Landfill (Marin County), Potrero Hills Landfill (Solano County), Vasco Road Landfill (Alameda County), and Keller Canyon Landfill (Contra Costa County). The future use of the Central Landfill is uncertain. The County had been in negotiations to sell the Central Landfill and lease the County's waste transfer stations to a private company; however, the sale/lease was not approved by the Board of Supervisors. Until a long-term solution is identified and implemented, the County's waste will continue to be hauled to out-of-county landfills with sufficient capacity for disposal.

3.16.2 Regulatory Setting

3.16.2.1 Federal

The Safe Drinking Water Act (SDWA) is the main federal law enacted to protect public health related to drinking water by ensuring that public water systems provide safe drinking water. The SDWA authorizes the USEPA to set health-based standards limiting levels of contaminants in

drinking water. These primary maximum contaminant levels (MCLs) are legally enforceable by either the USEPA or states.

3.16.2.2 State

Public Water Systems

The California Department of Public Health (CDPH) is responsible for regulating public water systems and ensuring that the drinking water supplies meet state and federal standards for water quality. Primary MCLs can be found in Title 22 of the California Code of Regulations (CCR), Sections 64431–64444. Specific regulations for lead and copper are in Section 64670, et seq. Secondary MCLs address the taste, odor, or appearance of drinking water (22 CCR Section 64449; CDPH 2009).

The California Department of Water Resources (DWR) is responsible for managing the water resources of the state.

Reclaimed Water Regulations

Reuse of treated wastewater is regulated by federal and state laws and is under the jurisdiction of several state and local agencies. Federal and state laws provide regulation of reclamation and reuse through the Clean Water Act (CWA) and the California Water Code, respectively. The CWA specifically encourages water reclamation as an integral part of water pollution control projects. Regulation of reclaimed water in California is governed by Regional Water Quality Control Boards (RWQCBs) and the CDPH. The California Water Code establishes the State Water Resources Control Board (SWRCB) as the agency with primary authority for water reclamation. The nine RWQCBs administer this authority. The SWRCB provides reuse plans and policy guidelines, while the RWQCBs establish regulations for specific projects. Section 13521 of the California Water Code states that the CDPH shall establish uniform statewide recycling criteria for each type of recycled water use where the use involves the protection of public health. These criteria appear in 22 CCR, Division 4, Chapter 3. Additional design criteria appear in 17 CCR, Division 1, Chapter 5.

Solid Waste

The California Integrated Waste Management Act of 1989 (AB 939) requires all California cities and counties to reduce the volume of waste deposited in landfills by 50 percent by the year 2000 and continue to remain at 50 percent or higher for each subsequent year. The purpose of AB 939 is to “reduce, recycle, and re-use solid waste generated in the State to the maximum extent feasible.”

The California Integrated Waste Management Act requires each California city and county to prepare, adopt, and submit to the California Integrated Waste Management Board (CIWMB) a source reduction and recycling element (SRRE) that demonstrates how the jurisdiction will meet the Integrated Waste Management Act’s mandated diversion goals. Each jurisdiction’s SRRE must include specific components, as defined in Public Resources Code (PRC) sections 41003 and 41303. In addition, the SRRE must include a program for management of solid waste generated within the jurisdiction that is consistent with the following hierarchy: (1) source

reduction, (2) recycling and composting, and (3) environmentally safe transformation and land disposal. Included in this hierarchy is the requirement to emphasize and maximize the use of all feasible source reduction, recycling, and composting options in order to reduce the amount of solid waste that must be disposed of by transformation and land disposal (PRC sections 40051, 41002, and 41302) (<http://www.ciwmb.ca.gov/>, 2008).

In order for Sonoma County to help meet the state's AB 939 diversion requirements, Chapter 22 of the Sonoma County Code (Section 22-7A) explicitly bans the disposal at county disposal sites of yard debris, recyclable wood waste, scrap metal, and corrugated cardboard. To support the recycling of materials generated during operation of the development projects, the California Solid Waste Reuse and Recycling Access Act of 1991 requires areas to be set aside for collecting and loading recyclable materials in development projects. Sonoma County has developed its own ordinance in response to this act: Chapter 22, Article I, Section 22-2 of the Sonoma County Code. In addition, legislation signed into law on September 29, 2004 (AB 2176) prohibits local agencies from issuing building permits to any development project unless the development project provides adequate areas for collecting and loading recyclable materials.

3.16.2.3 Local

Water Supply

Construction of water supply facilities in unincorporated Sonoma County is subject to review for consistency with the Sonoma County General Plan (SCPRMD 2006). Permits for groundwater wells are granted through the Sonoma County Permit and Resource Management Department (PRMD). Requirements for obtaining a permit vary depending on the location of the well. Four classes of groundwater areas have been developed (SCPRMD 2006):

- Class I includes major groundwater basins;
- Class II includes major natural recharge areas;
- Class III includes marginal groundwater availability areas; and
- Class IV includes areas with low or highly variable water yield.

Permits may be obtained for Class I or II wells provided that they follow state and county standards for well construction and location. For Class III or IV, permits may be obtained after providing proof of adequate groundwater supplies. Additional monitoring requirements apply for Class IV wells and may also apply for Class III wells (SCPRMD 2006). The project area is located within the Santa Rosa Plain groundwater basin in a region designated as Class I (SCPRMD 2006).

Wastewater

The Sonoma County PRMD requires that commercial and industrial facilities submit a survey describing the types of activities that would occur on site. This information is conveyed to SCWA to determine whether a wastewater discharge permit, pretreatment, and/or monitoring manholes would be required in order to discharge wastewater to the sanitary sewer (SCWA, 2009b). Building and plumbing plans are also reviewed to aid in the determination of applicable requirements.

Solid Waste

Sonoma County approved an amended Countywide Integrated Waste Management Plan (CoIWMP) in 2003 which set forth solid waste planning strategies through the Year 2050. The 2003 CoIWMP is a regional solid waste planning document for all of the nine Sonoma County cities and the unincorporated County area.

3.16.3 Impact Analysis

3.16.3.1 Approach and Methodology

The effects related to providing water and wastewater utilities were analyzed based on existing use and projected demand, capacity, and availability of water supplies and wastewater treatment for the project and other anticipated development in the service area. Other services for the proposed project were evaluated in the context of existing use and projected capacity or demand.

3.16.3.2 Thresholds of Significance

The project would have a significant impact if it would:

- Violate wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.
- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.
- Require new or expanded entitlements of water supplies to serve the project.
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
- Exceed the permitted capacity of the designated landfill to accommodate the project's solid waste disposal needs.
- Fail to comply with federal, state, and local statutes and regulations related to solid waste.

3.16.3.3 Less Than Significant Impacts Not Requiring Further Analysis

Regarding the first threshold listed above, the project would connect to the Airport-Larkfield-Wikiup Sanitation Zone for sewer service, which provides tertiary treatment and meets applicable wastewater treatment requirements. The project would not violate wastewater treatment requirements of the applicable RWQCB.

