

STATE CLEARINGHOUSE NO.
2008 02201 2

DRAFT ENVIRONMENTAL IMPACT REPORT

SUTTER MEDICAL CENTER OF SANTA ROSA/LUTHER BURBANK MEMORIAL FOUNDATION JOINT MASTER PLAN



Prepared for

County of Sonoma
Permit and Resource Management Department
2550 Ventura Avenue
Santa Rosa, CA 95403

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S.1 INTRODUCTION

Sutter Medical Center of Santa Rosa (Sutter) and the Luther Burbank Memorial Foundation (LBMF) request approval of a joint Master Plan prepared for the properties that comprise the project site at 50 Mark West Springs Road, Sonoma County, California. The joint Master Plan reflects the intent to accommodate both LBMF and Medical Campus facilities on the 53-acre site via an integrated land use and circulation plan, which would include a single major signalized site entry road from Mark West Springs Road. Implementation of the Master Plan is the project evaluated in this Draft EIR.

The Sutter Medical Center is classified as an acute-care facility. Seismic-safety legislation SB 1953 (Chapter 740, Statutes of 1994), the Alfred E. Alquist Hospital Facilities Seismic Safety Act, requires the seismic upgrade or replacement of all general and acute-care hospitals at risk of collapsing during a strong earthquake. The project sponsor has determined that it is infeasible to bring the facilities at the Chanate Road campus into compliance with the mandated SB 1953 regulations and the proposed project is the best way to comply with those regulations. The Office of Statewide Health Planning and Development (OSHPD) is responsible for carrying out the provisions of SB 1953 regulations, and has approved a time extension to Sutter, under SB 1661, that would allow Sutter to meet the provisions of SB 1953 by January 1, 2013.

S.2 PROPOSED PROJECT

Sutter Health currently operates one acute care hospital in Santa Rosa, on Chanate Road. Sutter has determined that replacement of the existing hospital on Chanate Road is needed to achieve long-range compliance with the Hospital Facilities Seismic Safety Act (Senate Bills [SBs] 1953 and 1661). Accordingly, as part of a larger medical campus, Sutter is proposing to build a new hospital on its property at 50 Mark West Springs Road to replace the hospital on Chanate Road.

The project evaluated in this Draft EIR consists of the phased development of the Sutter Medical Center medical campus with a state-of-the-art hospital that will comply with the Hospital Seismic Safety Acts, a central utility plant/plant operations/water treatment facilities complex to serve the Medical Campus, a Medical Office Building (MOB), a Physicians Medical Center (PMC), and a helistop, and revision of the Luther Burbank Memorial Foundation (LBMF) Use Permit to clarify currently allowed uses. See Section 2.0 for a detailed description of the project.

The Medical Campus construction would consist of the Sutter Medical Center hospital building, a two-story, 70-bed acute inpatient facility with a full range of inpatient and outpatient treatment and diagnostic services, including all ancillary and support services required. A Central Utility Plant would also be constructed on site. The campus would include a newly constructed three-story MOB to house medical center administrative activities and operations. The project also proposes a two- and three- story PMC, an acute care inpatient and outpatient facility with 28 licensed beds providing for inpatient and outpatient surgery and a full range of outpatient hospital services. A ground-level helistop adjacent to the hospital to transport patients is a part of the proposed project. On-site surface parking would increase to 1,941 paved and striped spaces. The project is expected to be constructed between 2010 and 2013.

The proposed project provides for future expansion of the medical campus to include expansion of the 70-bed Sutter Medical Center hospital by up to 29 beds, including expansion of the Emergency Department. Such expansion would include one- and two-story building additions.

An Initial Study was prepared and submitted with a Notice of Preparation (NOP) in August 2008 to facilitate the appropriate due diligence and full disclosure of potentially significant impacts that may be associated with the project. Based on the findings of the Initial Study, Sonoma County identified that preparation of an Environmental Impact Report (EIR) was necessary because the proposed project could have potentially significant impacts. The Initial Study is included in **Appendix A**.

This Draft EIR will be circulated for public review and comments. The Sonoma County Planning Commission will hold a public hearing during the comment period to receive comments on the Draft EIR. Once the review and comment period is completed, Sonoma County will respond to the substantive comments on the Draft EIR and make any necessary revisions to the text in response to the comments. The response to comments document and Draft EIR will constitute the Final EIR. Once the Final EIR is complete, the Planning Commission will consider whether to recommend to the Board of Supervisors certification of the Final EIR and approval of the project. Thereafter, the Sonoma County Board of Supervisors will hold a hearing to consider certification of the Final EIR and approval of the proposed project.

Alternatives

Seven build alternatives and the No Project alternative are analyzed in this Draft EIR. These alternatives are summarized below and to varying degrees would reduce impacts identified for the proposed project.

No Project:

1. No Project – Under the No Project alternative no new medical facilities would be developed. The existing Sutter Medical Center of Santa Rosa at 3325 Chanate Road would be required to be closed by January 1, 2013, in compliance with SB 1953 and SB 1661.

Alternative Sites:

2. Shiloh Road/US 101 – The project would be constructed on an undeveloped 27-acre site located just east of US 101 and south of Shiloh Road. This site is in the Town of Windsor and is part of the Shiloh Corridor Vision Plan.
3. Todd Road/Moorland Avenue – The project would be constructed on an undeveloped 19.9 acre site located west of US 101 and south of Todd Road. The site is under County jurisdiction, but within the Urban Growth Boundary of the City of Santa Rosa.

Decentralized Alternative:

4. Decentralized Alternative – Under this alternative the 28-bed PMC and a 50,000 sq/ft MOB would be constructed at 50 Mark West Springs Road (the proposed project site). Sutter's 70-bed hospital, a 50,000 sq/ft MOB, a helistop, and a central utility plant would be constructed at an alternate site (either the Todd/Moorland site referenced above or the Ring property site at 1700 Hampton Way within the city limits of Santa Rosa).

Reduced Project:

5. No Helistop – Under this alternative the project would be constructed as proposed at 50 Mark West Springs Road but without the helistop. Patients requiring transport by helicopter would arrive at the Sonoma County Airport and be transported by ambulance to the medical campus.
6. 70-bed Hospital Only – Under this alternative the proposed 70-bed hospital, central utility plant, and helistop would be constructed but not an accompanying PMC or MOB.
7. Overall Reduced Project – Under this alternative the intensity of the major components of the proposed project would be reduced by approximately one-third. Thus, this alternative would include a Sutter Medical Center of 47 beds, a PMC of 19 beds, an MOB of 53,600 square feet, and a helistop.

S.3 AREAS OF KNOWN CONTROVERSY / ISSUES TO BE RESOLVED

The primary issues of concern raised during the public scoping process are:

- Project location outside City of Santa Rosa limits,
- Potential economic effects on other hospitals,
- Helicopter noise, and
- Traffic impacts.

The proposed project would have significant unavoidable impacts on air quality, noise, and traffic. This EIR identifies alternatives that would reduce or eliminate these impacts, but each alternative has economic, political, and/or other issues to be resolved before it could be implemented (See Section 6.0).

This EIR discusses mitigation measures to reduce cumulative impacts on air quality, noise, and traffic that are beyond the ability of this project to implement (See Sections 3.4, 3.11, and 3.15). These include measures to reduce GHG emissions, noise levels, and traffic impacts. Issues to be resolved are whether and how these measures should be implemented.

S.4 IMPACT SUMMARY

Table S-1 lists all impacts and mitigation measures addressed in this EIR. The table provides a summary of each impact, its significance by alternative, mitigation measures, and the impact’s significance after mitigation has been applied.

The following are the significant and unavoidable impacts the would remain after mitigation has been applied:

- Temporary increase in criteria pollutants (NO_x and PM₁₀) from haul trucks bringing fill to the project site, resulting in exceedances of daily emissions thresholds (AIR-1 and cumulative)
- Long-term increase in criteria pollutant (NO_x) from annual testing of hospital emergency generator one day of the year, resulting in exceedance of daily emissions threshold (AIR-5 and cumulative)

- Increase in greenhouse gas emissions, contributing to the global inventory of greenhouse gas emissions and climate change (AIR-7)
- Temporary increase in noise levels at nearby sensitive receptors from construction (both with or without pile driving) (NOI-1a, NOI-1b)
- Exposure of sensitive off-site receptors to intermittent noise from helicopter operations (NOI-5)
- Cumulative noise impacts from project operations when added to other existing noise in the project vicinity (NOI-8)
- Worsening of unacceptable levels of service at some intersections in the vicinity of the project due to the addition of project traffic, both in the near-term (2014) and long-term (2035) (TR-1, TR-6, TR-16)
- Unsignalized River Road/Barnes Road intersection would experience a significant impact in 2014 and 2035 based upon peak hour signal warrant evaluation (TR-2, TR-7, TR-17)
- Worsening of significant 95th percentile queuing impacts at some intersections in the vicinity of the project due to the addition of project traffic, both in the near-term (2014) and long-term (2035) (TR-3, TR-8, TR-18)
- Increase in volume/capacity ratio on some segments of US 101 operating at unacceptable levels of service (TR-5, TR-10, TR-20)

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
AESTHETICS			
Impact AES-1: Affects a Scenic Vista. The project site is bounded on two sides by scenic corridors, US 101 and Mark West Springs Road. However, the proposed medical center facilities would not substantially interrupt or block scenic vistas.	LTS	No mitigation required	-
Impact AES-2: Damages Scenic Resources. There are no trees, rock outcroppings, historic buildings or other features on the site that are considered scenic resources. Although US 101 is listed as a Sonoma County scenic corridor, it is not a Designated State Scenic Highway.	NI	No mitigation required	-
Impact AES-3: Permanent Change in Project Site’s Visual Quality and Character. The visual quality and character of the northern portion of the site where new medical facilities would be built would change, but the proposed new facilities would be consistent with the character of the WFC and compatible with the character of the surrounding area.	LTS	No mitigation required	-
Impact AES-4: Permanent New Source of Light or Glare. The proposed medical center would require night lighting for operational, security, and safety purposes that would represent a new source of substantial light. Also, the new buildings could be a potential source of daytime glare.	PS	<p>Mitigation AES-4a: Use lights that prevent light trespass. The following measures are recommended to control and prevent light trespass:</p> <ul style="list-style-type: none"> • Lighting plans should be submitted for design review and approval. • The plans should require that free-standing light fixtures use low-pressure sodium lamps or other similar lighting fixture and be installed and shielded in such a manner that all lights are shielded from off-site view and no light rays are emitted from the fixture at angles above the horizontal plane. • Building-mounted lights should be shielded and downcast. • Prohibit the use of high intensity discharge lamps. <p>Mitigation AES-4b: Use building materials and surfaces that minimize reflected glare. The following measures are recommended to minimize reflected glare:</p> <ul style="list-style-type: none"> • Exterior building materials should be composed of at least 50 percent low-reflectance non-polished surfaces. • All bare metallic surfaces should be painted with flat finishes to reduce reflected glare. 	LTS

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
Impact AES-5: Cumulative Impacts of Hospital Operations on Aesthetics. Continued operation of the proposed project could contribute to a significant cumulative impact on aesthetics.	LTS	No mitigation required	-
AGRICULTURE			
Impact AG-2: Cumulative Agricultural Resources Impacts. Implementation of the proposed project could result in a considerable contribution to significant cumulative agricultural resources impacts.	LTS	No mitigation required	-
Impact AGR-1: Conversion of Farmland to Nonagricultural Uses. A 12-acre section of the project site is designated as Farmland of Local importance, which would be converted to nonagricultural use as a result of the project.	LTS	No mitigation required	-
AIR QUALITY			
Impact AIR-1: Temporary Increase of Criteria Pollutants for Which the Project Region Is Non-Attainment. Haul truck trips bringing fill to the proposed project site could potentially result in a net increase of criteria pollutants (ROG, NO _x and PM ₁₀) for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)	PS	Mitigation AIR-1: Reduce Length of Haul Truck Trips, Restrict Idling. The following measures could reduce emissions associated with haul truck trips to the project site. a) Preference for material to be imported to the site should be given to sources closest to the project site; b) Enforce state idling restrictions that apply to large trucks and construction equipment by posting clearly visible signs at the haul truck entrances that clearly stating the restrictions (no idling for greater than 5 minutes at any location); c) If possible, avoid haul truck trips on days when Spare the Air Days are forecasted by the BAAQMD. Because the source of the fill material and schedule for importing fill has not been determined at this time, the exact effectiveness of these measures is unknown. However, it is known that haul truck trips will be within a 15-mile radius of the project and impacts were calculated based on 15-mile distance from fill source. Fugitive dust control measures associated with the haul truck activities are addressed in Mitigation AIR-2a.	SU

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
<p>Impact AIR-2: Temporary Exposure of Sensitive Receptors to Construction Dust and Exhaust Emissions. Fugitive dust and exhaust emissions (from construction equipment and pile driving fuel combustion) during demolition, construction, and grading could expose sensitive receptors to substantial criteria pollutant concentrations.</p>	<p>PS</p>	<p>Mitigation AIR-2a: Include Measures to Control Dust Emissions. Implementation of the measures recommended by the BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less than significant level:</p> <ol style="list-style-type: none"> 1. Water all active construction areas at least twice daily and more often during windy periods. Active areas adjacent to residences should be kept damp at all times. 2. Cover trucks or maintain at least two feet of freeboard. Dust-proof chutes shall be used to load debris onto trucks during demolition. 3. Pave, apply water at least twice daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas. 4. Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas and sweep streets daily (with water sweepers) if visible soil material is deposited onto the adjacent roads. 5. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (i.e., within 10 days for previously-graded areas where final grading has occurred and for other construction areas that have been inactive for 30 days or more). 6. Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles. 7. Limit traffic speeds on any unpaved roads to 15 mph. 8. Replant vegetation in disturbed areas as quickly as possible. 9. Suspend construction activities that cause visible dust plumes to extend beyond the construction site. 10. Limit the area subject to excavation, grading and other construction activity at any one time <p>Mitigation AIR-2b: Include Measures to Reduce Criteria Pollutant Exhaust From Construction Equipment.</p> <ol style="list-style-type: none"> 1. The project shall ensure that emissions from all off-road 	<p>LTS</p>

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
		<p>diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. A visual survey of all in-operation equipment shall be made at least weekly throughout the duration of the project construction. A record of the inspection shall be maintained on-site. The BAAQMD and/or other officials may conduct periodic site inspections to determine compliance.</p> <ol style="list-style-type: none"> 2. The contractor shall install temporary electrical service whenever possible to avoid the need for independently powered equipment (e.g., compressors). 3. Signs shall be posted that indicate diesel-powered equipment standing idle for more than five minutes shall be turned off or operators would be subject to fines. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks could keep their engines running continuously as long as they were onsite. 4. Properly tune and maintain equipment for low emissions. 5. The applicant shall designate a Disturbance Coordinator responsible for ensuring that mitigation measures to reduce air quality impacts to nearby residences from construction are properly implemented. The Disturbance Coordinator shall be responsible for notifying adjacent land uses of construction activities and schedule and shall provide a written list of the aforementioned dust control measures. The list shall identify a contact person that will respond to any complaints. A log shall be kept of all complaints and the actions taken to remedy any valid complaint as well as the response period. 	
<p>Impact AIR-3: Consistency With Applicable Air Quality Plan. Operation of the new Medical Campus would generate air emissions which could conflict with or obstruct implementation of the applicable air quality plan</p>	<p>LTS</p>	<p>No mitigation required</p>	<p>-</p>

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
<p>Impact AIR-4: Insignificant Long-Term Increases in Carbon Monoxide Emissions. Carbon monoxide emissions from traffic associated with the operation of the proposed Medical Campus could violate carbon monoxide standards.</p>	LTS	No mitigation required	-
<p>Impact AIR-5: Long-Term Increases in Criteria Pollutant Emissions. Criteria pollutant emissions associated with the operation of the proposed Medical Campus could exceed BAAQMD CEQA significance thresholds, potentially resulting in a significant net increase of NO_x, PM₁₀, or ROG.</p>	PS	<p>Mitigation AIR-5a: Schedule Generator Testing to Avoid Ozone Exceedances. Testing of the diesel generators for more than one hour per day shall not occur during the months of May through October, to ensure that these emissions would not contribute to exceedances of State ozone standards in the region.</p> <p>Mitigation AIR-5b: Ensure Compliance With BAAQMD Rules and Regulations. Some mechanical equipment (e.g., natural gas fired boiler and diesel emergency generators) used at the hospital would require permits from the BAAQMD. The applicant shall consult with the BAAQMD to ensure compliance with appropriate rules and regulations so that emissions are properly controlled and do not exceed levels reported in this analysis.</p> <p>Mitigation AIR-5c: Reduce Air Pollutant Emissions on Spare the Air Days. The hospital administrators shall sign up with the BAAQMD to receive Spare the Air notifications and avoid scheduling generator testing on these days. In addition, Hospital and office building staffs should be informed of the Spare the Air Days so that they may voluntarily reduce emissions through carpooling, using transit or other means.</p>	SU
<p>Impact AIR-6: Insignificant Increases in TAC Emissions. Diesel particulate matter from construction and operation of the project could expose sensitive receptors to substantial TAC concentrations that would lead to an increased probability of cancer greater than 10 in one million.</p>	LTS	No mitigation required	-

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
<p>Impact AIR-7: Generation of Greenhouse Gas Emissions. The proposed project would result in emissions of greenhouse gases, and would thus contribute to the global inventory of greenhouse gas emissions and climate change</p>	<p>PS</p>	<p>Mitigation AIR-7: Develop project with the project design features and emissions reduction measures. The project shall be developed with the project design features and emissions reduction measures set forth in Table 1 of Appendix C-5:</p> <ol style="list-style-type: none"> 1. Incorporate energy conservation measures, including Leadership in Energy and Environmental Design (LEED) or equivalent standards in the design and construction of the new campus. Such measures to be incorporated to the extent feasible include passive energy conservation designs, green roof designs, low flow and waterless fixtures, and low impact development practices. Participate in PG&E’s Energy by Design program or the equivalent to optimize solar to the extent feasible (see Section 4.4.2 for more details). 2. Include measures to reduce vehicle trips and encourage transit, such as coordinating with Sonoma County Transit, providing bus stops adjacent to the hospital, providing priority parking for vanpools and carpools, and recharge stations or similar facilities for electric vehicles or other alternate fuel vehicles. Where feasible, use low emission of alternate fuel vehicles in the campus service fleet (see Section 4.4.2 for more details). 3. Provide sidewalks/pedestrian paths to encourage walking; provide bicycle parking, and develop off peak hour work shifts to the maximum extent feasible 4. Reduce water usage and associated energy demands by maximizing use of on-site water (rainwater or grey water) where appropriate, utilizing high performance fixtures and equipment, and drip irrigation and high efficiency irrigation control on any new landscaping. (The project’s wastewater offset program will also reduce water usage). 5. Monitor the efforts of CARB and other state agencies charged with reducing the state’s contribution to global climate change and implement any applicable strategies adopted through promulgated regulations. 	<p>SU</p>

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
BIOLOGY			
<p>Impact BIO-1: Temporary Construction Impacts on raptors and other special status birds. The proposed project may affect special status birds, including nesting raptors, if present on-site when construction begins.</p>	PS	<p>Mitigation BIO-1: Survey Trees Within 300 Feet of Project Site and Impose Buffers to Avoid Impacts to Nests. A nesting survey for raptors and other special-status bird species shall be conducted prior to commencing with tree removal, grading, or other construction work if this work would occur between February 1 and August 31. Nesting surveys shall include examination of all trees within 300 feet of the project site, regardless of whether they are slated for removal. If a nest is discovered, a buffer zone around the nest tree must be staked with bright orange lath or other suitable staking. If the tree is located off the project site, then the buffer shall be demarcated per above where the buffer occurs on the project site. The size of the buffer will be established by a qualified biologist to reflect the identified raptor or special-status bird species. No construction or earth-moving activity shall occur within the established buffer until it is determined by the qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 15 for raptors. This date may be earlier or later, and would be determined by a qualified biologist. If a qualified biologist is not on site to make observations, the buffers shall be maintained in place through the month of August and work within the buffer can commence September 1.</p>	LTS

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
<p>Impact BIO-2: Permanent Loss of Potentially Jurisdictional Features. Project construction would result in the loss of approximately 0.39 acre of jurisdictional wetlands and other waters.</p>	<p>PS</p>	<p>Mitigation BIO-2a: Avoidance and Minimization of Impacts to Jurisdictional Features. Waters of the U.S. and state shall be avoided by the project where possible and impacts shall be minimized to the extent practicable through the use of Best Management Practices during construction. These practices shall include installing orange construction fencing to keep workers and equipment out of the area to be preserved, and using erosion control measures, such as straw wattles, hay bails, and drain inlet controls to keep sediment and debris from entering jurisdictional waters. During project construction, a biological monitor will also be on-site to monitor the integrity of preserved wetlands and other waters while major earth moving activities are underway.</p> <p>Mitigation BIO-2b: Compensatory Mitigation. For those wetland areas that are impacted as part of the proposed project, appropriate permits shall be acquired from the Corps and RWQCB prior to any impacts occurring to regulated waters of the U.S. and/or State. Impacted wetland areas shall be compensated for at a 2:1 ratio (i.e., for each square foot of impact, compensation shall consist of 2 square feet of replacement/preservation compensation) via purchase of mitigation credits from a Corps and RWQCB approved wetland conservation bank. As the project will impact 0.39 acre of seasonal wetland, 0.78 acre of mitigation credits shall be purchased from a qualified wetlands conservation bank. Prior to purchasing mitigation credits from a qualified conservation bank, approval from the Corps and RWQCB shall be required. Mitigation credits shall be purchased prior to breaking ground on the project site. Copies of applicable permits from the Corps and RWQCB shall be provided to Sonoma County prior to grading, and any conditions in these permits shall become a condition of project approval. Any other conditions that are stipulated for wetland impacts by the Corps and/or RWQCB shall also become conditions of project approval. If mitigation compensation is not required by the Corps and/or RWQCB for the proposed project, then this condition of project approval shall be deemed unnecessary.</p>	<p>LTS</p>

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
		<p>In the event that mitigation credits cannot be secured from a Corps and RWQCB approved wetland conservation bank, compensation wetlands shall be created/enhanced on-site and will resemble those wetlands affected by the project (known as in-kind replacement). If wetlands cannot be created in-kind and on-site, wetland creation/enhancement shall be implemented offsite. Any wetland creation/enhancement plan shall be approved by the Corps and the RWQCB via permit issuance from these agencies for the appropriate jurisdictional features within the purview of these agencies. Mitigation requirements shall include that all impacted wetlands are replaced at a minimum 2:1 ratio (for each square foot of impact, one square foot of wetland would be enhanced/created) or as otherwise specified in permitting conditions imposed by the Corps and/or RWQCB. Thus, since 0.39 acre of seasonal wetland would be impacted, 0.78 acre of created/enhanced wetland would be required to be constructed. Implementation of this mitigation measure shall require that any site where wetlands are created/enhanced would have to be preserved in perpetuity via recordation of a perpetual restrictive deed recorded on the Title of the property. In addition, a five-year monitoring plan shall be implemented by a qualified biologist. At the end of the five-year monitoring period, the Corps and RWQCB shall render a conclusion that the created/enhanced wetlands are successful.</p>	
<p>Impact BIO-3: Permanent Loss of Protected Native Trees. The proposed project would remove native trees that are protected under ordinances in the Sonoma County Zoning Regulations.</p>	<p>PS</p>	<p>Mitigation BIO-3: Plant Replacement Trees or Pay In-Lieu Fee. The removal of native, protected oak trees shall be mitigated by planting replacement trees or paying an in-lieu fee, per zoning regulations. If replacement planting is the mitigation option chosen, replacement trees shall be the same species as the trees removed.</p> <p>To determine the mitigation ratio for coast live oaks removed, it shall be necessary for the applicant to implement Sonoma County’s “arboreal value” methodology, which is a mathematical evaluation of the arboreal component of a site for the purposes of establishing a plan for tree preservation. Under this methodology one of two available methods can be used for determining arboreal values, based on Chart Nos. 1 or 2 in the Sonoma</p>	<p>LTS</p>

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
		County Tree Ordinance. Chart No. 1 requires analysis be done only in the development areas and requires 100 percent replacement or in-lieu fees. Chart No. 2 requires analysis of the entire site but allows for removal of up to 50 percent of the arboreal value. Compensation for the loss of greater than 50 percent of arboreal value will require replacement by using the chart. Replacement shall include the replanting of coast live oak and valley oaks on the project site in accordance with the arboreal value and Chart No. 2 or by paying the in-lieu fee.	
Impact BIO-4: Cumulative Impacts to Biological Resources. The proposed project could contribute to a significant cumulative impact on biological resources.	PS	Mitigation BIO-4: Implement Mitigation BIO-2a and BIO-2b. Implement Mitigation BIO-2a and BIO-2b.	LTS
CULTURAL RESOURCES			
Impact CUL-1: Permanent Change to a Potentially Historic Resource. The project would demolish a barn at 100 Mark West Springs Road, a potentially historic resource.	LTS	No mitigation required	-
Impact CUL -2: Potential Construction Impacts to Undiscovered Unique Archaeological Resources. Project construction could adversely affect undiscovered unique archaeological resources, if present.	PS	Mitigation CUL-2: Work Stoppage and Resource Evaluation in the Event of a Subsurface Prehistoric or Historic Resource Find. If any prehistoric or historic subsurface cultural resources are discovered during ground-disturbing activities, all work within 50 feet of the resources shall be halted and a qualified archaeologist shall be consulted to assess the significance of the find according to <i>CEQA Guidelines</i> Section 15064.5. If any find is determined to be significant, representatives from the county and the archaeologist will meet to determine the appropriate avoidance measures or other appropriate mitigation. All significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts to historical resources or unique archaeological resources, the county will determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate	LTS

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
		measures (e.g., data recovery) will be instituted. Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is being carried out.	
<p>Impact CUL-3: Potential Construction Impacts to Undiscovered Unique Paleontological Resources. Although site soils have a very low potential to yield paleontological resources, project construction could adversely affect undiscovered unique paleontological resources, if present.</p>	PS	<p>Mitigation CUL-3: Work Stoppage and Resource Evaluation in the Event of a Paleontological Resources Find. In the event that fossils or fossil-bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify a qualified paleontologist to examine the discovery. The paleontologist shall document the discovery as needed (in accordance with Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 1995), evaluate the potential resource, and assess the significance of the find under the criteria set forth in <i>CEQA Guidelines</i> Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important. The plan shall be submitted to PRMD for review and approval prior to implementation.</p>	LTS

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
<p>Impact CUL-4: Potential Construction Impacts to Undiscovered Human Remains. Undiscovered human remains could be affected by excavation activities during project construction.</p>	PS	<p>Mitigation CUL-4: Work Stoppage and Resource Evaluation in the Event Human Remains Are Encountered. If human skeletal remains are uncovered during project construction, the contractor (depending on the project component) will immediately halt work, contact the Sonoma County coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5(e)(1) of the <i>CEQA Guidelines</i>. If the county coroner determines that the remains are Native American, the project proponent will contact the NAHC, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by AB 2641). Per Public Resources Code 5097.98, the contractor shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the contractor has discussed and conferred, as prescribed in this section (California Public Resources Code Section 5097.98), with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.</p>	LTS
<p>Impact CUL-5: Cumulative Cultural Resources Impacts. Implementation of the proposed project could result in a considerable contribution to significant cumulative cultural resources impacts</p>	LTS	No mitigation required	-
GEOLOGY AND SOILS			
<p>Impact GEO-1: Exposure of People or Structures to Fault Rupture. Damage to proposed project facilities or injury to persons could potentially occur due to fault rupture.</p>	LTS	No mitigation required	-
<p>Impact GEO-2: Exposure of People or Structures to Seismic Ground Shaking. Strong seismic ground shaking is expected to occur at the project site at some time during the design life of the proposed project. Strong seismic ground shaking has the potential to expose people or structures to substantial adverse effects.</p>	LTS	No mitigation required	-
<p>Impact GEO-3: Exposure of People or Structures to Seismic-Related Ground Failure. Some soils at the project site would be susceptible to seismic softening if subject to strong earthquake-generated ground shaking.</p>	LTS	No mitigation required	-

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
Impact GEO-4: Exposure of People or Structures Damage Due to Landslides. Damage due to landslides at the project site is considered to be low.	LTS	No mitigation required	-
Impact GEO-5: Soil Erosion. On-site soils may be susceptible to erosion and loss of topsoil depending on drainage paths and hydrology design.	LTS	No mitigation required	-
Impact GEO-6: Differential Settlement. Differential settlement at the project site could result in damage to project buildings or other improvements.	LTS	No mitigation required	-
Impact GEO-7: Expansive Soils. Expansive soils may be encountered during project grading and construction activities. Development on such soils could result in damage to foundations, slabs, or pavements.	PS	<p>Mitigation GEO-7a: The contractor shall keep exposed subgrade moist at all times during construction.</p> <p>Mitigation GEO-7b: Slabs shall be underlain with 12 inches of select fill consisting of low to non-expansive material. For slabs constructed on native, undisturbed material, the slab-on-grade subgrade shall be excavated to a minimum 12 inch depth below the subgrade level and replaced with select fill. The overexcavated exposed grades shall be scarified to a depth of 12 inches, moisture conditioned to at least 4 percentage points above optimum moisture, and recompacted to at least 90 percent relative compaction. Restore grades in the slab area using low- to non-expansive select engineered fill compacted to 90 percent relative compaction at least 2 percentage points above optimum moisture. Engineered fill shall consist of low- to non-expansive soil having a Plasticity Index less than 12. For interior floor slabs on grade abutting strip footing stemwalls, the edge of the slabs do not require thickening; for all other cases the edges of the slab on grade should be increased by 2-inches greater than slab section.</p> <p>Mitigation GEO-7c: The Structural Engineer shall provide final design thickness and additional reinforcement, if necessary, for the intended structural loads. As a minimum requirement, reinforce slabs-on-grade to control cracking. Provide frequent control joints to reduce the cracking. Provide a thickened edge extending at least 6 inches into compacted soil to minimize water infiltration. Place a 4-inch-thick layer of clean crushed rock or gravel, which conforms to the requirement listed in Section 2.04 of Part I of the Guide Contract Specifications, under all secondary concrete slabs. Slope slabs away from the buildings at a slope of at least 2 percent to prevent water from flowing toward the building.</p>	LTS

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
Impact GEO-8: Fills. Fill material may be encountered during project grading and construction activities. Development on such soils could result in damage to foundations, slabs, or pavements.	PS	Mitigation GEO-8: All undocumented fills within proposed building footprint shall be removed and replaced with properly compacted engineered fill.	LTS
Impact GEO-9: Cumulative Impacts Related to Geology and Soils. Construction and operation of the proposed project could result in a considerable contribution to a significant cumulative impact related to geology and soils.	LTS	No mitigation required	-
HAZARDS AND HAZARDOUS MATERIALS			
Impact HAZ-1: Temporary Risk of Exposure to Hazardous Materials During Construction. Excavation of soils and construction of project features could potentially cause health hazards to construction workers, the public, and the environment should hazardous materials be encountered or released.	PS	<p>Mitigation HAZ-1a: Dispose Existing On-site Hazardous Materials Before Construction. Prior to construction, hazardous materials such as paint and solvents no longer in use at the site and empty containers for paint and chlorine shall be properly disposed. Batteries shall be disposed in accordance with regulatory requirements.</p> <p>Mitigation HAZ-1b: Implement Health and Safety Plan. A health and safety plan shall be used to protect the general public and all workers in the construction area. The plan shall describe the practices and procedures to protect worker health in the event of an accidental release of hazardous materials (for example, fuels or solvents during construction) or if previously undiscovered hazardous materials are encountered during construction. The plan shall include items such as spill prevention, cleanup and evacuation procedures. The plan will help protect the public and workers by providing procedures and contingencies that will help reduce the exposure to hazardous materials.</p> <p>Mitigation HAZ-1c: Evaluate Structures for Potential Presence of Asbestos and Lead. Existing structures shall be evaluated for the presence of ACBM and lead-based paints prior to their renovation or demolition. The evaluation shall be conducted by a Cal-OSHA certified ACBM and lead-based paint contractor. Any ACBM or lead identified as a result of the evaluation shall be removed by a Cal-OSHA certified ACBM and lead-based paint contractor and be transported and disposed off-site in accordance with regulatory requirements.</p>	LTS

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
		<p>Mitigation HAZ-1d: Remove and Backfill Septic Systems and Leach Fields. Septic systems and related leach fields located within the proposed project site shall be removed in accordance with Sonoma County permitting requirements.</p> <p>Mitigation HAZ-1e: Inspect, Test, and Remove Potentially Contaminated Soil and Groundwater. During excavation at all construction areas, the contractor shall inspect the exposed soil for visual evidence of contamination, particularly near the areas identified during site reconnaissance. If contamination indicators (e.g., obvious soil staining, odors, etc.) are encountered during excavation or grading activities, all work shall stop and an investigation shall be designed and performed to verify the presence and extent of contamination at the site. Results shall be reviewed and approved by the County’s Environmental Health Division or DTSC before construction. The investigation could include collecting samples for laboratory analysis and quantifying contaminant levels within the proposed excavation and surface disturbance areas. Subsurface investigation will determine the appropriate worker protection and the hazardous material handling and disposal procedures. Areas with soil and groundwater determined to be hazardous waste shall be removed by personnel who have been trained through the OSHA-recommended 40-hour safety program (29 CFR 1910.120) with an approved plan for groundwater extraction, soil excavation, control of contaminant releases to the air, and off-site transport or on-site treatment.</p> <p>Mitigation HAZ-1f: Implement Measures in SWPPP for Accidental Spill Containment and Cleanup. A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared and implemented as discussed in Section 3.9. This plan will describe practices and procedures for spill containment and cleanup. The practices developed for the SWPPP will help protect water and soils from hazardous materials spills during construction.</p>	

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
Impact HAZ-2: Exposure to Hazardous Materials Through Routine Transport, Use, and Storage. Operation of the Medical Campus would involve the routine transport, use, and storage of small quantities of hazardous materials. Materials classified as hazardous include chemicals that are used routinely at medical facilities as well as building maintenance materials such as paint and solvents. Exposure to these materials could affect safety and health.	LTS	No mitigation required	-
Impact HAZ-3: Potential for Spills of Hazardous Materials During Operations. Medical Campus operations could potentially result in upset and accident conditions involving the release of hazardous materials into the environment. Exposure to these materials could affect safety and health.	LTS	No mitigation required	-
Impact HAZ-4: Handling of Hazardous Materials Within 0.25 Mile of a School. Operation of the Sutter Medical Center would involve handling of hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	LTS	No mitigation required	-
Impact HAZ-5: Helicopter Operations. The proposed project includes development and operation of a helistop, the operation of which could pose a safety hazard to people living, working and traveling in the area.	PS	Mitigation HAZ-5: Install lighting on Power Poles Crossing US 101 at the Project Sites. Lighting shall be placed on the power poles crossing US 101 at the project site in a manner that will make the poles readily visible from the air by helicopter pilots at night and in such a manner as to not distract drivers on US 101.	LTS
Impact HAZ-6: Cumulative Impacts from Operational Hazards and Hazardous Materials. The operation of the proposed project in conjunction with past, current, and probable future projects in the area would not result in a significant cumulative impact related to medical helicopter operations or the transport, handling, storage, or disposal of hazardous materials in the area.	LTS	No mitigation required	-
HYDROLOGY AND WATER QUALITY			
Impact HY-1: Temporary Water Quality Effects. Project construction has the potential to increase the amount of urban pollutants and sediment in storm water runoff and to degrade runoff water quality.	LTS	No mitigation required	-
Impact HY-2: Permanent Water Quality Effects. Project operation has the potential to increase the amount of urban pollutants in storm water runoff and to degrade runoff water quality.	LTS	No mitigation required	-

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
Impact HY-3: Permanent Effects on Groundwater Supplies. The proposed project could deplete groundwater supplies through pumping of groundwater and interfere with groundwater recharge. Operation of the two proposed wells could create a net deficit in aquifer volume or lower the local groundwater table level.	LTS	No mitigation required	-
Impact HY-4: Permanent Alteration of Drainage Patterns and Potential Increase in Siltation or Erosion. Project development would alter drainage patterns in the project area and could increase the rate or amount of surface runoff such that substantial siltation or erosion would occur on- or off-site.	PS	Mitigation Measure HY-4: The following measures will ensure that increased runoff associated with increased impervious area will result in a less-than-significant impact with regard to siltation or erosion: <ul style="list-style-type: none"> • Detention basins shall be used in conjunction with source- and treatment-control BMPs to maximize infiltration and prevent increases in peak runoff from the 2-year storm. Landscaping shall be designed and maintained to prevent runoff from contacting bare soil, and silt fences, berms, or sediment control basins shall be installed.	LTS
Impact HY-5: Permanent Alteration of Drainage Patterns and Potential Increase in Flooding. Project development would alter drainage patterns in the project area and increase the rate or amount of surface runoff, which could exceed the capacity of storm water drainage systems and result in significant flooding on- or off-site.	PS	Mitigation HY-5: Prevent Increase in 10-Year Peak Flows. The proposed project shall modify drainage patterns or detention of runoff such that post-development peak flows in a 10-year storm will not exceed the pre-development 10-year peak flows at the point where runoff leaves the project site.	LTS
Impact HY-6: Cumulative Impacts to Hydrology and Water Quality. Construction and operation of the proposed project could result in a considerable contribution to a significant cumulative impact related to hydrology and water quality.	LTS	No mitigation required	-
LAND USE AND PLANNING			
Impact LU-1: Conflict with an established land use plan, policy, or regulation. Potential inconsistencies with General Plan adopted land use designations, and the proposed amendment to include the project site within the Larkfield-Wikiup Urban Service Boundary established in the County General Plan. As part of the project, this boundary would be relocated to include the project site and maintain consistency with adopted land use plans and policies.	LTS	No mitigation required	-

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
<p>Impact LU-2: Cumulative land use and planning impacts. In general, development consistent with the County General Plan would result in an increase in developed land uses in the County. As stated in the Sonoma County General Plan 2020 EIR, this development would result in significant cumulative land use impacts due to the intensification of land use conflicts. Although the proposed project is consistent with County land use plans and policies, the proposed project would result in a cumulative considerable impact because it would contribute to the significant cumulative impact of increased developed land uses in the County that, while consistent with the County General Plan, could result in increased land use conflicts.</p>	PS	<p>Mitigation LU-2: To mitigate the significant impact of intensified land use conflicts as a result of the proposed project, the mitigation measures described in the following sections would be implemented:</p> <ul style="list-style-type: none"> • Section 4.2 Aesthetics • Section 4.4 Air Quality • Section 4.5 Biological Resources • Section 4.6 Cultural Resources • Section 4.7 Geology and Soils • Section 4.8 Hazards and Hazardous Materials • Section 4.9 Hydrology and Water Quality • Section 4.10 Land Use and Planning • Section 4.11 Noise • Section 4.13 Public Services • Section 4.15 Traffic • Section 4.16 Utilities and Service Systems 	LTS
NOISE			
<p>Impact NOI-1a: Noise From Construction Activities (No Pile Driving) Would Impact Adjacent Noise Sensitive Land Uses. Construction on the site will temporarily increase noise levels at nearby noise-sensitive receptors.</p>	PS	<p>Mitigation NOI-1a: Use Temporary Noise Barriers and Limit Hours of Construction. The following mitigation measures are recommended to reduce noise generated by construction:</p> <ul style="list-style-type: none"> • Construct temporary noise barriers with a minimum height of 8 feet, such as a solid plywood construction barrier or earthen berm, between the construction activity and residences within 630 feet before site grading and earthwork begins. Openings for site access between the project site and adjacent residential land uses during these phases of construction must be minimized. Noise barriers may be removed once all ground level work is complete and upper floor construction is underway. • Limit significant noise-generating construction activities, including truck traffic coming to and from the site for any purpose, to daytime, Monday through Saturday, non-holiday hours (7:00 AM to 6:00 PM). 	Significant and Unavoidable

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
		<ul style="list-style-type: none"> • Properly muffle and maintain all construction equipment powered by internal combustion engines. • Prohibit unnecessary idling of internal combustion engines by limiting idling to 5 minutes, per State idling restrictions. • Locate all stationary noise-generating construction equipment, such as air compressors, as far as practical from existing nearby residences and other noise-sensitive land uses. Acoustically shield such equipment by using piles of aggregate, project trailers, other non-noise generating equipment, or with temporary portable noise barriers. • Select quiet construction equipment, particularly air compressors, whenever possible. Fit motorized equipment with proper mufflers in good working order. <p>Designate a "construction noise disturbance coordinator" to be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and would require that reasonable measures to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule. (The project sponsor should be responsible for designating a construction noise disturbance coordinator and posting the phone number and providing construction schedule notices).</p>	

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
<p>Impact NOI-1b: Noise From Construction Activities (With Pile Driving) Would Impact Adjacent Noise Sensitive Land Uses. Construction on the site could involve pile driving and will temporarily increase noise levels at nearby noise-sensitive receptors.</p>	PS	<p>Mitigation NOI-1b: Use Temporary Noise Barriers and Limit Hours of Construction. While construction using pile driving is not anticipated, the following mitigation measures are provided should OSHPD disallow the use of surcharge:</p> <ul style="list-style-type: none"> • Where feasible based on a consideration of geotechnical conditions and structural requirements, implement “quiet” pile driving technology (using the drill and cast-in-place method). • Erect temporary plywood noise barriers or noise control blankets around pile driving rigs to reduce noise emissions from the site and shield adjacent uses. 	SU
<p>Impact NOI-2: Exposure of the Hospital to Highway Noise Levels That Exceed County Exterior and Interior Noise Standards. The entire project site is exposed to highway noise at levels exceeding 60 dBA L_{dn}, the Sonoma County threshold of acceptability for noise-sensitive development. Noise levels at the proposed hospital could exceed the county’s exterior and interior noise limits.</p>	PS	<p>Mitigation NOI-2a: Shield Exterior by Modifying Site Layout or Incorporating Noise Barriers. Use building massing to shield outdoor activity areas from traffic noise. Outdoor activity areas shall be developed within the acoustically sheltered portions of the site to the extent feasible. If all of the common outdoor areas cannot be shielded with proposed buildings, noise barriers shall be incorporated into the design to ensure the common areas are properly mitigated from existing traffic noise to less than 60 dBA L_{dn}.</p> <p>Mitigation NOI-2b: Incorporate Sound Insulation Treatments and Building Upgrades to Reduce Interior Noise Levels. Incorporate sound insulation treatments and building upgrades into the buildings so as to achieve an interior L_{dn} of 45 dBA or less with windows closed. Such treatments may include, but would not be limited to, acoustically rated windows and doors, acoustical caulking at all exterior wall penetrations, and noise control treatments for all air transmission paths associated with mechanical ventilation systems. An acoustical analysis of the project’s design and the preparation of a report detailing the necessary noise mitigation features shall be completed during the project design and incorporated into the building plans and submitted to PRMD.</p>	LTS

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
<p>Impact NOI-3: Exposure of Noise-Sensitive Receptors to Mechanical Noise Levels That Exceed County Standards. Mechanical equipment on the roofs of the proposed structures or in the Central Utility Plant could produce noise levels in excess of Sonoma County’s noise standard applicable to on-site mechanical noise.</p>	PS	<p>Mitigation NOI-3: Perform Acoustical Design Review. During the design phase of the mechanical equipment for the proposed project, an acoustical consultant shall review the final design of the Central Utility Plant facility as well as the placement of any auxiliary outdoor mechanical equipment, such as roof top ventilation fans. The acoustical consultant shall determine that sufficient noise mitigation, such as noise barriers around the equipment, is incorporated into the project design to ensure that noise from all mechanical equipment is limited to 45 dBA or less at the noise sensitive receptors. The acoustical consultant’s evaluation shall be submitted to PRMD.</p>	LTS
<p>Impact NOI-4: Intermittent Increase in Ambient Noise and Exceedance of County Standards From Parking and On-Site Circulation. On-site parking and circulation of motor vehicles could intermittently increase ambient noise levels and could potentially exceed the Sonoma County General Plan Table NE-2 noise standards at the noise sensitive land uses adjacent to the parking lot.</p>	PS	<p>Mitigation NOI-4: Provide a Noise Barrier to Shield Residences Adjacent to Parking Area. Construct a solid 6-foot-high noise barrier on the project side of the eastern property line where parking areas are adjacent to residential properties. The location of the noise barrier is shown in Figure 3.11-5. In order to be effective, the barrier must be constructed airtight over its face and at the base and have a minimum surface weight of 3.5 pounds per square foot. Suitable materials include wood, pre-cast masonry or pre-cast concrete panels. A 6-foot high noise barrier would provide 7-8 dB of reduction from these types of noises.</p>	LTS
<p>Impact NOI-5: Exposure of Sensitive Off-Site Receptors to Intermittent Noise from Helicopter Operations. Some residential areas near the project site would be exposed to an SEL in excess of 90 dBA during helicopter operations, which represents an intermittent but substantial increase over the ambient noise that could disturb a number of occupants.</p>	PS	<p>Mitigation NOI-5a: Adopt Preferential Approach and Departure Profiles. Adopt preferential directional approach and departure profiles. According to the analysis, the SEL levels will be greater when the helicopters are approaching from the north and departing to the south. Recommend to helicopter pilots that anytime the conditions are favorable all approaches shall be made from the south with subsequent departures made to the north. This will help reduce the SEL levels and the potential for sleep disturbance to the residences to the north of the project site.</p> <p>Mitigation NOI-5b: Implement Monitoring and Adaptive Management. A program of monitoring helicopter operations and designating a community noise disturbance coordinator shall be implemented to address noise annoyance in nearby residential areas. As a part of these measures, helicopter ambulance companies and pilots shall be informed by hospital staff of approved flight paths to and from the hospital helistop to avoid or</p>	SU