Regarding the last threshold listed above, the project would comply with federal, state, and local statutes and regulations related to solid waste. The project's solid waste would be taken to a Sonoma County transfer station where it will then be processed and disposed of at an out-of-county landfill in compliance with federal, state, and local statutes and regulations related to

solid waste. Disposal of hazardous waste, including medical waste, is discussed in Section 3.8 of the EIR.

3.16.3.4 Impacts and Mitigation

Impact UT-1: Require New or Expanded Water Supplies The proposed project could require new or expanded entitlements of water supplies to serve the project.

Significance: Less than significant

Discussion:

Two sources were considered as water supplies to serve the project: 1) Using the local water purveyor, and 2) Utilizing available groundwater at the project site. CalAm is the local water purveyor. Also, groundwater supplies are available to serve the project site. LBMF currently uses CalAm water for its domestic water supply needs, and uses an onsite well pumping groundwater for irrigation. LBMF has indicated its preference to continue obtaining its water from these sources, so that no additional water supplies are needed for the continuing operation of LBMF. Sutter is proposing to use groundwater to provide water for the medical campus, including water for the hospital and medical building uses as well as for irrigation, and Sutter is proposing to utilize CalAm water for emergency fire service needs.

Sutter decided to utilize groundwater after CalAm advised Sutter that, to serve the proposed project with CalAm water, development of an additional new water source(s) would be necessary. CalAm water supplies are projected to be insufficient to meet projected demand in 2010 even without the project, resulting in the need to increase supply by constructing at least one new water supply well. Additional water supplies will be needed by 2020 to meet increased projected demand.

Table 3.16-1 shows the projected growth in population and water demand in the CalAm service area from 2010 to build-out (beyond 2030). Based on projected growth in the Larkfield service area and the decline in production of existing wells, a new well would be needed by 2010 to meet projected demand. CalAm's capital improvement program includes the construction of two new wells. The Mark West Station Road site (Well #6) is already purchased by CalAm. CalAm has proposed to limit the well to 150 gpm to limit interference with nearby residential water supply wells. A second location for a well, the Faught site, has been approved by the California Public Utilities Commission for construction. This well would also be limited to 150 gpm; therefore, the combined capacities are expected to be 300 gpm. A schedule for the construction of these improvements has not been established. Since the above wells are limited to 150 gpm each, and growth projections indicate an additional 160 gpm will be needed by 2010 (**Table 3.16-1**), both are needed by 2020 to meet demand without the project. CalAm staff has indicated that a new well, other than the two planned, would likely be needed to serve the proposed project. Cal Am staff have indicated that 400 gpm would ultimately be necessary to cover future growth including the proposed project.

As noted above, CalAm currently provides domestic water to the WFC. It is proposed that CalAm would continue to provide water for all of the WFC's domestic needs and fire suppression purposes. In addition, CalAm would provide water for fire suppression for the

proposed medical campus.

The County Fire Marshal has indicated that fire flows of 2,500 gpm would be required from the hydrants in Mark West Springs Road fronting the hospital site (Brelje & Race Consulting Engineers, 2009b) (Appendix L). Off-site hydrant testing near the intersection of Lavell Road and Mark West Springs Road resulted in a fire flow of 2,500 gpm, which would be sufficient to supply the project without off-site improvements. Fire service to the new Medical Campus facilities will meet CalAm and Sonoma County standards and include dedicated, on-site fire suppression systems. Sutter will build its own fire protection loop and fire hydrants around the Medical Campus as part of the proposed project.

Projected Total Domestic Water Use for Sutter Medical Center

Projections for water use at the new Sutter hospital facilities are based on estimated use of plumbing fixtures at anticipated occupancy levels provided in the *Water and Wastewater Services Report, New Replacement Hospital Project, Sutter Medical Center of Santa Rosa* (Brelje & Race Consulting Engineers, 2009b) (Appendix L). It was estimated that the Sutter Medical Center Hospital and the Physicians Medical Center (PMC) would use 177 gpd/occupied bed. The maximum use would occur when all beds are occupied, with average occupancy assumed to be 80 percent of hospital capacity (Brelje & Race Consulting Engineers 2009b, see **Table 3.16-2**).

The HVAC system for the proposed hospital and PMC will have chillers, cooling towers and boilers, which will result in water losses from evaporation and periodic replacement of cooling system water. Water losses for this system have been estimated to average 10,200 gpd, with a peak daily use of about 24,700 gpd (Brelje & Race Consulting Engineers, 2009b) (Appendix L). **Table 3.16-2** shows the estimated future domestic water demands for the Sutter Medical Center.

The peak daily irrigation demand was estimated as 88,000 gallons (61 gpm), with an annual average requirement of over 6,000,000 gallons. Irrigation occurs over a shortened, approximately 10 - 16 hour day, with peak delivery rates estimated at 90 gpm. Irrigation demands would decrease as plants become established (Brelje & Race Consulting Engineers, 2009b) (Appendix L).

Rather than rely upon CalAm for water, the proposed project includes a new well system composed of two wells approximately 600 feet deep that would be drilled to provide all water (domestic and irrigation) needs for the Medical Campus. These wells would be owned and operated by Sutter. Irrigation water for LBMF would be provided by an existing well located on the WFC property, which currently has a pump capacity of 210 gpm. The total required supply would also include a minor amount of backwash water for the well water treatment system, estimated as 1,500 gpd (1.0 gpm) initially and 1,880 gpd (1.3 gpm) with the future expansion (Brelje & Race Consulting Engineers, 2009b) (Appendix L). To meet the total peak daily demand, the groundwater supply system would need to be able to provide a total of approximately 134,550 gpd (93 gpm) initially and 147,370 gpd (102 gpm) with the future expansion. If the peak demand is met by pumping over a 16-hour period, it would require pumping at 140 gpm initially and 154 gpm with the future expansion. The average annual supply required from the wells was estimated to be 50 acre-ft (44,496 gpd or 31 gpm) initially

Table 3.16-2. Sutter Medical Center Projected Average and Maximum Day Domestic and Irrigation Water Needs and Average Generated Wastewater, August 12, 2009

Location	Average Water Use (gpd)	Maximum Water Use (gpd)	Average Wastewater Generation (gpd)
Initial Period (2013)			
Sutter Medical Center Hospital (SMC) (70 beds) ¹	9,910	12,390	9,910
Physicians Medical Center (PMC) (28 beds) ¹	3,960	4,960	3,960
HVAC for SMC and PMC ^{2,3}	10,200	24,700	1,020
Medical Office Building (80,000 s.f.) ⁴	2,140	3,000	2,140
Water Treatment System Backwash	1,500	1,500	1,500
WFC after Plumbing Fixture Retrofit	Will use separate supply (not part of proposed project)		3,170
Initial Total Domestic Use	27,710	46,550	21,700
Landscape Irrigation⁵	16,786	88,000	No wastewater generated from irrigation
Initial Total Domestic and Irrigation use	44,496	134,550	21,700
Future Expansion (2020 +)			
SMC Expansion (29 beds) ¹	4,110	5,130	4,110
Expanded HVAC ^{3,6}	3,020	7,310	300
Expanded Water Treatment System Backwash	380	380	380
Domestic Use for Expansion	7,510	12,820	4,790
Future Total Domestic Use	35,220	59,370	26,490
Future Total Domestic and Irrigation Use	52,006	147,370	26,490

¹ Based on 177 gpd/bed at full occupancy and an 80% average day occupancy factor.