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
		reduce short-term noise exposures to noise sensitive areas. Sutter shall maintain a helistop log that includes arrival and departure times, the approach route taken, and explanation of any flight path deviation from the designated flight paths. A noise disturbance coordinator shall be identified at Sutter who would record citizen complaints and review the helistop log to determine the source of the noise disturbance. Communicate any helicopter noise complaints to the pilots and request they modify their flight approach whenever possible.	
Impact NOI-6: Exposure of Sensitive On-Site Receptors to Intermittent Noise from Helicopter Operations. The majority of the project site would be exposed to an SEL in excess of 90 dBA during helicopter operations, an intermittent but substantial increase in ambient noise that could disturb hospital patients and others at the project site.	PS	Mitigation NOI-6: Conduct Acoustical Analysis and Incorporate Findings into Project Design. Noise mitigation features such as window sound insulation or upgraded wall assemblies shall be incorporated into the project design. To determine the specific features required to reduce these adverse noise effects, an acoustical analysis of the project design shall be conducted that details the necessary noise mitigation features required for patient rooms and other sensitive hospital use areas to meet an interior SEL of 65 dBA and/or maximum noise level (L _{max}) of 55 dBA during helicopter operations. The findings of this acoustical analysis shall be incorporated into the design of the hospital.	LTS
Impact NOI-7: Exposure of Sensitive Receptors to Intermittent Noise from Ambulance Operations. Ambulance and emergency vehicle noise will occur in the vicinity of the project site as a result of the project.	LTS	No mitigation required	-
Impact NOI-8: Cumulative Noise Impacts. Project operation noise from traffic, helicopters, and mechanical equipment, when added to other existing noise in the project vicinity may be cumulatively considerable.	PS	Mitigation NOI-8: Implement Mitigation Measures NOI-1 through NOI-6.	SU
POPULATION AND HOUSING			
Impact PH-1: Indirect Growth Inducement. Implementation of the proposed project could indirectly induce growth in the area.	LTS	No mitigation required	-
Impact PH-2: Cumulative Population and Housing Impacts. Implementation of the proposed project could result in a considerable contribution to significant cumulative population and housing impacts.	LTS	No mitigation required	-

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
PUBLIC SERVICES			
Impact PS-1: Need for Additional Fire Protection Services. Implementation of the proposed project may result in the need for additional fire protection services.	PS	Mitigation PS-1: Determine Need for and Provide for Additional Firefighting Services. The project shall be reviewed and approved by Sonoma County and state firefighting agencies to determine the appropriate equipment, personnel needs, and training required to fight specialized fires. Mitigation shall include but not be limited to ¹ : <ol style="list-style-type: none"> 1. Fitting any new structures with sprinklers; 2. Training for specialized (helistop) firefighting underwritten by the hospital. 	LTS
Impact PS-2: Need for Additional Police Protection Services. Implementation of the proposed project could result in the need for additional police protection services.	LTS	No mitigation required	-
Impact PS-3: Need for Additional Schools. Implementation of the proposed project could result in the need for additional schools.	NI	No mitigation required	-
Impact PS-4: Cumulative Impacts from additional Public Service Demands. The continued operation of the proposed project could result in a significant increase in the demand for public services and the need for new facilities to serve that need.	LTS	No mitigation required	-
RECREATION			
Impact REC-1: Construction of Recreational Facilities That Might Have an Adverse Physical Effect on the Environment. The project would relocate existing athletic fields and a playground at the WFC and construct passive recreation facilities at the Medical Campus. Relocation of the WFC facilities could have temporary minor impacts on recreationists during construction.	LTS	No mitigation required	-
Impact REC-2: Cumulative Recreation Impacts. Implementation of the proposed project could result in a considerable contribution to significant cumulative recreation impacts.	LTS	No mitigation required	-

¹ Jack Rosevear, Rincon Valley Fire Department 2009

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
TRANSPORTATION AND TRAFFIC			
<p>Impact TR-1: Year 2014 Intersection Level of Service. Project traffic would adversely affect the level of service at several intersections in 2014.</p>	PS	<p>Mitigation Measure TR-1: Intersection Improvements. Prior to occupancy, the project applicant shall:</p> <p>A. Construct/implement the following:</p> <ul style="list-style-type: none"> • Mark West Springs Road/Lavell Road • Prohibit left turns from Lavell Road to eastbound Mark West Springs Road. (Alternative access is available to the neighborhood served by Lavell Road (i.e. to Old Redwood Highway) in order to allow access to eastbound Mark West Springs Road.) <p>B. Enter into an agreement with the County to provide a fair share contribution to the following improvements (see Figure 3.15-15), when and if these improvements are programmed and funded for construction:</p> <p>River Road/Fulton Road</p> <ul style="list-style-type: none"> • One additional through lane on the north and southbound Fulton Road intersection approaches. <p>River Road/Barnes Road</p> <ul style="list-style-type: none"> • Signalize the intersection and interconnect with operation of the planned signal at the River Road/US 101 Southbound Ramps intersection. <p>Separate right and left turn lanes on the Barnes Road intersection approach</p>	SU
<p>Impact TR-2: Year 2014 Signalization Needs. The unsignalized River Road/Barnes Road intersection would experience a significant impact in 2014 based upon peak hour signal warrant evaluation.</p>	PS	<p>Mitigation Measure TR-2: Intersection Signalization. Prior to occupancy, the project applicant shall enter into an agreement with the County to provide a fair share contribution to the following improvements when and if they are programmed and funded for construction:</p> <ul style="list-style-type: none"> • Signalize the River Road/Barnes Road intersection and interconnect with operation of the planned signal at the River Road/U.S.101 Southbound Ramps intersection. 	SU

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
<p>Impact TR-3: Year 2014 95th Percentile Vehicle Queuing. Numerous intersections would experience significant impacts to 95th percentile queuing due to the addition of project traffic.</p>	<p>PS</p>	<p>Mitigation Measure TR-3: Intersection Improvements for 95th Percentile Vehicle Queuing. Prior to occupancy, the project applicant shall:</p> <p>A. Construct/implement the following (see Figure 3.15-15):</p> <p>River Road/US 101 Southbound Ramps</p> <ul style="list-style-type: none"> • Change signal timing. <p>Mark West Springs Road/Old Redwood Highway</p> <ul style="list-style-type: none"> • Add second left turn lanes on the Old Redwood Highway north and southbound approaches. The length of the left turn lanes shall be limited to that distance which can be feasibly constructed within the existing right of way. If it is determined after field investigation that the left turn lanes cannot be feasibly constructed within exiting right of way, the impact would be significant and unavoidable. • Add a second left turn lane on the Mark West Springs Road westbound approach. • Adjust signal timing. • Provide additional length to the following turn lanes: Old Redwood Highway Southbound Right Turn Lane: Lengthen from 100 feet to at least 250 feet. Mark West Springs Road Westbound Right Turn Lane: Lengthen from 50 feet to at least 175 feet. <p>Mark West Springs Road/Lavell Road</p> <ul style="list-style-type: none"> • Prohibit left turns from the southbound Lavell Road approach (see Mitigation Measure TR-1). • B. Enter into an agreement with the County to provide a fair share contribution to the following improvements when and if they are programmed and funded for construction: <p>River Road/Fulton Road</p> <ul style="list-style-type: none"> • Provide one additional through lane on the north and southbound Fulton Road intersection approaches (same as Mitigation Measure TR-1). North and southbound right turns will be made from the new through lanes. In conjunction with this measure, provide second departure 	<p>SU</p>

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
		<p>lanes on the north and southbound intersection legs, which will then merge to single travel lanes north and south of the intersection.</p> <ul style="list-style-type: none"> • Provide a second left turn lane on the westbound River Road approach. • Provide additional length to the following turn lane: Fulton Road Southbound Left Turn Lane: Lengthen from 75 feet up to at least 175 feet. <p>Mark West Springs Road/Old Redwood Highway Old Redwood Highway Northbound Right Turn Lane: Lengthen from 50 feet up to at least 175 feet</p>	
<p>Impact TR-4: Year 2014 Arterial Operation. No arterial segments would experience significant impacts.</p>	LTS	No mitigation required	-
<p>Impact TR-5: Year 2014 Freeway Operation. Two freeway segments would experience significant impacts in 2014 due to project traffic.</p>	PS	There are no feasible mitigation measures to reduce this impact.	SU
<p>Impact TR-6: Year 2035 Intersection Level of Service. Several intersections would experience level of service impacts due to the addition of project traffic.</p>	PS	<p>Mitigation Measure TR-6: Various Road and Signalization Improvements. Prior to occupancy, the project applicant shall:</p> <p>A. Construct/implement the following (see Figure 3.15-16):</p> <p>Mark West Springs Road/Lavell Road</p> <ul style="list-style-type: none"> • Prohibit left turns from Lavell Road to eastbound Mark West Springs Road. (This measure has been recommended for mitigation of 2014 impacts [see TR-1].) <p>Mark West Springs Road/Old Redwood Highway</p> <ul style="list-style-type: none"> • Provide second left turn lanes on the Old Redwood Highway north and southbound approaches as well as the Mark West Springs Road westbound approach. • Provide overlap right turn phasing on all intersection approaches. <p>East Fulton Road/Old Redwood Highway</p> <ul style="list-style-type: none"> • Provide a second lane on the eastbound E. Fulton Road approach. 	SU

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
		<p>B. Enter into an agreement with the County to provide a fair share contribution to the following improvements when and if they are programmed and funded for construction:</p> <p>River Road/Barnes Road</p> <ul style="list-style-type: none"> Signalize the intersection and interconnect with operation of the planned signal at the River Road/US 101 Southbound Ramps intersection. (This measure has been recommended for 2014 impacts [see TR-2].) Provide separate right and left turn lanes on the Barnes Road intersection approach. 	
<p>Impact TR-7: Year 2035 Signalization Needs. The unsignalized River Road/Barnes Road intersection would experience a significant impact based upon peak hour signal warrant evaluation.</p>	PS	<p>Mitigation Measure TR-7: Intersection Improvements at River Road/Barnes Road.</p> <ul style="list-style-type: none"> Signalize the intersection and interconnect with operation of the planned signal at the River Road/US 101 Southbound Ramps intersection. 	SU
<p>Impact TR-8: Year 2035 95th Percentile Vehicle Queuing. Numerous intersections would experience significant impacts to 95th percentile queuing due to the addition of project traffic.</p>	PS	<p>Mitigation Measure TR-8: Intersection Improvements for 95th Percentile Vehicle Queuing. Prior to occupancy, the project applicant shall:</p> <p>A. Construct/implement the following (see Figure 3.15-16):</p> <p>River Road/US 101 Southbound Ramps</p> <ul style="list-style-type: none"> Change signal timing. <p>Mark West Springs Road/Old Redwood Highway</p> <ul style="list-style-type: none"> Add dual left turn lanes to the north, south and westbound intersection approaches. Adjust signal timing. Provide overlap right turn phasing on all intersection approaches. Provide additional length to the following turn lanes: Old Redwood Highway Northbound Left Turn Lanes: Lengthen from 200 feet to at least 350 feet. Old Redwood Highway Northbound Right Turn Lane: Lengthen from 50 feet to at least 275 feet. 	SU

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
		<p>Mark West Springs Road Westbound Left Turn Lane: Lengthen from 225 feet to at least 300 feet.</p> <ul style="list-style-type: none"> Mark West Springs Road Westbound Right Turn Lane: Lengthen from 50 feet to at least 250 feet. <p>Mark West Springs Road/Project Main Entry</p> <ul style="list-style-type: none"> Adjust signal timing. <p>Mark West Springs Road Eastbound Through Movement: 768 feet/lane with 860 feet of storage</p> <p>Mark West Springs Road/Lavell Road</p> <ul style="list-style-type: none"> Prohibit left turns from the Lavell Road stop sign controlled approach. Alternative access is available to the neighborhood served by Lavell Road (i.e., to Old Redwood Highway) in order to allow access to eastbound Mark West Springs Road. <p>B. Enter into an agreement with the County to provide a fair share contribution to the following improvements when and if they are programmed and funded for construction:</p> <p>River Road/Fulton Road</p> <ul style="list-style-type: none"> Provide second left turn lanes on the westbound River Road approach and on the southbound Fulton Road approach. Adjust signal timing. Provide additional lengths to the following turn lanes: River Road Westbound Dual Left Turn Lanes: Lengthen from 150 feet up to at least 375 feet. Fulton Road Southbound Dual Left Turn Lanes: Lengthen from 75 feet up to at least 175 feet 	
Impact TR-9: Year 2035 Arterial Operation. No arterial segments would experience significant impacts.	LTS	No mitigation required	-
Impact TR-10: Year 2035 Freeway Operation. Two freeway segments would experience significant impacts in 2035 due to project traffic.	PS	There are no feasible mitigation measures to reduce this impact.	SU

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
Impact TR-11: Parking Impacts. The proposed Sutter project could result in an inadequate supply of parking for the proposed uses. However, the shared use parking plan between Sutter and Wells Fargo Center would provide overflow parking areas immediately adjacent to the project site.	LTS	No mitigation required	-
Impact TR-12: Pedestrian Impacts. Increased pedestrian activity to and from the proposed medical center could present safety concerns for pedestrians.	PS	<p>Mitigation Measure TR-12: Traffic Calming Measures and Sidewalk along West Side of Main Entry Drive + Continuous Pathway Along Old Redwood Highway. Prior to occupancy, the applicant shall provide the following measures:</p> <ul style="list-style-type: none"> • Provide traffic calming measures, such as speed tables or landscaped chokers within the parking aisles north of the hospital main entry to significantly reduce vehicle speeds at the pedestrian walkway. Highlight the walkway with signing and different pavement surface. • Provide a sidewalk along the entire length of the west side of the project main entry driveway. • Prior to occupancy, the applicant shall obtain the necessary right of way and construct a sidewalk/pedestrian pathway on the east side of Old Redwood Highway, north of Mark West Springs Road, on the western edge of Assessors parcels 058-071-015, 016, and 017. If the applicant is unable to obtain the necessary right of way, then the applicant 	LTS
Impact TR-13: Bicycle Impacts. The site layout is adequate to accommodate bicycle riders.	LTS	No mitigation required	-
Impact TR-14: Transit Impacts. Potential inadequacy of public transit availability to the project site.	LTS	No mitigation required	-

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
<p>Impact TR-15: Construction Traffic Impacts. Truck traffic associated with project construction could cause significant traffic safety impacts as trucks attempt to turn from the site to Mark West Springs Road. In addition, construction worker traffic could cause significant traffic safety impacts (during peak outbound flow periods) as workers attempt to turn from the site to Mark West Springs Road.</p>	<p>PS</p>	<p>Mitigation Measure TR-15: Develop Traffic Management Plan and Provide all Roadway Widening along Mark West Springs Road and a Signalized Mark West Springs Road/WFC Main Entry Intersection Before Occupancy of Phase II.</p> <ul style="list-style-type: none"> • Phase I Fill Importation Prior to grading permit issuance, the applicant shall develop and obtain County approval of a construction traffic management plan. Assuming all fill truck access at the project site is to/from the west, flag people shall be employed to control truck access at the Mark West Springs Road/WFC main driveway intersection (for outbound left turns). During peak traffic periods, outbound truck movements shall only be allowed every 8 to 10 minutes so as to minimize disruption to the traffic flow along Mark West Springs Road. Use of the flag people will eliminate the need for outbound trucks to turn right from the site and travel through the community on Old Redwood Highway as well as other roads. • Phase II Prior to occupancy of Phase II, the applicant shall provide all roadway widening along the US 101 northbound off-ramp, Mark West Springs Road and a signalized Mark West Springs Road/WFC main entry intersection. Also, the applicant shall provide a flag person to control egress from the project site at all times during Phase II construction when more than 20 vehicles per hour (non trucks) are expected to be exiting the site or when more than 2 trucks per hour would be expected to be exiting the site. 	<p>LTS</p>
<p>Year 2014 Off-Site Impacts with Phase III Development</p>			
<p>Impact TR-16: Year 2014 Intersection Level of Service. Project traffic would adversely affect the level of service at several intersections. These would be the same intersections and for the same movements as with project Phase II traffic.</p>	<p>PS</p>	<p>Mitigation Measure TR-16: Intersection Improvements. Prior to occupancy the project applicant shall: Implement Mitigation Measure TR-1 (i.e., the same measures as with Phase II development).</p>	<p>SU</p>

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
Impact TR-17: Year 2014 Signalization Needs. The unsignalized River Road/Barnes Road intersection would experience a significant impact in 2014 based upon peak hour signal warrant evaluation.	PS	Mitigation Measure TR-17: Intersection Signalization. Prior to occupancy, the project applicant shall enter into an agreement with the County to provide a fair share contribution to the following improvements when and if they are programmed and funded for construction: Implement Mitigation Measure TR-2 for River Road/Barnes Road	SU
Impact TR-18: Year 2014 95th Percentile Vehicle Queuing. Numerous intersections would experience significant impacts to 95 th percentile queuing due to the addition of project traffic.	PS	Mitigation Measure TR-18: Intersection Improvements for 95th Percentile Vehicle Queuing. Prior to occupancy, the project applicant shall: Implement Mitigation Measure TR-3 (see Figure 3.15-20).	SU
Impact TR-19: Year 2014 Arterial Operation. No arterial segments would experience significant impacts.	LTS	No mitigation required	-
Impact TR-20: Year 2014 Freeway Operation. Two freeway segments would experience significant impacts in 2014 due to project traffic.	PS	There are no feasible mitigation measures to reduce this impact	SU
Impact TR-21: Cumulative Traffic and Transportation Impacts. Implementation of the proposed project could result in a considerable contribution to significant cumulative traffic and transportation impacts.	PS	Mitigation Measure TR-21: Implement Mitigation Measures TR-6 through TR-8 and TR-16 through TR-18. Implement Mitigation Measures TR-1 through TR-3, TR-6 through TR-8, and TR-16 through TR-18.	SU
UTILITIES AND SERVICE SYSTEMS			
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.	LTS	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.	PS	Mitigation UT-2: Implement Mitigation HY-4, AIR-1, AIR-2a, and AIR-2b. Mitigation UT-2: Implement Mitigation HY-4, AIR-1, AIR-2a, and AIR-2b	LTS
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.	PS	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.	LTS

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
<p>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.</p>	<p>PS</p>	<p>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:</p> <ol style="list-style-type: none"> 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. <p>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.</p> <p>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:</p> <ol style="list-style-type: none"> 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. 	<p>LTS</p>

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
		<p>4. Install 0.5 gallon per flush urinals in public restrooms.</p> <p>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.</p> <p>Mitigation UT-4c: Achieve Offset Credits by Funding a Program to Retrofit Residential and Commercial Buildings With Ultra Low Flow Toilets and Other Indoor Water Conserving Devices. 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 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.</p> <p>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</p>	

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
		<p>project has been offset by the retrofit program before an occupancy permit is granted.</p> <p>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.</p> <p>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.</p>	
<p>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.</p>	PS	<p>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.</p>	LTS
<p>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.</p>	LTS	No mitigation required	-
<p>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.</p>	LTS	No mitigation required	-

Table S-1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation	Significance With Mitigation Incorporated
Energy			
<p>Construction Energy Use. Construction of the proposed project would use electricity and gas as a short-term consequence (up to 48 months) of construction of the project.</p>	LTS	<p>The following mitigation measures have already been discussed in the air quality Section 4.4. While these mitigation measures shall be implemented in order to minimize air quality impacts they also will assist in preventing inefficient energy usage and promote conservation of energy resources.</p> <p>Mitigation AIR-1: Reduce Length of Haul Truck Trips, Restrict Idling</p> <p>Mitigation AIR-2b: Include Measures to Reduce Criteria Pollutant Exhaust From Construction Equipment</p> <p>Mitigation AIR-7: Develop project with the project design features and emissions reduction measures</p> <p>Energy Reduction Methods are also described in Section 4.4.2</p>	LTS
<p>Operational Energy Use. Based on worst case estimates from the applicant’s mechanical engineers (Sutter Energy Conservation Report, March 2009), the three facilities that will be power consumers will use a combined 6,520,577 kilowatt hours per year (kWh/yr) at full buildout. The project would not require the construction of additional electrical generation capacity. The proposed project’s natural gas usage is estimated to be approximately 109,337 therms per year. The natural gas use by the proposed project will not represent a significant increase in the natural gas usage within the County. Project operation would not result in a wasteful or inefficient use of transportation energy.</p>	LTS		LTS

LTS = Less than significant
 PS = Potentially significant
 SU = Significant and unavoidable

The subject of this Draft Environmental Impact Report (Draft EIR) is the Sutter Medical Center of Santa Rosa/Luther Burbank Memorial Foundation Joint Master Plan (the proposed project).

The lead agency for the project is the County of Sonoma, Permit Resource Management Department, 2550 Ventura Avenue, Santa Rosa, California 95403. Section 2 of this EIR describes the proposed project in detail.

1.1 PURPOSE OF THE EIR

Because the proposed project would require discretionary approvals by the County of Sonoma and other governmental agencies, the proposed project is subject to the California Environmental Quality Act (CEQA). Based on the preparation of a detailed Initial Study (see **Appendix A**) in February 2008, it was determined that the proposed project may have a significant effect on the environment and that an EIR should be prepared pursuant to the State and County of Sonoma *CEQA Guidelines*.

The County of Sonoma has commissioned this EIR for the following purposes:

- To satisfy CEQA requirements;
- To inform the general public, the local community, and responsible trustee, state, and federal agencies of the nature of the proposed project, its potentially significant environmental effects, feasible mitigation measures to mitigate those effects, and its reasonable and feasible alternatives;
- To enable the County of Sonoma to consider the environmental consequences of the proposed project;
- To provide a basis for preparation of any future environmental documents;
- For consideration by responsible agencies in issuing permits and approvals for the proposed project.

As described in CEQA and the *CEQA Guidelines*, public agencies are charged with the duty to avoid or substantially lessen significant environmental impacts where feasible. Where impacts cannot be mitigated to less-than-significant levels, public agencies have an obligation to balance the project's significant impacts on the environment with other conditions, including economic, social, technological, legal, and other benefits.

This Draft EIR is an informational document, the purposes of which are as follows:

- To identify the potentially significant impacts of the proposed project on the environment;
- To indicate the manner in which those significant impacts can be avoided or significantly lessened;
- To identify any significant and unavoidable adverse impacts that cannot be mitigated; and
- To identify reasonable and feasible alternatives to the proposed project that would eliminate any significant adverse environmental impacts or reduce the impacts to less-than-significant levels

CEQA requires the lead agency to consider the information in the EIR, along with any other relevant information, in making its decision on the proposed project. Although the EIR does not determine the ultimate decision regarding implementation of the project, the County of Sonoma is required to consider the information in the EIR and make findings regarding each significant effect the EIR identifies.

The County of Sonoma must certify the EIR before approving the proposed project. Once certified, the EIR will serve as the base environmental document for the County of Sonoma and will be used as a basis for decisions on implementation of the proposed project. Other agencies may also use this EIR in their review and approval processes.

This Draft EIR was prepared in accordance with Section 15151 of the *CEQA Guidelines*, which defines the standards for EIR adequacy as follows:

An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR would summarize the main points of disagreement among the experts. The courts have looked not for perfection; but for adequacy, completeness, and good faith effort at full disclosure.

1.2 EIR REVIEW PROCESS

1.2.1 Notice of Preparation

Responses from identified responsible and trustee agencies, as well as interested parties on the scope of the EIR, were solicited through Notice of Preparation (NOP) of the EIR process. The NOP for the EIR was posted and circulated for a 30-day review period starting on February 4, 2008. A public scoping meeting was also held on February 21, 2008, at the Wells Fargo Center for the Arts, Carston Cabaret, 50 Mark West Springs Road, Santa Rosa to solicit input from agencies, individuals, and organizations. A copy of the NOP and the responses to the NOP are included in **Appendix B**. Comments from the Scoping Meeting are summarized in Section 7.

1.2.2 Environmental Review

The Draft EIR will be circulated for review and comment by the public and other interested parties, agencies, and organizations for 45 days. During the public review period, the County of Sonoma will hold a noticed public hearing before the County of Sonoma Planning Commission, to allow the Commission and interested parties and agencies to voice their opinions regarding the adequacy of the Draft EIR. Notice of the time and location will be published before the public hearing. All written comments or questions about the Draft EIR should be addressed to:

County of Sonoma
Permit Resource Management Department
2550 Ventura Avenue
Santa Rosa, CA 95403

Attn: Steve Dee
(707) 565-8350
(707) 565-8358 (fax)
sdee@sonoma-county.org

Any questions regarding the proposed project itself should be directed to Ken Ellison at (707) 565-1928 or (kellison@sonoma-county.org).

1.2.3 Project Approval

After the public comment period closes, the County of Sonoma will respond, in the Final EIR, to all written comments received regarding the project's environmental impacts. The Response to Comments will be prepared as a separate document from the Draft EIR. The Final EIR will consist of the Draft EIR and the Response to Comments document. It will be considered by the County of Sonoma at a public meeting(s) and be certified if it complies with *CEQA Guidelines*. Upon certification of the EIR, the County of Sonoma will consider the merits of the proposed project for approval.

1.2.4 CEQA Findings and Mitigation Monitoring

CEQA requires that when a public agency approves a project and makes the necessary findings based on an EIR, it must adopt a reporting or monitoring program for those measures that it has adopted or made a condition of project approval to mitigate or avoid significant effects on the environment. Findings explain the connection between the analysis in the environmental document and the decisions by the decision-makers. The reporting or monitoring program must be designed to ensure compliance during project implementation. The mitigation monitoring program for the EIR will be prepared at the time the Final EIR is prepared.

1.3 PROJECT OVERVIEW

Sutter Medical Center of Santa Rosa (Sutter) and the Luther Burbank Memorial Foundation (LBMF) request approval of a joint Master Plan prepared for the properties that comprise the project site at 50 Mark West Springs Road, Sonoma County, California. The joint Master Plan reflects the intent to accommodate both LBMF and Medical Campus facilities on the 53-acre site via an integrated land use and circulation plan, which would include a single major signalized site entry road from Mark West Springs Road. Implementation of the Master Plan is the project evaluated in this Draft EIR.

California American Water Company (CalAm) currently provides domestic water to the site. It is proposed that CalAm would continue to provide water for all of LBMF's domestic needs and fire suppression purposes as well as for fire suppression for Sutter's proposed hospital and Medical Campus. A new well system composed of two wells approximately 600 feet deep would be drilled to provide all water (domestic and irrigation) needs for the Sutter hospital and Medical Campus, excluding water for fire protection, which, as noted above, would be provided by CalAm.

LBMF wastewater is currently treated and disposed of on site, via a private treatment and disposal facility. To provide reliable long-term service for the site, it is proposed that the existing private treatment and disposal facility be removed and that all of the existing and proposed facilities be connected to the Sonoma County Water Agency (SCWA) Airport-Larkfield-Wikiup Sanitation Zone wastewater treatment facilities.

The project would be completed in phases beginning with the annexation of the site into the SCWA's Airport-Larkfield-Wikiup Sanitation Zone, connection to the Airport-Larkfield-Wikiup Sanitation Zone's wastewater treatment system, and decommissioning of the existing on-site LBMF sewage treatment facility. Surcharging the proposed building sites would then begin. Structures located near the future hospital site will be demolished and LBMF maintenance activities would be relocated to a new single-story maintenance facility. The existing LBMF athletic fields would be relocated from the northeast portion of the site to the southern most part and the playground would be relocated northeast of its current location. A berm would be constructed along the northeastern edge of the East Drive to reduce noise from LBMF special events which currently occur on the East lawn.

The Sutter Medical Center hospital building would consist of a two-story, 70-bed acute inpatient facility with a full range of inpatient and outpatient treatment and diagnostic services, including all ancillary and support services required. A Central Utility Plant would also be constructed on site. The campus would include a new three-story Medical Office Building to house medical center administrative activities and operations.

The project also proposes a two- and three-story Physicians Medical Center, an acute care inpatient and outpatient facility with 28 licensed beds providing inpatient and outpatient surgery and a full range of outpatient hospital services. A ground-level helistop adjacent to the hospital to transport patients is a part of the proposed project. On-site surface parking would increase to 1,941 paved and striped spaces.

Site improvements would include widening/improvements to Mark West Springs Road and US 101 northbound off-ramp, signal modifications at the US 101 northbound off-ramp/Mark West Springs Road intersection, and signalization of the entry road/driveway. The entry road would be two lanes inbound and three lanes outbound. Additionally, paved, striped shared parking spaces would be added.

The proposed project provides for future expansion of the 70-bed Sutter Medical Center hospital by up to 29 beds, including expansion of the Emergency Department. Such expansion would include one- and two-story building additions. On site surface parking would decrease to 1,914 paved and striped spaces with this addition.

1.4 INITIAL STUDY FINDINGS

An Initial Study was prepared in February 2008 (Appendix A) to facilitate public input regarding issues to be addressed in this DEIR.

Based in part on the Initial Study, the County of Sonoma found that preparation of an EIR was necessary because the proposed project would have potentially significant impacts in the areas of aesthetics, agricultural resources, air quality, biological resources, cultural resources, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, population and

housing, public services, transportation/traffic, and utilities and service systems. Insignificant impacts determined in the Initial study not to require further analysis in the DEIR are identified following the significance criteria in each issue area of the DEIR.

1.5 INTENDED USES OF THIS EIR

The primary use of the Draft EIR is to inform decision makers and the public about a project's significant environmental effects and ways to avoid or reduce them, to demonstrate to the public that the environment is being protected, and to ensure that the planning and political processes reflect an understanding of the environmental cost of a project.. It is intended also to provide the information and environmental analysis necessary to assist public decision makers in considering all of the approvals necessary to implement the proposed project.

1.6 AGENCIES THAT MAY USE THIS EIR

The EIR is a public information document used in the planning and decision-making process. CEQA requires that all state and local agencies consider the environmental consequences of projects over which they have discretionary authority. The following agencies will use this EIR to base their decisions on issuing discretionary approvals for this project. The approvals for which they are responsible are listed in Section 2.

- County of Sonoma
- Sonoma County Local Agency Formation Commission
- North Coast Regional Water Quality Control Board
- Bay Area Air Quality Management District
- California Department of Transportation
- Section 404 Permit from the U.S. Army Corps of Engineers (USACE)
- California Department of Transportation Aeronautics Division
- Federal Aviation Administration

1.7 ORGANIZATION OF THIS EIR

This Draft EIR is organized into sections as follows:

- **Summary:** A summary of the project including the project objectives, the alternatives, and areas of known controversy or issues to be resolved.
- **Section 1 (Introduction):** Provides an overview of the project and an introduction and description of the intended uses of the EIR and the review and certification process.
- **Section 2 (Project Description):** Presents a complete description of the proposed project including location, characteristics, and objectives. This section also provides an overview of the study area's environmental setting, including a description of existing and surrounding

land uses, history, and background of the project site and a discussion of related projects to be analyzed in the EIR.

- **Section 3 (Environmental Impact Analysis):** This section is the primary focus of this Draft EIR. Each environmental issue contains a discussion of existing conditions for the project site, an evaluation and discussion of the significance of impacts associated with the proposed project, proposed mitigation measures, level of impact significance after mitigation and cumulative impacts.
- **Section 4 (Energy):** Describes the energy implications of construction and operation of the proposed project.
- **Section 5 (Other CEQA Considerations):** As required by CEQA, other considerations will be discussed in the Draft EIR. This section includes discussion of project impacts to growth inducement, and significant irreversible changes to the environment and significant unavoidable impacts. In addition, this section discusses the potential for the project to result in indirect environmental impacts related to the economic effect of the project on other hospitals.
- **Section 6 (Alternatives to the Proposed Project):** Includes an analysis of a range of reasonable alternatives to the proposed project to provide informed decision-making in accordance with Section 15126(f) of the *CEQA Guidelines*. The range of alternatives selected is based on their ability to feasibly attain most of the basic objectives of the project and avoid or substantially lessen any of the significant effects of the project.
- **Section 7 (Public Scoping and Coordination):** Provides summary of public participation and coordination. Public meetings and hearings are summarized along with comments received during the comment period.
- **Section 8 (Preparers and Persons Consulted):** Presents a list of lead agency, other agencies, and consultant team members that contributed to the preparation of the Draft EIR. This section also identifies persons consulted during the preparation of the Draft EIR.
- **Section 9 (References):** Presents a list of all references cited in the Draft EIR.
- **Appendices**

This section of the Draft EIR describes the Sutter Medical Center of Santa Rosa/Luther Burbank Memorial Foundation Master Plan (the proposed project). Sutter Health currently operates one acute care hospital in Santa Rosa, on Chanate Road. Sutter has determined that replacement of the existing hospital on Chanate Road is needed to achieve long-range compliance with the Hospital Facilities Seismic Safety Act (Senate Bills [SBs] 1953 and 1661). Accordingly, as part of a larger medical campus, Sutter is proposing to build a new hospital on its property at 50 Mark West Springs Road to replace the hospital on Chanate Road.

The project evaluated in this Draft EIR consists of the phased development of the Sutter Medical Center medical campus with a state-of-the-art hospital that will comply with the Hospital Seismic Safety Acts, a central utility plant/plant operations/water treatment facilities complex to serve the Medical Campus, a Medical Office Building (MOB), a Physicians Medical Center (PMC), and a helistop, and revision of the Luther Burbank Memorial Foundation (LBMF) Use Permit to clarify currently allowed uses. This section includes a discussion of the project objectives, geographic setting and location of the project, a description of the proposed project and its phasing, project alternatives, and required permits and approvals.

2.1 PROJECT OBJECTIVES

The objectives of the proposed project are:

1. To provide a new Sutter Medical Center of Santa Rosa (Sutter) hospital and Medical Campus in Sonoma County that promotes new, accessible, and innovative health care models and that complies with the requirements of the Hospital Facilities Seismic Safety Act (including Senate Bills 1953 and 1661, and the statutory requirements for submission of building plans to the Office of Statewide Health Planning and Development by January 1, 2009, and commencement of construction by January 1, 2011). This level of health care will be made available to Sonoma County residents by incorporating advanced technologies available for diagnosis and treatment in a new, modern hospital through an integrated Medical Campus that supports the continuous delivery of high quality, cost-effective health care services.
2. To develop the Medical Campus in a manner that realizes the benefits to health care delivery that can be achieved through the location, on the same site, of facilities that link inpatient, outpatient, and physician office visits and connect those services using the most modern and efficient layout for an operationally efficient and cohesive campus that supports an integrated model of health care delivery, promotes functional relationships among departments, services, and programs, and provides functional circulation within the inpatient and outpatient spaces, placement of seating areas, outdoor terraces, and other patient and visitor amenities.
3. To promote the interaction of the Medical Campus and the Wells Fargo Center for the Arts (WFC) in a synergistic manner that incorporates the fine arts as part of the healing process at the Medical Campus. The provision of an integrated Medical Campus and the interaction between that Medical Campus and the WFC are fundamental to attracting physicians and other medical professionals, as well as attracting patients to the Medical Campus.

4. To ensure that the Sutter Medical Center is constructed in a manner that honors the Health Care Access Agreement with Sonoma County, while achieving a level of development intensity that will allow the Medical Campus to be developed in a cost-effective manner.
5. To provide a Medical Campus that is easily accessed by persons living within the primary service area of the Sutter Medical Center.
6. To the extent consistent with the fundamental objective of providing integrated delivery of high quality health care services, to construct a Medical Campus that meets the Sutter Health Facility Planning and Development Building Design Policy for Sustainability with respect to site selection, water efficiency and conservation, energy efficiency, material and resource efficiency and environmental air quality. The proposed Medical Campus will strive to meet these policies by employing “green” and sustainable design and construction practices to achieve goals including maximizing green space, employing energy-efficient hospital design, stressing water conservation and implementing a construction waste management and recycling plan for all construction components. Sutter will seek to partner with public and private service providers such as PG&E to achieve these sustainability goals.
7. To provide a Medical Campus linked to the LBMF in a manner that provides a simple and elegant set of buildings linked by meditative paths, bioswales, outdoor gardens, courtyards, and open space that promote a sense of well-being and healing through a dignified and forward-thinking building plan that will be an inviting and positive healing environment for patients, families, visitors, staff and all that come in contact with the Medical Campus.
8. To allow for uninterrupted operation of medical services currently provided at Sutter’s Chanate campus and maintain continuity of care.
9. To develop the Medical Campus at a location close to US 101 so as to provide direct access for ambulances from the highway to the emergency entrance, to provide good visibility from the highway to facilitate emergency, physician, patient and visitor access, and to minimize noise and safety impacts of helicopter access by allowing helicopters to approach the hospital over the highway.
10. To provide a Medical Campus in Sonoma County on property owned by or available to Sutter, which includes:
 - A. A Sutter Medical Center that complies with the Hospital Facilities Seismic Safety Act and the existing Health Care Access Agreement between Sutter and the County of Sonoma, providing inpatient services including obstetrics, a Level III neonatal intensive care unit, intensive care, emergency services, medical/surgical and diagnostic services, supporting ancillary services, and a full range of women’s reproductive health services.
 - B. A Central Utilities Plant to service the Medical Campus that meets the requirements of the Hospital Facilities Seismic Safety Act.
 - C. A Physicians Medical Center that will comply with the Hospital Facilities Seismic Safety Act and provide 24-hour inpatient care, including medical, nursing, surgical, intensive care, anesthesia, laboratory, radiology, and pharmacy services.

- D. A visually unobtrusive helistop that meets the functional needs of the Medical Center, with controlled access to ensure public safety during helicopter landing and take-off, which complies with all applicable regulatory and life safety requirements for helistops and helicopter travel, including, but not limited to, Federal Aviation Administration and Caltrans Division of Aeronautics requirements for flight path obstruction clearance, and which minimizes noise impacts to sensitive receptors.
 - E. A Medical Office Building that can accommodate physicians affiliated with Sutter Medical Foundation North Bay, as well as independent physicians, and provide supplemental hospital services to support the Sutter Medical Center and Physicians Medical Center.
11. To further the LBMF's nonprofit mission to enrich, educate, and entertain the community through the arts through accessible and outstanding presentation of fine arts and entertainment performances, contemporary art exhibitions, family and education programs, and facility-based services.
 12. To revise LBMF's existing Use Permit to allow for certain single-day community events on the East Lawn and certain outdoor sales events on the South Lawn in compliance with the County's General Plan sound limits and County and State permit requirements.

2.2 PROJECT LOCATION AND SITE CHARACTERISTICS

2.2.1 Existing Project Site

The proposed project site at 50 Mark West Springs Road, Santa Rosa, California, is about 55 miles north of San Francisco. It covers approximately 53 acres in the southeastern quadrant of the US 101/Mark West Springs Road interchange just north of the city (**Figure 2-1**). An adjacent vineyard, currently owned by Sutter, is not part of this project. The site is generally bounded by US 101 to the west, Mark West Springs Road to the north, and Old Redwood to the east.

The site is in Sonoma County Planning Region 5, the Santa Rosa and Environs Planning Area. The area topography includes the flat terrain of the Santa Rosa Plain, several small valleys surrounded by rolling hills, and the more rugged mountainous areas of the Sonoma and Mayacamas Mountain ranges. Major drainages include Santa Rosa and Mark West creeks, and the Laguna de Santa Rosa. Principal land use issues confronting the Santa Rosa Region 5 are:

1. The ability of public services to accommodate projected residential, commercial, and industrial growth; and
2. Protection of agricultural lands. Proximity to urban Santa Rosa has resulted in pressure to convert such lands to rural residential use.

The General Plan Land Use designation for the project site is Public Quasi Public (PQP). The four contiguous parcels that compose the site are owned by Sutter and the LBMF. The sizes of the parcels and other details are summarized in **Table 2-1**, and the lot configuration is shown on **Figure 2-2**.

Table 2-1. Existing Parcels of the Project Site

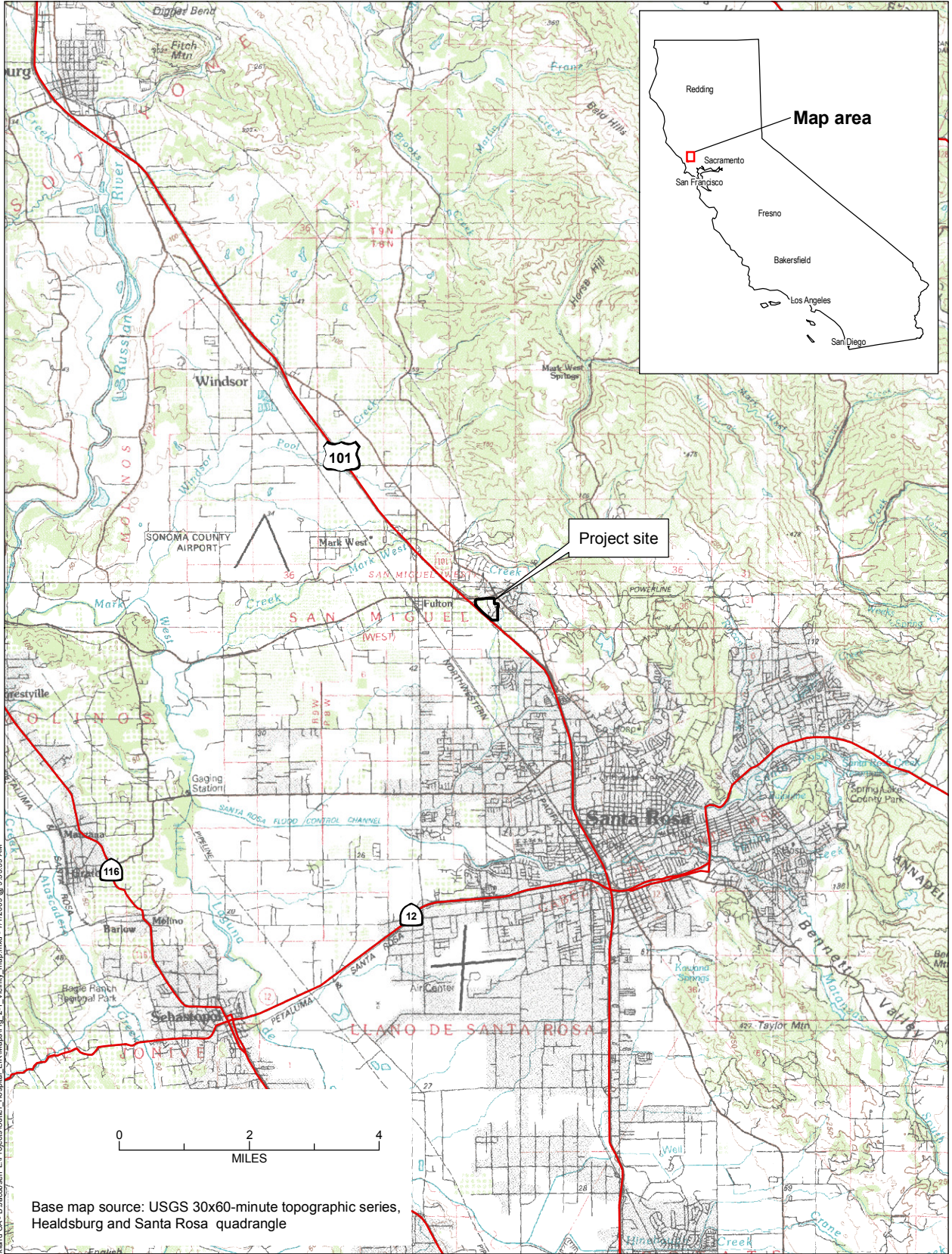
Lot	Assessor's Parcel No.	Owner	Zoning	Area (Acres)
A	058-040-058	Sutter	Public Facilities Scenic Design; Scenic Resources	15+/-
B	058-040-059	Sutter	Public Facilities Scenic Design; Scenic Resources	10+/-
C	058-040-060	LBMF	Public Facilities Scenic Design; Scenic Resources	25+/-
D	058-040-061	LBMF	Public Facilities	3+/-
Total Acres Project Site				53+/-
E	058-040-066	Cargile Trust	Rural Residential, 1 Acre Density, Valley Oak Habitat	1.4+/-

In addition to the development site, the project includes placing one additional adjacent 1.41 acre parcel (APN 058-040-036) inside the Larkfield-Wikiup Urban Service Boundary. This parcel is designated Rural Residential 1 acre density in the General Plan, is zoned RR (Rural Residential) – B6 – 1 acre density – VOH (Valley Oak Habitat), and is currently developed with one single family dwelling served by a well and septic system. The purpose of including this parcel within the Urban Service Boundary is to prevent the formation of ‘island’ parcels which do not have sewer service available inside the Urban Service Boundary (if the overall development project is approved). Including the subject residential parcel inside the Urban Service Boundary would not change the land use designation or the allowed uses on that property.

Current Land Uses

LBMF Facilities and adjacent Rural Residential Parcel

The LBMF does business on the project site as the Wells Fargo Center for the Arts (WFC), a nonprofit performing arts and cultural center founded in 1981. The facility is owned and operated by the Luther Burbank Memorial Foundation, a non-profit educational organization established in 1979. The principal performance space is the Ruth Finley Person Theater, which seats 1,612 people. The Center has two other stages: The Carston Cabaret (capacity: 100-300 people), and the Harry Merlo Theater (capacity: 400 people). The Santa Rosa Christian School is also located at the proposed project site in the Wells Fargo Center. The Wells Fargo Center



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Base map source: USGS 30x60-minute topographic series, Healdsburg and Santa Rosa quadrangle

Figure 2-1
Project Vicinity



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Sutter/LBMF Joint Master Plan

Figure 2-2
Existing Lot Configuration

Education Through the Arts is a program currently at the Wells Fargo Center, which uses the arts as a teaching tool for all core subjects (math, science, and literature) to assist with school district curriculum for kindergarten through grade 12.

WFC buildings and facilities occupy most of the LBMF's 28+- acres with the entrance off Mark West Springs Road on the eastern side of Parcel B; the rest of the LBMF property is vacant. An existing barn in the northern end of the property on Parcel A is currently being used as the LBMF maintenance facility.

Athletic fields are included as part of the existing facilities. These include sports fields in the northern area of Parcel B, the ~4-acre "South Field" on the southern corner of Parcel C used for periodic events, as well as the "East Lawn," also on Parcel C, to the eastern edge used for existing activities such as civic/community-based functions, private receptions and events, non-profit fund-raising events, and limited amplified events within General Plan parameters.

The WFC is in the center of Parcel C with 903 on-site parking spaces that are divided in two lots adjacent to the facility on its eastern and western sides.

The California-American Water Company (CalAm) provides potable water to the WFC. Wastewater is currently treated and disposed of on site, via an on-site private treatment and disposal facility.

The project also includes placing one additional adjacent 1.41 acre parcel (APN 058-040-036) inside the Larkfield-Wikiup Urban Service Boundary. This parcel is designated Rural Residential 1 acre density in the General Plan, is zoned RR (Rural Residential) – B6 – 1 acre density – VOH (Valley Oak Habitat), and is currently developed with one single family dwelling and a number of outbuildings served by a well and septic system. It is owned by the Severns-Cargile Pietrina Trust and the Thomas W. Cargile Trust.

2.2.2 Existing Sutter Medical Center Facilities

Sutter operates a medical facility in Santa Rosa at the Chanate Road campus. It is a community-based, not-for-profit hospital serving Sonoma County and neighboring communities, formerly known as Community Hospital, built in 1937, and expanded in 1956 and 1972. In 1996, the 170-bed facility became a Sutter Health Care affiliate through a 20-year lease of the hospital from Sonoma County, and currently employs about 1,200 people. It has two specialty units, including Adult and Neonatal Intensive Care in addition to the Heart Center for advanced cardiology services, and a helistop.

Hospital Facilities Seismic Safety Act Compliance

The Sutter Medical Center is classified as an acute-care facility. Seismic-safety legislation SB 1953 (Chapter 740, Statutes of 1994), the Alfred E. Alquist Hospital Facilities Seismic Safety Act, requires the seismic upgrade or replacement of all general and acute-care hospitals at risk of collapsing during a strong earthquake. The project sponsor has determined that it is infeasible to bring the facilities at the Chanate Road campus into compliance with the mandated SB 1953 regulations and the proposed project is the best way to comply with those regulations. The Office of Statewide Health Planning and Development (OSHPD) is responsible for carrying out the

provisions of SB 1953 regulations, and has approved a time extension to Sutter, under SB 1661, that would allow Sutter to meet the provisions of SB 1953 by January 1, 2013.¹

2.3 PROJECT DESCRIPTION

An Initial Study was completed for the proposed project in February 2008. Since that time, the proposed project has been reduced in size and scope due to environmental concerns as well as the state of medical service delivery in Sonoma County. According to the proponent, nearly flat population growth and a declining market share have decreased the number of beds needed (Sutter Medical Center of Santa Rosa, Health Care Access Agreement Background and Business Plan, Nov. 2008, pp. 1-2). The health care needs of an aging population notwithstanding, the demand for inpatient beds is also decreasing due to new technology and the use of minimally invasive surgical technologies, which allow many procedures to be performed on an outpatient basis or with reduced hospital stays (Sutter Health News, November 2008).

A summary of the project as proposed in the 2008 Initial Study is provided below followed by a description of the revised project, which is the subject of this Draft EIR.

2.3.1 Project As Described in 2008 Initial Study

Originally, Sutter had proposed to build new hospital facilities to replace both Warrack Hospital and the main medical center at Chanate Road with a new three- to four-story 116-bed acute-care facility on their portion of the subject site. Current parking would be expanded to 3,200 spaces divided between surface paved and striped and a parking structure.

The project analyzed in the 2008 Initial Study included expansion of the LBMF facilities as well as the phased construction of the Sutter Medical Center, two MOBs, a commercial building, and an additional 60-bed hospital tower. The Sutter facilities would have exclusively occupied approximately 15 acres, the LBMF facilities would have exclusively occupied approximately 28+- acres, and approximately 10 acres would have been devoted to shared parking facilities. The vineyard on the remaining 24 acres would remain in agricultural use.

Under the original proposal, CalAm would continue to provide water for all domestic and fire suppression purposes for all existing uses and future development proposed by the Master Plan. CalAm provided a “Will Serve” letter dated June 26, 2006, subject to the development and transmission of additional new on-site water source(s).

2.3.2 Proposed Project Analyzed in this Draft EIR

Subsequent to the 2008 Initial Study, Sutter and LBMF reached an agreement to downsize the joint Master Plan for the project site. As currently proposed, the joint Master Plan would accommodate the existing LBMF facilities and the proposed Medical Campus facilities on the 53-acre site via an integrated land use and circulation plan, which would include a single major

¹ Sutter Medical Center of Santa Rosa has applied for and been approved for an extension to the January 1, 2008 SB 1953 deadline, which under existing law would give a maximum deadline of 2013.

signalized site entry road from Mark West Springs Road and a separate dedicated emergency vehicle access.

Expansion of the LBMF facilities is no longer proposed. The Medical Campus construction would consist of a new Sutter Medical Center hospital building, planned as a two-story, 70-bed acute inpatient facility with a full range of inpatient and outpatient treatment and diagnostic services, including all ancillary and support services required. The campus would also include a new three-story MOB to house physician medical offices, as well as Sutter's medical center administrative activities and operations. The project also proposes a two- and three-story Physicians Medical Center, an acute care inpatient and outpatient facility with 28 licensed beds providing for inpatient and outpatient surgery and a full range of outpatient hospital services. A ground-level helistop adjacent to the 70-bed hospital for patient transport is a part of the proposed project. A Central Utility Plant would also be constructed on site. 1,941 paved and striped on site surface parking spaces would be provided.

The project would be completed in phases, beginning with annexation of the site into the Airport-Larkfield-Wikiup Sanitation Zone, decommissioning of the existing on-site LBMF sewage treatment facility, and connection to the Airport-Larkfield-Wikiup Sanitation Zone's wastewater treatment system. LBMF maintenance activities would be relocated to a new single-story maintenance facility, and the existing maintenance facility demolished to allow construction of the hospital. The existing LBMF athletic fields would be relocated from the northeast portion of the site to the southern most part and the playground would be relocated northeast of its current location. A berm would be constructed along the northeastern edge of the east drive to reduce noise from LBMF events historically allowed on the East Lawn. The existing vineyard that is located to the east and south of the project site would remain in agricultural use.

Construction of the Sutter Medical Center hospital, MOB, PMC, and related site improvements would follow in Phase II, with a possible future expansion of the Sutter hospital by up to 29 beds (as well as expansion of the Emergency Department) in Phase III. The expansion would include one- and two-story additions to the hospital building.

Site improvements would include widening/improvements to Mark West Springs Road and the US 101 northbound off-ramp, signal modifications at the US 101 northbound off-ramp/Mark West Springs Road intersection, signalization of the entry road/driveway, and a separate dedicated emergency vehicle access from Mark West Springs Road. The main entry road would be two lanes inbound and three lanes outbound. Additionally, paved, striped shared parking spaces would be added. As part of the Master Plan, it is proposed that:

- The lot line between Lots B and C (**Figure 2-2**) be adjusted slightly via Lot Line Adjustment,
- Lots A and B (**Table 2-1**) be subdivided into 5 lots plus one parcel, which would then result in the site as a whole consisting of seven lots and one parcel summarized in **Table 2-2** and shown on **Figure 2-3**.

The Medical Campus facilities would exclusively occupy Lots 1-4, inclusive, and the LBMF facilities would exclusively occupy Lots C and D. Lot 5 would be devoted to shared vehicular parking facilities.

Table 2-2. Proposed Lot Adjustments

Lot	Owner	General Plan Land Use	Zoning	Area (Acres)	Proposed Use
1	Sutter	Public/Quasi-Public	Public Facilities Scenic Design; Scenic Resources	10.3+/-	Sutter Medical Center Hospital Helistop Parking
2	Sutter	Public/Quasi-Public	Public Facilities Scenic Design; Scenic Resources	2.7+/-	Physicians Medical Center Parking
3	Sutter	Public/Quasi-Public	Public Facilities Scenic Design; Scenic Resources	0.9+/-	Central Utility Plant
4	Sutter	Public/Quasi-Public	Public Facilities Scenic Design; Scenic Resources	1.7+/-	Medical Office Building
5	Sutter	Public/Quasi-Public	Public Facilities Scenic Design; Scenic Resources	9.5+/-	Parking
A	Sutter	Public/Quasi-Public	Public Facilities Scenic Design; Scenic Resources	0.1+/-	Water Supply Wells
C	LBMF	Public/Quasi-Public	Public Facilities Scenic Design; Scenic Resources	25.0+/-	Wells Fargo Center for the Arts
D	LBMF	Public/Quasi-Public	Public Facilities	3.0+/-	Wells Fargo Center Maintenance Building
Total				53.2+/-	

CalAm currently provides domestic water to the site. It is proposed that CalAm would continue to provide water for all of LBMF’s domestic needs and fire suppression purposes as well as for fire suppression for Sutter’s proposed hospital and Medical Campus. A new well system composed of two wells approximately 600 feet deep would be drilled to provide all water (domestic and irrigation) needs for the Sutter hospital and Medical Campus, excluding water for fire protection, which, as noted above, would be provided by CalAm. The well site is generally depicted in **Figure 2-3**. Irrigation water for LBMF would be provided by an existing well on Lot C.



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Sutter/LBMF Joint Master Plan

Figure 2-3
Proposed Lot Configuration

LBMF wastewater is currently treated and disposed of on site, via a private treatment and disposal facility. To provide reliable long-term service for the site, it is proposed that the existing private treatment and disposal facility be removed and that all of the existing and proposed facilities be connected to the SCWA's Airport-Larkfield-Wickiup Sanitation Zone wastewater treatment facilities.

The Sutter Medical Campus project was registered for the Leadership in Energy and Environmental Design (LEED) in 2008. Pursuing LEED certification would further the incorporation of energy conservation and sustainability measures into the project design.

In addition to the development site, the project includes placing one additional adjacent 1.41 acre parcel (APN 058-040-036) inside the Larkfield-Wikiup Urban Service Boundary. This parcel is designated Rural Residential 1 acre density in the General Plan, is zoned RR (Rural Residential) – B6 – 1 acre density – VOH (Valley Oak Habitat), and is currently developed with one single family dwelling served by a well and septic system. The purpose of including this parcel within the Urban Service Boundary is to prevent the formation of 'island' parcels which do not have sewer service available inside the Urban Service Boundary (if the overall development project is approved). Including the subject residential parcel inside the Urban Service Boundary would not change the land use designation or the allowed uses on that property.

2.3.2.1 Project Phasing

The project would be built over time in several phases, outlined below. **Figure 2-4** shows a master site plan for ultimate project build-out.

Phase I (2010–2012): Entitlement, Relocation, Replacement of Utilities and Existing Facilities

1. Phase I(a)
 - A. Annexation of the entire 53-acre site and the additional adjacent 1.41 acre parcel (APN 058-040-036) to the Airport-Larkfield-Wikiup Sanitation Zone; and,
 - B. All existing facilities and site improvements would remain in place.

2. Phase I(b)

This phase is essentially a Site Preparation phase, which would include the following actions:

- A. Connection of the existing LBMF facilities to the Airport-Larkfield-Wikiup Sanitation Zone wastewater treatment system;
- B. Decommissioning of the existing on-site LBMF sewage treatment facility;
- C. Surcharging the proposed building sites with approximately 100,000 cubic yards of fill or, alternatively, driving approximately 700 piles to approximately 45 feet below ground surface²;

² Site preparation activities will include excavating loose unconsolidated soils where needed in proposed building locations, depositing approximately 5 feet of clean fill on proposed building footprint locations to raise the building

- D. Install new water supply wells and treatment facilities with the following components:
 - i. Sutter will drill two wells, approximately 600 feet deep. These wells will alternate pumping and will serve all of the water needs, including irrigation, for the Sutter hospital and Medical Campus, excluding fire protection.
 - ii. Sutter will develop a water treatment facility for the well water.
 - iii. Sutter will receive water for fire protection from CalAm.
 - iv. Sutter will build its own fire protection loop and fire hydrants around the Sutter hospital and Medical Campus.
- E. Demolishing the existing barn (LBMF maintenance facility) on Lot A (**Figure 2-1**);
- F. Relocating the maintenance activities to a newly-constructed Maintenance Facility on Lot D. The maintenance shop would be a single-story building of approximately 3,000 square feet with a height of approximately 16 feet;
- G. Relocating the existing athletic fields from Lot B to the southeastern corner of Lot C;
- H. Relocating the playground from the central portion of Lot C to the northeastern corner of Lot C;
- I. Maintaining “South Field” (3½ to 4 acres) along the southern portion of Lot C for periodic events, as currently allowed;
- J. Maintaining the “East Lawn” for historically-allowed activities, such as the following:
 - i. Civic/education/community-based functions;
 - ii. Private receptions/events;
 - iii. Non-Profit fund raising events; and,
 - iv. Limited amplified sound within General Plan parameters.
- K. Construct a berm along the northeastern edge of the East Drive to reduce noise from LBMF events historically allowed on the East lawn.

LBMF would continue to provide 903 on-site surface parking spaces on their property.

As part of the approval of this Master Plan, the existing LBMF Use Permit would be superseded with uses set forth and described in **Table 2-3**. The proposed outdoor events would be substantially consistent with the activities that historically have been undertaken.

pads elevation, and depositing approximately 7.5 feet of fill on top of proposed medical building footprint locations to prepare the ground (surcharge) for appropriate foundation construction conditions. The surcharge material will be removed after approximately 6 months and most of that soil will be used to fill and grade the rest of the project site to conform to the raised building footprints and construct proper site drainage contours. Alternatively, should pile driving be utilized instead of surcharging approximately 700 piles would be driven approximately 45 feet below ground surface to extend into dense alluvial gravel deposits.



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Sutter/LBMF Joint Master Plan



Figure 2-4
Master Plan

Table 2-3. LBMF Use Permit Provisions

South Lawn Event Area			
Event Size	Small	Medium	Large
Number of Operating Days Per Year	80	40	4
Maximum Number of Attendees At Any Given Time	150	500	2500
Amplified Music ⁽¹⁾	No	Yes	Yes
Hours Allowed	N/A	12 PM – 10 PM	12 PM – 10 PM
Days of Operation	7 days/week	7 days/week	Fri/Sat/Sun
Hours of Operation Limits	8 AM – 10 PM	9 AM – 10 PM	9 AM – 10 PM
Events Allowed to Overlap with Main Theater/East Lawn Events	Yes	Yes	No
Typical Event Types ⁽²⁾	Pumpkin Sales Christmas Tree Sales Tractor Demo/Sale	RV Show Car Show Carnival	Community Sale Rodeo Circus
Indoor and Portable Restrooms Available	Yes	Yes	Yes
East Lawn Event Area			
Event Size	Small	Medium	Large
Number of Operating Days Per Year	50	25	4
Maximum Number of Attendees At Any Given Time	150	500	2500
Amplified Music ⁽³⁾	No	Yes	Yes
Hours Allowed	N/A	12 PM – 9 PM	12 PM – 9 PM
Days of Operation	7 days/week	7 days/week	Friday/Saturday/Sunday
Hours of Operation Limits (for outdoor events; indoor events may start or end at any time)	10 AM – 9 PM	10 AM – 9 PM	10 AM – 8 PM
Events Allowed to Overlap with Main Theater/South Lawn Events	Yes	Yes	No
Typical Event Types ⁽⁴⁾	Wedding Ceremonies Corporate Events BBQs/Picnics	Political Events Religious Events Car Shows Graduations Food/Wine Events Fundraisers Weddings Corporate Events	Century Rides Community Events Graduations Food/Wine Events
Indoor and Portable Restrooms Available	Yes	Yes	Yes

(1) Must comply with Sonoma County General Plan Standards. (2) Following each event, all tents, stages, and other equipment shall be removed. (3) Amplified music allowed only in conjunction with a permitted event. Amplified music not allowed as a primary activity; no outdoor concerts permitted. Noise levels must comply with Sonoma County General Plan Standards. (4) Tents, stages, and other temporary event equipment shall not be on site for more than 6 months per year.

*Phase II (2010–2013): Medical Campus Construction***Medical Campus Facilities**

1. Sutter Medical Center hospital building with the following characteristics:
 - A. Full range of inpatient and outpatient treatment and diagnostic services, including all ancillary and support services required;
 - B. Seventy licensed bed acute inpatient facility;
 - C. Approximately 126,000 square feet of floor area;
 - D. Approximate 74,000-square-foot building “footprint”;
 - E. Two stories tall plus roof-top mechanical equipment enclosure(s); and,
 - F. A support facility (referred to as the CUP throughout this document) including an approximately 5,110-square-foot Central Utility Plant, and approximately 3,200-square-foot Plant Operations and Maintenance (PO&M) building (to house offices and workshops for the hospital engineering staff), and approximately 1,260-square-foot Water Treatment Facility, and approximately 1,230 square feet of associated chemical/gas storage tanks and 2 hydro-pneumatic tanks of about 1,500 gallons each. All buildings will be single story.
2. MOB with the following characteristics:
 - A. Approximately 80,000 square feet of floor area, (approximate 27,000 square foot building “footprint”);
 - B. Three-story-tall plus roof-top mechanical equipment enclosures; and
 - C. Medical center administrative activities and operations.
3. PMC – an acute care inpatient and outpatient facility providing for inpatient and outpatient surgery and also providing a full range of outpatient hospital services – with the following characteristics:
 - A. Twenty-eight licensed beds
 - B. Approximately 100,000 square feet of floor area
 - C. Two- and three-story building with an approximately 37,750 square foot building “footprint”
4. Helistop
 - A. To be at ground level, adjacent to the hospital.
 - B. To accommodate an average of 200 flights per year (1 “flight” = 1 helicopter arrival + 1 helicopter departure), based on historical flight volumes at existing Chanate Road facility, up to a maximum of 240 flights per year with future buildout.
 - C. The helistop would be approximately 7,500 square feet in area.

5. On-site surface parking: 1,038 paved, striped spaces (in addition to LBMF's 903 spaces), for a total of 1,941 spaces.

LBMF Facilities

1. No change in buildings or site activities from Phase I.
2. Removal of the existing athletic fields.

Site Improvements

1. Widening/improvements to Mark West Springs Road and US 101 northbound off-ramp.
2. Signal modifications at the US 101 northbound off-ramp/Mark West Springs Road intersection.
3. Signalization of entry road/driveway; entry road to be two lanes inbound and three lanes outbound.
4. Add paved, striped "shared" parking spaces.
5. Two interconnected detention basins acting as one.
6. Construct new on-site water supply "loop."

Phase III (2010 or later): Future Expansion

1. Sutter may expand the 70-bed Sutter Medical Center hospital by up to 29 beds, including expansion of the Emergency Department. Parking spaces provided in Phase II would be adequate for this expansion. Such expansion would entail:
 - A. Approximately 36,000 square feet of additional floor area;
 - B. Approximately 25,000 square feet of additional building "footprint"; and
 - C. One- and two-story building additions.
2. On-site surface parking: 1,011 paved, striped spaces (in addition to LBMF's 903 spaces), for a total of 1,914 spaces (27 parking spaces would be lost due to the hospital expansion).

2.3.3 Project Alternatives

Seven build alternatives and the No Project alternative are analyzed in this Draft EIR. These alternatives are summarized below and described in greater detail in Section 6 and shown on Figure 6-3.

No Project:

1. No Project – Under the No Project alternative no new medical facilities would be developed. The existing Sutter Medical Center of Santa Rosa at 3325 Chanate Road would be required to be closed by January 1, 2013, in compliance with SB 1953 and SB 1661.

Alternative Sites:

2. Shiloh Road/US 101 – The project would be constructed on an undeveloped 27-acre site located just east of US 101 and south of Shiloh Road. This site is in the Town of Windsor and is part of the Shiloh Corridor Vision Plan.
3. Todd Road/Moorland Avenue – The project would be constructed on an undeveloped 19.9-acre site located west of US 101 and south of Todd Road. The site is under County jurisdiction, but within the Urban Growth Boundary of the City of Santa Rosa.

Decentralized Alternative:

4. Decentralized Alternative – Under this alternative the 28-bed PMC and a 50,000 sq/ft MOB would be constructed at 50 Mark West Springs Road (the proposed project site). Sutter’s 70-bed hospital, a 50,000 sq/ft MOB, a helistop, and a central utility plant would be constructed at an alternate site (either the Todd/Moorland site referenced above or the Ring property site at 1700 Hampton Way within the city limits of Santa Rosa).

Reduced Project:

5. No Helistop – Under this alternative the project would be constructed as proposed at 50 Mark West Springs Road but without the helistop. Patients requiring transport by helicopter would arrive at the Sonoma County Airport and be transported by ambulance to the medical campus.
6. 70-bed Hospital Only – Under this alternative the proposed 70-bed hospital, central utility plant, and helistop would be constructed but not an accompanying PMC or MOB.
7. Overall Reduced Project – Under this alternative the intensity of the major components of the proposed project would be reduced by approximately one-third. Thus, this alternative would include a Sutter Medical Center of 47 beds, a PMC of 19 beds, an MOB of 53,600 square feet, and a helistop.

2.4 REQUIRED PERMITS AND APPROVALS

The Sutter Medical Center and LBMF will need to acquire the following approvals to proceed with their Master Plan:

- Certification of the EIR;
- An amendment to the Sonoma County General Plan to include the 53 acres and the additional adjacent 1.41 acre parcel (APN 058-040-036) within the Urban Service Boundary (required to allow annexation into the Airport-Larkfield-Wikiup Sanitation Zone);
- Use permits for:
 - The new Sutter Hospital Master Plan on APN’s 058-040-058 & 059, consisting of:
 - 70 bed Sutter Hospital, in a two story approximately 126,000 sf building;
 - Central Utilities Plant in an approximately 11,000 sf building and associated maintenance buildings and storage tanks;

- 28 bed Physicians Hospital, in a three story approximately 100,000 sf building;
- Helistop at ground level;
- Medical Offices, in a three story approximately 80,000 sf building;
- Setback reduction pursuant to code section 26-88-040G to allow reduced building setbacks and connections between the medical buildings;
- Building height increase above 35 feet pursuant to code section 26-52-050(A)(1) to allow three story buildings;
- A future hospital expansion of up to 29 beds;
- Parking facilities to serve the project;
- The Wells Fargo Center Master Plan on APN's 058-040-060 & 061, including the relocation of the maintenance building, playground, and playing fields, construction of a permanent sound berm east of the existing buildings, and limitation on allowed outdoor uses;
- A non-transient, non-community public water well serving only the Sutter parcels;
- A minor lot line adjustment between two parcels of approximately 10 acres (APN 058-040-059) and 25 acres (APN 058-040-060) in size, to create two parcels of approximately 10 acres and 25 acres in size;
- Lot Line Adjustment, which would modify the boundary between the existing Lots B and C (**Figure 2-2**);
- Major subdivision of resulting Lots A and B (APN's 058-040-058 & 059) totaling approximately 25 acres (**Table 2-1**), which would result in five lots for the proposed Medical Campus facilities plus a Parcel "A" for the proposed wells (**Table 2-2**);
- Design review of all physical changes/improvements to the site;

In addition to the above, a general plan text amendment may be implemented to restrict uses consistent with those of the master plan.

Other major permits or approvals that will likely be required for the proposed project include:

- National Pollutant Discharge Elimination System (NPDES) Permit from the North Coast Regional Water Quality Control Board (RWQCB)
- Approved Standard Urban Stormwater Mitigation Plan Requirements and Stormwater Mitigation Plan from North Coast RWQCB
- Section 401 Water Quality Certification from the North Coast RWQCB
- Section 404 Permit from the U.S. Army Corps of Engineers (USACE)
- Permit to Operate from the Bay Area Air Quality Management District (BAAQMD)
- Approval from the California Department of Transportation (Caltrans)
- Caltrans Division of Aeronautics and FAA permits for helicopter operations

Also, consultation will be required with the U.S. Fish and Wildlife Service and California Department of Fish and Game regarding potential impacts to federally and state-listed sensitive species.

In addition, the Hospital Facilities Seismic Safety Act (including Senate Bills 1953 and 1661), also known as the Alquist Act, mandates the replacement or seismic retrofit of existing acute care hospital facilities that do not meet current earthquake-resistant standards for hospitals. The Alquist Act requires that building plans for the retrofit or replacement of acute care hospital facilities be submitted to, and approved by, the Office of Statewide Health Planning and Development (OSHPD).

OSHPD enforces building standards related to construction of health facilities. Under OSHPD requirements, the construction of new hospitals must comply with the 2007 California Building Code, as amended for hospitals. Group I Occupancy structures (as defined in Chapter 3 of the California Building Code to include hospitals with non-ambulatory patients) are subject to stringent requirements for life-safety (fire, health, seismic). Non-OSHPD structures (i.e., structures that do not house OSHPD-regulated hospital functions) are not subject to the same building requirements, but are subject to currently applicable building codes.

The proposed Sutter Medical Center hospital, Physicians Medical Center, and Central Utility Plant would be considered Group I (Institutional) Occupancy structures, subject to the more stringent life-safety building standards as enforced by OSHPD (i.e., they would be OSHPD-regulated buildings). The other proposed new structures (including the Plant Operations and Maintenance Building, the Water Treatment Facility, and the Medical Office Building) would not contain the types of hospital functions regulated under OSHPD building standards, and would therefore not be required to meet the more stringent OSHPD building requirements. These “non-OSHPD” buildings would be subject to currently applicable building codes.

3.1 INTRODUCTION

This section presents potential environmental impacts of the proposed project. The scope of the analysis and key attributes of the analytical approach are presented to assist readers in understanding the manner in which the impact analysis was conducted.

CEQA Guidelines Section 15125(a) states:

An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to an understanding of the significant effects of the proposed project and its alternatives.

In this case, the County of Sonoma published the Notice of Preparation (NOP) for the project in February 2008 (see **Appendix B**). For this reason, the Draft EIR generally adopts as its baseline the environmental setting as it existed when the NOP was published.

The study area for environmental effects differs among resources depending on where impacts are expected. For example, traffic impacts caused by the proposed project are assessed for the local roadway network, whereas cultural resource impacts are assessed for the areas subject to direct ground-disturbing activities.

In addition to the direct impacts associated with the proposed project, the project may contribute to broader cumulative impacts when considered together with other developments that may cause related impacts. These cumulative impacts are described in each subsection in this section of the Draft EIR, and are summarized throughout Section 3.

Standards of Significance

As required by CEQA, an EIR must identify and evaluate the significance of impacts caused by a proposed project. Evaluation of the significance of an impact involves professional judgment that takes into account a variety of factors such as environmental resources, ability for resource recovery, need for mitigation, consistency with conclusions reached for similar projects, and CEQA case law. The following levels of impact significance were used in this analysis:

- *Significant and unavoidable impacts* are those that have been determined to be significant and cannot be mitigated to less than significant. A statement of overriding considerations must be made by the County if it approves the project with any significant impacts.
- *Potentially significant impacts* are those that may be significant but can either be reduced to less than significant through mitigation measures or remain significant and unavoidable after mitigation.
- *Less-than-significant impacts* are those that are adverse but are not potentially significant and therefore do not require mitigation.
- *No impact* refers to effects of the project on the environment that are not considered adverse.

Cumulative Impacts

According to the CEQA Guidelines, cumulative impacts are changes in the environment that result from adding the effect of the project to those effects of closely related past, present and probable future projects. The cumulative impact from several projects is the change in the environment that results from the incremental impacts of the proposed project when added to the other closely related past, present, and reasonably foreseeable future projects. As defined in Section 15355 of the CEQA Guidelines, an EIR should not discuss impacts that do not result in part from the project evaluated in the EIR. As such, the discussion in this section focuses specifically on those impacts of the project that would result in cumulative effects, and does not consider cumulative impacts to which the project would not contribute.

The CEQA Guidelines identify two basic methods for establishing the cumulative environment in which the project is to be considered: the use of a list of past, present, and reasonably anticipated future projects; or the use of adopted projections from a general plan or other regional planning document. The plan approach was used for this EIR and was based on the Sonoma County General Plan 2020 adopted in September 2008.

A two-step approach was used to analyze cumulative impacts. The first step was to determine whether the combined effects from the proposed project and other projects would be cumulatively significant. This was done by adding the project's incremental impact to the anticipated impacts of other projects. Where the combined effect of the projects was determined to result in a significant cumulative effect, the second step was to evaluate whether the proposed project's incremental contribution to the combined significant cumulative impact would be cumulatively considerable as required in Section 15064(h)(1) of the CEQA Guidelines. It should be noted that Section 15064(h)(4) of the CEQA Guidelines states that "the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable." Therefore, it is not necessarily true that, even where cumulative impacts are significant, any level of incremental contribution must be deemed cumulatively considerable. Conversely, it is not necessarily true that if the project's individual impact is less than significant; its contribution to a significant cumulative impact will not be cumulatively considerable. An impact that is less than significant when considered individually may still be cumulatively considerable in light of the impact caused by all projects considered in the analysis.

3.2 AESTHETICS

This section describes the visual conditions and general appearance of the project site and adjacent areas. It includes local plan policies and zoning regulations that pertain to scenic resources. The purpose of this section is to provide an analysis of potential visual impacts that may be associated with implementation of the project.

3.2.1 Environmental Setting

The project site is roughly 1 mile northwest of the Santa Rosa city limits, immediately southeast of the US 101/Mark West Springs Road interchange. The site is bordered by the interchange and US 101 to the west; Mark West Springs Road to the north; a vineyard to the south; and a vineyard and a residential neighborhood, the Berrybrook subdivision, to the east. US 101 and Mark West Springs Road are identified as Scenic Corridors in the Sonoma County General Plan. The project site is not part of or within a Scenic Landscape Unit or Community Separator.

The proposed project site has a base zoning designation of Public Facilities (PF) District and is subject to SD and SR Combining District zoning regulations, in addition to Valley Oak Habitat (VOH) Combining District zoning regulations. The project site is therefore subject to the development criteria promulgated in the PF District zoning regulations at Article 52, Section 26-52-050 of the Sonoma County Zoning Regulations. In addition, the project is subject to design review approval, as required under SR and SD zoning regulations.

3.2.2 Regulatory Setting

3.2.2.1 State

CEQA establishes that it is the policy of the State to take all action necessary to provide the people of the State with “enjoyment of aesthetic, natural, scenic and historic environmental qualities” (California Public Resources Code Section 21001[b]).

3.2.2.2 Local

The project site is located in unincorporated Sonoma County and is subject to the policies set forth in the *Sonoma County General Plan 2020* (the General Plan; PRMD 2008, revised 2009) and in the Sonoma County Zoning Regulations (the Zoning Regulations), which are included in Chapter 26 of the Sonoma County Code. The Zoning Regulations complement the General Plan.

The Open Space and Resource Conservation Element of the *Sonoma County General Plan 2020* (ORSC) designates certain lands within the county as Scenic Landscape Units, Community Separators, and Scenic Corridors. This information can be found in the Open Space and Resource Conservation Element and shown on Figure OSRC-5e, Open Space Map, Santa Rosa, and Environs of the General Plan. Policies regulating development along Scenic Corridors are located in Section 2.3 of the *Sonoma County General Plan 2020*. This section focuses on Goal OSRC-3 of the ORSC, which is to “identify and preserve roadside landscapes that have a high visual quality as they contribute to the living environment of local residents and to the County’s

tourism economy.” Sonoma County has adopted the following two objectives, located in the OSRC, to meet this goal:

Objective OSRC-3.1: Designate the Scenic Corridors on Figures OSRC-5a through OCSR-5i along roadways that cross highly scenic areas, provide visual links to major recreation areas, give access to historic areas, or serve as scenic entranceways to cities.

Objective OSRC-3.2: Provide guidelines so future land uses, development, and roadway construction are compatible with the preservation of scenic values along designated Scenic Corridors.

To achieve these objectives, Sonoma County has adopted a number of policies regulating development along Scenic Corridors. The following policies would apply to the project area:

Policy OSRC-3b: Apply the Scenic Resources Combining District to those portions of the properties within Scenic Corridor setbacks.

Policy OSRC-3c: Establish a rural Scenic Corridor setback of 30 percent of the depth of the lot to a maximum of 200 feet from the centerline of the road unless a different setback is provided in the Land Use Policies for the Planning Areas.

Policy OSRC-3d: Establish a building setback of 20 feet along Highway 101 Scenic Corridor in Urban Service Areas to be reserved for landscaping. Where a sound barrier or other sound mitigating structure must be located along a Scenic Corridor, ensure that the landscaped area is visible from the highway. Cooperate with State agencies to achieve compatible goals with regard to visual quality along Scenic Corridors.

Policy OSRC-3e: In conjunction with Section 2.5 “Policy for Urban Design”, incorporate design criteria for Scenic Corridors in urban areas.

Section 2.5 of the OSRC includes the future development of Urban Design Guidelines for each Urban Service Area in unincorporated Sonoma County. Currently, no Urban Design Guidelines have been established that would apply to the project area. The OSRC contains the following general urban design principles that are to be followed until Urban Design Guidelines for each Urban Service Area are adopted:

1. Promotion of pedestrian and/or bicycle use.
2. Compatibility with adjacent development.
3. Incorporation of important historical and natural resources.
4. Complementary parking out of view of the streetscape.
5. Opportunities for social interaction with other community members.
6. Promotion of visible access to buildings and use areas.
7. Appropriate lighting levels.

The OSRC also sets forth policies intended to preserve the natural and scenic resources which contribute to the general welfare and quality of life for the residents of the county and to the maintenance of its tourism industry. The OSRC includes policies and objectives addressing outdoor lighting. Goal OSRC-4 of the OSRC was adopted to preserve and maintain views of the night skies and the visual character of urban, rural, and natural areas, while allowing for

nighttime lighting levels appropriate to a given use and location. Sonoma County has adopted the following objectives to meet this goal:

Objective OSRC-4.1: Maintain night time lighting level at the minimum necessary to provide for security and safety of the use and users to preserve night time skies and the night time character of urban, rural, and natural area.

Objective OSRC-4.2: Ensure that night time lighting levels for new development are designed to minimize light spillage offsite or upward into the sky.

To achieve these objectives, Sonoma County has adopted the following policies:

Policy OSRC-4a: Require that all new development projects, County projects, and signage utilize light fixtures that shield the light source so that light is cast downward and that are no more than the minimum height and power necessary to adequately light the proposed use.

Policy OSRC-4b: Prohibit continuous all night exterior lighting in rural areas, unless it is demonstrated to the decision making body that such lighting is necessary for security or operational purposes or that it is necessary for agricultural production or processing on a seasonal basis. Where lighting is necessary for the above purposes, minimize glare onto adjacent properties and into the night sky.

Policy OSRC-4c: Discourage light levels that are in excess of industry and State standards (Sonoma County 2008).

The OSRC also addresses outdoor lighting in its Open Space and Resource Conservation Implementation Program at Program 7: Outdoor Lighting Standards, which maintains countywide standards for the preservation and conservation of night time skies in the use of outdoor lighting. Program 7 includes standards for nighttime lighting specific to use and location, including but not limited to parking lots, security lighting, street lighting, visitor serving uses, and signage. Program 7 applies to all new development, County projects, signage, retrofitting, expansions, and remodeling, and all new and replacement lighting fixtures/systems.

The *Sonoma County Zoning Ordinances* designate Scenic Design (SD) Combining Districts and Scenic Resource (SR) Combining Districts within the county. Lands within these districts are subject to the development criteria (e.g., height, bulk, and area requirements) set forth under the base zoning with which the SR and SD regulations are combined. In addition, the combining districts themselves have certain requirements that new development must meet under various circumstances.

3.2.2.3 Surrounding Visual Conditions

To the west of the project site (west of and along US 101) is an area of agricultural land use. This area is flat and has a very open appearance with only a few trees growing around small clusters of farm-related buildings. It has a distinct rural character.

The US 101/Mark West Springs Road interchange is landscaped with grass and a number of mature trees. Mark West Springs Road is elevated on earthen berms where it passes over the highway. The highway is at grade. The project site is immediately southeast of the interchange. Immediately northwest of the interchange is the PG&E Fulton Substation. This is a large electrical substation and has an industrial character. Several high-voltage transmission lines enter

and exit the substation. One of the transmission lines is routed along the northern edge of the project site on East Fulton Road and Mark West Springs Road. The transmission line is supported on steel lattice structures. Other overhead utilities strung on wood poles line both sides of Mark West Springs Road in the vicinity of the proposed project.

Residential development occupies the area immediately north of the project site, on the north side of Mark West Springs Road and on Lavell Road. The development is dense and consists of two-story homes on small lots. The Mark West Center is a new commercial development at the northeast corner of the project site between Mark West Springs Road, East Fulton Road, and Old Redwood Highway. Several businesses are in operation here. A law office is at the corner of East Fulton Road and Old Redwood Highway.

The Berrybrook residential subdivision is immediately east of the project site. It is located south of East Fulton Road and west of Old Redwood Highway. The development consists of about 43 one and two story homes on small lots. The east side of Old Redwood Highway features older, mostly residential development that includes single family homes and apartments. Some commercial development is on the east side of Old Redwood Highway at the corner of Ursuline Road.

A small vineyard is immediately adjacent to the south and southeast portion of the project site. Tom Schopflin Fields, part of the Sonoma County Regional Parks, is adjacent to the vineyard. The facility has ball fields, soccer fields, parking, and a restroom building. Vehicular access to the park is from Old Redwood Highway.

3.2.2.4 Visual Conditions of the Proposed Project Site

The project site is visible from US 101 and Mark West Springs Road. From northbound US 101, visual exposure of the site including the WFC occurs over a distance of about 0.5 mile from just south of the WFC to the US 101/Mark West Springs Road interchange. In the southbound direction the exposure occurs for about 0.4 mile. Views of the site from the highway last from about 22 to 27 seconds when traveling at the posted speed limit of 65 mph. The section of Mark West Springs Road from which the site can be seen extends for about 0.35 mile from the top of the highway overpass to the west end of East Fulton Road. Views toward the site for persons traveling on Mark West Springs Road last for about 32 seconds when moving at the posted speed limit of 40 mph. The site is also visible from private property in the Berrybrook subdivision, particularly the backyards of homes located on the west side of Darbster Place.

The project site includes the existing WFC which occupies nearly 30 acres of land. The main building, which is quite extensive, varies in configuration and height from one to three stories. The grounds around the building are landscaped with trees and shrubs. The facility includes 903 parking spaces in surface lots located northwest and east southeast of the main building. The parking lots are landscaped with ornamental trees and shrubs. The main building, the monument sign next to the highway, and the mature landscaping are a focal point in views for motorists on US 101 as they approach the site from either direction.

The northern portion of the project site where the proposed new hospital facilities would be built is a flat, mostly open, grassy area. The main entrance road to the WFC and west parking lot extends from Mark West Springs Road about 340 feet east of Lavell Road southward through the site. More than a dozen large trees and some large shrubs are located in a band off the west side

of the entrance road and at its intersection with Mark West Springs Road. A row of mostly large shrubs with some trees is located along the north side of the site, parallel to Mark West Springs Road between the entrance road and East Fulton Road. The shrub row is set back about 60 feet from Mark West Springs Road and East Fulton Road. A second access road to the WFC and its east parking lot extends south from East Fulton Road.

There are 143 native trees on the 53-acre project site. Even so, the majority of the northern portion of the site where the new hospital facilities would be constructed has a mostly open, grassy character. In the southern portion of the site the WFC has a predominantly institutional character.

3.2.3 Impacts and Mitigation

3.2.3.1 Approach and Methodology

The methodology used to assess the visual and aesthetic impacts of the proposed project is based on the Visual Assessment Guidelines issued by the Sonoma County Permit and Resource Management Department (PRMD). This methodology addresses the types and scales of proposed projects normally evaluated in environmental documents prepared for the County pursuant to CEQA. The methodology provides an objective basis for determining the significance of visual and aesthetic impacts under CEQA.

The primary tasks in assessing the project's visual and aesthetic impacts consist of viewing the site from relevant locations in the vicinity of the project site, selecting representative viewpoints for consideration in the EIR, describing the site from those locations, determining the sensitivity level of the site, studying photo simulations that illustrate the post-project appearance of the proposed site to help assess the project's visual dominance within its setting, and determining the significance of impact. These tasks are summarized below.

Determine Viewpoints for Study

Field visits to the project site and surrounding areas were made to develop an inventory of existing visual conditions, determine the visual exposure of the project site from surrounding public areas, and make direct observations from viewpoints selected for use in illustrating the proposed project in photographic simulations. The site was examined from locations along US 101, Mark West Springs Road, and other relevant locations accessed by the public.

US 101 and Mark West Springs Road are the two main roadways in the area that provide views of the project site. Large numbers of the public, primarily motorists, travel these roads. Candidate viewpoints were reviewed with County staff to select the set of viewpoints to be used for the impact analysis and photo simulations. Five viewpoints were selected including two on US 101, one at the US 101/Mark West Springs Road interchange, one on Mark West Springs Road, and one on private property located on Darbster Place in the Berrybrook residential neighborhood.

Characterize Existing Setting

Views of the project site were characterized by observing and describing the nature of existing vegetative cover, the prominence of the view, and the landscape and land uses in the surrounding areas.

Prepare Photo Simulations

Photo simulations were prepared by the project applicant to illustrate development of the proposed project. The photo simulations depict proposed buildings and project features including landscaping, access roads, and parking lots. Landscaping is shown at two stages, one during the first year after installation and another after 15 years of growth. The process used to develop the photo simulations was reviewed by PRMD staff. Staff also reviewed the photo simulations and approved them for use in this impact analysis.