² Based on interview with mechanical engineering contractor for hospital HVAC systems.

³ HVAC water that reaches the waste stream is assumed to be 10% of the total water used by HVAC units.

⁴ Based on 2.5 persons per 1,000 square feet, 15 gpd/person, and negligible water use by HVAC system.

⁵ Peak irrigation use was obtained from the Nov. 10, 2009 revision of the *Groundwater Study, Proposed Sutter Well Supply System, Sutter Medical Center* (ENGEO, 2009c).

⁶ Based on proportional increase in hospital size from 98 beds to 127 beds.

Sources: *Water and Wastewater Services Report New Replacement Hospital Project Sutter Medical Center of Santa Rosa* (Brelje & Race Consulting Engineers 2009b).

and 58 acre-ft (52,006 gpd or 36 gpm) with the future expansion. The well pumps are anticipated to be capable of pumping between 140 to 160 gpm in order to meet operational demand fluctuations which occur during normal daily operations.

A well was recently drilled to a depth of 510 feet below the existing ground surface in the southwest corner of the project site. A 72-hour pump test was performed at a constant rate of approximately 153 gpm (ENGEO, 2009c). The drawdown resulting from maximum pumping rates for the proposed project (up to approximately 160 gpm for 16 hours per day) should be less than the drawdown observed during the 72-hour pump test since there would be at least 8 hours for the water table to recover. During the 72-hour test, a shallow domestic well located nearly 1,500 feet northeast of the new well only experienced about one inch of drawdown at the end of the test (ENGEO, 2009c). As discussed in Section 3.9 under Impact HY-3, the drawdown experienced by wells within the radius of influence of the proposed Sutter wells would not significantly affect the production at those wells.

The capacity of the underlying aquifer is sufficient to supply the domestic and irrigation demands for the proposed project, as discussed in Section 3.9 under Impact HY-3. Therefore, the proposed project will not require new or expanded entitlements, and the impact to water supplies would be less than significant.

Mitigation: No mitigation required

Impact UT-2: Require Construction of New Water Treatment Facilities The proposed project would require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Significance: Potentially significant

Discussion:

As part of the proposed project, two new water supply wells would be constructed on the project site. Assuming that the water quality of the new wells is acceptably low in arsenic, on-site treatment would consist of the installation of a small greensand type filter plant (to treat iron and manganese), plus disinfection facilities in the vicinity of the new wells. Filters would be installed in a 1,100 square foot building located adjacent to the hospital's Central Utilities Plant. Disinfection would likely be by sodium hypochlorite injection. If arsenic concentrations are too high, additional treatment will be performed, such as the addition of ferric chloride. The capacity of the wells would be between 140 and 160 gpm.

As a small component of the larger proposed development, the environmental impacts due to the construction of the treatment facilities are included in the analysis throughout this Draft EIR. On-site stormwater detention facilities would be constructed to offset the projected increase in runoff that would result from the relatively small addition of impervious surfaces. Stormwater detention facilities to minimize the additional runoff are detailed in Impact HY-4 in Section 3.9. Construction of the water treatment facilities would comply with applicable regulations to minimize impacts to surface water quality, as discussed in Impact HY-1 in Section 3.9.

As discussed in Section 3.4, the Bay Area Air Quality Management District (BAAQMD) does

not have significance thresholds for construction emissions. The BAAQMD CEQA Guidelines do not recommend quantification of construction period emissions because these emissions are temporary and construction equipment is considered to be included in the regional air pollutant emissions inventories that are the basis of regional attainment plans. However, PM₁₀ emissions are the pollutant of greatest concern from construction activities, according to the BAAQMD CEQA Guidelines. Impacts to air quality due to supplying fill, construction, and grading would be minimized by the implementation of Mitigation AIR-1, AIR-2a, and AIR-2b (discussed in Section 3.4) such that any secondary air quality impacts associated with the construction of new water treatment facilities would be less than significant.

Mitigation UT-2: Implement Mitigation HY-4, AIR-1, AIR-2a, and AIR-2b Implement Mitigation Measures HY-4, AIR-1, AIR-2a, and AIR-2b to prevent increases in stormwater runoff and minimize air quality impacts during construction.

Significance After Mitigation: Less than significant

Impact UT-3: Require Construction of New Stormwater Drainage Facilities The proposed project would require the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Significance: Potentially significant

Discussion:

Existing storm drainage at the project site drains to the west where several existing culverts are located under US 101, which is adjacent to and west of the site (see **Figure 3.9-2**). No change to these existing culverts would be needed. On-site stormwater detention facilities would be constructed to offset the projected increase in runoff that would result from the project. Stormwater detention facilities to minimize the additional runoff are detailed in Impact HY-4 in Section 3.9. Construction of these new drainage facilities would comply with applicable regulations to minimize impacts to surface water quality, as discussed in Impact HY-1 in Section 3.9.

As discussed in Section 3.4, the Bay Area Air Quality Management District (BAAQMD) does not have significance thresholds for construction emissions. The BAAQMD CEQA Guidelines do not recommend quantification of construction period emissions because these emissions are temporary and construction equipment is considered to be included in the regional air pollutant emissions inventories that are the basis of regional attainment plans. However, PM₁₀ emissions are the pollutant of greatest concern from construction activities, according to the BAAQMD CEQA Guidelines. Impacts to air quality due to construction and grading required for the construction of the storm drainage facilities would be minimized by the implementation of Mitigation AIR-2a and AIR-2b (discussed in Section 4.4) such that the impact would be less than significant.

**Mitigation UT-3:
Implement Mitigation
HY-4, AIR-2a, and
AIR-2b** Implement Mitigation Measures HY-4, AIR-2a, and AIR-2b to prevent increases in stormwater runoff and minimize air quality impacts during construction.

**Significance After
Mitigation:** Less than significant

**Impact UT-4: Result in
Inadequate Wastewater
Treatment Capacity** Project implementation could result in a determination by the wastewater treatment provider that serves the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Significance: Potentially significant

Discussion:

As stated previously, annexation into the Sanitation Zone is the only viable means of providing public sewer service for the project. Numerous meetings and discussions regarding such service have taken place with Sutter, LBMF, and SCWA staff. The LBMF currently operates wastewater treatment and disposal facilities on site that serve the WFC. The project includes abandoning these facilities and connecting WFC and the new medical campus facilities to the Sanitation Zone collection system (sewers).