Determine Sensitivity Level of the Site

Based on field data and characterizations of view toward the project site, the sensitivity level of the project site (low, moderate, high, or maximum) was determined using the criteria in the County's Visual Assessment Guidelines. Visual sensitivity depends on such things as land use and zoning designation, character of development in the project vicinity, terrain characteristics, and aesthetic value of existing vegetation. Sites with low visual sensitivity are, among other things, located within an urban land use designation and have no designations protecting scenic resources. Sites with high or maximum sensitivity are, among other things, within General Plan designated scenic landscape units, community separators, or scenic corridors.

Determine Visual Dominance

Using the County's Visual Assessment Guidelines, the visual dominance of the proposed project was determined, first by evaluating the form, line, color, and texture of project features within the visual context of its surroundings. Using this evaluation and the photo simulations of the project from the five selected viewpoints, the project's visual dominance was defined according to the criteria contained in the PRMD Visual Assessment Guidelines. Potential classifications include Dominant, Co-Dominant, Subordinate, or Not Evident depending on a variety of factors including how visible the project will be, how strongly project elements stand out, how different they appear to be from surrounding development in terms of character, mass, and scale, and how much public attention they are likely to attract. Note that final architectural and engineering design of the project has not been completed as of this time. However, the layout, size and mass of buildings as well as the proposed landscape plans have been established and were used as the basis for the visual impact analysis. Final architectural and engineering design will be addressed during the design review process which is required by the county for this project.

Determine Significance of Visual Impacts

The determination of visual impacts was made by correlating visual sensitivity with visual dominance in accordance with the Visual Assessment Guidelines. When the visual sensitivity of a site is classified as Maximum, any level of visual dominance greater than Not Evident yields

significant visual impacts. Conversely, when the visual sensitivity of a site is determined to be Low, visual impacts of even visually Dominant projects are considered less than significant.

Thresholds of Significance

The project would have a significant visual impact if the visual dominance of the proposed project exceeds that which is considered acceptable for the sensitivity level of the project site as indicated in Table 3.2-1 below.

Table 3.2-1. Visual Impact Significance

Sensitivity	Visual Dominance			
	Dominant	Co-Dominant	Subordinate	Not Evident
Maximum	significant	Significant	significant	less than significant
High	significant	Significant	less than significant	less than significant
Moderate	significant	less than significant	less than significant	less than significant
Low	less than significant	less than significant	less than significant	less than significant

In addition, criteria from the *CEQA Guidelines* were used as a means to determine the significance of impacts. According to these criteria, the project would have a significant visual and aesthetic impact if it would:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway.
- Substantially degrade the existing visual character or quality of the site and its surroundings
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Impacts and Mitigation

Impact AES-1: Affect a Scenic Vista The project site is bounded on two sides by scenic corridors, US 101 and Mark West Springs Road. However, the proposed medical center facilities would not substantially interrupt or block scenic vistas.

Significance: Less than significant

Discussion:

The Sonoma County General Plan identifies certain views from scenic corridors as significant. Among them are views from US 101 to the east over Mark West Springs Hills to Mt. St. Helena. In the immediate vicinity of the proposed project, views from US 101 toward Mt. St. Helena are not open and expansive. Instead they are partially obstructed by trees and development. These

conditions are illustrated in the Existing Conditions photos shown in **Figures 3.2-1 through 3.2-6**. The project site itself is not considered a scenic vista. Views from Mark West Springs Road looking toward the project include only the project site itself. There are no significant scenic features on the site or that are west or south of the site and in view. The project would not substantially affect a scenic vista, especially in the first few years after construction. However, in the future when trees planted on the project site mature, they would block the partial view from US 101 of the hills to the east to an even greater degree. This would be a brief effect since it would only involve the segment of US 101 between the WFC and Mark West Springs Road and motorists views of the hills to the east would only be block for a short period of time. Views of the hills from other places along US 101 would be unchanged.

Mitigation: No mitigation required

Impact AES-2: Damage Scenic Resources There are no trees, rock outcroppings, historic buildings or other features on the site that are considered significant scenic resources. Although US 101 is listed as a Sonoma County scenic corridor, it is not a Designated State Scenic Highway.

Significance: No impact

Discussion:

Construction of the proposed medical center facilities would require clearing of the northern portion of the project site. However, the features that would be removed do not possess the characteristics of a scenic resource. There are no rock outcroppings on the site. No historic buildings of visual significance would be removed. While a number of trees would be removed, those that are slated for removal are not especially unique in terms of their size, age, or arrangement. (The loss of trees as a change in the visual quality and character of the site is discussed below in Impact AES-3; the loss of trees as an effect on biological resources is discussed in BIO-3.)

Mitigation: No mitigation required



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Sutter/LBMF Joint Master Plan

Figure 3.2-1
Viewpoint Locations



View 1 - Existing

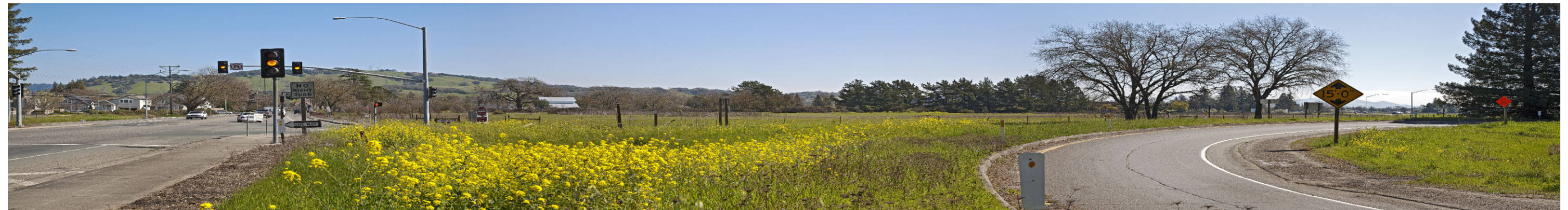


View 1 - Newly planted



View 1 - 15 years

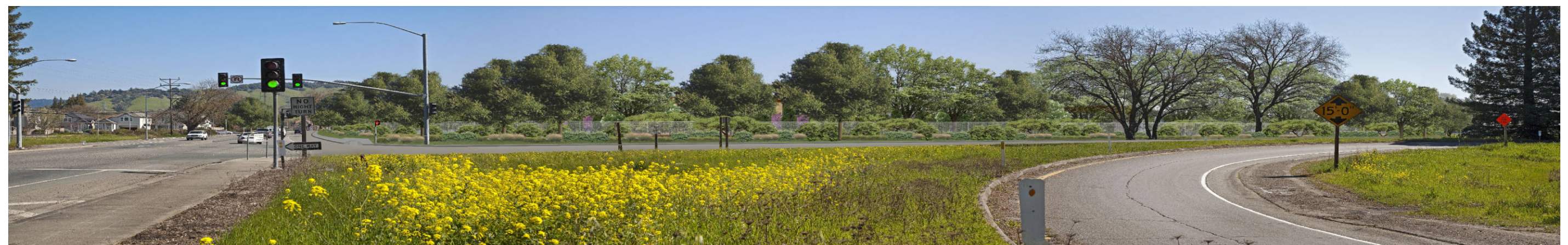
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View 2 - Existing



View 2 - Newly planted



View 2 - 15 years

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View 3 - Existing

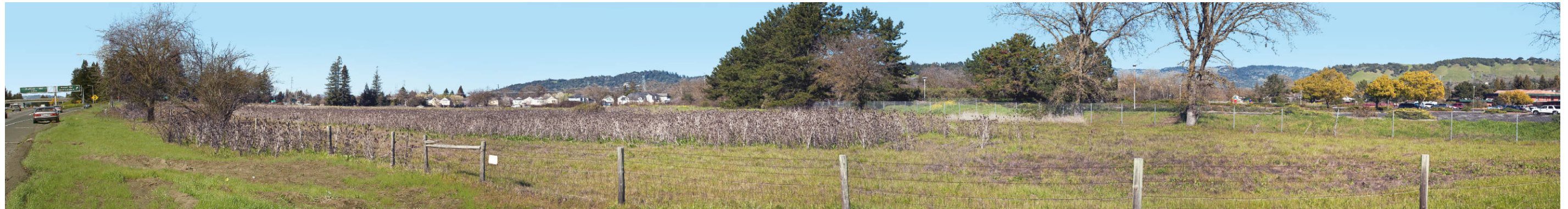


View 3 - Newly planted



View 3 - 15 years

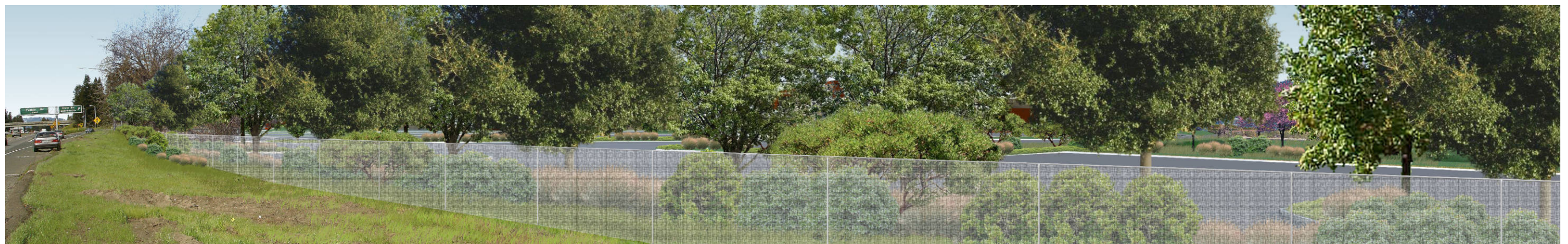
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View 4 - Existing



View 4 - Newly planted



View 4 - 15 years

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Figure 3.2-5 Existing Conditions and Photosimulations
 View 4: From US 101 Northbound looking northeast



View 5 - Existing



View 5 - Newly planted



View 5 - 15 years

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Figure 3.2-6 Existing Conditions and Photosimulations
 View 5: From Eastern project boundary near Berrybrook subdivision looking west

Impact AES-3: The visual quality and character of the northern portion of the site where new medical facilities would be built would change, but the proposed new facilities would be consistent with the character of the WFC and compatible with the character of the surrounding area.

Significance: Less than significant

Discussion:

The land use designation of the project site is Public-Quasi Public. Some allowed uses under this designation are urban in character, such as the existing WFC. Existing land uses in the immediate vicinity include a four-lane highway that is undergoing expansion, agricultural fields, vineyards, commercial businesses, an electrical substation, substantial residential development, and a public recreation facility. This variety of uses creates a visual character that is neither clearly urban nor rural.

Lands bordering on US 101 that are immediately north, south, and west of the project site are part of the 2000-acre Windsor/Larkfield/Santa Rosa Community Separator. The project site itself is not part of the community separator as shown on Figure OSRC5-e in the Sonoma County General Plan 2020.

The site is within a Scenic Design (SD) Combining District which means that, in addition to all requirements contained in the base zoning designation for Public Facilities (PF) (including maximum building heights, minimum lot areas and lot widths, yard requirements and maximum percentages of lot coverage), any development proposed as part of the project must undergo design review and approval. Under design review approval, all plans for land divisions or development projects shall be reviewed and approved, conditionally approved or denied by the DRC or planning director on the basis of site planning as it relates to designated open space or design policies of adopted general, specific or area plans or other such design criteria as may have been adopted by the board of supervisors. Where a use permit is required development plans shall be reviewed and acted upon by the Board of Zoning Adjustments/Planning Commission.

The project site is also within a Scenic Resources (SR) Combining District. SR Combining Districts add requirements for projects located within community separators and scenic landscape units or along scenic corridors. The site is not within a community separator or scenic landscape unit but is along a scenic corridor. Both US 101 and Mark West Springs Road are county scenic corridors. As a result, the SR Combining District adds a required rural building setback along US 101 and Mark West Springs Road of 30% of the depth of the lot up to a maximum of 200 feet from the road centerline. If the project is approved and the site included in the Urban Service Area, the scenic corridor requirements change and only a 20-foot landscaped setback requirement would apply along US 101. The proposed building layout on the site complies with the urban scenic corridor requirements. The SR Combining District also adds the same requirement for design review and approval described under the SD Combining District.

Public views of the project site occur primarily from US 101 and Mark West Springs Road. The views from these roadways last for between 22 and 32 seconds when moving at posted speed limits. Slower speeds would increase the duration of the view. The project site is flat and not located on a hillside. It does not serve as a scenic backdrop for views from the scenic corridors.

The portion where new hospital-related facilities would be built has a primarily open, grassy character that is unremarkable. It does not have significant natural features of aesthetic value. The project vicinity is characterized by a mix of rural and urban development. Based on these conditions the sensitivity of the project site is determined to be moderate on a scale that ranges from low, moderate, high, to maximum. Conditions of the project site are consistent with the criteria found in Table 1 of the Visual Assessment Guidelines for sites with moderate levels of sensitivity.

Photo simulations depicting the proposed project have been developed from five different viewpoints surrounding the site. The viewpoint locations are shown on **Figure 3.2-1**. The photo simulations, paired with photos of existing conditions, are shown on **Figure 3.2-2** through **Figure 3.2-6**. The southern portion of the site is occupied by the WFC. The proposed new medical facilities would be seen in the same context as the WFC. As illustrated by the photo simulation in **Figure 3.2-4**, the proposed facilities would be generally comparable in scale, mass, and height to the WFC and the grounds of the new facilities would be landscaped in a similar manner. The proposed new medical campus would exhibit a primarily institutional character, as does the WFC. The photo simulations of the proposed project include landscape conditions at two stages of growth, one immediately after landscaping is installed and another after 15 years of growth. The simulations show that as the landscaping matures, it substantially softens and screens views of the hospital complex buildings and parking areas. Landscape plans for the site include rows of trees and large shrubs around the entire outer edge of the property as well as landscaping of all parking lots and other internal areas. Consequently as the landscaping grows, the buildings would become less prominent when viewed from locations outside the site. Based on these circumstances the project is determined to be visually co-dominant within its setting, that is, it would eventually attract attention equally with other development in the immediate area. As shown in **Table 3.2-1** above, the visual impact of projects that would be visually co-dominant on sites that have a moderate sensitivity level would be less than significant.

Mitigation: No mitigation required

**Impact AES-4:
Permanent New Source
of Light or Glare** The proposed medical center would require night lighting for operational, security, and safety purposes that would represent a new source of substantial light. Also, the new buildings could be a potential source of daytime glare.

Significance: Potentially significant

Discussion:

The proposed project would create new light and glare sources in an area which is currently vacant. Sources of night lighting would include signage, security lights, overhead parking lot lights, interior lighting, and helicopter landing pad lights. Light trespass is light from a neighboring property that under certain circumstances can potentially illuminate areas on adjacent off-site areas. Such light can be a nuisance. Light pollution resulting from nighttime lighting could result in sky glow if the source is large enough and has enough intensity. Sky glow can reduce the ability to view the night sky and observe stars on an otherwise clear night. Light trespass at the project site would be controlled by fixture design and location and perimeter

landscaping and berms. Since a detailed lighting plan for the project has yet to be developed, it is uncertain if the amount of light at the proposed new facilities would contribute measurably to sky glow. During the day, sunlight reflecting from building surfaces and windows would be the primary source of potential glare.

Street lighting is present on US 101 adjacent to the project site, the 101/Mark West Springs Road interchange, Mark West Springs Road and Lavell Road in the vicinity of the project site, and intersection of Mark West Spring Road and Old Redwood Highway. The east and west parking lots at the WFC are also lighted as is the WFC itself and the Mark West Center at the corner of Mark West Springs Road and Old Redwood Highway. Sensitive receptors to lighting at the new medical center include residents on Mark West Springs Road and Lavell Road and in the Berrybrook subdivision. Proposed landscaping along the perimeter of the project site and a proposed berm on the east side of the project would limit or completely block light trespass from the medical center on these sensitive receptors.

For nighttime operation of the heliport, perimeter lighting of the helipad is required. The lights would surround the landing pad surface. A minimum of eight lights are required. The lights would be green in color and must be flush-mounted with the landing surface. In addition to these aviation-related lights, flood lighting would be needed to enable medical staff to see while working around the helicopter to load and/or unload patients. Controls for the lights typically are located in an equipment panel near the helipad. The floodlights need to be separately controlled from the perimeter lights. Floodlights would only be turned on after a helicopter has landed so as not to shine in the eyes of pilots while landing. They would be turned off again before the helicopter takes off and would remain off until the next helicopter has landed. Since the heliport would be located on the highway side of the medical center complex and off the southwest corner of the proposed buildings, it would be out of view from Mark West Springs Road.

Proposed project impacts from light and glare would be less than significant with implementation of mitigation measures AES-4a and AES-4b.

Mitigation AES-4a: Use lights that prevent light trespass

The following measures shall be implemented to control and prevent light trespass:

- Lighting plans shall be submitted for design review and approval.
- The plans shall require that free-standing light fixtures use low-pressure sodium lamps or other similar lighting fixture and be installed and shielded in such a manner that all lights are shielded from off-site view and no light rays are emitted from the fixture at angles above the horizontal plane.
- Building-mounted lights should be shielded and downcast.
- Prohibit the use of high intensity discharge lamps.

Mitigation AES-4b: Use building materials and surfaces that minimize reflected glare

The following measures shall be implemented to minimize reflected glare:

- Exterior building materials shall be composed of at least 50 percent low-reflectance non-polished surfaces.
- All bare metallic surfaces shall be painted with flat finishes to

reduce reflected glare.

Significance after Mitigation: Less than significant. Implementation of the above mitigation measures would minimize nighttime light trespass from the project on adjacent offsite areas and minimize the potential for daytime glare.

Impact AES-5: Cumulative Impacts of Hospital Operations on Aesthetics Continued operation of the proposed project could contribute to a significant cumulative impact on aesthetics

Significance: Less than significant

Discussion:

The EIR for the Sonoma County General Plan 2020 found that the policies contained in the General Plan 2020 would reduce visual impacts on Community Separators, Scenic Landscape Units, Scenic Corridors, Scenic Highways, and in other urban and rural areas to a less-than-significant level. Since the proposed project would comply with the policies of the General Plan 2020, it would not contribute to cumulative visual impacts to these resources.

In addition, the Sonoma County General Plan 2020 EIR determined that land uses and development would result in a cumulative impact to the visual quality of county lands that are not designated Scenic Resources. The proposed project would add incrementally to those cumulative impacts, including impacts from night lighting. The sensitivity level of the proposed project site is moderate based on several factors including its land use and zoning designations, the character and intensity of surrounding land uses, and visual exposure from public locations. The visual dominance of proposed project features would be co-dominant with existing development on the site and in surrounding areas. Therefore the contribution of the proposed project to this impact would not be cumulatively considerable.

New lighting would add to the existing lighting on and near the site. The east and west parking lots at the Wells Fargo Center for the Arts are lighted as is the Arts Center itself and the Mark West Center at the corner of Mark West Springs Road and Old Redwood Highway. There is existing street lighting on US 101 adjacent to the project site, the US 101/Mark West Springs Road interchange, Mark West Springs Road and Lavell Road in the vicinity of the project site, and intersection of Mark West Spring Road and Old Redwood Highway. Landscaping along the perimeter of the project site and a proposed berm on the east side of the project would limit or completely block light trespass from the medical center on these sensitive receptors and would minimize project level impacts. The new lighting for the project, while adding incrementally to existing lighting, would be required to conform to Sonoma County design guidelines and code requirements requiring lighting to be shielded and downward-cast. In addition, the proposed project site development would be consistent with GP 2020 land use policy, the project site adjoins a major highway corridor and a mix of other residential, commercial, and recreational uses, and the project would not result in a new source of light in an area otherwise devoid of nighttime lighting. Accordingly, new lighting associated with this project would not be considered a cumulatively considerable contribution to nighttime lighting. Construction impacts

associated with project facilities and foreseeable future developments would create temporary visual impacts as the construction sites are prepared and the buildings are erected. However, the cumulative visual impact of construction activities is not considered to be significant because it would be temporary.

Mitigation

No mitigation required

3.3 AGRICULTURAL RESOURCES

This section discusses agricultural lands in the project area, defines different types of agricultural lands, and identifies applicable state and local regulations related to agricultural lands. The purpose of this section is to provide the regulatory and environmental setting necessary to identify any potential project impacts on agricultural resources.

3.3.1 Environmental Setting

The approximately 53-acre project site can be divided into two distinct areas. The majority of the site—approximately 41 acres—is disturbed, covered with fill or structures, or compacted due to long-term event-related uses. The remaining 12 acres is undeveloped and used for pasture. This 12-acre area is identified in FMMP mapping as Farmland of Local Importance. The area, which occupies the northwestern corner of the proposed project site, is the only portion of the site with any agricultural potential. The land use designation given to the entire site in the County General plan is Public/Quasi-Public (Section 3.10). This location has never been designated by the County as a site for agricultural use, even though the site has been previously used for both agriculture and grazing.

The soil classification of this acreage is Yolo loam - 2% slopes. This soil type has a capability unit of I-1, meaning that it is appropriate for row crops, orchards, vineyards, and pasture. Historically, this section of the project site supported orchards. For approximately the past 40 years, however, it has been fallow.

3.3.2 Regulatory Setting

3.3.2.1 State

California Land Conservation Act (Williamson Act)

Since its enactment in 1965, the California Land Conservation Act (known as the Williamson Act) has been the state's premier land conservation program. The Williamson Act enables counties and cities to designate agricultural preserves that provide preferential taxation to private land owners who execute contracts restricting the use of their land within an Agricultural Preserve to agricultural or open-space uses and certain compatible uses. Agricultural landowners with properties under Williamson Act contracts are assessed taxes on the income-producing value of their property instead of their assessed market value. To qualify for the program, the landowner is required to sign a contract with the county or city agreeing to restrict the use of the land for a minimum 10-year period. The contract is renewed automatically annually unless one of the parties files for nonrenewal or the contract is canceled.

The California Department of Conservation has oversight responsibility for Williamson Act program administration and compliance. However, the local government is authorized to adopt rules governing the administration of agricultural preserves. The County of Sonoma first adopted Rules for Administering Agricultural Preserves in 1967, and which were last amended in 1989.

Two different rules were adopted, one for “Type I” preserves (prime agricultural land), and one for “Type II” preserves (nonprime agricultural land, e.g., grazing or open space).

Farmland Mapping and Monitoring Program

The California Department of Conservation administers the Farmland Mapping and Monitoring Program (FMMP), which evaluates the quality of farmlands throughout the State. The suitability of the local soil resources plays a crucial part in the FMMP’s farmland classifications. The FMMP uses the U.S. Department of Agriculture Natural Resource Conservation Service (USDA NRCS) soil survey information, land inventory, and monitoring criteria to classify most of the state’s agricultural regions into five agricultural and three nonagricultural land types. Every two years, the FMMP publishes this information in its Important Farmland map series. The five agricultural land classifications are as follows:

- *Prime Farmland* – Lands with the best combination of physical and chemical features able to sustain long term production of agricultural crops. The land must be cropped and be supported by a developed irrigation water supply that is dependable and of adequate quality during the growing season. Land must have been used for production of irrigated crops at some time during the two update cycles prior to the mapping date.
- *Farmland of Statewide Importance* – Lands similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. These lands have the same reliable source of adequate quality irrigation water available during the growing season. Land must have been used for production of irrigated crops at some time during the two update cycles prior to the mapping date.
- *Unique Farmland* – Less quality soils used for production of the State’s leading agricultural crops. These lands are usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones of California. Land must have been cropped at some time during the two update cycles prior to the mapping date.
- *Farmland of Local Importance* – Land of importance to the local agricultural economy as determined by each county’s board of supervisors and local advisory committees. In Sonoma County, these farmlands include the hay producing areas of the Santa Rosa Plains, Petaluma Valley, and Tubbs Island Naval Reservation. Additional areas also include those lands which are classified as having the capability for producing locally important crops such as grapes, corn, etc., but may not be planted at the present time.
- *Grazing Land* – Lands of at least 40 acres on which the existing vegetation is suited to the grazing of livestock.

The first three categories (prime, statewide, and unique farmlands) are considered “important farmland” and also meet the definition of agricultural land under CEQA (Section 21060.1).

3.3.2.2 Local

The Sonoma County Agricultural Preservation and Open Space District (District) was established as part of the Open Space Element of the Sonoma County General Plan to acquire and administer open space lands. The District is a public agency funded by 0.25 percent sales tax in Sonoma County. However, the District is not a regulatory agency and does not have the power

of eminent domain. The District acquires conservation easements through voluntary transactions with landowners, and also purchases land outright from willing sellers. The District identifies four acquisition categories: Agriculture, Greenbelts, Natural Resources and Recreation. The Agriculture Acquisition Category includes small farms, dairies, livestock ranches, vineyards and other agricultural lands that contribute to the county's agricultural economy and provide valuable open space. The District has protected over 32,000 acres of active agricultural lands in Sonoma County.

3.3.3 Impacts and Mitigation

Approach and Methodology

The analysis in this section focuses on the compatibility of the project with existing agricultural uses and policies within the vicinity of the project site. In addition, the analysis focuses on the compatibility of project with the California Land Conservation Act and the Sonoma County General Plan 2020.

Thresholds of Significance

The project would have a significant impact if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use.

Less Than Significant Impacts Not Requiring Further Analysis

The project does not contain any elements that would conflict with existing zoning for agricultural use or a Williamson Act contract. The Sonoma County General Plan does not designate the project site for agricultural use but for Public-Quasi Public land use. Further, the project site is zoned for Public Facilities/Scenic Design and Scenic Resources, which do not permit agricultural uses. Therefore, the project would not conflict with General Plan zoning designations. None of the project site is subject to a Williamson Act contract, and there are no conflicts between existing land uses at the site and the adjacent agricultural uses.

No new conflicts are expected as a result of the construction of the Medical Campus or other project components. The vineyard adjacent to the project site will not be affected by the project and will continue in agricultural use. No other changes in the existing environment are proposed that, due to their location or nature could result in conversion of farmland to nonagricultural use.

Impacts and Mitigation

Impact AG-1: A 12-acre section of the project site is designated as Farmland of Local importance, which would be converted to nonagricultural use as a result of the project.

Conversion of Farmland to Nonagricultural Uses

Significance: Less than significant

Discussion:

A 12-acre section of the project site is identified in FMMP mapping as Farmland of Local Importance. Under CEQA, this designation does not represent a significant impact as it is not labeled as Prime Farmland, Unique Farmland or Farmland of Statewide importance. The zoning of the project site is not zoned for agricultural use and does not fall under a Williamson Act contract. In addition, the land has not been in agricultural use for a number of years and has lain fallow. Development of this site would not result in farmland outside of the project site to be converted to non agricultural uses. Conversion of this acreage to nonagricultural use would be a less-than-significant impact to local agriculture.

Mitigation: No mitigation required

Impact AG-2: Implementation of the proposed project could result in a considerable contribution to significant cumulative agricultural resources impacts.

Cumulative Agricultural Resources Impacts

Significance: Less than significant

Discussion:

The Sonoma County General Plan 2020 EIR determined that development in the County would not result in cumulative impacts to agricultural resources because of policies in the plan limiting the extent of development on agricultural lands. The proposed project is consistent with those policies.

The proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance or conflict with current zoning for agricultural use. The County's General Plan does not designate the project site for agricultural use. Thus, there would be no cumulative impacts to agricultural resources.

Mitigation: No mitigation required

3.4 AIR QUALITY

The purpose of this section is to provide the environmental and regulatory settings necessary to identify any potential project impacts on surrounding air quality. This section evaluates the proposed project's air quality emissions from construction activities, operation of the hospital, helicopter operations, and emergency diesel generator testing. The proposed project's air quality emissions are evaluated against the thresholds of significance set forth in Appendix G of the CEQA Guidelines and against Bay Area Air Quality Management District (BAAQMD) CEQA significance thresholds to determine the level of impact.¹ State and county greenhouse gas reduction goals are also considered in evaluating the significance of the project's contribution to the cumulative impact of global climate change.

In addition a health risk assessment is conducted to determine if diesel particulate matter (DPM) from construction and operation of the project would expose sensitive receptors to substantial toxic air contaminant concentrations. A health risk assessment for DPM on hospital patients and workers from nearby US 101 was also evaluated.

This section includes information from the *Imported Fill Sources Letter* (Simpkins 2009), *Environmental Air Quality Assessment* (Illingworth & Rodkins 2009a), *Attachment for Environmental Air Quality Assessment* (Illingworth & Rodkins 2009d), *Air Pollution Emissions for Helicopter Operations* (Illingworth & Rodkins 2009c), and *Global Climate Change* (Zischke 2009), which are included as **Appendix C** in the Technical Appendices, Vol. 2 of this document.

3.4.1 Environmental Setting

3.4.1.1 *Climate, Meteorology, and Topography*

Due to its topographic diversity, the meteorology and climate of the Bay Area is often described in terms of different subregions and their microclimates. The proposed project is located in the Cotati and Petaluma Valley subregion, as defined by the Bay Area Air Quality Management District (BAAQMD).

This climatological subregion stretches from Santa Rosa to the San Pablo Bay and is known as the Cotati Valley at the north end and the Petaluma Valley at the south end. The largest city in the Cotati Valley is Santa Rosa. To the east, the valley is bordered by the Sonoma Mountains, with the San Pablo Bay at the southeast end of the valley. To the immediate west are a series of

¹ BAAQMD's guidance on determining significance is set forth in the December 1999 publication, *BAAQMD CEQA Guidelines: Assessing the Air Quality Impacts of Projects and Plans*. BAAQMD has proposed the adoption of new recommended thresholds of significance for project emissions, including emissions of greenhouse gasses. BAAQMD, *California Environmental Quality Act Guidelines Update – Proposed Thresholds of Significance*, November 2009. BAAQMD's staff recommendations for these proposed new thresholds are likely to be considered by the BAAQMD Board in December. The proposed new BAAQMD guidelines do not specify when they will be effective, however the BAAQMD staff has recommended the effective date of the proposed thresholds be 90 days from the Board decision in December (Pers.comm., Sigalle R. Michael to URS, November 2009). As this Draft EIR is being finalized, it is not certain when these proposals will be adopted, when they will take effect, and whether the BAAQMD Board will adopt the staff recommendations. In the interest of full disclosure, this EIR discusses the recommended draft thresholds in the following impact analysis.

low hills and further west are the Estero Lowlands, which opens to the Pacific Ocean. The region from the Estero Lowlands to the San Pablo Bay is known as the Petaluma Gap. This low-terrain area is a major transport corridor allowing marine air to pass into the Bay Area.

Wind patterns in the Petaluma and Cotati Valleys are strongly influenced by the Petaluma Gap. The predominant wind pattern in this region is for marine air to move eastward through the Petaluma Gap, then to split into northward and southward paths as it moves into the Cotati and Petaluma valleys. The southward path crosses the San Pablo Bay and moves eastward through the Carquinez Straits. Winds are usually stronger in the Petaluma Valley than the Cotati Valley because it is part of the Petaluma Gap. The low terrain in the Petaluma Gap does not offer much resistance to the marine air as it flows to the San Pablo Bay. The Cotati Valley, being slightly north of the Petaluma Gap experiences lower wind speeds. In Santa Rosa, the annual average wind speed is 5.4 mph.

Summer maximum temperatures for this region are in the low 80's, while winter maximum temperatures are in the high 50s to low 60s. Summer minimum temperatures are 50-51 degrees, and wintertime minimum temperatures are 36-40 degrees. Rainfall averages are 24 inches per year at Petaluma, and 30 inches at Santa Rosa. Santa Rosa's rainfall is higher because the air is lifted and cooled in advance of the Sonoma Mountains, thereby causing condensation of the moisture. Consistent with the Bay Area Mediterranean climate, Santa Rosa receives 81% of its annual rainfall from November through March.

3.4.1.2 Air Pollution Potential

The clear skies with relatively warm conditions that are typical in summer in the Bay Area combine with localized air pollutant emissions to elevate O₃ (ozone) levels. Air quality standards for O₃ traditionally are exceeded when relatively stagnant conditions occur for periods of several days during the warmer months of the year. Weak wind flow patterns combined with strong inversions substantially reduces normal atmospheric mixing. Key components of ground-level O₃ formation are sunlight and heat; therefore, significant O₃ formation only occurs during the months from late spring through early fall. Air pollution potential in the project area is not as high as other parts of the Bay Area because winds generally do not transport enough of the precursor pollutants into that area (highest concentrations occur at monitoring stations in the eastern and southern portions of the Bay Area that are usually downwind of the major urban areas). However, pollutants emitted in the Santa Rosa area can be transported down-wind and contribute to air quality problems in those areas. Light winds that are common in winter combine with strong surface-based inversions, caused by cold air trapped near the surface, to trap pollutants such as particulates (e.g., wood smoke) and carbon monoxide. This can lead to localized high concentrations of these pollutants.

3.4.1.3 Criteria Air Pollutants

Carbon Monoxide (CO)

CO, a colorless and odorless gas, interferes with the transfer of oxygen to the brain. It can cause dizziness and fatigue, and can impair central nervous system functions. CO is emitted almost exclusively from the incomplete combustion of fossil fuels. Automobile exhaust and residential wood burning in fireplaces and woodstoves emit most of the CO in the Bay Area. CO is a non-

reactive air pollutant that dissipates relatively quickly, so ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. The highest CO concentrations measured in the Bay Area are typically recorded during the winter. Monitored levels of CO are below the Federal and State ambient air quality standards, but 10 urban areas (including Sonoma County) in the Bay Area are considered maintenance areas.

Ozone (O₃)

O₃, a colorless toxic gas, is the chief component of urban smog. O₃ enters the blood stream and interferes with the transfer of oxygen, depriving sensitive tissues in the heart and brain of oxygen. O₃ also damages vegetation by inhibiting growth. Although O₃ is not directly emitted, it forms in the atmosphere through a chemical reaction between reactive organic gas (ROG) and nitrogen oxides (NO_x) under sunlight. ROG and NO_x are primarily emitted from automobiles and industrial sources. O₃ is present in relatively high concentrations within portions of the Bay Area. Highest O₃ concentrations occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies.

Nitrogen Dioxide (NO₂)

NO₂, a reddish-brown gas, irritates the lungs. Exposure to NO₂ can cause breathing difficulties at high concentrations. Clinical studies suggest that NO₂ exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children. Similar to ozone, NO₂ is not directly emitted, but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO₂ are collectively referred to as nitrogen oxides (NO_x) and are major contributors to ozone formation. NO_x is emitted from combustion of fuels, with higher rates at higher combustion temperatures. NO₂ also contributes to the formation of PM₁₀ (see discussion of PM₁₀ below). Monitored levels in the Bay Area are well below ambient air quality standards.

Sulfur Oxides

Sulfur oxides, primarily SO₂, are a product of high-sulfur fuel combustion. The main sources of SO₂ are coal and oil used in power stations, in industries, and for domestic heating. Industrial chemical manufacturing is another source of SO₂. SO₂ is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. Due to the lack of sources, SO₂ is found at low concentrations in the North Bay region.

Suspended Particulate Matter

Respirable particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}) consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. PM₁₀ and PM_{2.5} represent fractions of particulate matter that can be inhaled and cause adverse health effects. Major sources of PM_{2.5} results primarily from diesel fuel combustion (from motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. PM₁₀ include all PM_{2.5} sources as well as emissions from dust generated by construction, landfills, and agriculture; wildfires and brush/waste burning, industrial sources, windblown dust from open lands, and atmospheric chemical and photochemical reactions.

PM₁₀ and PM_{2.5} are a health concern, particularly at levels above the Federal and State ambient air quality standards. PM_{2.5} (including diesel exhaust particles) is thought to have greater effects on health because minute particles are able to penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Children are more susceptible to the health risks of PM_{2.5} because their immune and respiratory systems are still developing.

PM_{2.5} are miniscule and can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility. The USEPA recently adopted a new, more stringent PM_{2.5} standard of 35 µg/m³ for 24-hour exposures based on a review of the latest new scientific evidence. At the same time, the USEPA revoked the annual PM₁₀ standard due to a lack of scientific evidence correlating long-term exposures of ambient PM₁₀ with adverse health effects. Most stations in the Bay Area report elevated PM₁₀ and PM_{2.5} levels on similar fall/winter days, indicating a regional air quality problem. The primary sources of these pollutants are wood smoke and traffic. Meteorological conditions that are common during this time of the year result in calm winds and strong surface-based inversions that trap pollutants near the surface. The buildup of these pollutants is greatest during the evenings and early morning periods. The high levels of PM₁₀ result in not only health effects, but also reduced visibility. The San Francisco Bay Area air basin (SFBAAB) is unclassified for the national 24-hour standard for PM₁₀, even though the basin has attained the standard over the past two years. The air basin is considered attainment for the national annual standard for PM_{2.5}. The air basin has not achieved attainment with respect to the 24-hour standard for PM_{2.5} since the USEPA lowered the 24-hour standard from 65 µg/m³ to 35 µg/m³ in 2006. The USEPA recommends that the SFBAAB be considered non-attainment for the 24-hour PM_{2.5} standard; however the designation is not official yet.

3.4.1.4 Greenhouse Gases

The earth's atmosphere naturally contains a number of gases, including (but not limited to) carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), which are collectively referred to as greenhouse gases. In this report, greenhouse gas (GHG) emissions are numerically depicted as carbon dioxide (CO₂) since it is the predominant GHG associated with fuel combustion. Manmade emissions of GHG occur through the combustion of fuels, as well as a variety of other sources.^{2 3}

² Appendix C-5 to this EIR, entitled *Global Climate Change (2009)* is an analysis of greenhouse gas emissions and global climate change submitted by Sutter in February 2009 and later revised. This analysis includes additional discussion of greenhouse gasses and the impacts of greenhouse gas emissions. This is one of the documents evaluated by the County in preparing this EIR analysis.

³ In October 2009, the Governor signed Senate Bill 104, which adds nitrogen trifluoride to the list of greenhouse gasses that are to be regulated under AB 32. Nitrogen trifluoride is primarily used in the manufacture of several consumer items, including photovoltaic solar panels, microprocessors, and LCD television screens. *Assembly Committee on Appropriations, SB 104 Bill Analysis* (July 15, 2009). Nitrogen trifluoride is not generally used in hospitals or medical offices.

These gases trap some amount of solar radiation and the earth's own radiation, preventing it from passing through earth's atmosphere and into space. GHGs are vital to life on earth; without them earth would be an icy planet. For example, CO₂ is also a trace element that is essential to the cycle of life. However, increasing GHG concentrations are believed to be warming the planet.

As the average temperature of the earth increases, weather may be affected, including changes in precipitation patterns, accumulation of snow pack, and intensity and duration of spring snowmelt. The sea level may rise, resulting in coastal erosion and inundation of coastal areas. Emissions of air pollutants and ambient levels of pollutants also may be affected in areas. Climate zones may change, affecting the ecology and biological resources of a region. There may be changes in fire hazards due to the changes in precipitation and climate zones.

While scientists have established a connection between increasing GHG concentrations and increasing average temperatures, important scientific questions remain about how much warming will occur, how fast it will occur, and how the warming will affect the rest of the climate system. At this point, scientific efforts are unable to quantify the degree to which human activity impacts climate change. The phenomenon is worldwide, yet it is expected that there will be substantial regional and local variability in climate changes. It is not possible with today's science to determine the effects of global climate change in a specific locale, or whether the effect of one aspect of climate change may be counteracted by another aspect of climate change, or exacerbated by it.

Human activities generate GHG emissions. Since pre-industrial times, there has been a build-up of levels of GHG in the atmosphere. Anthropogenic GHG emissions worldwide as of 2005 (the latest year for which data are available for Annex 1 countries⁴) totaled approximately 30,800 CO₂ equivalent million metric tons (MMTCO₂e⁵). It should be noted that global emissions inventory data are not all from the same year and may vary depending on the source of the emissions inventory data (UNFCCC n.d.[a] and UNFCCC n.d.[b]⁶). Six countries and the European Community accounted for approximately 70 percent of the total global emissions.

The United States was the top producer of greenhouse gas emissions as of 2005. Based on GHG emissions in 2004, six of the states—Texas, California, Pennsylvania, Ohio, Illinois, and Florida, in ranked order—would each rank among the top 30 GHG emitters internationally (World Resources Institute 2006). The primary greenhouse gas emitted by human activities in the United States was CO₂, representing approximately 84 percent of total greenhouse gas emissions (USEPA 2008). Carbon dioxide from fossil fuel combustion, the largest source of US greenhouse gas emissions, accounted for approximately 80 percent of US GHG emissions (USEPA 2008).

⁴ Annex 1 countries are developed countries which have adopted greenhouse gas emission reduction obligations under the Kyoto Protocol.

⁵ The CO₂ equivalent emissions are commonly expressed as "million metric tons of carbon dioxide equivalent (MMTCO₂e)" The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP, such that MMTCO₂e = (million metric tons of a GHG) x (GWP of the GHG). For example, the GWP for methane is 21. This means that emissions of one million metric tons of methane are equivalent to emissions of 21 million metric tons of CO₂.

⁶ The global emissions are the sum of Annex I and non-Annex I countries without counting Land-Use, Land-Use Change and Forestry (LULUCF). For countries that 2004 data were unavailable, the UNFCCC data for the most recent year were used.

Based upon the 2004 GHG inventory data (the latest year available) compiled by the California Air Resources Board (CARB) for the California 1990 greenhouse gas emissions inventory, California emitted emissions of 484 MMTCO₂e, including emissions resulting from out-of-state electrical generation (CARB 2007). Based on the CARB inventory and GHG inventories for countries contributing to the worldwide GHG emissions inventory compiled by the United Nations Framework Convention on Climate Change (UNFCCC) for 2005, California's GHG emissions rank second in the United States (Texas is number one) with emissions of 423 MMTCO₂e (excluding emissions related to imported power) and internationally between Ukraine (418.9 MMTCO₂e) and Spain (440.6 MMTCO₂e) (UNFCCC n.d.[a]).

A California Energy Commission (CEC) emissions inventory report placed CO₂ produced by fossil fuel combustion in California as the largest source of GHG emissions in 2004, accounting for 81 percent of the total GHG emissions (CEC 2006a). CO₂ emissions from other sources contributed 2.8 percent of the total GHG emissions, methane emissions 5.7 percent, nitrous oxide emissions 6.8 percent, and the remaining 2.9 percent was composed of emissions of high-GWP gases (CEC 2006a). The primary contributors to GHG emissions in California are transportation, electric power production from both in state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities.

3.4.1.5 Toxic Air Contaminants (TAC)

Besides the "criteria" air pollutants, there is another group of substances found in ambient air referred to as Hazardous Air Pollutants (HAPs) under the Federal Clean Air Act and Toxic Air Contaminants (TACs) under the California Clean Air Act. These contaminants tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods. They are regulated at the local, State, and Federal level.

The particles emitted by diesel engines are coated with chemicals, many of which have been identified by the USEPA as HAPs, and by CARB as TACs. Diesel engines emit particulate matter at a rate about 20 times greater than comparable gasoline engines. The vast majority of diesel exhaust particles (over 90 percent) consist of PM_{2.5}, which are particles that can be inhaled deep into the lung. Like other particles of this size, a portion will eventually become trapped within the lung possibly leading to adverse health effects. CARB estimates that about 70 percent of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from diesel exhaust particles (OEHHA 2001). California has adopted a comprehensive diesel risk reduction program to reduce Diesel Particulate Matter (DPM) emissions 85 percent by 2020. The USEPA and CARB adopted low sulfur diesel fuel standards in 2006 that reduce DPM substantially.

3.4.1.6 Existing Air Quality

The BAAQMD monitors air quality conditions at over 30 locations throughout the Bay Area. The Santa Rosa Monitoring Station on Fifth Street is closest and most representative of the project site. Criteria pollutants monitored include O₃, CO, NO₂, hydrocarbons, PM₁₀, and PM_{2.5}. The gaseous pollutants (i.e., O₃, CO and NO₂) are monitored continuously while particulate matter (i.e., PM₁₀ and PM_{2.5}) are sampled for 24 hours every sixth day. A summary of the data recorded at this station is shown in **Table 3.4-1** for the period 2004 through 2008.