Potential connection points to the sewer for the project are located along the north side of Mark West Springs Road (an 8" line) and along the west side of Old Redwood Highway (a 12" line).

Although the additional flows from the medical campus and WFC will be completely offset in the majority of the existing trunk system due to implementation of mitigation measures UT-4a to UT-4c, local collector sewers in the upstream end of the collection system may be impacted by these additional flows. Sewer flow capacity is evaluated using peak wet weather flow (PWWF) criteria. The selection of the PWWF is dependent upon several variables whose values will be determined during the SCWA sewer service application process, which will include detailed modeling and design studies that will be used to select the preferred alternative for connection to the collection system (Brelje & Race Consulting Engineers, 2009b) (Appendix L).

Treatment plant capacity is evaluated using ADWF criteria and estimated peaking factors. The peak ADWF indicates that the plant is operating at nearly its current rated capacity. Improvements to the plant would need to be realized before significant wastewater flow is added to the system.

Wastewater Generation

Wells Fargo Center for the Arts

Since the new hospital would occupy the site of the existing wastewater treatment system for the WFC, the wastewater treatment ponds would be decommissioned and the WFC would also

be connected to the sanitary sewer system. The current wastewater generated at the WFC has been determined to average approximately 4,900 gpd (Brelje & Race Consulting Engineers 2009b) (Appendix L). This flow was derived from metered water use data for the period October 2007 to October 2008.

Hospital

The domestic wastewater generated by the project hospitals – the Sutter hospital (initially with 70 beds with a possible future expansion to 99 beds) and 28-bed PMC – is projected to be 177 gpd/bed based upon plumbing fixture use frequency and flow rates contained in the 1992 Energy Policy Act (cited in LEED WE Credit 3) and an allowance for support areas of the facility, such as surgery, emergency room, food service, and janitorial facilities. At an anticipated occupancy of 80%, this per-bed volume results in an average wastewater flow of approximately 14,000 gpd initially from SMC and PMC combined, increasing to approximately 18,000 gpd after the SMC expansion (Brelje and Race Consulting Engineers 2009b) (Appendix L).

The above estimates of wastewater generation were based on the following fixture flow rates:

- Toilets (1.6 gallons per flush)
- Urinals (1 gallon per flush)
- Sinks and showers (2.5 gpm)

The following section provides estimates of wastewater generation from water treatment and for the HVAC system serving the SMC and PMC.

Water Treatment and HVAC Facilities

Sutter proposes to install its own wells capable of providing domestic water supply. Well water will require treatment. Backwash of the treatment facility to clean and regenerate filter media may generate up to 1,880 gpd of wastewater. If the facility includes the means to recycle backwash water through the filtration system, discharges to the sewer could be avoided.

Although water consumed through HVAC equipment operation can be substantial, the consumption is primarily due to evaporative losses associated with heat rejection from cooling towers. In order to control the solids concentration in the cooling tower water, a small percentage of the circulating water is “bled off” and discharged to the sewer. These bleed losses are estimated to be 10% of the HVAC system water consumed on an average day or 1,020 gpd initially and 1,440 gpd with the future expansion.

Medical Office Building

The wastewater generated by an 80,000-square-foot Medical Office Building is projected to be 3,000 gpd at full occupancy. This volume is based on an occupant density of 2.5 persons per 1,000 square feet and a wastewater generation of 15 gpd per occupant. The building is projected to be occupied at the above density from Monday through Friday at most times during the year, but largely vacant on weekends. The wastewater discharged during a typical ADWF rating period is therefore expected to be approximately 2,140 gpd (Brelje & Race Consulting Engineers 2009b) (Appendix L).

Rural Residential Parcel

The wastewater generated by the existing single family dwelling on the 1.41 acre rural residential lot (APN 058-040-036) that could connect to the sewer system once annexed to the sewer district is estimated to be 280 gpd (SCWA, 2009d). While this parcel may not connect to the sewer system in the foreseeable future because its existing septic system is functioning adequately, the potential is there, so the possible connection must be mitigated.

Wastewater Quality

The medical facilities at the Sutter Medical Center campus will produce commercial and industrial wastes that could be detrimental to the Sanitation Zone facilities if discharged to the wastewater collection system. To comply with SCWA wastewater regulations, certain processes of concern will require the implementation of pretreatment measures. Any hospital buildings that generate process wastewater will need to have dual plumbing systems (process waste and sanitary waste) installed. Monitoring manholes will need to be installed on building sewers. Any areas where food waste is present will require a grease interceptor (SCWA, 2009b). All wastewater discharged to the sewer will be regulated and monitored by SCWA in accordance with conditions established by an Industrial Wastewater Discharge Permit.

The SCWA will not allow garbage disposals (SCWA 2009b). With implementation of Mitigation UT-4d, Sutter will install kitchen waste collection systems at all nurses' stations and any food processing locations. These wastes will either be composted on site or will be collected for commercial recycling. As discussed in Section 3.8, the medical facilities will need to comply with all federal, state, and local regulations regarding hazardous waste. All hazardous, bio-waste and bio-hazardous wastes will be separated out before any such wastes enter either the wastewater or solid waste streams.

Wastewater discharged to the sewer collection system will have BOD (biochemical oxygen demand) and TSS (total suspended solids) concentrations similar to those generated by residential units and commercial uses within the Sanitation Zone. BOD and TSS are the two primary constituents of concern in establishing the treatment capacity of the Sanitation Zone wastewater treatment plant (Brelje & Race Consulting Engineers 2009b) (Appendix L).

Biochemical Oxygen Demand (BOD): The BOD concentration of wastewater discharged to the sewer collection system is expected to average 219 mg/l (Brelje & Race Consulting Engineers 2009b) (Appendix L). BOD concentrations reported for the existing Sutter Hospital on Chanate Road ranged between 90 and 290 mg/l over a 4 year period with an average concentration of 175 mg/l. The projected increase from 175 mg/l to 219 mg/l accounts for the fact that the proposed project buildings will be equipped with water conserving fixtures and therefore will likely generate a more concentrated waste stream (Brelje & Race Consulting Engineers 2009b).

The Sanitation Zone wastewater treatment plant processes wastewater during all times of the year such that its effluent BOD concentrations are below the limit established by its current Waste Discharge Requirements (Brelje & Race Consulting Engineers 2009b) (Appendix L). Influent BOD concentrations at the Sanitation Zone plant range between 113 mg/l and 344 mg/l (5th and 95th percentile of data from 2005 to 2009) (Brelje & Race Consulting Engineers

2009b). The BOD load projected to be discharged to the sewer collection system by the proposed hospital facilities is estimated to be less than 2% of that capable of being removed by the plant (Brelje & Race Consulting Engineers 2009b). No plant improvements are required to accommodate this slight additional load (Brelje & Race Consulting Engineers 2009b). Therefore, plant loading related to BOD will be a less than significant impact.