Table 3.4-1. Highest Measured Air Pollutant Concentrations

Pollutant	Average Time	Measured Air Pollutant Levels				
		2004	2005	2006	2007	2008
Santa Rosa						
Ozone (O ₃)	1-Hour	0.076 ppm	0.072 ppm	0.077 ppm	0.071 ppm	0.076 ppm
	8-Hour	0.06 ppm	0.051 ppm	0.058 ppm	0.059 ppm	0.064 ppm
Carbon Monoxide (CO)	8-Hour	1.57 ppm	1.98 ppm	1.70 ppm	1.71 ppm	1.49 ppm
	1-Hour	2.70 ppm	2.50 ppm	2.40 ppm	2.60 ppm	3.50 ppm
Nitrogen Dioxide (NO ₂)	1-Hour	0.048 ppm	0.047 ppm	0.044 ppm	0.046 ppm	0.049 ppm
	Annual	0.011 ppm	0.011 ppm	0.011 ppm	0.011 ppm	0.011 ppm
Fine Particulate Matter (PM _{2.5})	24-Hour	27 µg/m ³	34 µg/m ³	59 µg/m³	32 µg/m ³	31 µg/m ³
	Annual	8 µg/m ³	8 µg/m ³	9 µg/m ³	8 µg/m ³	7 µg/m ³
Respirable Particulate Matter (PM ₁₀)	24-Hour	48 µg/m ³	39 µg/m ³	90 µg/m³	37 µg/m ³	50 µg/m ³
	Annual	17 µg/m ³	15 µg/m ³	18 µg/m ³	17 µg/m ³	17 µg/m ³
Bay Area (Basin Summary)						
Ozone (O ₃)	1-Hour	0.113 ppm	0.120 ppm	0.127 ppm	0.120 ppm	0.141 ppm
	8-Hour	0.085 ppm	0.090 ppm	0.106 ppm	0.091 ppm	0.111 ppm
Carbon Monoxide (CO)	8-Hour	3.4 ppm	3.1 ppm	2.9 ppm	2.7 ppm	2.5 ppm
Nitrogen Dioxide (NO ₂)	1-Hour	0.073 ppm	0.074 ppm	0.107 ppm	0.069 ppm	0.080 ppm
	Annual	0.013 ppm	0.013 ppm	0.013 ppm	0.012 ppm	0.012 ppm
Fine Particulate Matter (PM _{2.5})	1-Hour	78 ug/m³	56 ug/m³	75 ug/m³	58 ug/m³	75 µg/m ³
	Annual	12 ug/m³	12 ug/m³	11 ug/m³	11 ug/m³	--
Respirable Particulate Matter (PM ₁₀)	24-Hour	65 ug/m ³	81 ug/m ³	106 ug/m³	78 ug/m³	77 µg/m ³
	Annual	25 ug/m ³	23 ug/m ³	34 ug/m ³	25 ug/m ³	23 µg/m ³

Source: CARB ADAM website, accessed March 2009; EPA Report and Map, accessed March 2009.

Note:

ppm = parts per million

Values reported in bold exceed ambient air quality standard

NA = data not available.

3.4.1.7 Attainment Status for State and Federal Ambient Air Quality Standards

Areas that do not violate ambient air quality standards are considered to have attained the standard. Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. The Bay Area as a whole does not meet State or Federal ambient air quality standards for ground level O₃ and PM_{2.5} nor does it meet State standards for PM₁₀. For O₃, the entire Bay Area is designated non-attainment at both the Federal and State levels. **Table 3.4-2** summarizes the number of violations of ambient standards at the nearest monitoring station.

Table 3.4-2. Number of Days Measured Air Quality Levels Exceeded Standards

Pollutant	Standard	Monitoring Station	Days Exceeding Standard				
			2004	2005	2006	2007	2008
Ozone (O ₃)	NAAQS 1-hr	Santa Rosa	0	X	X	X	X
		BAY AREA	0	X	X	X	X
	NAAQS 8-hr	Santa Rosa	0	0	0	0	0
		BAY AREA	7	5	17	2	12
CAAQS 1-hr	Santa Rosa	0	0	0	0	0	
	BAY AREA	7	9	18	4	9	
CAAQS 8-hr	Santa Rosa	0	0	5	0	0	
	BAY AREA	13	9	22	9	20	
Fine Particulate Matter (PM ₁₀)	NAAQS 24-hr	Santa Rosa	0	0	0	0	0
		BAY AREA	0	0	0	0	0
CAAQS 24-hr	Santa Rosa	0	0	2	0	0	
	BAY AREA	4	4	13	4	2	
Fine Particulate Matter (PM _{2.5})	NAAQS 24-hr	Santa Rosa	0	0	1	0	0
		BAY AREA	1	0	10	14	--
All Other (CO, NO ₂ , Lead, SO ₂)	All Other	Santa Rosa	0	0	0	0	--
		BAY AREA	0	0	0	0	--

* Based on standard of 65 µg/m³ that was in place until September 21, 2006, then 35 µg/m³ standard in 2006.

X = Standard revoked in 2004. --- = Insufficient data.

Source: CARB ADAM website, accessed March 2009; EPA Report and Map, accessed March 2009; Bay Area Air Quality Management District – Bay Area Air Pollution Summaries

Under the Federal Clean Air Act (CAA), the USEPA has designated the region as *moderate non-attainment* for ground level O₃. However, the USEPA recently revoked the 1-hour standard and replaced it with an 8-hour standard. The USEPA classified the region as *marginally non-attainment* for the 8-hour O₃ standard. The USEPA requires the region to adopt a plan that will bring it into attainment with that standard by 2007. The Bay Area has met the CO standards for over a decade and is classified as *attainment* by the USEPA. The Bay Area has met the 24-hour PM₁₀ standard for the last two years but is considered *unclassified*. The Bay Area is considered *attainment* for the annual PM_{2.5} standard. The USEPA has recommended the Bay Area be classified as *non-attainment* for the 24-hour PM_{2.5} standard, but the designation is not official yet. The USEPA has classified the area as *attainment* for SO₂ and *unclassified* for N₂O. When a region is graded as unclassified, it means that the area likely meets the standard.

At the State level, the region is considered *serious non-attainment* for ground level O₃ and non-attainment for PM₁₀. California ambient air quality standards are more stringent than the national ambient air quality standards. The region is required to adopt plans on a triennial basis, the latest being the *2005 Bay Area Ozone Strategy* that show progress towards meeting the State O₃ standard. The area is considered attainment or unclassified for all other pollutants.

3.4.2 Regulatory Setting

The Federal Clean Air Act governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations

under the California Clean Air Act. At the Federal level, the United States Environmental Protection Agency (USEPA) administers the Clean Air Act (CAA). The California Clean Air Act is administered by the California Air Resources Board (CARB) at the State level and by the Air Quality Management Districts at the regional and local levels. The Bay Area Air Quality Management District (BAAQMD) regulates air quality at the regional level, which includes much of the nine-county Bay Area, including the southern portion of Sonoma County. The project site is within the BAAQMD's jurisdiction.

3.4.2.1 Federal

United States Environmental Protection Agency

The USEPA is responsible for enforcing the Federal Clean Air Act (CAA). The USEPA is also responsible for establishing the National Ambient Air Quality Standards (NAAQS). The NAAQS are required under the 1977 CAA and subsequent amendments. The USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by the CARB.

The Federal Clean Air Acts establish ambient air quality standards for different pollutants. National Ambient Air Quality Standards (NAAQS) were established by the federal Clean Air Act of 1970 (amended in 1977 and 1990) for six criteria pollutants. These criteria pollutants include carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), particulate matter with a diameter less than 10 microns (PM₁₀), sulfur dioxide (SO₂), and lead (Pb). Recently, the USEPA added fine particulate matter or PM_{2.5} as a criteria pollutant. Air quality studies generally focus on five pollutants that are most commonly measured and regulated: CO, O₃, NO₂, SO₂, and suspended particulate, i.e., PM₁₀ and PM_{2.5}.

The USEPA does not currently regulate greenhouse gases (GHGs), a category that includes carbon dioxide and other pollutants that could contribute significantly to climate change. However, in the 2007 case *Massachusetts v. The Environmental Protection Agency*, the United States Supreme Court held that the USEPA has a mandatory duty to enact rules regulating mobile GHG emissions pursuant to the Federal Clean Air Act. The court held that GHGs fit the definition of an air pollutant that causes and contributes to air pollution and may reasonably be anticipated to endanger public health or welfare. Upon the final decision, President Bush signed Executive Order 13432 on May 14, 2007, directing the USEPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a regulatory process that responds to the Supreme Court's decision. The order requires the US EPA to coordinate closely with other federal agencies and to consider the president's Twenty-in-Ten plan in this process. The Twenty-in-Ten plan would establish a new alternative fuel standard that would require the use of 35 billion gallons of alternative and renewable fuels by 2017. The USEPA will be working closely with the Department of Transportation in developing new automotive efficiency standards.

3.4.2.2 State

California Air Resources Board

The CARB, part of the California Environmental Protection Agency, is responsible for meeting the state requirements of the Federal CAA, administering the California CAA, and establishing the California Ambient Air Quality Standards (CAAQS). The California CAA, as amended in 1992, requires all air districts in the State to endeavor to achieve and maintain the California Ambient Air Quality Standards (CAAQS). The CAAQS are generally more stringent than the corresponding Federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. The CARB regulates mobile air pollution sources, such as motor vehicles. The agency is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. The CARB established passenger vehicle fuel specifications, which became effective on March 1996. The CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level. The CARB also monitors ambient air quality throughout the State.

California established ambient air quality standards as early as 1969 through the Mulford-Carroll Act. Pollutants regulated under the California Clean Air Act are similar to those regulated under the Federal Clean Air Act. In many cases, California standards are more stringent than the NAAQS. Federal and State air quality standards are shown in **Table 3.4-3**. Both the National and California ambient air quality standards have been adopted by the BAAQMD.

Table 3.4-3. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards ^(a)	
			Primary ^(b,c)	Secondary ^(b,d)
Ozone	8-hour	0.070 ppm	0.075 ppm	—
	1-hour	0.09 ppm	— ^e	Same as primary
Carbon monoxide	8-hour	9.0 ppm	9 ppm	—
	1-hour	20 ppm	35 ppm	—
Nitrogen dioxide	Annual	0.03 ppm	0.053 ppm	Same as primary
	1-hour	0.18 ppm	—	—
Sulfur dioxide	Annual	—	0.03 ppm	—
	24-hour	0.04 ppm	0.14 ppm	—
	3-hour	—	—	0.5 ppm
	1-hour	0.25 ppm	—	—

Table 3.4-3. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards ^(a)	
			Primary ^(b,c)	Secondary ^(b,d)
PM ₁₀	Annual	20 µg/m ³	— ^e	Same as primary
	24-hour	50 µg/m ³	150 µg/m ³	Same as primary
PM _{2.5}	Annual	12 µg/m ³	15 µg/m ³	
	24-hour	—	35 µg/m ^{3e}	
Lead	Calendar quarter	—	1.5 µg/m ³	Same as primary
	30-day average	1.5 µg/m ³	—	—

a) Standards, other than for ozone and those based on annual averages, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

b) Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis.

c) Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than 3 years after that state's implementation plan is approved by the EPA.

d) Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

e) The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005. A new 8-hour standard was established in May 2008. The annual PM₁₀ standard was revoked by U.S. EPA on September 21, 2006 and a new PM_{2.5} 24-hour standard was established.

Source: California Air Resources Board, May 2009.

Climate Change/Greenhouse Gas Legislation and Plans

The State of California has been studying the impacts of climate change for more than 20 years. State actions to address global climate change target automobile emissions, stationary sources and power generation, land use planning, and the development of sustainable communities. Summaries of applicable State legislation dealing with global climate change and greenhouse gas emissions are presented in **Table 3.4-4**.⁷

AB 32 Scoping Plan

Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, sets a goal of reducing GHG emissions statewide to 1990 levels by 2020. The CARB is the lead agency for implementing the Act. AB 32 requires the CARB to prepare a Scoping Plan containing the main strategies that will be used to achieve reductions in GHG emissions in California.

⁷ Table 3.4-4 is a list of legislation, and does not include Executive Order S-03-05, which established greenhouse gas emissions reduction goals and directed State agencies to report annually on efforts to meet those goals. This Executive Order directs CalEPA to coordinate agency efforts to reduce emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 per cent below 1990 levels by 2050.

Table 3.4-4. Summary of State of California Relevant Greenhouse Gas Legislation

Bill, Year	Action
AB 4420, 1988	Directed California Energy Commission, in consultation with the CARB and other agencies, to “study and report...on how global warming trends may affect California’s energy supply and demand, economy, environment, agriculture, and water supplies
AB 1493, 2002	Requires CARB “develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of greenhouse gases from motor vehicles”.
AB 32, 2006 California Global Warming Solutions Act of 2006	Requires statewide GHG emissions be reduced to 1990 levels by 2020 Reduction accomplished via enforceable statewide cap on GHGs to be phased in starting in 2012. Directs CARB to develop and implement regulations to reduce statewide emissions from stationary sources. Specifies that regulations adopted in response to AB 1493 be used to address GHG emissions from vehicles Requires CARB adopt a quantified cap on GHG emissions representing 1990 emissions levels Includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.
Senate Bill 1368, 2007	Companion bill to AB32. Requires California Public Utility Commission (CPUC) to establish GHG emission performance standards for investor and publicly owned electrical generation facilities June 30, 2007. Requires all electricity provided to California, including imported, be generated by plants standards set by Public Utility Commission (PUC) and CEC.
Senate Bill 97, 2007	Directs Governor’s Office of Planning and Research (OPR) to develop proposed CEQA Guidelines by July 1, 2009, and adopt guidelines by January 1, 2010.
Senate Bill 375, 2008	Requires coordination between transportation planning and land use planning. Directs CARB to develop regional greenhouse gas emission reduction targets to be achieved from automobile and light truck sectors by 2020 and 2035 CARB will work with California’s 18 metropolitan planning organizations to align their regional transportation, housing and land-use plans and prepare a “sustainable communities strategy” to reduce vehicle miles traveled in their respective communities.

CARB released the Climate Change Proposed Scoping Plan in October 2008 and adopted the Plan on December 12, 2008. This plan contains an outline of the proposed State strategies to achieve the 2020 greenhouse gas emission limits. Key elements of the Scoping Plan include the following recommendations:

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
2. Achieving a statewide renewables energy mix of 33 percent;
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;

4. Establishing targets for transportation-related greenhouse gas emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
5. Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel standard;
6. Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation.

Under the Scoping Plan, approximately 85 percent of the state's emissions would be subject to a cap-and-trade program where covered sectors are placed under a declining emissions cap. Emissions reductions will be achieved through regulatory requirements and the option to reduce emissions further or purchase allowances to cover compliance obligations. It is expected that emission reduction from this cap-and trade program will account for a large portion of the reductions required by AB 32.

Proposed CEQA Guidelines (SB 97)

Pursuant to SB 97, on July 3, 2009, the California Natural Resources Agency began the formal rulemaking process for the adoption of CEQA Guideline Amendments for greenhouse gas emissions. Generally, the proposed guidelines seek to apply CEQA's existing rules for impact analysis to the topic of greenhouse gas emissions, specifying in several instances, for example, that determinations on greenhouse gas emissions must be supported by substantial evidence, as with other CEQA determinations. The draft guidelines do not propose a particular threshold of significance to be applied in determining whether a project's contribution to global climate change is significant. Rather, the draft guidelines provide guidance on determining the significance of impacts resulting from a project's greenhouse gas emissions as well as appropriate mitigation measures (proposed Guidelines 15064.4 and 15126.4). The guidelines indicate that lead agencies have discretion to determine which type of methodology to use to evaluate greenhouse gas emissions, given that such methodologies are evolving (proposed Guideline 15064.4). The proposed Guidelines were revised in response to public comments, and those revised proposed Guidelines were circulated for a second, shorter round of public comment in November 2009. The Guidelines are anticipated to be certified by the Secretary of the Resources Agency by January 1, and the proposed Guidelines will then undergo the formal rulemaking process overseen by the Office of Administrative Law. It is thus anticipated that these Guidelines will be incorporated into the California Code of Regulations sometime in early 2010.

CAPCOA CEQA and Climate Change White Paper

The California Air Pollution Control Officers Association (CAPCOA) prepared a "white paper" on CEQA and climate change in January 2008. The white paper was intended to be used as a resource by lead agencies when considering policy options and not as a guidance document. Specifically, the white paper discusses three possible approaches to evaluating the significance of GHG emissions and possible mitigation measures, without endorsing any particular approach. The three alternative significance approaches are: (1) not establishing a significance threshold for

GHG emissions; (2) setting the GHG emission threshold at zero; and (3) setting the GHG emission threshold at some non-zero level. The white paper provides a list of potential mitigation measures and discusses each in terms of emissions reduction effectiveness, cost effectiveness, and technical and logistical feasibility. While programs are still being developed by CARB, the white paper is intended to provide public agencies with information to ensure that GHG emissions are, according to CAPCOA, "appropriately considered and addressed under CEQA."

Health Risk Assessments

In 2005, CARB issued guidance to local governments that recommended buffers between sources of air pollution and sensitive receptors. CARB identified medical facilities, such as a hospital, as sensitive land uses. For freeways, CARB recommended that sensitive land uses be avoided within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day (OEHHA 2003). The CARB recommendations are advisory in nature and do not reflect local conditions. In their guidance, CARB notes that land use agencies have to balance other considerations including housing and transportation needs, economic development priorities, and other quality of life issues.

CARB established the 500-foot buffer recommendation based on review of air pollution studies and air dispersion modeling. Air pollution studies indicate that residing close to freeways or busy roadways may result in adverse health effects beyond those typically found in urban areas. Several studies found an association between adverse non-cancer health effects (e.g., asthma) and living or attending school near heavily traveled urban roadways. In addition, proximity to freeways increases exposure to particulate matter and cancer risk. Diesel particulate matter, or DPM, poses the greatest cancer risk from roadways. On average, CARB reports that DPM represents about 70 percent of the potential cancer risk from vehicle travel.

Studies reviewed by CARB found measured air pollution concentrations from motor vehicles drop off dramatically between the source and 500 feet. These studies were consistent with CARB air quality modeling and risk analyses performed for freeways. CARB's modeling was based on 2000 information that included higher DPM emissions rates. CARB's EMFAC2007 model shows that new vehicle standards, diesel fuel reformulation, and CARB adopted Diesel Risk Reduction Measures has resulted in lower vehicle emissions. CARB's published health risk maps show that potential cancer risks near freeways will be substantially reduced in 2010 from 2000 levels. In addition, CARB recently adopted new rules requiring retrofit of large diesel-fueled vehicles that will further reduce DPM emissions by over 50 percent in 2014.

The BAAQMD Draft CEQA guidelines released in September 2009 and updated in October and November 2009 propose to require analysis of risks within a 1,000 foot radius around proposed new sensitive receptors for the measurement of potential cancer risks from sources of air pollution.

3.4.2.3 Local

Bay Area Air Quality Management District

In 1955, the California Legislature created the Bay Area Air Quality Management District (BAAQMD). The agency is primarily responsible for assuring that the National and State

ambient air quality standards are attained and maintained in the Bay Area. The BAAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, as well as many other activities. The BAAQMD does not have authority to regulate emissions from motor vehicles.

The BAAQMD regulates air quality in the southern portion of Sonoma County where the project will be located. Certain stationary and area emission sources are subject to BAAQMD Regulations and Rules. Mobile sources, both off-and on-road are not subject to BAAQMD authority. BAAQMD rules and regulations that may apply to the proposed hospital facility are described below.

- Permitting Rule 2-1-301 requires that any person installing, modifying, or replacing any equipment, the use of which may reduce or control the emission of air contaminants, shall first secure written authorization from the Air Pollution Control Officer (APCO). Project equipment that may require permitting includes the boiler, cooling tower, chillers, and diesel-fueled emergency generator. Rule 2-1-302 requires that written authorization from the APCO be secured before any such equipment is used or operated.
- New Source Review Rule 2-2, New Source Review (NSR), applies to all new and modified sources or facilities that are subject to the requirements of Rule 2-1-301. The purpose of the rule is to provide for review of such sources and to provide mechanisms by which no net increase in emissions will result.
- Best Available Control Technology Rule 2-2-301 requires that an applicant for an Authority to Construct (ATC) or Permit to Operate (PTO) apply best available control technology (BACT) to any new or modified source that results in an increase in emissions and has emissions of precursor organic compounds, non-precursor organic compounds, NO_x, SO₂, PM₁₀, or CO of 10.0 pounds or more per highest day.
- Equipment Specific Requirements Both the boiler and the diesel-fueled emergency generator would be subject to equipment-specific requirements.
 - *Boiler Requirements* – The boiler will be subject to Rule 9-7, Nitrogen Oxides and Carbon Monoxide From Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters, which applies to boilers and other equipment with a rated heat input of 10 million Btu per hour (MMBtu) or greater. The rule includes minimum emission limits for NO_x and CO to be met, as well as monitoring, record keeping and reporting requirements. The boiler would also be subject to the federal New Source Performance Standards (NSPS) for boilers, which have been adopted by the BAAQMD under Regulation 10, Standards of Performance for New Stationary Sources.
 - *Diesel Fueled Engines* – Rule 9-8, Nitrogen Oxides and Carbon Monoxide From Stationary Internal Combustion Engines, includes NO_x and CO emission limits for internal combustion engines, as well as operating, monitoring, record keeping, and reporting requirements for emergency generators. In addition to Rule 9-8, diesel-fueled engines that emit diesel exhaust particulate matter are subject to the District's Risk

Management Policy for Diesel-Fueled Engines in addition to the standard permitting requirements. The applicant must demonstrate through air dispersion modeling that the diesel exhaust particulate matter would not cause a significant health risk. The acceptable health risk is an increased cancer risk of one in one million (1×10^{-6}), unless the engine used Best Available Control Technology for Toxics (TBACT), in which case the acceptable risk is 10 in one million (10×10^{-6}).

- *Prohibitory Rules* – Regulation 6 pertains to particulate matter and visible emissions and limits the quantity of particulate matter emitted into the atmosphere through the establishment of limitations on emission rates, concentration, visible emissions, and opacity. Visible emissions from a source are required to be less than 20% opacity (No. 1 Ringelmann) for any period aggregating to 3 minutes in any one hour. Additionally, for heat transfer operations (e.g., the boiler), the particulate matter emissions are not to exceed 0.15 grains per dry standard cubic foot, corrected to 6% oxygen. Although, the engine for the emergency generator will be fired with diesel fuel, the BAAQMD will require that the engine be a modern, low emissions engine, and is not expected to exceed the opacity limit. For the boiler, since it will be fired on natural gas, no visible emissions are expected and particulate matter emissions will be negligible.

Specific requirements, including emission control technology requirements and emission limitations, as well as operating, monitoring, record keeping, and reporting requirements for the equipment that need to be permitted by the BAAQMD would be determined during the permitting process prior to installation of the applicable equipment.

BAAQMD Draft CEQA Thresholds

The BAAQMD published a set of guidelines for determining the significance of pollutant emissions in 1999. *BAAQMD CEQA Guidelines: Assessing the Air Quality Impacts of Projects and Plans (December 1999)*. The BAAQMD released a draft update of these CEQA guidelines entitled “*California Environmental Quality Act Draft Air Quality Guidelines*” in September 2009. In October, BAAQMD released revised proposed guidelines and a further revision was released in early November for public comments. *BAAQMD California Environmental Quality Act Guidelines Update – Proposed Thresholds of Significance (November 2009)*. These guidelines have not been approved by the BAAQMD Board, and therefore are not yet effective. The proposed new guidelines do not contain a proposed effective date, and BAAQMD staff have advised that the effective date of the proposals will be considered by the BAAQMD Board when it considers the proposed thresholds. As this Draft EIR is being finalized, it is not certain when these proposals will be adopted, when the adopted proposals would become effective, and whether the BAAQMD Board will adopt the staff recommendations.

There are new thresholds of significance that have been proposed for criteria pollutants emitted during operational activities, criteria pollutants emitted during construction activities and greenhouse gases.

Criteria Pollutants

In the proposed BAAQMD CEQA guidelines the operational-related thresholds of significance were updated to include a $PM_{2.5}$ emission threshold. The daily threshold of significance for ROG and NO_x were reduced from 82 pounds per day to 54 pounds per day. The annual thresholds of

significance for ROG and NO_x and the daily and annual thresholds of significance for PM₁₀ remained unchanged. The table below shows the proposed updated thresholds of significance for operational-related emissions.

Thresholds of Significance for Operational-Related Emissions		
Pollutant/ Precursor	Annual Threshold (tpy)	Daily Threshold (lbs/day)
ROG	10	54
NO _x	10	54
PM ₁₀	15	82
PM _{2.5}	10	54

The previous BAAQMD CEQA Guidelines (“*BAAQMD CEQA Guidelines: Assessing the Air Quality Impacts of Projects and Plans*,” December 1999) did not set forth thresholds of significance for construction-related emissions. The BAAQMD suggested a list of mitigation measures for construction-related emissions (specifically PM₁₀ emissions) to reduce the impacts to be less than significant. The proposed BAAQMD CEQA guidelines have included thresholds of significance for construction-related emissions.

The BAAQMD proposed daily thresholds of significance for NO_x, ROG and PM_{2.5} of 54 pounds per day and a daily threshold of significance for PM₁₀ of 82 pounds per day (for construction exhaust emissions only). The table below shows the updated thresholds of significance for construction-related emissions.

Thresholds of Significance for Construction-Related Emissions	
Pollutant/ Precursor	Daily Threshold (lbs/day)
ROG	54
NO _x	54
PM ₁₀	82
PM _{2.5}	54

Greenhouse Gases (GHG)

The proposed BAAQMD CEQA guidelines include suggested thresholds of significance for greenhouse gases (GHG). These thresholds of significance were developed to comply with the existing California legislation adopted to reduce statewide GHG emissions. The proposed guidelines set forth a proposed threshold of significance for operational-related GHG emissions for land use projects that would allow any one of three factors to be used in determining significance. The significance threshold recommended by BAAQMD staff would be (a) compliance with a qualified climate action plan (b) project-related emissions of 1,100 metric tons per year (MT/yr) of CO₂ equivalent (CO₂e), or (c) project-related emissions of 4.6 metric tons of

CO₂e per service population per year⁸ (BAAQMD, November 2009), pp. 6). There are no thresholds of significance for construction-related GHG emissions in the proposed BAAQMD CEQA guidelines. BAAQMD staff recommends case by case consideration of construction GHG emissions and encourages project applicants to implement construction GHG reduction strategies where feasible. The October version of the proposed BAAQMD CEQA Guidelines generally refer to best management practices, including use of alternative fuels, use of local materials, and recycling of construction and demolition waste. (BAAQMD, October 2009, p. 28).

Sonoma County General Plan

The Open Space and Resource Conservation Element of the Sonoma County General Plan 2020 (Sonoma County, 2008) has the following goals, objectives and policies pertaining to this project and air quality:

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

Objective OSRC-14.4: Reduce greenhouse gas emissions by 25 per cent below 1990 levels by 2015.

Goal OSRC-16: Preserve and maintain good air quality and provide for an air quality standard that will protect human health and preclude crop, plant and property damage in accordance with the requirements of the Federal and State Clean Air Acts.

Objective OSRC-16.1: Minimize air pollutant and greenhouse gas emissions.

Objective OSRC-16.2: Encourage reduced motor vehicle use as a means of reducing resultant air pollution.

The Sonoma County General Plan includes the following policies, in addition to those of the Circulation and Transit Element, to carry out those objectives.

Policy OSRC-16a: Require that commercial and industrial development projects be designed to minimize air emissions. Reduce direct emissions by decreasing the need for space heating.

Policy OSRC-16c: Refer projects to the local air quality districts for their review.

Policy OSRC-16d: Review proposed changes in land use designations for potential deterioration of air quality and deny them unless they are consistent with the air quality levels projected in the general plan EIR.

Policy OSRC-16h: Require that development within the Bay Area Air Quality Management District that generates high numbers of vehicle trips, such as shopping centers and business parks, incorporate air quality mitigation measures in their design.

Policy OSRC-16i: Ensure that any proposed new sources of toxic air contaminants or odors provide adequate buffers to protect sensitive receptors and comply with applicable health standards. Promote land use compatibility for new development by using buffering

⁸ The October 2009 *Revised Draft Options and Justification Report* prepared by BAAQMD staff and its consultant evaluates four other potential thresholds of significance for operational greenhouse gas emissions. One of these thresholds is a performance standard pursuant to which all projects would be required to achieve a 26% reduction in greenhouse gas emissions compared to business as usual.

techniques such as landscaping, setbacks, and screening in areas where such land uses abut one another.

Policy OSRC-16k: Require that discretionary projects involving sensitive receptors (facilities or land uses that include members of the population sensitive to the effects of air pollutants such as children, the elderly, and people with illnesses) proposed near the Highway 101 corridor include an analysis of mobile source toxic air contaminant health risks. Project review should, if necessary, identify design mitigation measures to reduce health risks to acceptable levels.

With respect to the General Plan goal of reducing greenhouse gas emissions, Assembly Bill 881 was enacted in 2009 to establish the Sonoma County Regional Climate Protection Authority. The Authority is governed by the same board as the Sonoma County Transportation Authority, but acts as a separate legal entity, and is authorized to perform coordination and implementation activities to assist local agencies in meeting their greenhouse gas reduction goals. Assembly Bill 881 was approved October 11, 2009 and the Authority will remain in effect until December 1, 2015.

Regional Clean Air Plans

The BAAQMD and other agencies prepare clean air plans in response to the State and Federal Clean Air Acts. Sonoma County also has General Plan policies that encourage development that reduces air quality impacts. In addition, BAAQMD has developed CEQA Guidelines (BAAQMD 1999) to assist local agencies in evaluating and mitigation air quality impacts.

2005 Ozone Attainment Plan

The latest Clean Air Plan, which was adopted in January 2006, is called the *Bay Area 2005 Ozone Strategy* (BAAQMD 2006). This plan includes a comprehensive strategy to reduce emissions from stationary, area, and mobile sources. The plan objective is to indicate how the region would make progress toward attaining the stricter state air quality standards, as mandated by the California Clean Air Act. The plan is designed to achieve a region-wide reduction of ozone precursor pollutants through the expeditious implementation of all feasible measures. The plan proposes expanded implementation of transportation control measures (TCMs) and programs such as Spare the Air. Spare the Air is a public outreach program designed to educate the public about air pollution in the Bay Area and promote individual behavior changes that improve air quality. Some of these measures or programs rely on local governments for implementation. An update to the plan is currently being developed and should be available by 2009.

PM₁₀ and PM_{2.5} Plans

The clean air planning efforts for ozone will also reduce PM₁₀ and PM_{2.5}, since a substantial amount of this air pollutant comes from combustion emissions such as vehicle exhaust. In addition, BAAQMD adopts and enforces rules to reduce particulate matter emissions and develops public outreach programs to educate the public to reduce PM₁₀ and PM_{2.5} emissions (e.g., Spare the Air Program). In 2003, the Legislature passed Senate Bill 656 (SB 656) that required further action by CARB and air districts to reduce public exposure to PM₁₀ and PM_{2.5}. Efforts identified by BAAQMD in response to SB 656 are primarily targeting reductions in wood

smoke emissions and adoption of new rules to further reduce nitrogen oxides (NO_x) and particulate matter from internal combustion engines and reduce particulate matter from commercial charbroiling activities. BAAQMD recently adopted a rule addressing residential wood burning. The rule restricts operation of any indoor or outdoor fireplace, fire pit, wood or pellet stove, masonry heater or fireplace insert on specific days during the winter when air quality conditions are forecasted to exceed the NAAQS for PM_{2.5}. The rule would also limit excess visible emissions from wood burning devices and require clean burning technology for wood burning devices sold (or resold) or installed in the Bay Area. NO_x emissions contribute to ammonium nitrate formation that resides in the atmosphere as particulate matter, so a reduction in NO_x emissions would reduce wintertime PM_{2.5} levels. The Bay Area experiences the highest PM₁₀ and PM_{2.5} in winter when wood smoke contributions to particulate matter are highest.

3.4.3 Impact Analysis

3.4.3.1 Approach and Methodology

Regional Emission Calculation Methodology

Air quality regional construction emissions were calculated based on the amount of fill material required by the project, the heavy equipment usage, and the area undergoing grading. For project operation, regional emissions calculations were based on the specifications for the proposed Medical Campus (e.g., building sizes, boiler use, and generator testing and specifications) and transportation emission associated with the Medical Campus. Project operation regional emissions also include emissions from potential increases in helicopter flights.

The primary sources of air pollutant emissions from the project include indirect emissions from traffic, area-source emissions (e.g., natural gas usage and landscaping), natural gas fired boilers for steam generation, increased helicopter trips, and emissions associated with daily testing of an emergency generator.

Phase I: Site Grading and Preparation

Haul Truck Trips. About 100,000 cubic yards of fill may be imported to the site for surcharging during Phase I activities (explanation of surcharging is provided in Section 3.7.3.9). The applicant estimates that about 180 loads of material would be brought to the site per day for a total of about 50 days, or about 9,000 round-trips (round-trips represent the total number of loads per year). Approximately 30,000 cubic yards of fill may be removed from the site after surcharging has taken place. The applicant estimates that about 7 loads of material will be removed from the site per day for a total of 365 days (one year), or about 2,700 round-trips.

The capacity of each truck was assumed to be about 11 cubic yards, based on information provided by Ghilotti Construction in January 2009 (Appendix C-1). Each load would include two trips: one in and one out. Sources of fill material have been identified within a 9-12-miles travel distance of the site according to Ghilotti Construction. For the emissions analysis, the fill material is conservatively assumed to be imported from and exported to an area about 15 miles away from the project site. For this analysis, each truck was assumed to travel along Mark West

Springs Road for the entire frontage of the project at 30 miles per hour. Travel to the center of the site was also assumed in the truck emission calculations.

Instead of surcharging the site, the applicant may choose to drive piles into the soil for the foundation of the hospital buildings. In that case, only 75,000 cubic yards of fill would be imported to the project site for site grading. The applicant estimates that about 6,750 round-trips are required to bring the fill to the project site or approximately 135 loads per day. The total time required to import the fill (50 days) and capacity of the truck will be the same as in the previous analysis. The fill is assumed to be imported from the same site as was previously assumed.

The emissions for criteria pollutants such as Reactive Organic Compounds (ROG), NO_x and PM₁₀ were estimated using the emission factors from CARB EMFAC2007 model for heavy-heavy-duty trucks for the year 2010. EMFAC2007 is an emission inventory model that calculates emission inventories for motor vehicles operating on roads in California. The model takes into account the change in emissions for future on-road vehicles by considering the changes in the fuel burning technology. In addition, travel activity and emission rates were combined to estimate daily air pollutant emissions during this activity. Calculated emissions from haul truck activity are conservative, since the EMFAC2007 model assumes the truck fleet will include heavy duty trucks from 1966 to 2010, with a majority of the fleet being from pre-1990. This will not be the case in actuality, and the actual emissions would be lower than estimated using the EMFAC2007 model.

Construction Activities. The BAAQMD does not require quantification of regional construction emissions. Therefore, these emissions are discussed qualitatively in the impacts section (see **Section 3.4.3.4**).

Phase II and III Build-Out Hospital/ Medical Office/ Physician Medical Center Building Operation

Under Phase II, the project hospital, PMC, and medical office building would be constructed and hospital services would be relocated to the project site. This would result in changes in traffic patterns that would affect air pollution emissions. The primary sources of new air pollutant emissions to the region from Phase II of the hospital portion of the project would be vehicle trips associated with the new hospital facility, emissions from testing of an emergency generator system (required by State law), and area source emissions such as natural gas emissions from space and water heating. Emissions for Phase II were calculated for 2014, the earliest date of operation.

Operation of the project would include on-site emissions and traffic-related emissions from activity associated with the new Medical Campus. These emissions at the current hospital location are part of the existing air quality conditions. However, they are presented here as a new source because the future uses of the existing hospital facilities on Chanate Road, which are being replaced with this project, are unknown at this time and could represent an addition to the existing emissions. The one exception to this is the helicopter flight emissions as it is unlikely that the future use of the existing hospital building will include helicopter flights. However, to provide a conservative impact analysis, this EIR assumes a maximum of 240 helicopter trips per year, compared to the current average of approximately 200 trips per year. Therefore, emissions from these assumed additional helicopter trips are included in the analysis.

Area sources from Phase II build-out of the proposed project were predicted by using the URBEMIS2007 model and separately computing emissions from natural gas consumption. (The URBEMIS2007 modeling did not include natural gas consumption.) Using annual natural gas consumption rates provided by the applicant, emissions were averaged over the entire year (i.e., daily consumption was the annual consumption divided by 365 days).

Projected trip generation (i.e., 4,584 daily trips) (see section 3.15 for more details) along with the project's land use types and sizes were input to the URBEMIS2007 model. Emissions were computed for a summer day and annually. For purposes of this analysis it was assumed that build-out of the project occurs by 2014. The year of analysis is important to consider when modeling vehicle emissions. The vehicle emission rates for ROG and NO_x are decreasing each year and are predicted to decrease substantially between 2010 and 2020. For instance, NO_x emission rates will decrease by 56 percent during that period because of improvements in vehicle emissions and retirement of older, more polluting vehicles from the roadways. Therefore, for years after 2014, actual vehicle emission rates will likely be less than the calculated emission rates.

Natural Gas and Boiler Emissions. Criteria pollutants like ROG, NO_x and PM₁₀ emissions from the boilers are included as part of the natural gas consumption emissions. Emission factors for the natural gas used by the URBEMIS2007 model were multiplied by the natural gas consumption rates.

Emergency Generator Emissions. The hospital facilities would require diesel-powered generators to provide electrical power to the hospitals during power outages. These generators must be tested routinely. Emergency generator emissions were computed for two Caterpillar 1500 kW generator sets. These emissions are based on the manufacturer data at 100 percent load. A testing schedule of 5 minutes per week, 0.5 hour each month, and annual testing on one day for eight hours (18.3 hours per year operation) was assumed for these calculations. Since normal Medical Campus emissions would occur simultaneously on days with testing, those emissions were added to the generator testing emissions.

The emergency generators at the existing facility have only been used on an average of 5.5 hours per year (Personal Communication from Nadin Sponamore, August 13, 2009). The emergency generators at the proposed project site will mostly likely be in operation for the same number of hours per year (less than 10 hours per year).

In Phase III, Sutter could expand the hospital by up to 29 beds. Such expansion would entail approximately 36,000 square feet of additional floor area; approximately 25,000 square feet of additional building "footprint"; and one- and two-story building additions. Emissions with full build out of the project, as defined in Phase III, were also modeled with URBEMIS2007. For purposes of this analysis, full build-out of Phase III is assumed to occur in 2014.

Helicopter Flight Emissions

Helicopter flight emissions are represented as a change between existing emissions and proposed emissions due to the new facility. Helicopter emissions were calculated using published

emissions factors for landing/takeoff operations (LTO) for a Bell 222 or similar helicopter⁹. The hospital was assumed to currently generate 200 annual helicopter trips¹⁰. For purposes of providing a conservative impact analysis, the number of helicopter trips is calculated at a worst case maximum of 240 trips per year with full buildout of Phase III. This increase would equate to about three additional trips per month. The average trip length for air pollutant emissions was assumed to be 15 miles for a one-way trip and 30 miles for a two-way trip (to and from the hospital). These assumptions are based on the fact that direct travel from the project site to the boundaries of the air basin (Bay Area Air Basin) is estimated to be about 15 miles. When looking at project air pollutant emission that affect regional air quality in the Bay Area Air Basin (e.g., hospital generated vehicle traffic emissions), emissions outside of the air basin are not considered as it is assumed that those emissions do not affect the basin. Travel speed was assumed to be 80 miles per hour.

Localized Emissions Methodology

Air quality localized emissions will have an effect on the sensitive receptors in the area. The localized construction and operation emissions were modeled to determine the health impact risks on the residential receptors in the vicinity. In addition, the emissions from heavy-duty trucks on US 101 were modeled to determine the health risk impacts to hospital patients and hospital workers.

Localized Project Construction and Operation Emissions

Haul Truck Trips. The localized emissions (such as DPM emissions) were estimated using the same methodology as was used for the regional haul truck emissions. The PM₁₀ gram per mile exhaust emission rate (assumed to be the DPM emission rate) was estimated using the EMFAC2007 model for heavy-duty trucks for the year 2010, when the fill would be imported.

Construction Activities. The localized construction emissions from Phase I were estimated by the URBEMIS2007 model using default values and the estimated area of disturbance from construction. URBEMIS is a model that was developed with the cooperation and input of several California air districts. It is widely approved within California for use in estimating emissions from land use development projects. URBEMIS2007 provides exhaust PM₁₀ emissions, which were assumed to be DPM from the construction activities.

Localized emissions from roadway construction adjacent to the project site were estimated using the Roadway Construction Emissions Model (Version 6.3.1) with default assumptions. The Roadway Construction Emissions Model was developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD) to assist in determining the emission impacts of transportation projects. The SMAQMD Roadway Construction Model is based on the CARB-approved OFFROAD Model. The model has PM₁₀ (assumed to be DPM) emission factors that are based on the specific type of equipment, the horsepower of the equipment, and the year the construction activities occur. These emission factors are more site-specific than the BAAQMD

⁹ Guidance on Determination of Helicopter Emissions. Swiss Confederation, Federal Department of the Environment, Transport, Energy and Conservation. March 2009.

¹⁰ There were 199 helicopter trips in 2008 (the most recent complete year), 186 in 2007, and 213 in 2006.

emission factors, which do not account for the type of equipment used or the year in which the construction activities take place. Roadway construction was assumed to cover about 5 acres and occur over 6 months. The roadway emissions from the Roadway Construction Emission Model and construction emissions from the URBEMIS2007 model were combined and then modeled as two separate area sources across the site.

Emissions from pile driving hammers are from the combustion of diesel fuel in the engine or generator that powers the hammer. Since emission factors for pile driving hammers were not provided in URBEMIS, the localized emissions were estimated using emission factors based on manufacturer's data¹¹ for a Delmag D46-32- 96 kW-120 hp or similar hammer. Approximately 700 piles were assumed to be driven to a depth of 45 feet over the construction period based on information provided by the applicant. Based on professional engineering judgment using site-specific information, it was assumed that approximately 3 piles per hour would be driven by the hammer.

Operation Emissions. The primary source of TACs from routine operation of the project would be DPM emitted from truck deliveries. On average, there would be approximately 6 heavy-duty truck and 5 medium-duty truck trip daily deliveries anticipated. According to the EMFAC2007 guidance, medium-duty trucks weigh 14,001 to 33,000 pounds and heavy-duty trucks weigh 33,001 to 60,000 pounds. These deliveries would have two trips associated with them: one in and one out. The PM₁₀ gram per mile exhaust emission rate was estimated using the EMFAC2007 model for heavy and medium-duty trucks for the year 2014, which is the first year of full operation. Predicted PM₁₀ truck exhaust emissions were assumed to be DPM. These emissions were assumed to occur 6 days per week over 70 years of project operation. While emissions of DPM from trucks are anticipated to decrease substantially over the 70 year operation period, the higher 2014 emission factor was assumed for this assessment. Use of this factor would overstate the health risk associated with this activity. Similar to haul truck trips, these trucks were assumed to travel the entire frontage of Mark West Springs Road and travel on site to the loading areas.

Helicopters combust aviation fuel, which will not emit any DPM. Since DPM is the TAC of greatest concern, helicopter operations are not included in the localized emission analysis.

Emergency Generator Emissions. Emissions of DPM from the routine testing of the generators were included in the localized emission analysis/ health risk assessment analysis performed for the project's diesel sources. Two Caterpillar 1500 kW Generator Sets would be used for emergency power needs. The generator emissions information is provided in the *Environmental Air Quality Assessment, Sutter Hospital, Sonoma County, California* (Illingworth & Rodkin 2009a) (Appendix C-2). As mentioned above, testing of the generator set would occur on a weekly basis for 5 minutes, on a monthly basis for 30 minutes, and one day annually for 8 hours. During testing, the generators are assumed to operate at full load or over 2,200 horsepower.

Localized Emissions from US 101

The proposed project would place a hospital within 500 feet of the travel lanes of US 101. The EMFAC2007 model results were adjusted to the traffic mix on US 101 reported by Caltrans.

¹¹ Technical Data for exhaust emissions from diesel hammers: www.pileco.com/products/specifications/diesel-hammers/diesel-emission.pdf

Emission factors were developed for 2014, 2020 and 2030, using the calculated mix of diesel-fueled vehicles. Future DPM emissions for traffic on US 101 were developed using the latest version of the CARB EMFAC2007 emission factor model with defaults for Sonoma County. Future traffic increases projected on US 101 were provided by Dowling and Associates (Appendix K to this Draft EIR).

Health Risk Assessments

Residential Receptors. The Industrial Source Complex Short Term (ISCST3) model provided 1-hour concentrations at nearby residential receptor locations due to project construction and operation emissions (estimated using methodology mentioned above). The ISCST3 model is the USEPA's current regulatory model and is based on a steady-state Gaussian plume algorithm. The model can be used for estimating ambient impacts from point, area, and volume sources out to a distance of about 50 kilometers.