Total Suspended Solids (TSS): The TSS concentration of wastewater discharged to the sewer collection system is expected to average 201 mg/l (Brelje & Race Consulting Engineers 2009b) (Appendix L). TSS concentrations reported for the existing Sutter Hospital on Chanate Road generally ranged between 60 and 300 mg/l over a 4 year period with an average concentration of 161 mg/l. The increase from 161 mg/l to 201 mg/l accounts for the fact that the proposed project buildings will be equipped with water conserving fixtures and therefore will likely generate a more concentrated waste stream (Brelje & Race Consulting Engineers 2009b).

The concentration of TSS at the Sanitation Zone wastewater treatment plant currently poses intermittent problems when influent flows exceed the microfiltration process capacity necessary to produce effluent to tertiary standards. Influent TSS concentrations at the Sanitation Zone plant generally range between 111 mg/l and 346 mg/l (5th and 95th percentile of data from 2005 to 2009) (Brelje & Race Consulting Engineers 2009b) (Appendix L). The TSS load projected to be discharged to the sewer collection system by the proposed hospital facilities is estimated to be less than 2% of that entering the plant on an average day (Brelje & Race Consulting Engineers 2009b).

The intermittent microfiltration operational problems generally occur during the winter when elevated plant influent flow exceeds the through-put efficiency of the microfilters. In this situation, a portion of the secondary effluent from the settling pond is temporarily diverted to a storage pond. Because of the elevated TSS levels, this diverted water does not meet secondary treatment standards and must therefore be retreated when plant inflow no longer exceeds the threshold that prevents the entire plant flow from being directed through the microfilters (Brelje & Race Consulting Engineers 2009b) (Appendix L).

Since the sewer flows discharged from the hospital would not include storm water flows in the winter, the minor increase in TSS load due to the hospital facilities would not significantly affect the intermittent microfiltration problems.

TSS Plant Loading: Currently, there are four microfiltration modules. SCWA plans to resolve the above intermittent microfilter capacity problem through the addition of two additional banks of microfilters to increase the tertiary treatment capacity (Brelje & Race Consulting Engineers 2009b) (Appendix L). There is adequate space to accommodate the improvements in the already developed areas of the existing facility (Brelje & Race Consulting Engineers 2009b). SCWA currently anticipates that the improvements would be completed by 2013 (SCWA, 2009c).

Zero Footprint Offset Credits

In lieu of the project driving the need to increase the rated capacity of the Sanitation Zone plant, Sutter plans to take a multi-prong approach to water conservation with the expectation of realizing a “zero footprint” for the project in terms of wastewater treatment needs. This

approach considers the following three primary components:

- Retrofit the WFC with low flow toilets and other indoor water conserving devices.
- Install ultra-low flow fixtures in both hospitals and the Medical Office Building.
- Achieve offset credits by funding a program to retrofit residential and commercial buildings already connected to the Sanitation Zone with ultra low flow toilets and other indoor water conserving devices.

The first component will be implemented as part of Mitigation UT-4a. The second component is included in Mitigation UT-4b, and the third component is included in Mitigation UT-4c.

Opportunities for reducing the wastewater generated at WFC reside primarily with replacement or retrofit of existing restroom plumbing fixtures. Reduction is expected to be robust since a very high percentage of the indoor water use comes from toilet/urinal flushing and hand washing, especially during events that use the 1,668-seat Pearson Theatre. It is estimated that the generation of wastewater can be reduced from about 4,900 to 3,200 gpd through the use of water-saving devices (Brelje & Race Consulting Engineers 2009b) (Appendix L). Indoor plumbing fixture retrofits and replacements will be implemented at the WFC to the maximum extent practicable.

The wastewater generation from the proposed hospital could be reduced using a combination of the following measures, which could achieve the goal of meeting the Water Use Reduction Credit set forth in LEED WE Credit 3.2:

1. Install ultra-low flush toilets (1.1 gallons average per flush).
2. Install lavatory faucets with 1.5 gpm flow moderators.
3. Install ultra-low flow (0.5 gpm) lavatory faucets with infrared sensors for on/off control in public restrooms.
4. Install 0.5 gallon per flush urinals in public restrooms.

On August 18, 2009 the SCWA Board of Directors passed a resolution to implement a High Efficiency Fixture Direct Installation Program (HEFDIP) for low-flow toilets/urinals, shower heads, and faucet aerators in the Airport/Larkfield-Wikiup Sanitation zone. In addition to this program the sanitation zone also offers a program of rebates for replacement of low flow toilets and purchase of high-efficiency washing machines. The purpose of the direct installation program is to replace all older toilets with low flow toilets in the sanitation zone within 10 years.

For residential buildings, the potential reduction in wastewater generation by replacing toilets, faucets and showerheads is estimated to be 14.4 gpd/person. If clothes washing machines are replaced with higher efficiency appliances, the reduction increases to 19.9 gpd/person (ref. Table 8, Nelson 2004). Based on population characteristics for the Sanitation Zone, there are 2.5 people per ESD (SCWA, 2009d). The corresponding reduction in residential wastewater would be 36 gpd/ESD for replacing toilets, faucets, and showerheads, and 50 gpd/ESD if washing machines are also included. This is out of a current average residential wastewater flow of 280 gpd/ESD in the Sanitation Zone (SCWA, 2009d). The above estimates of residential wastewater reductions per ESD are slightly lower than values that were calculated in

the *Water and Wastewater Services Report* (Brelje & Race Consulting Engineers, 2009b) (Appendix L), which had used the same method but with an estimate of 2.8 people per ESD. The potential reduction in wastewater generation for commercial buildings is conservatively estimated to be 28 gpd/ESD (Brelje & Race Consulting Engineers, 2009b).

As of July 2008, there were 3,622 equivalent single-family dwellings (ESDs) connected to the Sanitation Zone. Roughly 65 percent are residential and 35 percent are commercial. A large proportion of the buildings in the service area were constructed prior to the advent of low flow and ultra-low flow fixtures being used in construction (Brelje & Race Consulting Engineers, 2009b) (Appendix L). Assuming the savings discussed above (36 gpd for residential and 28 gpd for commercial) the average savings per ESD would be 33 gpd/ESD for the HEFDIP.

Table 3.16-3 shows the number of offsets required for “Zero Footprint” Design.

To realize a “zero footprint” project in terms of wastewater treatment needs, the total average daily wastewater flow generated by the project will need to be offset by water conservation in the service area that can be attributed to the program funded as part of the project. The projected total average daily flow for all buildings of the project, including the WFC, is 21,700 gpd initially, increasing to 26,490 gpd after future 2020 expansion. A reduction of 21,700 gpd would require 658 ESDs to participate in the program, or 18% of the total ESDs connected to the Sanitation Zone, and 26,490 gpd would require 803 ESDs or a 22% participation rate. If LEED WE Credit 3.2 is achieved, fewer offsets would be required. To be conservative, the values in **Table 3.16-3** are shown without accounting for the LEED WE Credit 3.2 reduction.