Hospital Receptors. Dispersion modeling for sensitive receptors at the hospital was conducted using the CAL3QHCR model, which is acceptable to the BAAQMD for this type of analysis. A 4-year set of hourly meteorological data for the Sonoma County Airport was obtained from the BAAQMD's website and used in the modeling. The station, located one mile south-southwest of the project site, is considered to have metrological conditions that are reasonably representative of the project site. Other inputs to the model included geometry (based on site plans), current traffic conditions reported by Caltrans for US 101, and the DPM emission factors obtained from the EMFAC 2007 model for traffic on US 101.

3.4.3.2 Thresholds of Significance

The primary sources of air pollutant emissions from the project include indirect emissions from traffic, area-source emissions (e.g., natural gas usage and landscaping), natural gas fired boilers for steam generation, helicopter trips, and emissions associated with daily testing of an emergency generator.

The CEQA Guidelines (Appendix G) provide the following checklist of significance criteria for air quality impacts. For the purposes of this EIR, an impact is considered significant if the implementation of the proposed project would:

1. Conflict with or obstruct implementation of the applicable air quality plan;
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors); or
4. Expose sensitive receptors to substantial pollutant concentrations.
5. Create objectionable odors affecting a substantial number of people.

Where applicable, the evaluation of significance is accomplished by comparing estimated project emissions to significance thresholds established by the BAAQMD. As previously noted,

BAAQMD has proposed the adoption of new recommended thresholds of significance for project emissions, including emissions of greenhouse gasses, but it is not certain when these proposals will be adopted, when they will take effect, and whether the BAAQMD Board will adopt the staff recommendations. In the interest of full disclosure, this EIR discusses the recommended draft thresholds in the following impact analysis.

Criteria Pollutants

To attain and maintain ambient air quality standards for ozone and PM₁₀, the BAAQMD has established thresholds of significance for evaluating direct and indirect emissions of air pollutants from projects. These thresholds are for ozone precursors (reactive organic gases and nitrogen oxides) and PM₁₀. There are no thresholds for PM_{2.5} in the current BAAQMD CEQA Guidelines; however, these guidelines are being updated. The annual BAAQMD threshold for ROG, NO_x and PM₁₀ is 15 tons per year. The daily BAAQMD threshold for ROG, NO_x and PM₁₀ is 80 pounds per day.

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. The BAAQMD does not have thresholds for construction emissions. However, PM₁₀ emissions are the pollutant of greatest concern from construction activities, according to the BAAQMD CEQA Guidelines. BAAQMD lists mitigation measures in Table 2 of its CEQA Guidelines to reduce the construction fugitive dust emission impacts from these emissions to be less than significant. In addition, mitigation measures are included to reduce equipment exhaust emissions.

GHG Emissions

To date, no local or state air quality agency has adopted significance criteria for determining whether a land use project's GHG emissions would make a cumulatively considerable impact¹² on the environment. While the Global Warming Solutions Act (AB 32) created a framework for the reduction of GHGs in California, the Act did not address the role of CEQA in achieving the goals of the Act. In August 2007, the governor signed SB 97 into law, which requires the Office of Planning and Research (OPR) to prepare CEQA guidelines for the mitigation of GHG emissions or the effects of greenhouse gas emissions. On July 3, 2009, the California Natural Resources Agency began the formal rulemaking process for the adoption of CEQA Guideline amendments concerning the evaluation of greenhouse gas emissions, and the proposed guidelines, which remain subject to further comment and revision, are expected to become effective early in 2010. The draft guidelines as currently proposed do not set forth a specific

¹² While no guidance exists to indicate what level of GHG emissions would be considered substantial enough to result in a project-specific significant adverse impact on global climate, it is generally the case that an individual project of any size is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. Thus, GHG impacts are recognized as exclusively cumulative impacts; as no single project generates significant climate change or greenhouse gas emissions impacts (BAAQMD, October 2009, p. 1; CAPCOA 2008). Accordingly, discussion of the Proposed Project's GHG emissions and their impact on global climate are addressed in terms of the its contribution to the cumulative impact of global climate change.

proposed threshold of significance, but indicate that lead agencies assessing the significance of greenhouse gas emissions on the environment may consider factors that include whether the project increases or reduces greenhouse gas emissions as compared to the existing environmental setting, whether project emissions exceed a significance threshold that the lead agency determines may apply to the project, and whether the project complies with regulations or requirements adopted to implement a greenhouse gas reduction plan.¹³

CEQA requires analysis of a project's environmental effects based on the net increment of change that would occur as a result of the project. Such an analysis requires a methodology to determine the increment of change, as well as appropriate standards for determining whether the change is significant. In the case of GHG emissions, the relevant federal, state, and local agencies have not yet identified either a methodology or standards for determining the incremental impact on climate change from this type of land use development project. Furthermore, neither the state nor the County has yet adopted regulations or requirements implementing a state or local greenhouse gas reduction plan.

As indicated in the Governor's letter to the Senate upon signing SB 37 (<http://www.opr.ca.gov/ceqa/pdfs/SB-97-signing-message.pdf>), the development of CEQA significance thresholds and methodologies should be guided by the appropriate responsible agencies to achieve a standardized approach consistent with AB 32. This is especially important given the complexity of climate change and the state's leadership role in establishing California's response to this important environmental issue.

The BAAQMD released draft thresholds of significance in September 2009 (these were updated in October 2009 and again in November 2009). BAAQMD proposes three different project thresholds of significance for GHG emissions: (1) compliance with a qualified Climate Action Plan, (2) a bright line emissions threshold of 1,100 metric tons of CO₂e (carbon dioxide equivalent) per year, or (3) emissions of 4.6 metric tons of CO₂e per capita per year for mixed use projects. The emissions based thresholds are for operational impacts. BAAQMD did not identify emission based thresholds for construction activities. Instead, best management practices are suggested for construction projects. These draft thresholds are currently under review and may be further revised, with adoption not expected to occur until December 2009 or early 2010.¹⁴

TACs

According to the BAAQMD, TAC emissions would be significant if they increased the probability for contracting cancer for the Maximally-Exposed Individual that exceeds 10 in one million.

¹³ Proposed Guideline 15064.4, *Determining the Significance of Impacts from Greenhouse Gas Emissions*, July 3, 2009.

¹⁴ The BAAQMD proposals and updated versions of those proposals can be viewed on the BAAQMD website at <http://www.baaqmd.gov/Divisions/Planning-and-Research/Planning-Programs-and-Initiatives/CEQA-GUIDELINES.aspx>

3.4.3.3 *Less Than Significant Impacts Not Requiring Further Analysis*

The project is not expected to be a source of objectionable odors that would affect the general public. Existing sources of odors that could affect the proposed project were not identified.

3.4.3.4 *Impacts and Mitigation*

The primary sources of air pollutant emissions from the project include indirect emissions from traffic, area-source emissions (e.g., natural gas usage and landscaping), natural gas fired boilers for steam generation, helicopter trips, and emissions associated with daily testing of an emergency generator.

Construction Impacts

Impact AIR-1: Temporary Increase of Criteria Pollutants for Which the Project Region Is Non-Attainment Haul truck trips bringing fill to the proposed project site could potentially result in a net increase of criteria pollutants (ROG, NO_x and PM₁₀) for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)

Significance: Potentially significant

Discussion:

Standard construction equipment (including pile driving hammers) generates criteria pollutants (such as NO_x and ROG) from fossil fuel combustion. The BAAQMD's 1999 CEQA Guidelines do not include thresholds for standard construction emissions and do not typically require quantification of these emissions. However, for the purpose of this EIR, haul trips to import or remove fill material were considered to be non-standard construction activities. Emissions from haul trucks trips were calculated using travel estimates and emission factors from the EMFAC2007 model and compared to the BAAQMD's 1999 CEQA Guidelines emissions thresholds for long-term operations.

About 100,000 cubic yards of fill may be imported to the site for surcharging activities requiring approximately 9,000 round-trips. Each truck is assumed to have a capacity of about 11 cubic yards. The truck capacity was provided in a letter from Ghilotti Construction dated January 2009 (Appendix C-1). This amounts to approximately 180 loads of material brought to the site per day for a total of approximately 50 days. About 30,000 cubic yards of fill will be removed from the project site, after surcharging has taken place. Approximately 7 loads of material will be removed from the site per day for a total of 365 days (one year), or about 2,700 round-trips. Again, each truck is assumed to have a capacity of about 11 cubic yards.

Instead of importing these large quantities of fill, the applicant may choose to drive piles into the soil for the foundation of the hospital buildings. In this case, only 75,000 cubic yards of fill will be imported to the project site for surcharging. The applicant estimates that about 6,700 round-trips are required to bring the fill to the project site or approximately 135 loads per day for a total of about 50 days.

Each load would include two trips: one in and one out. The PM₁₀ gram per mile exhaust emission rate was estimated using the EMFAC2007 model for heavy-duty trucks for the year 2010. Each truck was assumed to travel along Mark West Springs Road for the entire frontage of the project. Travel to the center of the site was also assumed in the truck modeling.

Truck haul emissions are reported in **Table 3.4-5** and **Table 3.4-6**. Assuming all haul trips are conducted in 2010, annual emissions from this activity would not exceed the annual thresholds established by the BAAQMD. However, daily emissions from this activity would exceed thresholds for NO_x and PM₁₀. The NO_x emissions would be associated with vehicle exhaust, while most of the PM₁₀ emissions would be associated with entrained dust from truck travel. Although temporary (less than 5 years), the daily emissions associated with haul truck trips would be considered significant. Mitigation is recommended to reduce this impact but even after implementation of the mitigation the impact is still considered significant.

Table 3.4-5. Project Emissions from Haul Truck Trip Activity (No Pile Driving)

Scenario	Modeled Emissions in pounds per day and tons per year		
	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO _x)	Respirable Particulates (PM ₁₀)
Daily Haul Trips (Import)	13 pounds	171 pounds	171 pounds
2010 Annual Haul Trips (Import)	0.33 tons	4.27 tons	4.28 tons
Daily Haul Trips (Export)	1 pound	7 pounds	7 pounds
2010 Annual Haul Trips (Export)	0.10 tons	1.28 tons	1.28 tons
Total Daily Emissions	14 pounds	178 pounds*	178 pounds*
Total Annual Emissions	0.43 tons	5.55 tons	5.56 tons
<i>BAAQMD Thresholds</i>	<i>80 pounds per day and 15 tons per year</i> <i>* Exceedances are presented in bold¹⁵</i>		

Table 3.4-6. Project Emissions from Haul Truck Trip Activity (With Pile Driving)

Scenario	Modeled Emissions in pounds per day and tons per year		
	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO _x)	Respirable Particulates (PM ₁₀)
Daily Haul Trips (Import)	10 pounds	128 pounds *	128 pounds*
2010 Annual Haul Trips (Import)	0.25 tons	3.20 tons	3.21 tons
<i>BAAQMD Thresholds</i>	<i>80 pounds per day and 15 tons per year</i> <i>* Exceedances are presented in bold¹⁶</i>		

¹⁵ These would also be exceedances under BAAQMD's 2009 proposed emissions thresholds for construction emissions.

¹⁶ These would also be exceedances under BAAQMD's 2009 proposed emissions thresholds for construction emissions.

**Mitigation AIR-1:
Reduce Length of Haul
Truck Trips, Restrict
Idling**

The following measures could reduce emissions associated with haul truck trips to the project site.

- a) Preference for material to be imported to the site should be given to sources closest to the project site;
- b) Enforce state idling restrictions that apply to large trucks and construction equipment by posting clearly visible signs at the haul truck entrances that clearly stating the restrictions (no idling for greater than 5 minutes at any location);
- c) If possible, avoid haul truck trips on days when Spare the Air Days are forecasted by the BAAQMD.

Because the source of the fill material and schedule for importing fill has not been determined at this time, the exact effectiveness of these measures is unknown. However, it is known that haul truck trips will be within a 15-mile radius of the project and impacts were calculated based on 15-mile distance from fill source.

Fugitive dust control measures associated with the haul truck activities are addressed in Mitigation AIR-2a.

**Significance After
Mitigation:**

Significant and unavoidable because effectiveness of mitigation measures are difficult to quantify without information regarding the distance to the fill source. Even if information about the distance from the fill source was known, due to the large quantities of fill imported and exported, mitigation measures might not reduce impacts to a less than significant level. This is because of the significant daily NO_x and PM₁₀ exceedances from haul truck activities.

**Impact AIR-2:
Temporary Exposure of
Sensitive Receptors to
Construction Dust and
Exhaust Emissions**

Fugitive dust and exhaust emissions (from construction equipment and pile driving fuel combustion) during demolition, construction, and grading could expose sensitive receptors to substantial criteria pollutant concentrations

Significance: Potentially significant

Discussion:

Construction Dust

During demolition, grading and construction activities (including site surcharging), dust would be generated. Most of the dust would result during grading activities, while some dust might result from hauling of fill material to and from the site as well as pile driving activities. The amount of dust generated would be highly variable and is dependent on the size of the area disturbed, amount of activity, soil conditions and meteorological conditions. Typical winds

during late spring through summer are from the west-southwest. Nearby residences could be adversely affected by dust generated during construction activities.

Although grading and construction activities would be temporary, they would have the potential to cause both nuisance and health air quality impacts. PM₁₀ is the pollutant of greatest concern associated with dust. If uncontrolled, PM₁₀ levels downwind of actively disturbed areas could possibly exceed State standards. In addition, dust fall on adjacent properties could be a nuisance. If uncontrolled, dust generated by demolition, grading, hauling and construction activities represents a *potentially significant* impact. Implementation of the measures recommended by the BAAQMD and listed in Mitigation AIR-2a would reduce the air quality impacts associated with construction dust emissions to a less than significant level.

Construction Equipment Exhaust

Construction equipment (including pile driving hammers) generates criteria pollutants (such as NO_x and ROG) from fossil fuel combustion. Such emissions would be temporary and cease as soon as the construction period ends. Mitigation to reduce criteria pollutant exhaust from construction equipment is provided in Mitigation AIR-2b. Construction equipment also emits toxic air contaminants (TAC) in the form of diesel particulate matter (DPM). Exposure of sensitive receptors to DPM emissions are addressed in Impact AIR-6.

Mitigation AIR-2a: Include Measures to Control Dust Emissions

Implementation of the measures recommended by the BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less than significant level:

- 1) Water all active construction areas at least twice daily and more often during windy periods. Active areas adjacent to residences should be kept damp at all times.
- 2) Cover trucks or maintain at least two feet of freeboard. Dust-proof chutes shall be used to load debris onto trucks during demolition.
- 3) Pave, apply water at least twice daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas.
- 4) Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas and sweep streets daily (with water sweepers) if visible soil material is deposited onto the adjacent roads.
- 5) Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (i.e., within 10 days for previously-graded areas where final grading has occurred and for other construction areas that have been inactive for 30 days or more).
- 6) Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles.

- 7) Limit traffic speeds on any unpaved roads to 15 mph.
- 8) Replant vegetation in disturbed areas as quickly as possible.
- 9) Suspend construction activities that cause visible dust plumes to extend beyond the construction site.
- 10) Limit the area subject to excavation, grading and other construction activity at any one time

**Mitigation AIR-2b:
Include Measures to
Reduce Criteria
Pollutant Exhaust From
Construction Equipment**

- 1) The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. This measure means that equipment with continuous dark emissions is in violation of the requirement. A visual survey of all in-operation equipment shall be made at least weekly throughout the duration of the project construction. A record of the inspection shall be maintained on-site. The BAAQMD and/or other officials may conduct periodic site inspections to determine compliance.
- 2) The contractor shall install temporary electrical service whenever possible to avoid the need for independently powered equipment (e.g., compressors).
- 3) Signs shall be posted that indicate diesel-powered equipment standing idle for more than five minutes shall be turned off or operators would be subject to fines. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks could keep their engines running continuously as long as they were onsite.
- 4) Properly tune and maintain equipment for low emissions.
- 5) The applicant shall designate a Disturbance Coordinator responsible for ensuring that mitigation measures to reduce air quality impacts to nearby residences from construction are properly implemented. The Disturbance Coordinator shall be responsible for notifying adjacent land uses of construction activities and schedule and shall provide a written list of the aforementioned dust control measures. The list shall identify a contact person that will respond to any complaints. A log shall be kept of all complaints and the actions taken to remedy any valid complaint as well as the response period.

**Significance After
Mitigation:**

Less than significant. According to BAAQMD, although construction emissions are not quantified, implementation of recommended mitigation measures will ensure impacts will be less than significant.

Operational Impacts

**Impact AIR-3:
Consistency With
Applicable Air Quality
Plan** Operation of the new Medical Campus would generate air emissions which could conflict with or obstruct implementation of the applicable air quality plan

Significance: Less than significant

Discussion:

BAAQMD is the regional agency responsible for overseeing compliance with State and Federal air quality laws, regulations, and programs within the San Francisco Bay Area Air Basin. The BAAQMD has prepared and/or implements specific plans to meet the applicable laws, regulations, and programs. The Bay Area 2005 Ozone Strategy is the latest adopted Clean Air Plan (BAAQMD 2006). This plan describes the Bay Area's strategy for compliance with State one-hour ozone standard planning requirements. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality impacts.

In formulating compliance strategies, the BAAQMD relies on planned land uses established by local general plans. When a project proposes to change planned uses, by requesting a general plan amendment (GPA), the project may depart from the assumptions used to formulate clean air plan strategies in such a way that the cumulative result of incremental changes may hamper or prevent the Plan from achieving the goals. This is because land use patterns influence transportation needs, and motor vehicles are the primary source of air pollution. Projects proposed in jurisdictions with general plans that are consistent with the BAAQMD's *Clean Air Plan* and projects that conform to the applicable general plan would not have significant cumulative impacts. The BAAQMD's 2005 Ozone Strategy also contains a list of transportation control measures that are intended to reduce emissions from vehicles travel. Among this list are 7 measures that the BAAQMD relies on local jurisdictions such as the County to implement through General Plan policies. Exhibit 4.3-5 to the Sonoma County General Plan 2020 environmental impact report lists the relevant general plan 2020 programs which implement the 7 BAAQMD transportation control measures. Sonoma County General Plan 2020 EIR, p. 4.3-12 to 4.3-14. The Sonoma County Board of Supervisors adopted the County General Plan 2020 in September 2008.

This project, which will replace Sutter's existing hospital campus on Chanate Road, is anticipated to continue to serve the needs of forecasted population growth in the region. Both the current General Plan and the zoning allow for the proposed development and land use. Development of the project is not anticipated to interfere with population projections used in Clean Air Plans.

Mitigation: No mitigation required

**Impact AIR-4:
Insignificant Long-Term
Increases in Carbon
Monoxide Emissions** Carbon monoxide emissions from traffic associated with the operation of the proposed Medical Campus could violate carbon monoxide standards.

Significance: Less than significant

Discussion:

Carbon monoxide emissions from traffic generated by the project would be a pollutant of concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause highly-localized concentrations of carbon monoxide. The intersection of Mark West Springs Road and Old Redwood Highway would be most affected by project traffic that could lead to the highest carbon monoxide concentrations at sensitive receptors (i.e., residences). There are 1- and 8-hour standards for carbon monoxide. The 8-hour standard is the most stringent and historically has always been exceeded if the 1-hour standard is exceeded. Therefore, this analysis evaluated impacts against the 8-hour standard.

Carbon monoxide concentrations were modeled using screening methods recommended by the BAAQMD that are based on the CALINE4 Line-Source dispersion model. This method uses traffic volumes, emissions, meteorology, and the roadway/receptor geometry. For this assessment, meteorological conditions most conducive for high carbon monoxide concentrations in the Bay Area, peak-hour traffic conditions (i.e., evening period), slow traffic speeds and emission factors generated by the California Air Resources Board emission factor model (i.e., EMFAC2007) were used as input to the model. Modeled concentrations were added to background levels to predict total carbon monoxide concentrations. This assessment was conducted for existing conditions (2008) and 2014 both with and without the project. Results of this assessment are shown in **Table 3.4-7**.

Table 3.4-7. Predicted 8-Hour Worst Case Carbon Monoxide Levels (in ppm)

Description	2008 Existing	2014 No Project	2014 with Project (Ph. I & II)
Mark West Springs Road and Old Redwood Highway*	4.3 ppm	4.4 ppm	4.4 ppm
Mark West Springs Road and Old Redwood Highway **	4.4 ppm	4.1 ppm	4.2 ppm
Worst-Case Emissions	4.4 ppm	4.4 ppm	4.4 ppm
<i>Significance Thresholds (CAAQS)</i>	<i>9.0 ppm for 8-hour exposure</i>		

* Mark West Springs Road is the primary roadway

** Old Redwood Highway is the primary roadway

This table indicates that carbon monoxide conditions would remain below ambient air quality standards. Assumptions used for the prediction of project-related carbon monoxide concentrations are provided in the Environmental Air Quality Assessment, Sutter Hospital, Sonoma County, California (Illingworth & Rodkin 2009a) (Appendix C-2).

Although the CALINE4 model predicts worst-case 8-hour CO emissions in 2014 both with and without project would 4.4 ppm, actual emission rates are anticipated to decrease by about 45 percent between 2008 and 2014, due to improvements in engine efficiencies.

Mitigation: No mitigation required

Impact AIR-5: Long-Term Increases in Criteria Pollutant Emissions Criteria pollutant emissions associated with the operation of the proposed Medical Campus could exceed BAAQMD CEQA significance thresholds, potentially resulting in a significant net increase of NO_x, PM₁₀, or ROG.

Significance: Potentially Significant

Discussion:

The primary sources of air pollutant emissions from operation of the project include indirect emissions from traffic, area-source emissions (e.g., natural gas usage and landscaping), natural gas fired boilers for steam generation, helicopter trips, and emissions associated with routine testing of emergency generators. Inclusion of these criteria pollutant emissions in the air quality analysis of the new medical center represents a conservative impact analysis, as the existing medical center already emits these pollutants within the air basin.

Project-related emissions of air pollutants from traffic and area sources were predicted using the URBEMIS2007 model (Version 9.3), which is approved for use by the BAAQMD. Area source emissions include emissions from natural gas usage, landscape equipment, and ROG emissions from consumer products (e.g., architectural coatings). The URBEMIS2007 model predicts daily emissions associated with land use developments. The model combines predicted daily traffic activity associated with the different land use types, with emission factors from the State's mobile emission factor model (i.e., EMFAC2007). Dowling and Associates (the project applicant's traffic consultant) provided trip generation. Assumptions used for predicting project-related emissions of air pollutants that affect the region are provided in the *Environmental Air Quality Assessment, Sutter Hospital, Sonoma County, California* (Illingworth & Rodkin 2009a) (Appendix C-2).

Build out of the project would result in the construction or modification of stationary air pollutant sources that are not properly accounted for in the URBEMIS 2007 modeling. Emissions for these stationary sources are calculated separately from the source emissions included in URBEMIS2007 model. Stationary sources identified at this design phase include natural-gas fired boilers and two 1500-kilowatt Standby Generator Sets. The boilers would be fired by natural gas and the generator sets would use diesel fuel. These sources would be subject to BAAQMD permit requirements. Overall, these sources would result in minor emissions, compared to those from traffic generation reported above.

ROG, NO_x, and PM₁₀ emissions from the boilers are included as part of the natural gas consumption emissions. The project applicant's Engineer provided estimated annual natural gas consumption rates. Emission factors for natural gas used by the URBEMIS2007 model were applied to these usage rates to develop daily and annual emissions. The calculations provided in this assessment would over predict the emissions, since emission standards, specified by BAAQMD regulations, would likely apply to these boilers (Illingworth & Rodkin 2009a) (Appendix C-2).

Daily emissions from typical operation of the hospital under Phase II are reported in **Table 3.4-8**. The typical daily operation of the hospital facilities and medical office building built out in Phase II would have daily emissions that are below the BAAQMD significance thresholds. Typical

operation of the proposed project would have *less than significant* daily emissions.

Table 3.4-8. Phase II Daily Operation Emissions

Scenario	Modeled Emissions in pounds per day		
	Reactive Organic Gases (ROG)	Nitrogen Oxides (NOx)	Respirable Particulates (PM ₁₀)
Area Sources	3 pounds	10 pounds	<1 pounds
Mobile Sources	29 pounds	31 pounds	32 pounds
Total	32 pounds	41 pounds	32 pounds
<i>BAAQMD Thresholds</i>	<i>80 pounds per day and 15 tons per year</i>		

Emissions associated with Phase III buildout of the hospital, with the expansion of the hospital by 29 beds, are summarized in **Table 3.4-9**. In addition, helicopter emission increases for the proposed project versus existing project were computed for the Bell 222 helicopter, and included in **Table 3.4-9**. The applicant provided the increase in daily and yearly flight numbers. Emissions factors for the helicopter were obtained from the *Guidance on Determination of Helicopter Emissions* (Swiss Confederation, Federal Department of the Environment, 2009). The increase in helicopter emissions will be a minor source compared to other mobile source emissions that were predicted using the URBEMIS2007 model.

Table 3.4-9. Phase III Daily Operation Emissions

Scenario	Modeled Emissions in pounds per day		
	Reactive Organic Gases (ROG)	Nitrogen Oxides (NOx)	Respirable Particulates (PM ₁₀)
Area Sources	3 pounds	10 pounds	<1 pounds
Mobile Sources	33 pounds	35 pounds	35 pounds
Total	36 pounds	45 pounds	35 pounds
<i>BAAQMD Thresholds</i>	<i>80 pounds per day and 15 tons per year</i>		

Emergency generator emissions were computed for two Caterpillar 1500 kW Generator Sets. These emissions are based on the manufacturer data at 100% load. A testing schedule of 5 minutes per week, ½ hour each month and annual testing on one day for eight hours (18.3 hours per year operation) was assumed for these calculations.

Emissions associated with operation of both generators during each of the three types of testing, under Phase III buildout, are reported in **Table 3.4-10**. Since normal hospital and medical office building operation emissions would occur simultaneously on days with testing, those emissions were added to the generator testing emissions. Both daily and annual emissions are presented for comparison to BAAQMD thresholds.

Table 3.4-10. Operational Emissions with Generator Testing

	Modeled Emissions		
	Reactive Organic Gases (ROG)	Nitrogen Oxides (NO _x)	Respirable Particulates (PM ₁₀)
Scenario 1			
5-minute Generator Test once per week (lbs/day)	<1	4	<1
Operation Sources - Total from Table 3.4-9 above (lbs/day)	36	45	35
<i>Total (lbs/day)</i>	36	49	35
<i>BAAQMD Thresholds(lbs/day)</i>	80	80	80
Scenario 2			
30-minute Generator Test once per month (lbs/day)	<1	24	<1
Operation Sources (lbs/day)	36	45	35
<i>Total (lbs/day)</i>	36	69 ¹⁷	35
<i>BAAQMD Thresholds</i>		80	80
Scenario 3			
8-hour Generator Test once annually (lbs/day)	9	387*	2
Operation Sources (lbs/day)	36	45	35
<i>Total (lbs/day)</i>	45	432	37
<i>BAAQMD Thresholds(lbs/day)</i>	80	80	80
<i>Total Annual Emissions (tons)</i>	6.8	9.5	6.5
<i>BAAQMD Thresholds(tons/year)</i>	15	15	15

Source: *Environmental Air Quality Assessment, Sutter Hospital, Sonoma County, California* (Illingworth & Rodkin 2009a)

* Only occurs on one day during the year

Daily emissions under Scenarios 1 and 2, when the generators are tested less than an hour during each test, are estimated to be less than the BAAQMD daily thresholds. However, under Scenario 3 when the generators are tested for 8 hours, estimated NO_x emissions are greater than the BAAQMD daily thresholds. This would be considered a significant impact for that one day per year. For the remainder of the year (Scenarios 1 and 2) the daily and annual emissions would be less than significant.

**Mitigation AIR-5a:
Schedule Generator
Testing to Avoid Ozone
Exceedances**

Testing of the diesel generators for more than one hour per day shall not occur during the months of May through October, to ensure that these emissions would not contribute to exceedances of State ozone standards in the region.

¹⁷ BAAQMD has proposed a new emissions threshold for NO_x of 54 lbs/day. If this threshold is adopted, the operational emissions with generator testing would exceed this new threshold..

Mitigation AIR-5b: Ensure Compliance With BAAQMD Rules and Regulations	Some mechanical equipment (e.g., natural gas fired boiler and diesel emergency generators) used at the hospital would require permits from the BAAQMD. The applicant shall consult with the BAAQMD to ensure compliance with appropriate rules and regulations so that emissions are properly controlled and do not exceed levels reported in this analysis.
Mitigation AIR-5c: Reduce Air Pollutant Emissions on Spare the Air Days	The hospital administrators shall sign up with the BAAQMD to receive Spare the Air notifications and avoid scheduling generator testing on these days. In addition, Hospital and office building staffs should be informed of the Spare the Air Days so that they may voluntarily reduce emissions through carpooling, using transit or other means.
Significance After Mitigation:	Significant and unavoidable. Even though the applicant will implement mitigation measures, the testing for the emergency generator for 8-hour continuously will exceed the existing BAAQMD daily significance threshold, and will therefore be significant on that one day. ¹⁸

DPM Health Risk Assessment

Impact AIR-6: Insignificant Increases in TAC Emissions	Diesel particulate matter from construction and operation of the project could expose sensitive receptors to substantial TAC concentrations that would lead to an increased probability of cancer greater than 10 in one million.
Significance:	Less than significant

Discussion:

Toxic Air Contaminant Emissions from Construction and Operation of the Project

Residences near the proposed project could be exposed to emissions of TACs from project construction and operation. The primary sources of TACs would include DPM emitted from construction activities, routine truck deliveries during operation, and testing of the generators. Although other TACs might be emitted, they will be emitted in much smaller quantities as compared to DPM, therefore DPM will be the TAC of greatest concern.

The health risks, in terms of incremental lifetime cancer risk, were assessed for nearby residences. Emissions for each activity or process were computed and used in the ISCST3 dispersion model to predict DPM concentrations. The modeled used screening meteorological conditions that typically result in over predictions of the concentrations. Modeling assumptions

¹⁸ If the proposed new daily significance threshold of 54 lbs/day is adopted by BAAQMD, then operational emissions with generator testing would be significant one day a month (see Scenario 2 in Table 3.4-10) instead of one day per year..

are described in the *Environmental Air Quality Assessment, Sutter Hospital, Sonoma County, California* (Illingworth & Rodkin 2009a) (Appendix C-2). A screening analysis is typically done as a first step in evaluating health risks. If risks are found to be below thresholds, no further analysis is required.

Construction Activity

DPM emissions were estimated from the campus building construction with URBEMIS2007 model using default values and the estimated area of disturbance due to construction. URBEMIS2007 provides exhaust PM₁₀ emissions, which were assumed to be DPM. There would also be emissions from roadway construction adjacent to the project site. These emissions were estimated using the Roadway Construction Emission Model (Version 6.3.1) with default assumptions. Roadway construction was assumed to cover about 5 acres and occur over 6 months. The roadway and construction emissions were combined and then modeled as two separate area sources across the site.

The first option for hospital construction was to import about 100,000 cubic yards of fill to the site for surcharging activities, as discussed above, requiring approximately 9,000 round-trips. Each load would include two trips: one in and one out. The PM₁₀ gram per mile exhaust emission rate was estimated using the EMFAC2007 model for heavy-duty trucks for the year 2010, when the fill would be imported. Each truck was assumed to travel along Mark West Springs Road for the entire frontage of the project. Travel to the center of the site was also assumed in the truck modeling. About 30,000 cubic yards of fill would be removed from the project site after the surcharging activities are completed, requiring approximately 2,700 round-trips.

The second option for hospital construction was to drive piles for the building foundation and only import 75,000 cubic yards of fill material as opposed to importing the 100,000 cubic yard of fill.

PM₁₀ emissions (assumed to be DPM emissions) from pile driving activity were estimated from manufacturer emission factor data for a Delmag D46-32- 96 kW-120 hp or similar hammer, as discussed above. Approximately 700 piles were assumed to be driven to a depth of 45 feet. Based on professional engineering judgment using site specific information, it was assumed that approximately 3 piles per hour were driven by the hammer.

Routine Operation of the Project Site

The primary source of TACs from routine operation of the project would be DPM emitted from truck deliveries. On average, there would be approximately 6 heavy-duty truck and 5 medium-duty truck trip daily deliveries anticipated. According to the EMFAC2007 guidance, medium-duty trucks weigh 14,001 to 33,000 pounds and heavy-duty trucks weigh 33,001 to 60,000 pounds. These deliveries would have two trips associated with them: one in and one out. The PM₁₀ gram per mile exhaust emission rate was estimated using the EMFAC2007 model for heavy and medium-duty trucks for the year 2014, which is the first year of full operation. Predicted PM₁₀ truck exhaust emissions were assumed to be DPM. These emissions were assumed to occur 6 days per week over 70 years of project operation. While emissions of DPM from trucks are anticipated to decrease substantially over the 70-year operation period, the higher 2014 emission factor was assumed for this assessment to be conservative. Use of this factor would overstate the health risk associated with this activity. Similar to haul truck trips, these

trucks were assumed to travel the entire frontage of Mark West Springs Road and travel on site to the loading areas.

Helicopters will be used during hospital operation and will be a minor source of TAC emissions. Helicopters combust aviation fuel, which will not emit any DPM. Since DPM is the TAC of greatest concern, helicopter operations are not included in the health risk assessment.

Emergency Generator Testing

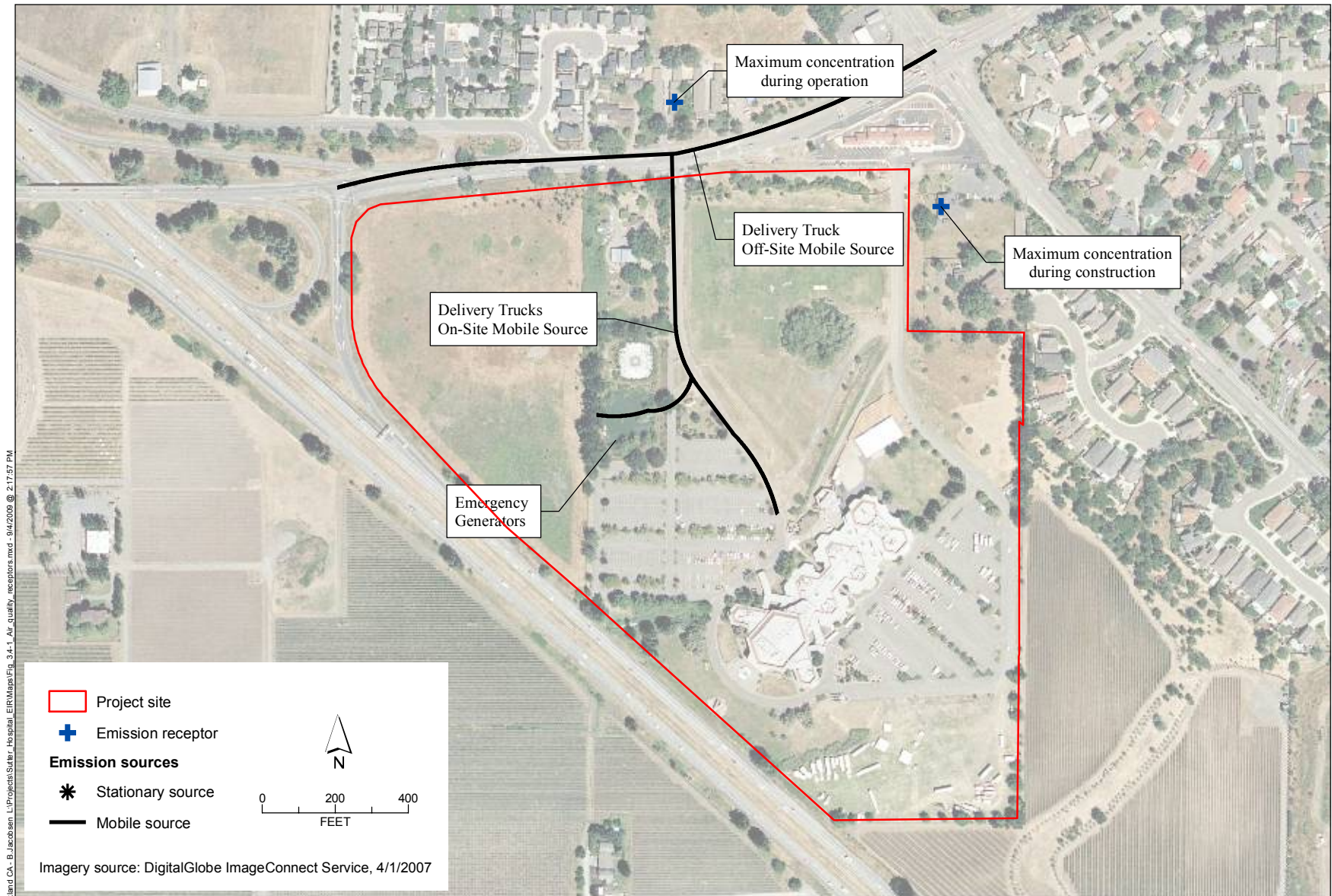
The project would include the installation and weekly testing of an emergency generator. These generators would be powered by diesel fuel. While operation under emergency conditions is anticipated to be minimal, State law and the manufacturer would require testing. Diesel particulate matter from the exhaust could pose a health risk to nearby sensitive receptors. The nearest residences are estimated to be over 700 feet from the proposed central location where the generators would be located. Emissions of DPM from the routine testing of the generators were included in the health risk assessment analysis performed for the project's diesel sources.

As currently proposed, two Caterpillar 1500 kW Generator Sets would be used for emergency power needs. The generator emissions information is provided in the *Environmental Air Quality Assessment, Sutter Hospital, Sonoma County, California* (Illingworth & Rodkin 2009a) (Appendix C-2). As mentioned above, testing of the generator set would occur on a weekly basis for 5 minutes, on a monthly basis for 30 minutes, and one day annually for 8 hours. During testing, the generators are assumed to operate at full load or over 2,200 horsepower.

Predicted Incremental Cancer Risk

The ISCST3 model provided 1-hour concentrations at nearby receptor locations from each source. **Figure 3.4-1** shows the locations of the receptors (shown as +), the proposed project and the DPM sources. The closest sensitive receptor during project construction is approximately 100 feet from the project site boundary and the closest sensitive receptor during project operation is 200 feet from the project boundary (see **Figure 3.4-1**). The 1-hour diesel particulate matter concentrations predicted by the model were adjusted to annual concentrations using a factor of 0.10. The maximum-modeled annual concentrations resulting from construction activities would range from 0.17 to 0.21 $\mu\text{g}/\text{m}^3$ of DPM, based on the first option (soil surcharging) as the worst case scenario for the two construction options. The lifetime incremental cancer risk associated with this exposure would be 1.52 excess cancer cases per million people. The highest annual DPM concentration for exposure to project operation would be 0.0018 $\mu\text{g}/\text{m}^3$. Assuming emissions remained similar through a 70-year lifetime exposure period, the incremental cancer risk would be 0.58 excess cancer cases per million people. Note that heavy-duty truck DPM emissions are anticipated to decrease in the future, so the cancer risk would also decrease. The maximum DPM concentrations from construction and operational activities occur at different locations. However, the maximum risk from construction was added to the maximum risk from operation for this screening assessment (even though maximum concentrations occurred at two different receptors). This resulted in a predicted lifetime incremental cancer risk of 2.10 excess cancer cases per million people.

The BAAQMD uses a lifetime cancer risk of 10 in one million as a threshold for determining whether a project would cause a significant health risk. The risk of 2 excess cancer cases per million caused by the project would result in a *less-than-significant* impact.



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Figure 3.4-1
Project Emission Sources and Receptors

It should be noted that the risk presented in this assessment are overstated and would be less. Key factors contributing to this overestimate are: (1) use of a lifetime exposure that assumes nearly continuous exposure to these sources over a 70-year lifetime; (2) use of 2014 truck emission factors to assess DPM exposure from almost 70 years of project operation; (3) use of screening meteorology in the dispersion modeling assessment; and (4) addition of maximum construction risks to maximum operation risks that occur at two different locations.

Exposure of Hospital Patients and Workers to Toxic Air Contaminants from US 101 Traffic

The proposed project would place a hospital within 500 feet of the travel lanes of US 101. US 101 near the project site currently has relatively low truck traffic volumes, when compared to urban freeways. This portion of US 101 through Santa Rosa carries about 91,000 average daily trips (Caltrans 2007). Of these trips, 5% are trucks (3% are considered large trucks that are almost all diesel-fueled). This is a relatively low fraction of diesel vehicles, when compared to urban freeways that can have up to 20% diesel powered vehicles. In the *Air Quality and Land use Handbook* (CARB, 2005), CARB identified a typical freeway as having truck traffic of 10,000 to 20,000 trucks per day. US 101 near the project has about 3,000 daily large truck trips, about 1/3rd to 1/6th the volumes of the roadways considered by CARB. Based on site-specific traffic levels alone, the siting of sensitive receptors near US 101 could be 1/3rd less than the CARB recommended criteria of 500 feet. In addition, Figure 1-1 of the *Air Quality and Land use Handbook* shows that DPM concentrations decrease sharply after 300 feet. The closest hospital building is located approximately 335 feet from US 101. Given that US 101 experiences much lower truck traffic volumes (the source for DPM) than was included in the CARB guidance, and given that the closest hospital building is not within 300 feet from the freeway, where the DPM concentration decreases dramatically, DPM from the freeway would not have a significant adverse affect on the hospital.

Sonoma County's recent General Plan update requires analysis of health risks for projects near the US 101 corridor:

Policy OSRC-16k: Require that discretionary projects involving sensitive receptors (facilities or land uses that include members of the population sensitive to the effects of air pollutants such as children, the elderly, and people with illnesses) proposed near the Highway 101 corridor include an analysis of mobile source toxic air contaminant health risks. Project review should, if necessary, identify design mitigation measures to reduce health risks to acceptable levels.

In response to CARB guidance and the Sonoma County General Plan policy, a health risk assessment was performed to evaluate the cancer risks at the project site. The health risk involved prediction of vehicle emission rates, prediction of traffic levels, and dispersion modeling of emissions associated with US 101 traffic.

Emissions

Lower future vehicle emission rates that have been established by regulations through 2006 were taken into account in the analysis. Note that DPM emissions are anticipated to decrease in the future. CARB has been developing new regulations and emission standards since identifying DPM as a carcinogenic. Some of these requirements take time to provide substantial emission

reductions. For example, new trucks would have considerably lower emission rates than older trucks, but older trucks will only slowly leave the vehicle fleet. Since this analysis assessed the risk of proposed hospital uses to future exposures, the lower future emissions were taken into account. The EMFAC2007 results were then adjusted to the traffic mix on US 101 reported by Caltrans. Emission factors were developed for 2014, 2020 and 2030, using the calculated mix of diesel-fueled vehicles. Emissions factors were developed for 2014, 2020 and 2030 to consider a modeling scenario representative of actual emissions.

CARB's diesel reduction plan includes proposed regulatory actions developed in 2000 that are intended to substantially decrease emissions of DPM. CARB has implemented many of the control measures outlined in the plan and many of those actions are reflected in the EMFAC2007 model runs. Future regulatory actions and additional measures not yet adopted that would lower emissions rates were not included. Such measures include a recent regulation to reduce DPM emissions from in-use on-road diesel-fueled vehicles, which requires truck fleet owners to either retrofit or phase out older engines over time. CARB predicts substantial short-term reductions in DPM as a result of this action.

Traffic Levels

Future DPM emissions for traffic on US 101 were developed using the latest version of the CARB EMFAC2007 emission factor model with defaults for Sonoma County. Future traffic increases projected on US 101 were provided by Dowling and Associates.