In addition to the above, the wastewater generated by the existing single family dwelling on the 1.41 acre rural residential lot (APN 058-040-036) that could connect to the sewer system once annexed to the sewer district is estimated to be 280 gpd (SCWA, 2009d). While this parcel may not connect to the sewer system in the foreseeable future because its existing septic system is functioning adequately, the potential is there, so the possible connection must be mitigated. The additional 8 ESDs required to offset the 280 gpd have been included in Table 3.16-3, for a grand total of 811 required ESD offsets after all future 2020 expansion is counted.

It is difficult to predict how many people will participate in the program. The City of Rohnert Park (City) has implemented a residential “direct-install” Ultra-Low Flow Toilet (ULFT) program since 1997. After only one year, 10% of the entire inventory of toilets was replaced of which 68% were from the direct-install program (the City also has a low-flow toilet rebate program). The City has continued its toilet replacement program and as of March 2004, 37% of the pre-1992 inventory had been replaced (Nelson, 2004). Based on the average rate of toilet replacements between 1998 and 2004, it is estimated that over 20% of the City’s toilets would have been replaced in the first 3 years. With a similar participation rate expected for the HEFDIP starting in 2010 for the Sanitation Zone service area, the wastewater generated in the first two phases of the project should be completely offset by 2013 when the project is proposed to be constructed, with the remainder of wastewater expected for future expansion in Phase III being offset shortly thereafter.

Implementation of Mitigation UT-4a through Mitigation UT-4c would result in the Sanitation Zone having sufficient capacity to meet the demand of the proposed project in addition to its existing commitments. The impact would be less than significant.

**Mitigation UT-4a:
Retrofit the WFC with
Low Flow Toilets and
Other Indoor Water
Conserving Devices**

Indoor plumbing fixture retrofit and replacements shall be implemented at the WFC to the maximum extent practicable to reduce its wastewater generation. At a minimum, the following measures will be implemented:

1. Install low flow toilets (1.6 gallons average per flush).
2. Install 1.0 gallons per flush urinals.
3. Retrofit lavatory faucets with 1.5 gpm flow moderators.

A report shall be prepared by Sutter Hospital before an occupancy permit is granted that describes the retrofit of the WFC and compares the pre- and post-retrofit water usage to provide an accounting of the reduction in wastewater generation. The report will include the number of participants in the retrofit program that is funded by Sutter up to that point and the number required to offset the waste generation from the WFC. If there are insufficient participants in the program to offset the wastewater generated by the WFC, a program to increase participation shall be proposed by Sutter and implemented immediately upon approval by the County and SCWA. The WFC will not be connected to the Sanitation Zone collection system until there are sufficient participants in the program unless an exception to this requirement is expressly granted by SCWA.

**Mitigation UT-4b:
Install Ultra Low Flow
Toilets and Other
Indoor Water
Conserving Devices in
All of the New
Buildings, including the
Sutter Medical Center,
the Physicians Medical
Center, and the
Medical Office Building**

Water conservation measures shall be implemented in all of the new buildings, including the Sutter Medical Center, the Physicians Medical Center, and the Medical Office Building, and will include some or all of the following:

1. Install ultra-low flush toilets (1.1 gallons average per flush).
2. Install lavatory faucets with 1.5 gpm flow moderators.
3. Install ultra-low flow (0.5 gpm) lavatory faucets with infrared sensors for on/off control in public restrooms.
4. Install 0.5 gallon per flush urinals in public restrooms.

A report will be prepared by Sutter describing the water conserving measures to be implemented in the new buildings. The report will be submitted to the County and SCWA before issuance of a building permit. The report shall provide an estimate of the waste generation in the new buildings and the number of ESD participants in the retrofit program required to offset the waste generated.

**Mitigation UT-4c:
Achieve Offset Credits
by Funding a Program
to Retrofit Residential
and Commercial**

Sutter shall offset the additional wastewater generated by the proposed project by funding the recently approved SCWA direct install program to retrofit residential and commercial buildings with ultra low flow toilets and other indoor water conserving devices. Sutter shall fund the program at a level sufficient to meet the needs

Buildings With Ultra Low Flow Toilets and Other Indoor Water Conserving Devices

of this project per Table 3.16-3. Alternatively, if the report prepared as part of Mitigation UT-4b is approved by SCWA and demonstrates that less wastewater would be generated due to the implementation of additional water conserving devices, the level of funding could be reduced to account for the reduced number of required offsets. The method of funding shall be agreed to between Sutter and the SCWA before issuance of a building permit.

Sutter shall submit a report every six months to the SCWA starting in January 2010 and continuing until the retrofit program has reduced the waste generated in the Sanitation Zone sufficiently to offset the waste generated by this project. The report shall state the number of ESDs that have participated in the program and shall also provide an estimate of the date at which the program is expected to meet the needs of the project based on the rate of participation. If the date is later than the expected date of occupancy, a program to increase participation or the amount of savings by participants (e.g., include high efficiency washers in the program) shall be included in the report and subsequently implemented once approved by SCWA. The final report will need to show that the expected wastewater generated by the project has been offset by the retrofit program before an occupancy permit is granted.

Mitigation UT-4d: Ensure Hospital Wastewater Discharge Quality

Kitchen waste collection systems will be installed at all nurses' stations and any food processing locations. These wastes will either be composted on site or will be collected for commercial recycling.

Mitigation UT-4e: Provide Capacity for Increased Wastewater Flows at Proposed Connection Points

If modeling shows a lack of capacity and Sutter chooses to connect at the Mark West Springs Road trunk line, the portion of the existing 8" sewer between the project connection point in Mark West Springs Road and its terminus at the trunk sewer in Old Redwood Highway at Lark Center Drive will be replaced with a larger diameter sewer prior to hospital occupancy.

Significance After Mitigation:

Less than significant once sufficient offsets have been obtained and sewer line has been replaced, if necessary.

Table 3.16-3. Schedule of Offsets Required for Zero Footprint²

PHASE	OFFSETS REQUIRED <i>In equivalent single family dwellings, ESDs using 33 gpd/ESD savings³</i>	PROGRAM <i>To be verified by a feasibility study</i>	TIMING OF OFFSETS <i>In place before the following approval</i>	MONITORED BY
Phase I (2010 - 2012) - Entitlement, Relocation, Replacement of Utilities and Existing Facilities				
Annexation of the entire 53± ac. site to the Airport-Larkfield-Wikiup Sanitation Zone (all existing facilities and site improvements would remain in place)	Zero	Retrofit existing WFC facilities (urinals, toilets, hand sinks) to reduce flows from 4,931 gpd to 3,170 gpd.	Prior to any project approval	WFC
Connection of the existing LBMF facilities to the Airport-Larkfield-Wikiup Sanitation Zone wastewater treatment system;	97	Under SCWA High-Efficiency Fixture Direct Installation Program (HEFDIP), retrofit existing single family homes, apartment complexes and commercial buildings in the Sanitation Zone service area with new low flow toilets, low flow shower heads and/or low flow faucets to reduce wastewater generation (water use) by 3,200gpd.	Prior to connecting to Sanitation Zone collection system	SCWA
Decommissioning of the existing on-site LBMF sewage treatment facility;	Zero			
Demolishing the existing barn (LBMF maintenance facility) on Lot A	Zero			

² Modified from table in *Water and Wastewater Services Report, New Replacement Hospital Project, Sutter Medical Center of Santa Rosa* (Brelje & Race Consulting Engineers, 2009b).

³ The 33 gpd/ESD does not include washing machine replacements, consistent with the HEFDIP. If 100% of the residential ESDs replaced their washing machine with a high efficiency model, the reduction would average 42 gpd/ESD (Brelje & Race Consulting Engineers, 2009b).

Table 3.16-3. Schedule of Offsets Required for Zero Footprint²

PHASE	OFFSETS REQUIRED <i>In equivalent single family dwellings, ESDs using 33 gpd/ESD savings³</i>	PROGRAM <i>To be verified by a feasibility study</i>	TIMING OF OFFSETS <i>In place before the following approval</i>	MONITORED BY
Relocating the maintenance activities to a newly-constructed Maintenance Facility.	Zero			
Allowance for potential sewer hookup of existing dwelling on 1.41 acre rural residential parcel (APN 058-040-036)	8	Under SCWA High-Efficiency Fixture Direct Installation Program (HEFDIP), retrofit existing single family homes, apartment complexes and commercial buildings in the Sanitation Zone service area with new low flow toilets, low flow shower heads and/or low flow faucets to reduce wastewater generation (water use) by 280 gpd.	Prior to connection of existing dwelling to sewer or initiation of work on Phase 2 of the project.	SCWA
Phase II (2010-2013) - Construction of Medical Campus Facilities				
70 licensed bed acute inpatient facility with approximately 126,000 square feet of floor area	300	Under SCWA High-Efficiency Fixture Direct Installation Program (HEFDIP), retrofit existing single family homes, apartment complexes and commercial buildings in the Sanitation Zone service area with new low flow toilets, low flow shower heads and/or low flow faucets to reduce wastewater generation (water use) by 9,910 gpd.	Prior to receiving certificate of occupancy and connecting to Sanitation Zone collection system	SCWA
A support facility including an approximately 5,110 square foot Central Utility Plant (CUP), and approximately 3,200 square foot Plant Operations and Maintenance (PO&M) building (to house offices and workshops for the hospital	76	Under SCWA High-Efficiency Fixture Direct Installation Program (HEFDIP), retrofit existing single family homes, apartment complexes and commercial buildings in the Sanitation Zone service area with new low	Prior to connecting to Sanitation Zone collection system	SCWA

Table 3.16-3. Schedule of Offsets Required for Zero Footprint²

PHASE	OFFSETS REQUIRED <i>In equivalent single family dwellings, ESDs using 33 gpd/ESD savings³</i>	PROGRAM <i>To be verified by a feasibility study</i>	TIMING OF OFFSETS <i>In place before the following approval</i>	MONITORED BY
engineering staff), and approximately 1,260 square foot Water Treatment Facility, and approx. 1,230 square feet of associated chemical/gas storage tanks and 2 hydro-pneumatic tanks of about 1,500 gallons each		flow toilets, low flow shower heads and/or low flow faucets to reduce wastewater generation by 2,520 gpd to account for water treatment backwash allowance and HVAC system bleed.		
Medical Office Building (MOB) with approximately 80,000 square feet of floor area including administrative activities and operations.	65	Under SCWA High-Efficiency Fixture Direct Installation Program (HEFDIP), retrofit existing single family homes, apartment complexes and commercial buildings in the Sanitation Zone service area with new low flow toilets, low flow shower heads and/or low flow faucets to reduce wastewater generation (water use) by 2,140 gpd.	Prior to receiving certificate of occupancy and connecting to Sanitation Zone collection system	SCWA
Physicians Medical Center (PMC) – an acute care inpatient and outpatient facility providing for inpatient and outpatient surgery and also providing a full range of outpatient hospital services (28 licensed beds) approximately 100,000 square feet of floor area	120	Under SCWA High-Efficiency Fixture Direct Installation Program (HEFDIP), retrofit existing single family homes, apartment complexes and commercial buildings in the Sanitation Zone service area with new low flow toilets, low flow shower heads and/or low flow faucets to reduce wastewater generation (water use) by 3,960 gpd.	Prior to receiving certificate of occupancy for PMC and connecting to Sanitation Zone collection system	SCWA
LBMF Facilities (no change in buildings or site activities from Phase I)	Zero			

Table 3.16-3. Schedule of Offsets Required for Zero Footprint²

PHASE	OFFSETS REQUIRED <i>In equivalent single family dwellings, ESDs using 33 gpd/ESD savings³</i>	PROGRAM <i>To be verified by a feasibility study</i>	TIMING OF OFFSETS <i>In place before the following approval</i>	MONITORED BY
Phase III - Future Expansion (2010 or later)				
Sutter may expand the 70-bed Sutter Medical Center hospital by up to 29 beds, including expansion of the Emergency Department in approximately 36,000 square feet of additional floor area.	125	Under SCWA High-Efficiency Fixture Direct Installation Program (HEFDIP), retrofit existing single family homes, apartment complexes and commercial buildings in the Sanitation Zone service area with new low flow toilets, low flow shower heads and/or low flow faucets to reduce wastewater generation (water use) by 4,110 gpd.	Prior to receiving certificate of occupancy for SMC expansion	SCWA
The water requirements for the HVAC system and the water treatment system would be increased to support the future expansion.	21	Under SCWA High-Efficiency Fixture Direct Installation Program (HEFDIP), retrofit existing single family homes, apartment complexes and commercial buildings in the Sanitation Zone service area with new low flow toilets, low flow shower heads and/or low flow faucets to reduce wastewater generation (water use) by 680 gpd	Prior to receiving certificate of occupancy for SMC expansion	SCWA
Total offsets required <i>In equivalent single family dwellings, ESDs</i>	811			

Impact UT-5: Require Construction of New Wastewater Treatment Facilities The proposed project would require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Significance: Potentially significant

Discussion:

The project site is located along the southern boundary of the SCWA's Airport-Larkfield-Wikiup Sanitation Zone. Annexation into the Sanitation Zone is the only viable means of providing public sewer service for the project. The LBMF currently operates wastewater treatment and disposal facilities on-site that serve the WFC. The project includes abandoning these facilities and connecting the Sutter medical complex and the WFC to the Sanitation Zone collection system (sewers).