Dispersion Model

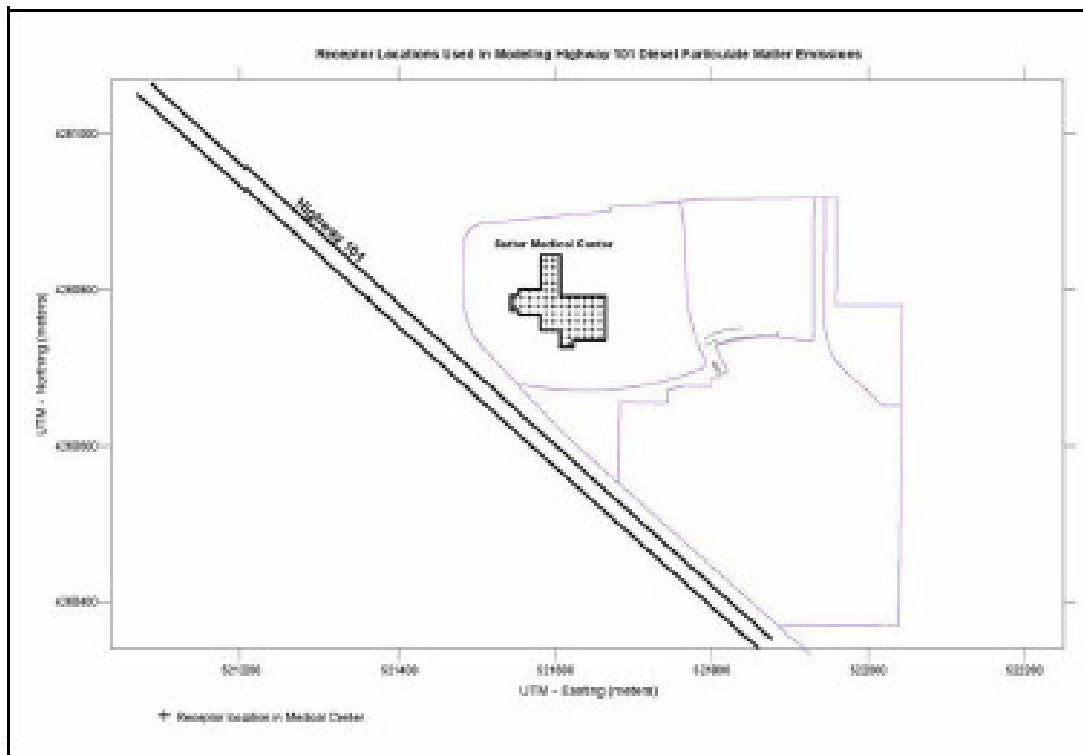
Dispersion modeling was conducted using the CAL3QHCR model, which is acceptable to the BAAQMD for this type of analysis. A 4-year set of hourly meteorological data for the Sonoma County Airport was obtained from the BAAQMD's website and used in the modeling. The station, located one mile south-southwest of the project site, is considered to have meteorological conditions that are reasonably representative of the project site. This meteorological data set was used for the refined modeling analysis, that was required to accurately represent the expected risks from US 101 at the hospital receptors. An initial screening analysis was performed, but results were above the screening thresholds, therefore a more refined analysis was required. **Figure 3.4-2** shows US 101 and the modeled hospital receptors. Other inputs to the model included geometry (based on site plans), current traffic conditions reported by Caltrans for US 101, and the DPM emission factors obtained from the EMFAC 2007 model. Inputs along with computed results at receptors are contained in Appendix C-2, the Environmental Air Quality Assessment prepared by Illingworth & Rodkin.

Cancer Risk

The maximum-modeled annual concentrations at the hospital resulting from US 101 traffic would be $0.12 \mu\text{g}/\text{m}^3$ of DPM, annualized for 2014. This concentration would decrease to $0.08 \mu\text{g}/\text{m}^3$ in 2020 and $0.06 \mu\text{g}/\text{m}^3$ in 2030 as emission rates from traffic decrease. The California Office Of Environmental Health Hazard Assessment (OEHHA) does not have recommendations for determining hospital patient cancer risks. Hospital patients tend to spend relatively short periods at the hospital and their time is spent mostly indoors. Therefore, this assessment considered two different exposures: a continuous exposure of a hospital patient for one year (using 2014 emission rates and traffic) and a worker exposure for workers who would work at

the hospital and live off-site for 40 years (beginning with 2014 emission rates and traffic). The cancer risk assessment is consistent with the BAAQMD guidelines, which are based on the statewide AB 2588 guidelines.

Figure 3.4-2. US 101 and Modeled Hospital Receptors



The highest modeled DPM concentrations and associated health risk were considered for this impact evaluation. Over the course of a 1-year continuous exposure during the first year of hospital operation, the incremental risk is calculated at 0.6 excess cancer cases per for a hospital patient. This is based on highway traffic DPM emissions during 2014. Because highway DPM emissions are anticipated by the EMFAC2007 model to decrease, cancer risk for future years would be less. A worker continuously exposed at this location would have a cancer risk of 4.5 excess cancer cases. The DPM concentrations decrease at positions (within hospital complex) further from the freeway. The closest hospital building to the US 101 is approximately 335 feet away from the freeway. It should be clearly noted that these risks are based on outdoor exposures. The indoor risks, especially those inside a hospital, would be less.

On-Site Sources

The project would include DPM emissions from routine testing of emergency power generators and truck deliveries. Emissions and dispersion modeling of these sources were conducted to predict the impact to the project (i.e., hospital). This assessment was similar to that conducted for off-site residential uses. The difference for this impact is that the 4-year meteorological data set obtained from the BAAQMD was used. Results of this assessment show that on-site sources

would have a negligible effect on the overall cancer risk predicted for the hospital uses. The cancer risks reported above include the contribution of these sources.

Other Factors Not Considered

The predicted cancer risk is based on outdoor exposures. Patients and workers at the hospital would spend most of their time indoors. While building codes for hospitals require operable windows, most indoor air would be provided through air handling systems. Natural ventilation through windows or other openings such as louvers is considered as supplemental to the required mechanical ventilation systems. Filtration is required in hospital mechanical ventilation systems. CARB estimates a 1/3rd reduction in cancer risk between outdoor and indoor air in a residence. This reduction would be greater in a hospital, since most indoor air is mechanically supplied and conditioned with filtration. Also, air intakes are usually located on the rooftops, which have lower exposure than near the ground. Predicted DPM concentrations for this assessment were predicted near ground level, since details of the proposed project mechanical ventilation system were not available.

These results show that a hospital patient exposed continuously for one year or a worker exposed continuously while working at the hospital for 40 years would have incremental cancer risks from US 101 traffic that would be less than ten in one million. This would be below the BAAQMD incremental cancer risk criteria of 10 in one million. As a result, this impact would be *less than significant*.

Mitigation: No mitigation required

Cumulative Impacts

Criteria Pollutants

Future growth in the County is expected to result in significant cumulative impacts according to the General Plan 2020 EIR. Construction and operation of the proposed project would incrementally contribute to these impacts. The Bay Area as a whole (including the southern portion of Sonoma County where the proposed project is located) does not meet state or federal ambient air quality standards for ground level O₃ and PM_{2.5}, nor does it meet state standards for PM₁₀. For O₃, the entire Bay Area is designated non-attainment at both the federal and state levels. The area is considered attainment or unclassified for all other pollutants.

Pollutant emissions associated with the proposed project's typical daily operations would not exceed BAAQMD CEQA significance thresholds and would not result in a cumulatively considerable net increase of NO_x, PM₁₀, or ROG. The primary sources of air pollutant emissions from operation of the project include indirect emissions from traffic, area-source emissions (e.g., natural gas usage and landscaping), natural gas fired boilers for steam generation, helicopter trips, and emissions associated with testing of an emergency generator. The annual 8-hour testing of the emergency generator would exceed the daily NO_x emissions threshold and would be significant that one day a year. Mitigation Measure AIR-5a requires the annual testing to be done outside of the ozone season (i.e., testing would occur November -April), which would reduce the project's contribution to unhealthy air pollutant levels. However, if BAAQMD's proposed new emissions threshold of 54 lb/day for daily NO_x is adopted, the project would exceed the threshold

during monthly testing of the generator. This would be a cumulatively considerable contribution to a significant cumulative impact.

Construction-related emissions are generally short-term in duration but may still cause adverse air quality impacts. According to the BAAQMD CEQA Guidelines, PM₁₀ is the pollutant of greatest concern during construction. Construction equipment also emits carbon monoxide and the precursors to ozone and could lead to further violations of the ozone standards. The BAAQMD does not have thresholds for construction emissions and typically does not require quantification of emissions. However, haul trips to import the estimated 100,000 cubic yards of surcharge materials and fill in 2010 are considered to be non-standard construction activities. Haul truck trips bringing fill to the proposed project site would potentially result in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard. This would include emissions which exceed quantitative thresholds for ozone precursors that are normally applied to operational impacts but are used in this analysis for construction impacts as well. Implementation of Mitigation Measure AIR-1 would reduce these impacts, although not to a less than significant level. As a result, the project would have a temporary significant cumulative impact on air quality when haul truck trips occur in 2010.

PM₁₀ and PM_{2.5} emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle and equipment exhaust. Construction emissions of these particulates can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors. Despite this variability in emissions, experience has shown that there are a number of feasible control measures that can be reasonably implemented to significantly reduce particulate emissions from construction. The BAAQMD's approach to CEQA analyses of construction impacts is to emphasize implementation of effective and comprehensive control measures rather than detailed quantification of emissions (BAAQMD 1999).

The BAAQMD has identified a set of feasible particulate control measures for construction activities that are provided in the BAAQMD CEQA Guidelines (BAAQMD 1999). If all of the appropriate control measures are implemented on a project, then BAAQMD considers air pollutant emissions from construction activities a less-than-significant impact with respect to particulate matter from fugitive dust. These control measures are included as Mitigation Measures AIR-2(a) and 2(b) for the project. With the application of these control measures, particulate emissions from fugitive dust would be reduced to a less-than-significant level. Therefore, the incremental particulate emissions associated with the proposed project would not be considered cumulative considerable.

Greenhouse Gas Emissions

As previously noted, the connection between climate change (or global warming) and emissions of greenhouse gases (GHGs) is widely recognized by the scientific community. These GHGs, composed primarily of carbon dioxide (CO₂), methane (CH₄), nitrous oxides (NO_x), and water vapor, are emitted by both natural and human-made sources. However, the increase in human-made GHGs over the past several decades has caused global atmospheric temperatures to rise above historic levels. While there is some uncertainty regarding exactly how and when the

earth's climate will respond to increasing concentrations of greenhouse gases, observations as well as climate modeling indicate that observable changes are underway.¹⁹ The sources of human-made GHGs that are of the greatest concern include power plants, industry, agriculture, home heating, open burning, motor vehicles, and other transportation modes that use fossil fuels (i.e., ships, trains, aircraft, and construction vehicles).

No local or state air quality agency has yet adopted significance criteria for determining whether a land use project's GHG emissions would make a cumulatively considerable contribution to climate change. Draft thresholds proposed by the BAAQMD staff are currently under review and are not expected to be adopted until December 2009 or early 2010.

Nevertheless, this EIR quantifies the greenhouse gases that would be emitted by this project, discusses the project's consistency with the state's and County's GHG emissions reduction goals and identifies appropriate, feasible mitigation measures to further reduce the project's contribution to GHG emissions. In addition, because the BAAQMD is likely to adopt GHG emissions thresholds in some form while this project is still pending, the analysis below also considers the extent to which the project would meet the BAAQMD's proposed draft thresholds of significance as proposed at this time.

Impact Analysis:

**Impact AIR-7:
Generation of
Greenhouse Gas
Emissions** The proposed project would result in emissions of greenhouse gases, and would thus contribute to the global inventory of greenhouse gas emissions and climate change

Significance: Potentially significant

The proposed project would result in emissions of GHGs due to fuel combustion in motor vehicles using the project, mobile construction equipment, and building heating and water systems associated with the Medical Campus and thus would contribute to the global GHG inventory. Building and motor vehicle air conditioning systems may also use HFCs (and HCFCs and CFCs to the extent that they have not been completely phased out at later dates), which may result in emissions through leaks. The other primary GHGs (perfluorocarbons and sulfur hexafluoride) are associated with specific industrial sources and are not expected to be associated with the proposed project. Nitrogen trifluoride, added to the California list of GHGs by SB 104 (2009), is not generally used in hospitals or medical office buildings, and also not expected to be associated with the proposed project.

Project GHG Emissions Inventory

To provide an analysis of the proposed project's GHG emissions (presented as CO₂ emissions), Sutter prepared and the County reviewed an estimate of the GHG construction-related and operational emissions. The proposed project's GHG emissions might also include methane (CH₄) and nitrous oxide (N₂O), but since CO₂ is the GHG pollutant emitted in the largest quantity at this project site and is the pollutant of greatest concern, only CO₂ emissions are presented below.

¹⁹ CalEPA, *Climate Action Team Report to Governor Schwarzenegger and the California Legislature* (2006).

The construction-related CO₂ emissions estimates were calculated using EMFAC2007 CO₂ emission factors for the heavy-heavy duty trucks in Sonoma County for import and export of fill material, URBEMIS2007 CO₂ emissions for hospital campus construction activity and the Roadway Construction Emissions Model (Version 6.3.1) CO₂ emission factors for roadway construction. Construction-related CO₂ emissions estimates are presented in Table 3.4-11.

Table 3.4-11. Proposed Project Estimated Construction GHG Emissions

Annual Total Emissions	CO₂ (tons/year)
2010	707.9
2011	539.1

The operational CO₂ emissions from operational (mobile) sources and area sources were estimated using the URBEMIS2007 model and the estimated hospital, medical office and buildings acreage upon full build out. Operational (mobile sources) include emissions from worker commute trips while area sources include emissions from activities like landscaping. The operational CO₂ emissions from energy consumption were based on the mitigated facility electricity consumption of 6,520,577 kWh (see Section 4.0 for more details) and the CO₂ emission factor from the PG&E carbon footprint calculator assumptions on the PG&E website (<http://www.pge.com/myhome/environment/calculator/assumptions.shtml>). The operational CO₂ emissions from the emergency generator testing were calculated using CO₂ emission factor provided by the manufacturer. The operational CO₂ emissions from natural gas consumption was based on the California Climate Action Registry (CCAR) Reporting Protocol, Version 3.1 Table C.7 (January 2009) emission factor and the mitigated natural gas consumption rates of 10,667,024 scf. The operational CO₂ emissions from helicopter trips were based on the CCAR Reporting Protocol Table C.3 emission factor for jet fuel and the fuel usage. Similar to the helicopter criteria pollutant emissions, the helicopter CO₂ emissions represent the difference between the existing helicopter CO₂ emissions generated at the Chanate facility and the CO₂ emissions that would be generated by helicopters at full buildout of the proposed project. Operational CO₂ emissions estimates are presented in Table 3.4-12.

Table 3.4-12. Proposed Project Estimated Operational GHG Emissions (Phase II and Phase III)

Emission Source	CO₂ (tons/year)
Operational (Mobile) & Area Sources	6,494
Electricity (including water)	1,708
Emergency Generator Testing	42
Natural Gas	640
Helicopter Trips (increase only)	103
Total	8,987

Consistency with State's and County's GHG Emissions Reductions Goals

As estimated above, the project would result in the emissions of approximately 8,987 tons of CO₂e per year (or 8,153 metric tons of CO₂e per year). To put the proposed project's GHG emissions in context, the applicant has provided an estimate of the GHG construction-related and operational emissions that would be expected with the construction and operation of a "standard" hospital and medical office project of the scale and location of the proposed project (a "business-as-usual" calculation), and then compared that with an estimate of the construction and operational emissions of the project as proposed with design features and emissions reduction measures included to reduce energy usage and greenhouse gas emissions (see Appendix C-3). According to the applicant, the project as proposed would achieve a reduction of just over eleven percent (11%), comparing "proposed project" operational emissions to "standard" operational emissions. Sutter has also provided a qualitative evaluation of the project relative to pertinent measures included in ARB's Scoping Plan for the state's compliance with AB 32. Table 4, Consistency of Campus Project Features with AB 32 Scoping Plan Measures, in Appendix C-5, lists all pertinent measures included in CARB's Scoping Plan for the state's compliance with AB 32, and identifies sustainability policies, programs, and design features proposed for the project that would that comply with the Scoping Plan measures.

Although the actual emissions reductions achieved by the project may be higher or lower than those calculated by the applicant, the replacement of the existing hospital complex with a new energy-efficient, LEED-certified hospital complex is likely to achieve some reductions in GHG emissions and in doing so, would likely help rather than hinder the state's and County's GHG reduction goals.

BAAQMD proposed significance thresholds: One criteria, proposed as the sole recommendation by BAAQMD staff in September 2009 and then proposed as one of several possible options in October 2009, is a threshold of 1,100 metric tons of CO₂ equivalent per year in operational emissions associated with the project. The project's estimated operational greenhouse gas emissions of 8,153 metric tons per year would exceed this threshold, were it to be adopted.

Another criteria proposed by BAAQMD staff is 4.6 metric tons per year of CO₂ equivalent operational emissions per service population associated with the project, with "service population" being defined as the sum of the number of jobs and the number of residents provided by a project. If this threshold were adopted and if it applied to this project, based on the projected employment at the project, it is anticipated that the project would exceed this threshold.

Given the substantial regulatory uncertainty regarding whether significance thresholds will be adopted that should be applied to this project, and given that project emissions would appear to exceed some of the potential thresholds that are currently being considered, the impact is considered to be potentially cumulatively considerable.

The following mitigation measures would further reduce the project's GHG emissions:

**Mitigation AIR-7:
Develop project with the
project design features
and emissions reduction
measures**

The project shall be developed with the project design features and emissions reduction measures set forth in Table 1 of Appendix C-5:

- 1) Incorporate energy conservation measures, including Leadership in Energy and Environmental Design (LEED) or equivalent standards in the design and construction of the new campus. Such measures to be incorporated to the extent feasible include passive energy conservation designs, green roof designs, low flow and waterless fixtures, and low impact development practices. Participate in PG&E's Energy by Design program or the equivalent to optimize solar to the extent feasible (see **Section 4.4.2** for more details).
- 2) Include measures to reduce vehicle trips and encourage transit, such as coordinating with Sonoma County Transit, providing bus stops adjacent to the hospital, providing priority parking for vanpools and carpools, and recharge stations or similar facilities for electric vehicles or other alternate fuel vehicles. Where feasible, use low emission of alternate fuel vehicles in the campus service fleet (see **Section 4.4.2** for more details).
- 3) Provide sidewalks/pedestrian paths to encourage walking; provide bicycle parking, and develop off peak hour work shifts to the maximum extent feasible
- 4) Reduce water usage and associated energy demands by maximizing use of on-site water (rainwater or grey water) where appropriate, utilizing high performance fixtures and equipment, and drip irrigation and high efficiency irrigation control on any new landscaping. (The project's wastewater offset program will also reduce water usage).
- 5) Monitor the efforts of CARB and other state agencies charged with reducing the state's contribution to global climate change and implement any applicable strategies adopted through promulgated regulations.

**Significance After
Mitigation:**

Potentially significant and unavoidable on a cumulative basis.

Although the project will replace an old and inefficient medical complex and will incorporate numerous energy efficiency features that will reduce GHG emissions, the project emissions would exceed some of the potential thresholds that are currently being considered for adoption by the applicable air quality management district. Accordingly, the impact is considered to be potentially cumulatively considerable, and thus for purposes of this EIR, the impact is determined to be significant and unavoidable.

3.5 BIOLOGICAL RESOURCES

This section describes existing biological resources on the project site and identifies potentially significant impacts that could occur to sensitive biological resources from construction and operation of the proposed project.

Biological resources include common plant and animal species, and special-status plants and animals as designated by the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Game (CDFG), the National Marine Fisheries Service (NMFS), and other resource organizations including the California Native Plant Society. Biological resources also include waters of the U.S. and the state, as regulated by the U.S. Army Corps of Engineers (USACE), the California Regional Water Quality Control Board (RWQCB), and the CDFG.

This section includes information from the *Biological Resource Analysis* (Monk and Associates 2008), *Special Status Plant Survey Report* (Monk and Associates 2009b), *California Tiger Salamander Survey and Appendix* (Monk and Associate 2006), *Preconstruction Nesting Raptor Survey Report* (Monk and Associates 2009c), *Request for Jurisdictional Determination* (Monk and Associates 2009a), which are included as **Appendix D** in the Technical Appendices, Vol. 2 of this document.

3.5.1 Environmental Setting

3.5.1.1 Project Location and Existing Land Use

The project site is in the southeastern quadrant of the US 101/Mark West Springs Road interchange, and covers approximately 53 acres. The proposed site includes paved parking and roads, buildings, and manicured landscaping, totaling approximately 25 acres. Athletic fields, a playground, and other nonirrigated turf areas cover approximately 10 acres. An approximately 15-acre parcel that has been used in the recent past as a horse pasture is on the northwestern edge of the project site. No horses were present at the time of field surveys conducted in December 2008. This parcel is composed largely of nonnative annual grassland species. On the eastern side of this parcel is a barn that is being used as a maintenance facility for the LBMF. Immediately south of the barn are two sewage treatment ponds that currently serve the WFC.

3.5.1.2 Field Surveys

A number of surveys of biological resources at the site have been conducted by Monk and Associates (M&A) over a several-year period (Monk and Associates 2009) (Appendix D-1 through D-6). Prior to conducting site surveys, the most recent version of the CDFG's Natural Diversity Database, RareFind 3.2 application (CNDDDB 2008) was searched for historic and recent records of special-status plant and animal species (threatened, endangered, and rare) known to occur in the region of the project site. In addition, the California Native Plant Society's electronic inventory was searched for records of special-status plants within 5 miles of the project site (CNPS 2001). M&A examined known recorded locations for special-status species to determine if special-status species could occur on the project site or within an area of effect.

Biological resource surveys of the site are listed in **Table 3.5-1**.

Table 3.5-1. Biological Resource Surveys Conducted of the Proposed Project Site

Date	Survey
Spring 1993, 1998, 1999, 2004, 2009	Rare Plant Surveys
August 2004	California tiger salamander (CTS) site assessment
October 2005 to March 2006	Protocol-level CTS trapping survey using drift nets and pitfall traps
March, April, May 2005; March, April, May 2006	CTS larval surveys
October and December 2008	Wetland and other Waters of the U.S. site assessment
December 2008	Site evaluation to characterize plant communities and wildlife habitats
December 2008	Formal wetland delineation
January 2009	Native Tree Surveys

3.5.1.3 Plant Communities and Associated Wildlife Habitats

Vegetation at the project site has been altered through historic and ongoing agricultural and other land use activities. The project site contains WFC buildings, a wastewater treatment facility, parking lots, and extensive planted turf areas. In the few undeveloped portions of this parcel, ruderal (weedy) vegetation grows. An open, nonnative annual grassland field is also present along the western edge of the project site between US 101 and the sewage treatment ponds, where the hospital complex is proposed to be located. A list of plant species observed on the project site is presented in **Appendix D, Table 1**. **Appendix D, Table 2** presents a list of wildlife species observed on the project site.

Nonnative Annual Grassland

Nonnative annual grassland occurs in the field on the western side of the project site. This plant community is dominated by introduced grasses and forbs, including Italian rye grass (*Lolium multiflorum*), soft chess brome (*Bromus hordeaceus*), rip-gut brome (*Bromus diandrus*), medusa head (*Taeniatherum caput-medusae*), spring vetch (*Vicia sativa*), prickly lettuce (*Lactuca serriola*), bindweed (*Convolvulus arvensis*), filarees (*Erodium botrys*, *E. cicutarium*, *E. moschatum*) and cut leaf geranium (*Geranium dissectum*). A large patch of Fuller's teasel (*Dipsacus sativus*) grows in the approximate center of this field. Coyote brush (*Baccharis pilularis*) are scattered throughout the field. Along the fence line of this field are valley oak (*Quercus lobata*) and coast live oak (*Quercus agrifolia*) trees and Himalayan blackberry bushes.

The project site's grassland habitat provides food and cover for a variety of wildlife species, including amphibians such as western toad (*Bufo boreas*) which will seek seasonal refuge in the grassland and forage there; reptiles such as western fence lizard (*Sceloporus occidentalis*) which will forage in the grassland; and mammals such as red fox (*Vulpes vulpes*), Botta's pocket gopher (*Thomomys bottae*), striped skunk (*Mephitis mephitis*), Virginia opossum (*Didelphis*

virginiana), deer mouse (*Peromyscus maniculatus*), western harvest mouse (*Reithrodontomys megalotis*), and ornate shrew (*Sorex ornatus*). The grasses and forbs provide seeds for passerine birds (perching birds) such as white-crowned sparrow (*Zonotrichia leucophrys*) and lesser goldfinch (*Carduelis psaltria*).

Ornamental Landscaping

The WFC and the grounds surrounding the barn have been planted with ornamental trees and shrubs, including redwood (*Sequoia sempervirens*), deodar cedar (*Cedrus deodara*), Monterey pine (*Pinus radiata*), liquidambar (*Liquidambar styraciflua*), camphor (*Cinnamomum camphora*), olive (*Olea europaea*), persimmon (*Diospyros kaki*), strawberry tree (*Arbutus unedo*), rose (*Rosa* sp.) and juniper (*Juniperus* sp.). Large lawns are located north and southwest of the WFC. A few mature valley oaks, including a 48-inch diameter oak, stand within the parcel that contains the barn.

Ornamental landscape plants provide urban-adapted species with a food source and nesting opportunities. Birds observed in the residential areas of the project site include American robin (*Turdus migratorius*), European starling (*Sturnus vulgaris*), brown-headed cowbird (*Molothrus ater*), California towhee (*Sitta carolinensis*), cedar waxwing (*Bombycilla cedrorum*), house finch (*Carpodacus mexicanus*), yellow-rumped warbler (*Dendroica coronata*), and northern mockingbird (*Mimus polyglottos*).

Borrow Pit/Pond

A former borrow pit exists in the northeast portion of the project site that was used to excavate material for grading activities associated with the construction of the WFC. The borrow pit is a seasonal pond that supports an assemblage of tree species commonly associated with ponds and drainages, including valley oak, Fremont cottonwood, red willow, and narrow-leaved willow (*Salix exigua*). Olive trees (*Olea europaea*), likely a remnant of previous use of the site as an orchard, are also growing in this area. This dense growth of vegetation completely encircles the pond, providing wildlife with dense cover. Understory species include coyote brush, cotoneaster (*Cotoneaster pannosa*), and fennel (*Foeniculum vulgare*).

Wildlife species associated with the borrow pit/pond on the project site include bird species that forage insects from the willow leaves and branches, including ruby-crowned kinglet (*Regulus calendula*), and oak titmouse (*Baeolophus inornatus*), and larger bird species that hunt for insects in the tree's bark such as the Nuttall's woodpecker (*Picoides nuttallii*) and northern flicker (*Colaptes auratus*). Black phoebes (*Sayornis nigricans*) were observed sallying for insects near the pond surface. Arboreal salamander (*Aneides lugubris*), California slender salamander (*Batrachoseps attenuatus*), and Pacific tree frog (*Pseudacris regilla*) were all found in the pitfall traps encircling the pond as part of the CTS protocol surveys (Monk and Associates 2006) (Appendix D-3).

Ruderal Habitat

Ruderal (weedy) communities are assemblages of plants that thrive in areas that have been disturbed by human activity. On the project site, ruderal habitat occurs around the sewage treatment ponds, the barn, in undeveloped areas south and northeast of the WFC, and along the edges of the project site and the parking lots. Ruderal species detected in these areas include wild oats (*Avena fatua*), soft chess, ripgut brome, common velvet grass (*Holcus lanatus*), Harding

grass (*Phalaris aquatica*), English plantain (*Plantago lanceolata*), sharp-point fluellin (*Kickxia elatine*), and short-podded mustard (*Hirschfeldia incana*). Monterey pines have been planted around the perimeter of the sewage treatment pond area, with coyote brush and Himalayan blackberry scattered throughout the area.

Typically, ruderal communities provide habitat for those animal species adapted to man. Examples of animals associated with these communities include house finch (*Carpodacus mexicanus*), killdeer (*Charadrius vociferus*), white-crowned sparrow, California towhee, American robin, American crow (*Corvus brachyrhynchos*), raccoon, and opossum, all of which were observed (either by sight or sign) on the project site.

Native Trees

The project site supports 143 native trees, including valley oak, coast live oak, red willow (*Salix laevigata*), and Fremont cottonwood (*Populus fremontii* ssp. *fremontii*). These trees are scattered throughout the site; no oak woodlands are present. Coast redwoods are present at the project site. However, these trees were planted on the site as part of the landscaping and are categorized as ornamental trees even though they are native species in other parts of Sonoma County (Meserve 2006).

Wetlands and Other Waters of the U.S.

A total of 0.44 acre of waters of the United States and/or state were delineated on the project site (**Figure 3.5-1**). These features are within the jurisdiction of the Corps and RWQCB pursuant to Sections 404 and 401 of the Clean Water Act, respectively. Wetlands and other waters at the project site include several small human-made drainages and the borrow pit/pond.

Waters of the U.S. on the project site include a 0.008 acre wetland to the west of the WFC (W1), and several linear wetlands and waters totaling approximately 0.076 acre (LW 1-5 and OW 1). These are relatively small, human-made features that were constructed with the WFC to facilitate on-site runoff and drainage. The largest drainage way begins east of the pond and adjacent to a driveway that accesses the WFC's southeastern parking lot. Its source is a small, concrete-lined water collection basin that receives storm water runoff that is directed into the basin through human-made upland swales off various parking areas and open fields associated with parking areas. This basin is hydrologically connected via culverts under the access driveway to an approximately 2-foot-wide concrete-lined v-ditch that delivers storm water southwestward before entering a long culvert under the main parking area north of the WFC. On the southern edge of this parking area, the culvert drains water into a human-made drainage swale that drains southwest into a culvert under US 101 on the western edge of the WFC. This swale is dominated by Himalayan blackberry (*Rubus discolor*) and pampas grass (*Cortaderia jubata*).

An additional human-made drainage feature is located on the southern end of the WFC. A culvert from the southern parking lot area conveys water to this drainage. The drainage starts at the southern end of the paved parking area and leaves the project site via a culvert that is routed westward under US 101. This drainage is also dominated by pampas grass and Himalayan blackberry.

The seasonal borrow pit/pond wetland is regarded by the Corps as isolated and thus outside this agency's jurisdiction pursuant to the Clean Water Act. However, impacts to this isolated seasonal pond/borrow pit are regulated by the RWQCB pursuant to the Porter-Cologne Water

Quality Control Act. The borrow pit/pond is located between the athletic fields and playground immediately north of the existing WFC structures (**Figure 3.5-1**). This borrow pit is approximately 15,800 square feet (0.36 ac) in size and collects surface water from the athletic fields. The “pond” attains a maximum depth of approximately 3 feet and is surrounded by and covered over by Fremont cottonwoods and red willows. The pond dries sometime in mid-summer.

The project site has no significant off-site watershed. The entire project site drains during storm events via percolation into the soil, into limited on-site collection at the pond, and into the small drainage ways described above.

3.5.1.4 *Special-Status Species*

Special-status species are plants and animals that are legally protected under the California and Federal Endangered Species Acts (CESA and FESA, respectively) or other regulations, and species that are considered rare by the scientific community (for example, the CNPS). This includes:

- Plants and animals that are listed or proposed for listing as threatened or endangered under the CESA or FESA or that are candidates under these acts;
- Species designated by the USFWS as species of concern or species of local concern, or by CDFG as species of special concern;
- Plants occurring on Lists 1A, 1B, and 2 of CNPS’ electronic inventory;
- Animals that are designated as “species of special concern” by the CDFG; and
- Animal species that are “fully protected”¹ in California.

Appendix D, Table 3 provides a list of federally or state-listed plant species known to occur in the project vicinity. **Appendix D, Table 4** provides similar information for listed animal species.

Special Status Plants

Surveys for special-status plants were conducted on the project site over 5 years: 1993, 1998, 1999, 2004, and 2009 (Monk and Associates 2009) (Appendix D-2). Surveys for special-status plants were appropriately timed during the known blooming periods of the four federally listed plant species known from the area including: Burke’s goldfields (*Lasthenia burkei*), Sebastopol meadowfoam (*Limnanthes vinculans*), Baker’s blennosperma (*Blennosperma bakeri*), and many-flowered navarretia (*Navarretia plieantha*). Native plant habitat at the site is marginal, and no special-status plants were recorded on or adjacent to the project site over the multi-year surveys.

Special Status Animals

A total of 10 special-status animal species are known to occur in the region of the project site according to CNDDB records. Based on the absence of suitable habitat at the site and the findings of focused studies, it has been determined that the project site does not provide suitable habitat for any federally or state-listed animal species, or state species of special concern.

¹“Fully Protected” is a legal protective designation administered by the California Department of Fish and Game (CDFG), intended to conserve wildlife species that risk extinction within the state of California.

Protocol-level surveys for CTS were conducted over a 2-year period at the proposed project site (Monk and Associates 2006) (Appendix D-3). No adults, larvae, or eggs were recorded during the surveys. The USFWS Sacramento Field Office concurred with the survey results and findings that the CTS does not occur on the project site and development of the project site would not result in “take” of this federally listed species. The USFWS issued a finding of “no effect” for this project (Monk and Associates 2006).

The trees on the project site may provide suitable nesting habitat for raptors (birds of prey) and passerine birds (perching birds). Raptors that could nest on the project site include the red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), and the white-tailed kite (*Elanus caeruleus*). All are protected under the MBTA. In addition, the white-tailed kite is a state fully protected species. Although these species could occur in the project area, none has been observed nesting at the proposed project site.

All other special-status animals known from the region are summarily dismissed for the reasons presented in **Appendix D, Table 4**, most notably due to lack of suitable habitat at the project location.

3.5.2 Regulatory Setting

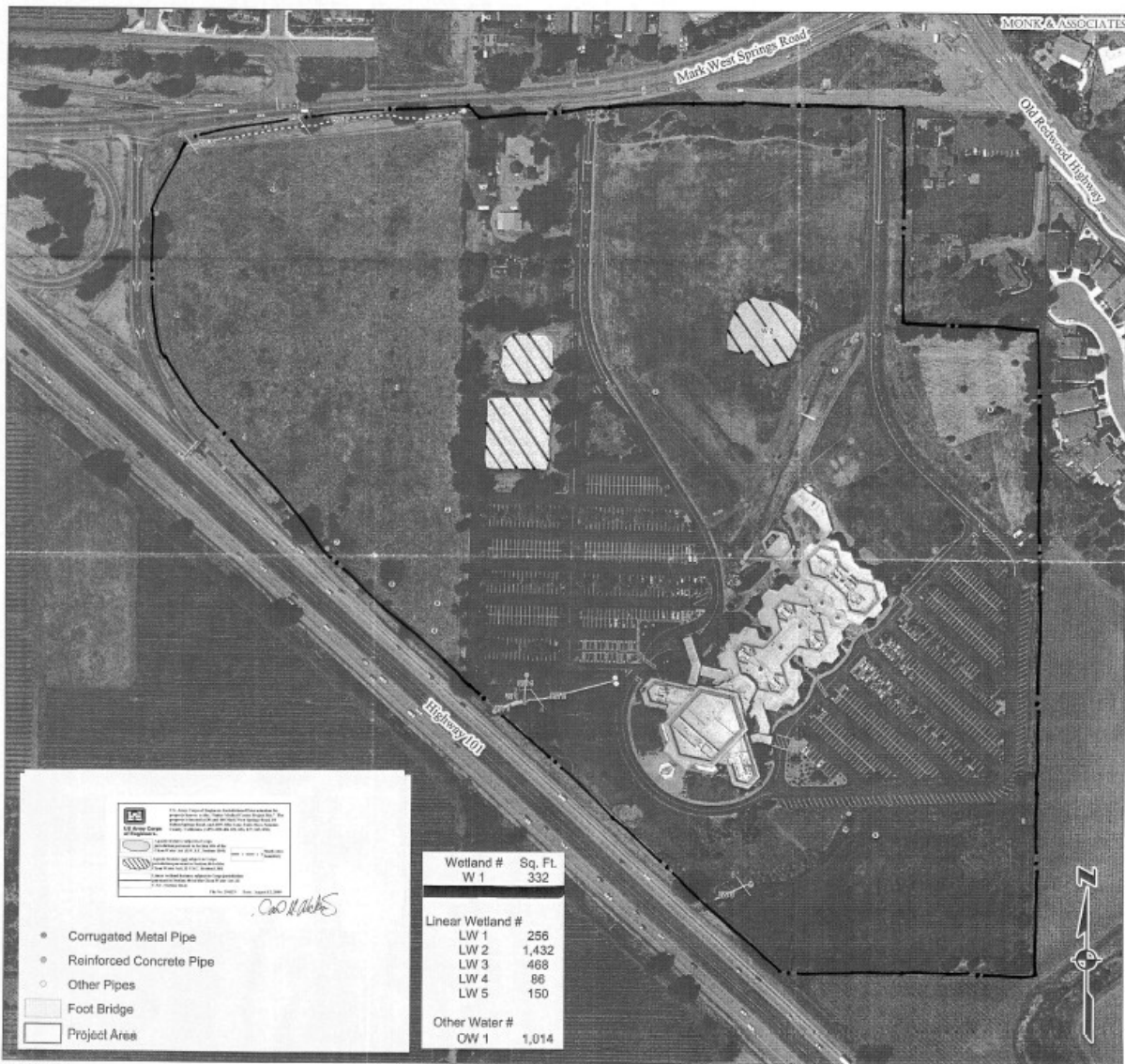
3.5.2.1 Federal

Federal Endangered Species Act (FESA)

The primary focus of the FESA of 1973 is that all federal agencies must seek to conserve threatened and endangered species through their actions. FESA prohibits the “take” of listed fish or wildlife species. “Take,” as defined by FESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” “Harm” includes not only the direct taking of a species itself, but the destruction or modification of the species’ habitat resulting in the potential injury of the species. As such, “harm” is further defined to mean “an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR 17.3).

If “take” of a listed species could occur due to project activities, consultation under Section 7 of FESA would be required. Section 7(a)(2) of the Act requires that each federal agency shall, in consultation with and with the assistance of the USFWS, ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat. Critical habitat identifies specific areas, both occupied and unoccupied, that are essential to the conservation of a listed species and that may require special management considerations or protection.

Federal actions include permitting, funding, and entitlements for both federal projects, as well as private projects facilitated by federal actions (for example, a private landowner applying to the



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Sheet 1. U.S. Army Corps of Engineers Confirmed Wetland Delineation Map
 Sutter Medical Center Project Site
 Santa Rosa, Sonoma County, California

Scale: 1 inch = 100 feet
 Corps Confirmation Date: July 27, 2009
 Confirmed by: Dawn Wickless
 Map Revision Date: July 27, 2009
 Aerial Photograph Date: 2004
 Aerial Photograph Source: Sonoma County

URS Corp - Oakland CA - B.Jacobsen, L:\Projects\Sutter_Hospital_EIR\Maps\Fig. 3.5-1_Potential_waters.mxd - 9/4/2009 @ 2:18:05 PM



Sutter/LBMF Joint Master Plan

Figure 3.5-1
Potential Waters of the U.S.

USACE for a permit). As an example, if a federally listed endangered species is present in “waters of the United States” on a project site, prior to authorizing impacts to waters of the U.S., the USACE (which administers the Clean Water Act) would be required to initiate formal consultation with the USFWS pursuant to Section 7 of FESA. As part of the formal consultation, the USFWS would be required to prepare a Biological Opinion based on a review and analysis of the project applicant’s avoidance and mitigation plan. The Biological Opinion will state that the project either will or will not result in “take” or threaten the continued existence of the species. If an endangered species could be harmed by a proposed project, the USFWS has to be in concurrence with the proposed avoidance and mitigation plan.

Potential presence of listed species is discussed in Section 3.5.1.4.

Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 USC Sections 703–712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986, and 1989) makes it unlawful to “take” (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

Section 404

Pursuant to Section 404 of the Clean Water Act (33 USC 1344), the USACE regulates the discharge of dredged or fill material into “waters of the United States” (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the USACE prior to discharging dredged or fill material into any water of the U.S. In the Federal Register “waters of the United States” are defined as, “all interstate waters including interstate wetlands...intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce” (33 CFR Section 328.3).

Wetlands are defined as “areas that are inundated or saturated by surface or ground water at a frequency and duration to support a prevalence of vegetation adapted for life in saturated soil conditions” (33 CFR Section 328.8 [b]). Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated, or flooded) to be regulated by the USACE. Section 404 jurisdiction in “other waters” such as lakes, ponds, and streams, extends to the upward limit of the ordinary high water mark (OHWM) or the upward extent of any adjacent wetland. The OHWM on a nontidal water is the “line on shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas” (33 CFR Section 328.3[e]).

To comply with Section 404, project proponents and property owners (applicants) are required to obtain authorization from the USACE prior to discharging or otherwise impacting “waters of the United States.”

The USACE maintains a policy of “no net loss” of wetlands (waters of the U.S.). Therefore, impacts to USACE-regulated areas must be mitigated. Typically, the USACE requires mitigation to be “in-kind” (i.e., if a stream channel would be filled, mitigation would include replacing it with a new stream channel), and at a minimum of a 1:1 replacement ratio. Often a 2:1 replacement ratio is required. Usually the 2:1 ratio is met by creation or enhancement of an equivalent amount of wetland that is impacted, in addition to preserving an equivalent amount of wetland. A number of USACE-approved wetland mitigation banks exist where, under certain conditions, wetland mitigation credits can be purchased to meet mitigation requirements. Mitigation banks have limited distribution and the USACE typically only allows their use when projects have limited impacts.

3.5.2.2 State

California Endangered Species Act

Sections 2080 and 2081 of the California Fish and Game Code regulate the take of plants and animals that are protected under the authority of the California Endangered Species Act of 1984 (CESA). Under CESA, CDFG maintains a list of threatened species and endangered species (California Fish and Game Code 2070). The CDFG also maintains a list of candidate species that are species CDFG has formally noticed as being under review for addition to either the list of endangered species or the list of threatened species, as well as a list of “species of special concern” which serve as “watch lists.”

Pursuant to the requirements of CESA, an agency reviewing a project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project area and determine whether the proposed project will have a potentially significant impact on such species.

California Fish and Game Code Sections 3503, 3503.5, 3511, and 3513

California Fish and Game Code Sections 3503, 3503.5, 3511, and 3513 prohibit the “take, possession, or destruction of birds, their nests or eggs.” Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered “take.” Such a take would also violate federal law protecting migratory birds (MBTA).

All raptors (e.g., hawks, eagles, owls) and their nests, eggs, and young are protected under California Fish and Game Code (Section 3503.5). Additionally, “fully protected” birds, such as the white-tailed kite (*Elanus leucurus*), are protected under California Fish and Game Code (Section 3511). “Fully protected” birds may not be taken or possessed (that is, kept in captivity) at any time.

Section 1602 of the California Fish and Game Code

Pursuant to Section 1602 of the California Fish and Game Code, the CDFG regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream, which CDFG typically considers to include its riparian vegetation. Any proposed activity in a stream channel that would substantially adversely affect an existing fish and/or wildlife resource would require entering into a Streambed Alteration Agreement (SBAA) with CDFG prior to commencing with work in the stream. However, prior to authorizing such permits,

CDFG typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

Protected Amphibians

Under Title 14 of the California Code of Regulations (CCR 14, Division 1, Subdivision 1, Chapter 5, Section 41, Protected Amphibians), protected amphibians, such as the California tiger salamander (CTS) may only be taken under special permit from the CDFG issued pursuant to Sections 650 and 670.7 of these regulations.

3.5.2.3 Local

Sonoma County Tree Ordinance

The Sonoma County Zoning Regulations, Chapter 26, has articles that pertain to the protection of native trees. Two articles (Article 88 and Article 67) are applicable to the proposed project.

Article 88, the Sonoma County Tree Ordinance, has provisions and measures to protect native trees at development locations. At the project site, native trees that are protected in accordance with the ordinance are valley oak trees and coast live oak trees. General provisions of the tree ordinance state that projects shall be designed to minimize the destruction of protected trees. With development permits, a site plan shall be submitted that depicts the location of all protected trees greater than 9 inches in diameter at breast height and that depicts their protected perimeters in areas that will be impacted by the proposed development. The ordinance specifies a number of mitigation measures to protect trees that would not be removed and specifies replacement or in-lieu fees if damage to protected trees occurs. The ordinance requires that valley oaks be preserved to fullest extent possible.

Article 67 (Valley Oak Habitat Combining District) specifies mitigation through replacement on- or off-site planting or paying in-lieu fees to be used exclusively for valley oak planting programs in the county.

3.5.3 Impact Analysis

3.5.3.1 Thresholds of Significance

The project would have a significant impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or the USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or the USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.5.3.2 *Less Than Significant Impacts Not Requiring Further Analysis*

No riparian or other sensitive habitats or communities have been recorded at the proposed project site. Although some tree species commonly associated with riparian habitats are present at the borrow pit/pond, this area does not warrant classification as riparian habitat. While the pond is densely vegetated with oaks, willows, and non-native olive trees, the pond is isolated in the middle of a mowed lawn with a soccer field adjacent to the pond. It does not provide a protected movement corridor for wildlife or a protected nesting habitat away from human disturbance. The vegetation around this pond does not serve as a wildlife corridor, a protected habitat, or other significant resource. Therefore, the proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community.

The project would not interfere with the migration of any migratory fish or wildlife. The project site is not an established migratory corridor for fish or wildlife nor is it considered a nursery site for fish or wildlife. Therefore, the proposed project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

No habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan includes the proposed project site. The proposed project is within the boundaries of the study area for the Santa Rosa Plain Conservation Strategy. The Conservation Strategy identifies eight conservation areas for CTS and listed plants, one CTS and listed plant preserve system, and one listed plant conservation area. The project site is not located within any of these areas. The proposed project would not conflict with implementation of the Santa Rosa Plain Conservation Strategy. Therefore, the proposed project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

3.5.3.3 *Impacts and Mitigation*

Impact BIO-1: Temporary Construction Impacts on raptors and other special status birds	The proposed project may affect special status birds, including nesting raptors, if present on-site when construction begins.
Significance:	Potentially significant

Discussion:

With the exception of nesting raptors, impacts to wildlife would be less than significant in that no natural habitats of high value will be lost. Surveys for special-status plants and animals were conducted over several years at the project site, including protocol-level surveys for CTS. No listed species were recorded and habitats suitable for such species are generally not present. No sensitive plants been found at the project site over several years of detailed spring surveys, and there are no historic records of such species occurring here or immediately nearby. The USFWS has concurred that CTS are not present at the project site.

The only special status species that might occur at the site are raptors. The project site is within the range of the red-tailed hawk, red-shouldered hawk, and white-tailed kite. The white-tailed kite is a CDFG fully protected species. Conceivably, these species could nest at the project site in future years. No large stick nests or tree cavities have been observed on the proposed project site that would indicate recent raptor nesting (Monk and Associates 2009) (Appendix D-5).

**Mitigation BIO-1:
Survey Trees Within
300 Feet of Project Site
and Impose Buffers to
Avoid Impacts to Nests**

A nesting survey for raptors and other special-status bird species shall be conducted prior to commencing with tree removal, grading, or other construction work if this work would occur between February 1 and August 31. Nesting surveys shall include examination of all trees within 300 feet of the project site, regardless of whether they are slated for removal. If a nest is discovered, a buffer zone around the nest tree must be staked with bright orange lath or other suitable staking. If the tree is located off the project site, then the buffer shall be demarcated per above where the buffer occurs on the project site. The size of the buffer will be established by a qualified biologist to reflect the identified raptor or special-status bird species. No construction or earth-moving activity shall occur within the established buffer until it is determined by the qualified biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by July 15 for raptors. This date may be earlier or later, and would be determined by a qualified biologist. If a qualified biologist is not on site to make observations, the buffers shall be maintained in place through the month of August and work within the buffer can commence September 1.

**Significance After
Mitigation:**

Less than significant. Pre-construction surveys will detect active nests of special status species or raptors, which will then be avoided until the young have fledged.

**Impact BIO-2:
Permanent Loss of
Potentially
Jurisdictional Features**

Project construction would result in the loss of approximately 0.39 acre of jurisdictional wetlands and other waters.

Significance:

Potentially significant

Discussion:

The proposed project would result in impacts to areas that are within the Corps' and RWQCB's jurisdiction pursuant to Sections 404 and 401 of the Clean Water Act, respectively. A total of 0.44 acre of Corps and/or RWQCB jurisdictional wetlands and waters occur within the site boundaries, of which approximately .39 acre would be impacted by the project. Based on the Corps-verified jurisdictional map for the project site, areas that would be impacted include a roadside ditch along the northern project site boundary. Removal of a portion of this ditch would impact 0.026 acres of Corps and RWQCB regulated seasonal wetland and other waters (LW 5 and OW 1 respectively, **Figure 3.5-1**). In addition, a 0.36 acre borrow pit/ pond seasonal wetland adjacent to the soccer field would be impacted by the project. This seasonal borrow pit/pond is regarded by the Corps to be isolated and thus outside this agency's jurisdiction pursuant to the Clean Water Act. However, impacts to this isolated seasonal pond/borrow pit are regulated by the RWQCB pursuant to the Porter-Cologne Water Quality Control Act.

Impacts to both the roadside ditch and the seasonal borrow pit/pond are regarded as significant adverse impacts pursuant to CEQA. Such impacts would be mitigated to a less than significant level with the mitigation measure described below.

**Mitigation BIO-2a:
Avoidance and
Minimization of
Impacts to
Jurisdictional Features**

Waters of the U.S. and state shall be avoided by the project where possible and impacts shall be minimized to the extent practicable through the use of Best Management Practices during construction. These practices shall include installing orange construction fencing to keep workers and equipment out of the area to be preserved, and using erosion control measures, such as straw wattles, hay bails, and drain inlet controls to keep sediment and debris from entering jurisdictional waters. During project construction, a biological monitor will also be on-site to monitor the integrity of preserved wetlands and other waters while major earth moving activities are underway.

**Mitigation BIO-2b:
Compensatory
Mitigation**

For those wetland areas that are impacted as part of the proposed project, appropriate permits shall be acquired from the Corps and RWQCB prior to any impacts occurring to regulated waters of the U.S. and/or State. Impacted wetland areas shall be compensated for at a 2:1 ratio (i.e., for each square foot of impact, compensation shall consist of 2 square feet of replacement/preservation compensation) via purchase of mitigation credits from a Corps and RWQCB approved wetland conservation bank. As the project will impact 0.39 acre of seasonal wetland, 0.78 acre of mitigation credits shall be purchased from a qualified wetlands conservation bank. Prior to purchasing mitigation credits from a qualified conservation bank, approval from the Corps and RWQCB shall be required. Mitigation credits shall be purchased prior to breaking ground on the project site. Copies of applicable permits from the Corps and RWQCB shall be provided to Sonoma County prior to grading, and any conditions in these permits shall become a condition of project approval. Any other conditions that are stipulated for wetland

impacts by the Corps and/or RWQCB shall also become conditions of project approval. If mitigation compensation is not required by the Corps and/or RWQCB for the proposed project, then this condition of project approval shall be deemed unnecessary.

In the event that mitigation credits cannot be secured from a Corps and RWQCB approved wetland conservation bank, compensation wetlands shall be created/enhanced on-site and will resemble those wetlands affected by the project (known as in-kind replacement). If wetlands cannot be created in-kind and on-site, wetland creation/enhancement shall be implemented offsite. Any wetland creation/enhancement plan shall be approved by the Corps and the RWQCB via permit issuance from these agencies for the appropriate jurisdictional features within the purview of these agencies. Mitigation requirements shall include that all impacted wetlands are replaced at a minimum 2:1 ratio (for each square foot of impact, one square foot of wetland would be enhanced/created) or as otherwise specified in permitting conditions imposed by the Corps and/or RWQCB. Thus, since 0.39 acre of seasonal wetland would be impacted, 0.78 acre of created/enhanced wetland would be required to be constructed. Implementation of this mitigation measure shall require that any site where wetlands are created/enhanced would have to be preserved in perpetuity via recordation of a perpetual restrictive deed recorded on the Title of the property. In addition, a five-year monitoring plan shall be implemented by a qualified biologist. At the end of the five-year monitoring period, the Corps and RWQCB shall render a conclusion that the created/enhanced wetlands are successful.

Significance After Mitigation:

Less than significant. Wetlands losses will be compensated for at a ratio of 2:1.

**Impact BIO-3:
Permanent Loss of
Protected Native Trees**

The proposed project would remove native trees that are protected under ordinances in the Sonoma County Zoning Regulations.

Significance:

Potentially significant

Discussion:

The project site supports 143 native trees, many of which are valley oaks and coast live oaks. The trees are distributed throughout the project site and do not constitute oak woodland habitat. Both valley oaks and coast live oaks are protected trees under Sonoma County's Zoning Regulations. It is estimated that approximately 116 coast live oak and valley oak trees could be removed for the proposed project (Monk and Associates 2008) (Appendix D-1).

The applicant's arborist calculated the number of protected trees to be removed on the entire property, breaking the trees down by size class (diameter at breast height) consistent with the Arboreal Value Charts. Using Chart No. 2, it has been determined that greater than 50 percent of the arboreal value on-site will be removed. Hence, mitigation by replacement planting or in-lieu fee payment using the County's arboreal valuations shall be required for the project.

**Mitigation BIO-3:
Plant Replacement
Trees or Pay In-Lieu
Fee**

The removal of native, protected oak trees shall be mitigated by planting replacement trees or paying an in-lieu fee, per zoning regulations. If replacement planting is the mitigation option chosen, replacement trees shall be the same species as the trees removed.

To determine the mitigation ratio for coast live oaks removed, it shall be necessary for the applicant to implement Sonoma County's "arboreal value" methodology, which is a mathematical evaluation of the arboreal component of a site for the purposes of establishing a plan for tree preservation. Under this methodology one of two available methods can be used for determining arboreal values, based on Chart Nos. 1 or 2 in the Sonoma County Tree Ordinance. Chart No. 1 requires analysis be done only in the development areas and requires 100 percent replacement or in-lieu fees. Chart No. 2 requires analysis of the entire site but allows for removal of up to 50 percent of the arboreal value. Compensation for the loss of greater than 50 percent of arboreal value will require replacement by using the chart. Replacement shall include the replanting of coast live oak and valley oaks on the project site in accordance with the arboreal value and Chart No. 2 or by paying the in-lieu fee.

**Significance After
Mitigation:**

Less than significant. Trees would be replaced or compensated for through the payment of fees used for tree replacement.

**Impact BIO-4:
Cumulative Impacts to
Biological Resources**

The proposed project could contribute to a significant cumulative impact on biological resources

Significance:

Potentially significant

Discussion:

The General Plan 2020 EIR for Sonoma County determined that future development and land use activities consistent with that plan would result in a significant cumulative impact to wildlife through the reduction of existing natural habitat for special-status species, loss of sensitive natural communities, habitat fragmentation, and obstruction of wildlife movement opportunities.

No special-status species or sensitive natural communities or habitats were found at the project site. No riparian habitat is present onsite. In addition, the project site occupies a relatively small area and is surrounded by developed residential land to the north and east and bounded by US 101 to the southwest. It does not provide an established migratory corridor for fish or wildlife, nor is it considered a nursery site for fish or wildlife. Accordingly, it is unlikely that the proposed project would make a cumulatively considerable contribution to habitat fragmentation or obstruction of wildlife movement. Impacts to nesting raptors and other special-status birds would be avoided through mitigation measure BIO-1.

Wetland impacts were determined to be cumulatively significant in the General Plan 2020 EIR. The proposed project would contribute to this significant cumulative impact by affecting 0.39 acre of Corps and/or RWQCB jurisdictional wetland. Areas subject to jurisdiction include a roadside ditch along the northern project site boundary and the seasonal pond/borrow pit wetland adjacent to the soccer field on the project site. All of the wetlands at the site are either man-made drainage ditches or, in the case of the borrow pit/pond, created due to excavation at the site. These wetlands provide relatively low wildlife habitat value. This impact is not considered cumulatively considerable, as it will be mitigated at a 2:1 ratio through implementation of mitigation measures BIO-2a and BIO-2b.

Mitigation BIO-4: Implement Mitigation BIO-2a and BIO-2b.

**Implement Mitigation
BIO-2a and BIO-2b**

**Significance After
Mitigation:** Less than significant. Project impacts to wetlands/waters would be fully mitigated.

3.6 CULTURAL RESOURCES

This section describes existing cultural resources on the project site and identifies potentially significant impacts that could occur to cultural resources from construction and operation of the proposed project.

This section is based on a cultural resources study of the project site and vicinity prepared by Tom Origer & Associates (*A Cultural Resources Survey for the Sutter Medical Center of Santa Rosa Luther Burbank Center for the Arts Master Plan, Santa Rosa, Sonoma County, CA, 2008*). This study included archival research at the Northwest Information Center (NWIC), Sonoma State University (NWIC File No. 05-444), examination of the library and files of Tom Origer & Associates, consultation with the Native American Heritage Commission and local Native American representatives, and field inspection of the project site. The study also based on a historic structures resource study conducted by JRP Historical Consulting (*Inventory and Evaluation, Sutter/LBMF Joint Master Plan, 2008*). Both the cultural resources study by Tom Origer & Associates (Beard 2008) and the historic structures resource study by JRP Historical Consulting (JRP 2008) are included as **Appendix E** in the Technical Appendices, Vol. 2 of this document.

The assessment of project impacts on cultural resources under CEQA (*CEQA Guidelines*, Section 15064.5) is a two-step process, as follows:

1. Determine whether the project site contains cultural resources (defined as prehistoric archaeological, historic archaeological, or historic architectural resources). If the site is found to contain a cultural resource, then
2. Determine whether the project would cause a substantial adverse change to the resource.

The setting discussion describes the existing properties identified within the project area and assesses whether the properties are historical resources as defined by CEQA. The impact discussion reviews the criteria for significant impacts on cultural resources and assesses the impact of the project on cultural resources. The setting, methods, and results are summarized from a report by Thomas Origer and Associates (Beard 2008) (Appendix E-1).

3.6.1 Environmental Setting

The 53-acre project site is located about 4 miles north-northwest of downtown Santa Rosa, as shown on the Sebastopol and Santa Rosa, California 7.5-minute USGS topographic quadrangles. The project site is situated on the Santa Rosa Plain, about 0.5 mile southwest of Mark West Creek and about 1 mile from where the creek flows out of the hills.

Soils mapped for this location are clay loams of the Yolo soil series (Miller 1972: Sheet 74). Yolo soils are generally well-drained loams found on alluvial fans and flood plains. In a native state, they support the growth of annual and perennial grasses, forbs, small shrubs, wild berry vines, and scattered oak trees. Of note within the project site is the presence of dogbane, also known as Indian hemp. The fiber from this native plant was used to make ropes, nets, and clothing, and as thread.

The project area would have been marginally situated for prehistoric occupants of the region to live or gather resources. Its surroundings include nearby freshwater sources and well-drained soils that would have supported a variety of plants that in turn could have served as food and cover for animals. Research has shown that prehistoric sites are sometimes found in locations such as this.

Archaeological evidence indicates that human occupation of California began at least 12,000 years ago (Fredrickson 1984:506). Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

At the time of European settlement, the project area was part of an area controlled by the Southern Pomo (Barrett 1908; McLendon and Oswalt 1978). The Southern Pomo were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures (Barrett 1908; Kroeber 1925). They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied continually throughout the year and other sites were visited to procure particular resources that were especially abundant or available only during certain seasons. Sites often were near freshwater sources and in ecotones where plant life and animal life were diverse and abundant. For more information about the Pomo, see Bean and Theodoratus (1978), Kniffen (1939), and Stewart (1943).

Historically, the project area is within Rancho San Miguel, a Mexican land grant made to Marcus West during the 1840s and confirmed to his widow and children in 1852. Later 19th century maps show that the project area was part of the J. McMinn estate, portions of which were then acquired by Thomas Forsyth, J. Clay, and J. Barndt (Bowers 1867; Thompson 1877). This area was predominantly used for fruit and nut production.

The project area encompasses land west of Fulton and north of Santa Rosa just south of the early settlement of Mark West. The former Rancho San Miguel was divided into large holdings by 1877. Initially large holdings focused on the production of cattle and grains. By the 1880s new crops suitable for smaller farms were gaining prominence, including hops, stone fruit, and vineyards. In the early 20th century, many large holdings were divided into smaller farms suitable for these crops. The establishment of the railroad through the Petaluma Valley aided the shift in agriculture. The project area was within a mile of the railroad station in Fulton, and the small community of Mark West.

A more detailed historical context is provided in *Inventory and Evaluation, Sutter/LBMF Joint Master Plan* (JRP Historical Consulting [JRP] 2008) (Appendix E-2).

3.6.2 Regulatory Setting

State

The following California statutes apply:

- CEQA: California Public Resources Code Sections 5020.1, 5024.1, 21083.2, 21084.1, *et seq.*; – require analysis of potential environmental impacts of proposed projects and application of feasible mitigation measures.
- California Public Resources Code Section 5020.1 – defines several terms, including the following: (f) “DPR Form 523” means the Department of Parks and Recreation Historic Resources Inventory Form; (i) “historical resource” includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California; (j) “local register of historical resources” means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution; (l) “National Register of Historic Places” (NRHP) means the official federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture as authorized by the National Historic Preservation Act of 1966 (Title 16 United States Code Section 470 *et seq.*); (q) “substantial adverse change” means demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired.
- California Public Resources Code Section 5024.1 – establishes a California Register of Historical Resources (CRHR); sets forth criteria to determine significance; defines eligible properties; lists nomination procedures.
- California Public Resources Code Section 5097.98 – prohibits obtaining or possessing Native American artifacts or human remains taken from a grave or cairn; sets penalties.
- California Public Resources Code Section 21083.2 – the lead agency determines whether a project may have a significant effect on unique archaeological resources. If a potential for damage to unique archaeological resources can be demonstrated, such resources must be avoided; if they can’t be avoided, mitigation measures shall be required; discusses excavation as mitigation; discusses cost of mitigation for several types of projects; sets time frame for excavation; defines “unique and non-unique archaeological resources”; provides for mitigation of unexpected resources; sets limitation for this section.
- California Public Resources Code Section 21084.1 – indicates that a project may have a significant effect on the environment if it causes a substantial change in the significance of a historic resource; the section further describes what constitutes an historic resource and a significant historic resource.
- *CEQA Guidelines* Section 15064.5 – specifically addresses effects on historic and prehistoric archaeological resources, in response to problems that have arisen in the application of CEQA to these resources.

- *CEQA Guidelines* Sections 15000, *et seq.*, Appendix G (j), – specifically defines a potentially significant environmental effect as occurring when the Proposed Project will “...disrupt or adversely affect...an archeological site, except as part of a scientific study.”
- City, county, district, authority, or public corporation, or any agency thereof.

CEQA requires that public or private projects financed or approved by public agencies must assess the effects of the project on unique or significant historical resources. Historical resources are defined as buildings, sites, structures, objects or districts, each of which may have historical, architectural, archaeological, cultural, or scientific significance (California Public Resources Code 21083.2; *CEQA Guidelines* Section 15064.5).

Archaeological resources that are not “historical resources” according to the above definitions may be “unique archaeological resources” as defined in Public Resources Code section 21083.2, which also generally provides that “nonunique archaeological resources” do not receive any protection under CEQA. If an archaeological resource is neither a “unique archaeological” nor an “historical resource,” the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the EIR, but they need not be considered further in the CEQA process.

CEQA requires that if a project results in an effect that may cause a substantial adverse change in the significance of an historical resource, then alternative plans or mitigation measures must be considered; however, only significant historical resources need to be addressed.

Therefore, prior to the assessment of effects or the development of mitigation measures, the significance of cultural resources must first be determined. The steps that are normally taken in a cultural resources investigation for CEQA compliance are as follows:

- Identify potential historical resources
- Evaluate the eligibility of potential historical resources
- Evaluate the effects of a project on all historical resources

Local

The Sonoma County General Plan Open Space Element contains the following goal and objectives regarding cultural resources:

Goal OS-9: Preserve significant archaeological and historical sites which represent the ethnic, cultural, and economic groups that have lived and worked in Sonoma County.

Objective OS-9.1: Encourage the preservation and conservation of historic structures by promoting their rehabilitation or adaptation to new uses.

Objective OS-9.2: Encourage preservation of historic building or cemeteries by maintaining a Landmarks Commission to review projects which may affect historic structures or other cultural resources.

Objective OS-9.3: Encourage preservation of archaeological resources by reviewing all development projects in archaeologically sensitive areas.

3.6.3 Impact Analysis

An investigation by Beard (2008) (Appendix E-1) was used as the primary source for discussing the potential impacts to cultural resources posed by the proposed project. In addition, an evaluation of the built environment within the project area was conducted by JRP (2008) (Appendix E-2). The following summarizes the methods from the above reports to identify cultural resources within the project area.

3.6.3.1 Approach and Methodology

Data Collection

Archival Study Procedures. Archival research included examination of the library and project files at Tom Origer & Associates. Review (NWIC File Nos. 04-192 and 04-282) was completed of the archaeological site base maps and records, survey reports, and other materials on file at the Northwest Information Center (NWIC), Sonoma State University, Rohnert Park. Sources of information included but were not limited to the current listings of properties on the NRHP, California Historical Landmarks, CRHR, and California Points of Historical Interest as listed in the Office of Historic Preservation's Historic Property Directory (OHP 2004).

The Office of Historic Preservation has determined that structures in excess of 45 years of age should be considered potentially important historical resources, and former building and structure locations could be potentially important historic archaeological sites. Archival research included an examination of historical maps to gain insight into the nature and extent of historical development in the general vicinity, and especially within the project area. Maps ranged from hand-drawn maps of the 1800s (e.g., GLO) to topographic maps issued by the United States Geological Survey (USGS).

In addition, ethnographic literature that describes appropriate Native American groups, county histories, and other primary and secondary sources were reviewed.

Native American Consultation. Letters describing the project were sent to the Native American Heritage Commission (NAHC) and local Native American groups. Follow-up telephone calls were made, as needed, to ensure that the letters were received and to discuss the project.

The NAHC responded with a letter dated September 10, 2004. They have no record of Native American cultural resources in the immediate vicinity of the project area. No other responses have been received to date.

Field Survey Procedures – Archaeology. An intensive field survey of the project site was completed by Vicki Beard of Thomas Origer & Associates in September 2004. The project site was examined by walking in a zigzag fashion within corridors about 10 meters wide except where vineyards were planted. Vineyards were surveyed by walking at least every eighth row. The parcel that includes the vineyards is no longer part of the project site. Visibility ranged from good to poor, with vegetation and sealed parking areas being the chief hindrances. A hoe was used as necessary to clear small patches of vegetation so that the soil could be inspected, and the periphery of all paved areas was checked for native soils.

Based on the results of the pre-field research, it was anticipated that prehistoric cultural resources might be found within the project site. Prehistoric archaeological site indicators expected to be

found in the region include but are not limited to obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and handstones, and mortars and pestles; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire-affected stones. Historic period resources were considered more likely. In addition to standing structures, historic-period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

Field Survey Procedures – Architectural History. JRP conducted fieldwork at the project site on June 18, 2008, and recorded the historic era properties on DPR 523 forms. JRP conducted research at a variety of libraries and repositories including: California State Library, Sacramento; Shields Library, University of California, Davis; Sonoma County Library, Santa Rosa; Sonoma County Assessor’s Office, Santa Rosa; Sonoma County Recorder’s Office, Santa Rosa; and the Sonoma County Permits and Resource Management Department, Santa Rosa.

JRP then prepared a historic context to address pertinent themes of agricultural history in Sonoma County and evaluated the properties under CRHR criteria on the DPR 523 form.

Results

Archival Study Findings. Archival research indicated that there are no recorded cultural resources within the project site; however, most of the project site had not been the subject of prior cultural resources investigation and there are recorded prehistoric and historic-period resources nearby. Péron (1993) surveyed about 40 acres of the project site and found no cultural resources. He noted that most of his survey area was “covered by dense stands of wild oats, vetch, wild anise, California teasel, California poppy, and other mixed grasses” (Péron 1993:2). Since the 1993 survey, that part of the project site has been planted as vineyard, where surface visibility is typically good, so the decision was made to resurvey the area.

No ethnographic villages or camps are reported within or near the project site (Barrett 1908; McLendon and Oswalt 1978).

There are no local, state, or federally recognized historic properties within or near the project site (OHP 2004; Sonoma County Planning Department 1984; State of California Department of Parks and Recreation 1976).

Review of historical maps found no buildings, structures, or other historical features on this property prior to the 1922 United States Army Corps of Engineers (USACE) map for which the field survey was completed in 1915 (Bell and Heymans 1888; Bowers 1867; General Land Office 1852; McIntyre and Lewis 1908; Reynolds and Proctor 1898; Thompson 1877; USACE 1922; USGS 1916).

Field Survey Findings

No prehistoric archaeological sites were found within the project site. One obsidian flake and two pieces of naturally occurring obsidian were noted, but were considered isolates and therefore not historical resources or unique archaeological resources.

No historic-period archaeological sites were identified within the project site. Several fragments of non-diagnostic ceramic shards were noted in the gravel driveway of an early 20th century

farm complex (see below). These items were widely dispersed and in a disturbed context. They were not considered historical resources or unique archaeological resources.

Two properties from the early 20th century were identified within the project area: a farmstead at 100 Mark West Springs Road built between 1901 and 1910, and a residence at 18 Fulton Road built in 1928. The farmstead at 100 Mark West Springs Road originally contained a residence and four other structures. Only one structure, a barn that is being used as a maintenance facility for the LBMF, remains. The residence at 18 Fulton Road is on a parcel that is no longer part of the project site, although this property was evaluated and found not to be a historical resource under CEQA (JRP 2008) (Appendix E-2).

3.6.3.2 *Thresholds of Significance*

According to Appendix G of the *CEQA Guidelines*, the proposed project could have a significant impact on cultural resources if it would result in any of the following:

- A substantial adverse change in the significance of a historical resource that is either listed or eligible for listing on the NRHP, the CRHR, or a local register of historic resources;
- A substantial adverse change in the significance of a unique archaeological resource;
- Disturbance or destruction of a unique paleontological resource or site or a unique geologic feature; or
- Disturbance of any human remains, including those interred outside of formal cemeteries.

3.6.3.3 *Less Than Significant Impacts Not Requiring Further Analysis*

All potential impacts to cultural resources are addressed in this Draft EIR.

3.6.3.4 *Impacts and Mitigation*

Impact CUL-1: The project would demolish a barn at 100 Mark West Springs
Permanent Change to a Road, a potentially historic resource.
Potentially Historic
Resource

Significance: Less than significant

Discussion:

The farmstead at 100 Mark West Springs Road was evaluated by JRP in June 2008. The farmstead contained a main house, a secondary house, two outbuildings, and a barn. All structures except the barn have since been demolished. The barn, which serves as a maintenance facility for the LBMF, would be demolished as part of Phase I of the proposed project.

The JRP evaluation concluded that the farmstead did not appear to meet the criteria for listing in the CRHR and thus did not qualify as historical resources for the purposes of CEQA (JRP 2008) (Appendix E-2). While this rural household had its origins in the first half of the 20th century, it was not importantly associated with the development of agriculture in Sonoma County (Criterion 1 or A). Like many other farms in the area, the farmstead at 100 Mark

West Springs Road appears to have been constructed and planted with prunes between 1901 and 1910.

Under Criterion 2 or B, the historical record did not suggest that this agricultural property was associated with any historically significant people.

Under Criterion 3 or C, the farmstead at 100 Mark West Springs Road did not possess any distinctive characteristics or high artistic value that would render it eligible under this criterion. The residence was a modest example of Minimal Traditional architecture, a popular style of architecture used in the mid-20th century.

In general, CRHR Criterion 4 (NRHP Criterion D) is used to evaluate historic sites and archaeological resources. Although buildings and structures can occasionally be recognized for the important information they might yield regarding historic construction or technologies, the properties within the project site were building types that are well documented. Thus, this property is not a principal source of important information in this regard.

The barn is a transverse crib barn, a style common in California and other western states. While well-maintained, the building has had alterations to its fenestration, which has diminished the integrity of workmanship and materials (JRP 2008) (Appendix E-2). Because this potentially historic resource is not considered significant, demolishing the barn that remains on the property would result in a less-than-significant impact.

Mitigation: No mitigation required

Impact CUL -2: Potential Construction Impacts to Undiscovered Unique Archaeological Resources Project construction could adversely affect undiscovered unique archaeological resources, if present.

Significance: Potentially significant

Discussion:

No previously recorded archaeological sites exist within the project site, and none were identified through surface surveys (Beard 2008) (Appendix E-1). However, extensive subsurface excavation activities would occur during construction, so there is a possibility that previously unknown archaeological sites, such as shell midden soils, stone artifacts, and historic trash scatters, may occur within the project site. Inadvertent damage to unique buried archaeological deposits during construction would be a significant impact. Implementation of Mitigation CUL-2 would reduce the impact to a less-than-significant level.

Mitigation CUL-2: Work Stoppage and Resource Evaluation in the Event of a Subsurface Prehistoric or Historic Resource Find If any prehistoric or historic subsurface cultural resources are discovered during ground-disturbing activities, all work within 50 feet of the resources shall be halted and a qualified archaeologist shall be consulted to assess the significance of the find according to *CEQA Guidelines* Section 15064.5. If any find is determined to be significant, representatives from the

county and the archaeologist will meet to determine the appropriate avoidance measures or other appropriate mitigation. All significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards.

In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts to historical resources or unique archaeological resources, the county will determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is being carried out.

Significance after Mitigation:

Less than significant

Impact CUL-3: Potential Construction Impacts to Undiscovered Unique Paleontological Resources

Although site soils have a very low potential to yield paleontological resources, project construction could adversely affect undiscovered unique paleontological resources, if present.

Significance:

Potentially significant

Discussion:

Paleontological resources are the fossilized evidence of past life found in the geologic record. Despite the tremendous volume of sedimentary rock deposits preserved worldwide and the enormous number of organisms that have lived through time, preservation of plant or animal remains as fossils is an extremely rare occurrence. Because of the infrequency of fossil preservation, fossils—particularly vertebrate fossils—are considered to be nonrenewable resources. Because of their rarity and the scientific information they can provide, fossils are highly significant records of ancient life.

The project site is underlain by alluvial soils that have a very low potential for yielding paleontological resources.

While fossils are not expected to be discovered during project construction, significant fossils could be discovered during excavation activities, even in areas with a low likelihood of occurrence. Fossils encountered during excavation could be inadvertently damaged. If a unique paleontological resource is discovered, the impact to the resource could be substantial. However, implementation of Mitigation CUL-3 would reduce this impact to a less-than-significant level.

Mitigation CUL-3: Work Stoppage and Resource Evaluation in the Event of a Paleontological Resources Find

In the event that fossils or fossil-bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify a qualified paleontologist to examine the discovery. The paleontologist shall document the discovery as needed (in accordance with Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 1995), evaluate the potential resource, and assess the significance of the find under the criteria set forth in *CEQA Guidelines* Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important. The plan shall be submitted to PRMD for review and approval prior to implementation.

Significance after Mitigation Less than significant

Impact CUL-4: Potential Construction Impacts to Undiscovered Human Remains

Undiscovered human remains could be affected by excavation activities during project construction.

Significance: Potentially significant

Discussion:

There is no indication that any particular area in the project site has been used for human burial purposes in the recent or distant past. It is unlikely that human remains would be encountered during construction of the proposed project. However, in the unlikely event that human remains, including those interred outside of formal cemeteries, are discovered during subsurface activities, the human remains could be inadvertently damaged. This could be a significant impact. The impact would be reduced to less than significant with implementation of Mitigation CUL-4.

Mitigation CUL-4: Work Stoppage and Resource Evaluation in the Event Human Remains Are Encountered

If human skeletal remains are uncovered during project construction, the contractor (depending on the project component) will immediately halt work, contact the Sonoma County coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5(e)(1) of the *CEQA Guidelines*. If the county coroner determines that the remains are Native American, the project proponent will contact the NAHC, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code

5097.98 (as amended by AB 2641). Per Public Resources Code 5097.98, the contractor shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the contractor has discussed and conferred, as prescribed in this section (California Public Resources Code Section 5097.98), with the most likely descendents regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

Significance after Mitigation: Less than significant

Impact CUL-5: Cumulative Cultural Resources Impacts Implementation of the proposed project could result in a considerable contribution to significant cumulative cultural resources impacts.

Significance: Less than significant

Discussion: The Sonoma County General Plan 2020 EIR determined that development and land use activities consistent with that plan could result in a cumulative impact to cultural resources. This determination was based, in large part, on the fact that a large proportion of future development activities in the County will be ministerial and thereby not subject to discretionary review, thus avoiding environmental review pursuant to CEQA which could avoid or minimize impacts to cultural resources. The proposed project, in contrast, is subject to discretionary review and is fully assessed in this EIR. Further, this EIR has determined that the project site has no known cultural resources and the proposed project was found not to result in significant impacts to cultural resources with the implementation of the proposed mitigation measures. For these reasons, the proposed project would not result in a considerable contribution to a cultural resources cumulative impact.

Mitigation: No mitigation required

3.7 GEOLOGY AND SOILS

This section describes the proposed project's geologic environment and potential impacts based on a site reconnaissance, published and unpublished geologic reports and maps, and site-specific technical reports. This section includes information from the *Preliminary Geotechnical Exploration Report* (ENGEO 2004a), *Geotechnical Exploration, Sutter Medical Center* (ENGEO 2006a), and *Supplemental Geotechnical Exploration, Proposed Hospital Building* (ENGEO 2008), which are included as **Appendix F** in the Technical Appendices, Vol. 2 of this document.

3.7.1 Environmental Setting

3.7.1.1 *Geology*

The project site is relatively flat having estimated elevations ranging from 156 feet above means sea level (msl) in the southern portion of the site to an estimated elevation of 159 feet msl in the northern portion of the site. The project site is located within the Coast Ranges geologic province of California, a series of northwest-trending ridges and valleys. Bedrock in the province has been folded and faulted during regional uplift beginning in the Pliocene period, about 4 million years before present. The regional geology is depicted on **Figure 3.7-1**. Locally, the site is mapped as underlain by Holocene-Pleistocene Alluvium (Wagner and Bortugno 1982). This alluvium consists of unconsolidated deposits of sand, silt, gravel, and clay likely derived from the bedrock uplands and older unconsolidated deposits. The alluvial deposits in this area are greater than 100 feet in thickness.

3.7.1.2 *Soils*

Soil types on the project site consist of Cortina Very Gravelly Sandy Loam with 0 to 2 percent slopes, Yolo Silt Loam with 0 to 2 percent slopes, and Yolo Clay Loam with 0 to 2 percent slopes (**Figure 3.7-2**).

ENGEO Incorporated conducted a geotechnical investigation of the project site in May 2006 (ENGEO 2006a) (Appendix F-2). The report describes subsurface conditions at the project site as follows.

Existing fills are encountered throughout this site, except in the existing fields used for grazing at the northwestern section of the site. Existing fills extend to approximately 7 feet below the current site grades. These fills typically consist of stiff to very stiff clay and silty clay with various amounts of gravel and rock fragments. The existing fills were likely placed at the site in conjunction with previous site grading associated with the existing Wells Fargo Center development.

Alluvial soil deposits were encountered in all borings drilled at the site. These deposits generally consist of interlayer clayey sand, sandy clay, silty clay and clays. Above the groundwater table, these alluvial deposits are generally medium stiff to stiff. Below free groundwater levels, the soil deposits consist of soft to medium stiff clays with thin layers of loose to medium dense silty and clayey sand that extend to depths of about 30 to 35 feet. These soft to medium stiff/loose to medium dense alluvial deposits are encountered in most borings. Beneath this depth, stiff to very

stiff clays and dense to very dense sands were encountered to approximately 100 feet below ground surface.

3.7.1.3 *Faulting and Seismicity*

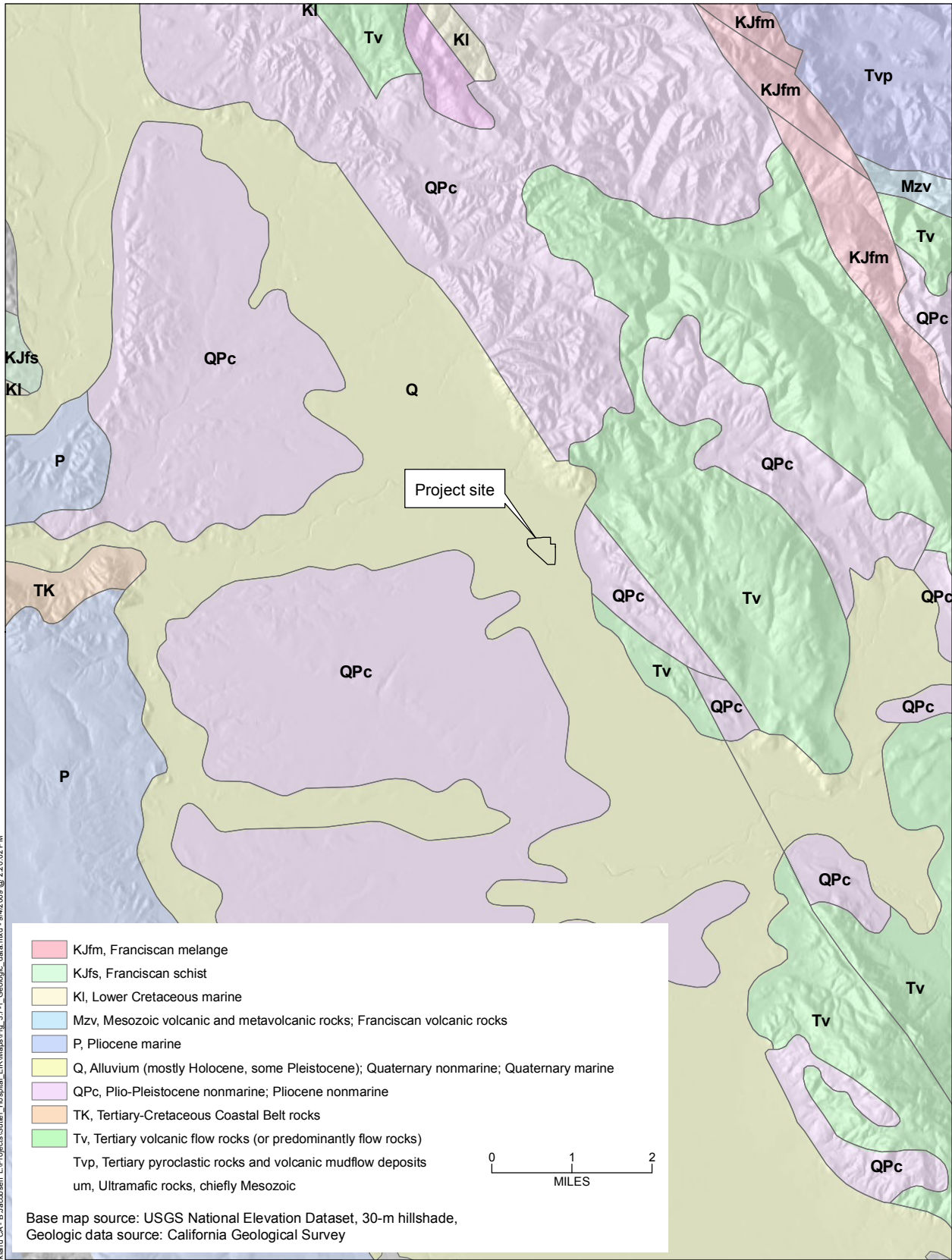
The proposed project site is located in a region that contains numerous active¹ and potentially active earthquake faults. However, the site is not located within the State of California Fault Hazard Zone. The active Rodgers Creek fault is located approximately 0.7 mile to the east of the project area. The Rodgers Creek fault is capable of creating earthquakes with a moment magnitude of M7.0 (Blake 1994). The Maacama fault is located 6.3 miles to the east, and the San Andreas fault is located 19.5 miles to the west of the site. A regional faulting and seismicity map is shown on **Figure 3.7-3**, which shows regional proximity of major active faults and significant historic earthquakes with respect to the site.

Historically, the San Francisco Bay Area has been subjected to strong ground shaking from several large earthquakes. The following (Bakun 1999) earthquakes may have generated strong ground motions in the vicinity of the project site:

- 1838 Mw 6.8 (San Andreas fault)
- 1868 Mw 6.8 (Hayward fault)
- 1906 Mw 7.8 San Francisco (San Andreas fault)
- 1923 Mg-r 7.3 Off-shore Cape Mendocino
- 1969 ML 5.6 and 5.7 Santa Rosa (Healdsburg fault)
- 1989 Mw 6.8 Loma Prieta (San Andreas fault zone)

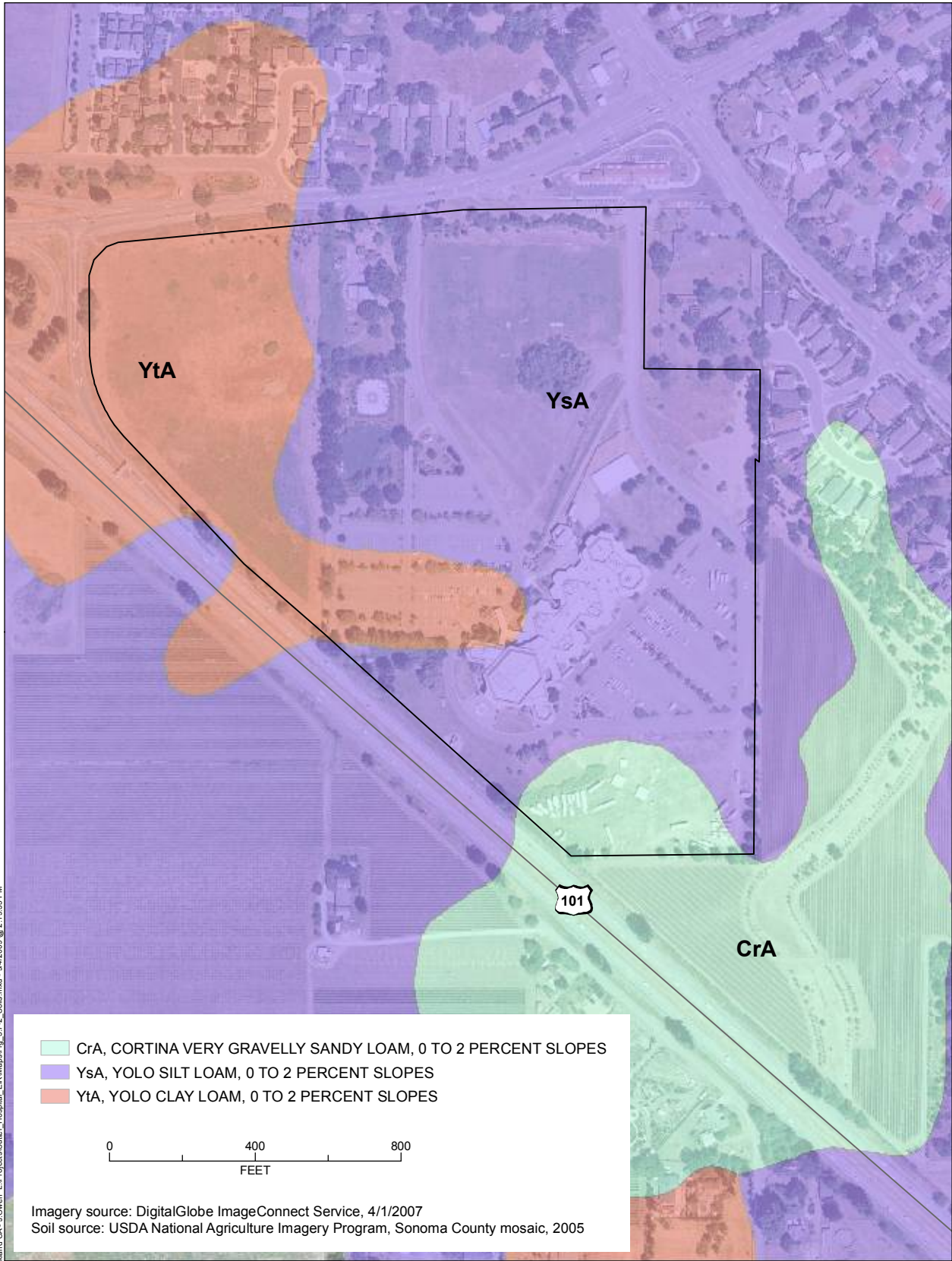
The regional seismicity of the Bay Area was recently evaluated by the Working Group on California Earthquake Probabilities (WGCEP 2007). The WGCEP periodically attempts to summarize seismic risk in the Bay Area by presenting probabilities of 6.7 Mw or greater earthquakes on active Bay Area faults for a 30-year return interval (2007-2036). The most recent summary gives a 63 percent aggregate probability for the entire Bay Area. The active Rodgers Creek fault system is estimated to have a 30-year probability of 31 percent for a M6.7 or greater earthquake. According to the WGCEP, the probability of an even more powerful earthquake (magnitude M7.5 or greater) in the Bay Area is 15 percent in the next 30 years (WGCEP 2007). It should therefore be expected that the site will experience one or more episodes of strong ground shaking during the design life of the proposed improvements.

¹ An active fault is defined by the California Geological Survey as one that has had surface displacement within Holocene time (about the last 11,000 years) (Sections 2621-2630, Public Resources Code).