The current rated capacity of the Sanitation Zone treatment plant is 0.900 mgd. According to the Sonoma County Water Agency 2005 Urban Water Management Plan this treatment plant is already operating at capacity (SCWA 2006, see Table 5-3). A study for the draft 2009 Housing Element of the Sonoma County General Plan found that a new aeration lagoon would be required before treatment capacity could be increased. Such an improvement could result in significant environmental effects such as the addition of pollutants to air and storm water during construction. Mitigation measures UT-4a to UT-4c would reduce the wastewater flow generated by the proposed project and offset the project flows to prevent the need to increase the Sanitation Zone's current rated capacity.

However, as discussed under Impact UT-4, the project flows could impact local collector sewers in the upstream end of the collection system. If modeling shows that the capacity of the existing 8" sewer is inadequate between the project connection point in Mark West Springs Road and its terminus at the trunk sewer in Old Redwood Highway at Lark Center Drive, it will need to be replaced as described in Mitigation UT-4e.

Construction of the replacement sewer line would comply with applicable regulations to minimize impacts to surface water quality, as discussed in Impact HY-1 in Section 3.9.

As discussed in Section 3.4, the Bay Area Air Quality Management District (BAAQMD) does not have significance thresholds for construction emissions. The BAAQMD CEQA Guidelines do not recommend quantification of construction period emissions because these emissions are temporary and construction equipment is considered to be included in the regional air pollutant emissions inventories that are the basis of regional attainment plans. However, PM10 emissions are the pollutant of greatest concern from construction activities, according to the BAAQMD CEQA Guidelines. Impacts to air quality due to construction would be minimized by the implementation of Mitigation AIR-2a and AIR-2b (discussed in Section 3.4) such that any secondary air quality impacts associated with the construction of the replacement sewer line, if required, would be less than significant.

**Mitigation UT-5:
Implement Mitigation
UT-4a through UT-4c** Implement Mitigation Measures UT-4a through UT-4c to offset project wastewater flows and implement Mitigation Measures AIR-2a, and AIR-2b to minimize air quality impacts during construction of the replacement sewer line, if required.

**Significance After
Mitigation:** Less than significant

**Impact UT-6: Result in
Insufficient Landfill
Capacity** The proposed project could be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.

Significance: Less than significant

Discussion: Construction and operation of the proposed project would result in an increased demand for disposal of solid waste. This would be a potentially significant impact.

The proposed project would generate waste during construction as well as from daily operation. Construction waste would generally consist of brush and other vegetative growth, sheetrock, dimensional lumber, metal scraps, cardboard packaging, and plastic wrap.

Although waste composition varies, in many hospitals the largest components of the waste stream are paper (especially cardboard, mixed paper, newspaper, and high grade paper), plastics (especially film plastic), food waste, and disposable linens (a combination of paper and other materials). Based upon an average of the current Sutter Medical Center on Chanate Road in Santa Rosa, Sutter Elk Grove and Sutter Memorial Hospital facilities and confirmed with the California Integrated Waste Management Board's (CIWMB's) solid waste generation rates, the project is expected to generate approximately 14,390 pounds of solid waste per day.

In compliance with Chapter 22, Article I, Section 22-2 of the Sonoma County Code, the project applicant will prepare and implement a recycling plan for the construction phase and daily operation of the Sutter medical Center Campus. The recycling plan will address major materials generated by the construction project and identify the means to divert these materials away from landfill disposal. The recycling plan will also address the daily operation of the medical center and efforts to require that all components of the project participate in the program. Recycling will be required to divert 50 percent of the project's business as usual solid waste. In addition, the site plan will provide adequate storage space for recyclable materials.

Currently, no waste is buried in Sonoma County, as landfill operations have been suspended at the County's Central Landfill. Accordingly, all waste is processed by the county disposal system and the out-of-county landfills that accept waste from Sonoma County, not at the Central Landfill. These landfills have sufficient permitted capacity to accept the County's waste. Future operations at the Central Landfill are uncertain. However, until a long-term solution is identified, the County will continue to contract for waste disposal at out-of-County landfills with sufficient permitted capacity to accept all County waste, including waste from the proposed project.

Mitigation: No mitigation required

Significance After Mitigation: Less than significant

Impact UT-7: Cumulative Impacts to Utilities and Service Systems Construction and operation of the proposed project could result in a considerable contribution to a significant cumulative impact related to utilities and service systems.

Significance: Less than significant

Discussion:

Water Supply

The Sonoma County General Plan 2020 EIR identifies increased water demand and the potential need to expand water delivery systems as a significant cumulative effect, given the uncertainty regarding the future availability of supplies. The proposed project would increase demand for water, however, the project would develop its own water supply and treatment facilities onsite. CalAm currently supplies water to the WFC. This would not change under the proposed project. The project would therefore not have a considerable contribution to a significant cumulative impact on water supply services. (The project's contribution to cumulative impacts on groundwater is discussed in Section 3.9-3 (Impact HY-6).

Wastewater Management

Increased demand for wastewater treatment services and the subsequent need to build additional treatment capacity has been identified in the EIR for the Sonoma County General Plan 2020 as a significant cumulative effect. The proposed project would generate additional wastewater flows to the local treatment plant, however, the project includes the use of low flow fixtures in new construction, and retrofitting the WFC with low flow fixtures to reduce new wastewater generation as much as practical. While the proposed project would generate additional wastewater flows, project specific mitigation described in Section 3.16 includes offsetting the wastewater flow by implementing programs to reduce residential wastewater flows, creating a "zero footprint" project. Because the new wastewater flows would be offset by wastewater reductions to the local treatment plant, the project would not contribute to a cumulative impact.

Solid Waste Generation and Disposal

The Sonoma County General Plan 2020 EIR identifies increased generation of solid waste as a significant cumulative impact. Based upon an average of the existing Sutter Medical Center of Santa Rosa, Sutter Elk Grove and Sutter Memorial Hospital facilities and confirmed with the CIWMB's solid waste generation rates, the project is expected to generate approximately 14,390 pounds of solid waste per day. Implementation of a recycling program would reduce the amount of solid waste requiring landfill disposal by one half to approximately 7,195 pounds per day.

Approximately 1,165,936 tons of solid waste was generated in Sonoma County in 2003 and of this amount approximately 55 percent or 523,400 tons was disposed of in landfills (SCPRMD, 2006). The proposed project would generate approximately 1,313 tons of solid waste per year that would require landfill disposal or approximately 0.25 percent of the solid waste generated

in Sonoma County that would require landfill disposal. All of the County's waste will be disposed of in landfills with sufficient permitted capacity to accept the waste. Therefore, the proposed project is not expected to make a considerable contribution to a cumulative impact on solid waste generation and disposal.

Mitigation: No mitigation required

Significance After Less than significant

Mitigation:

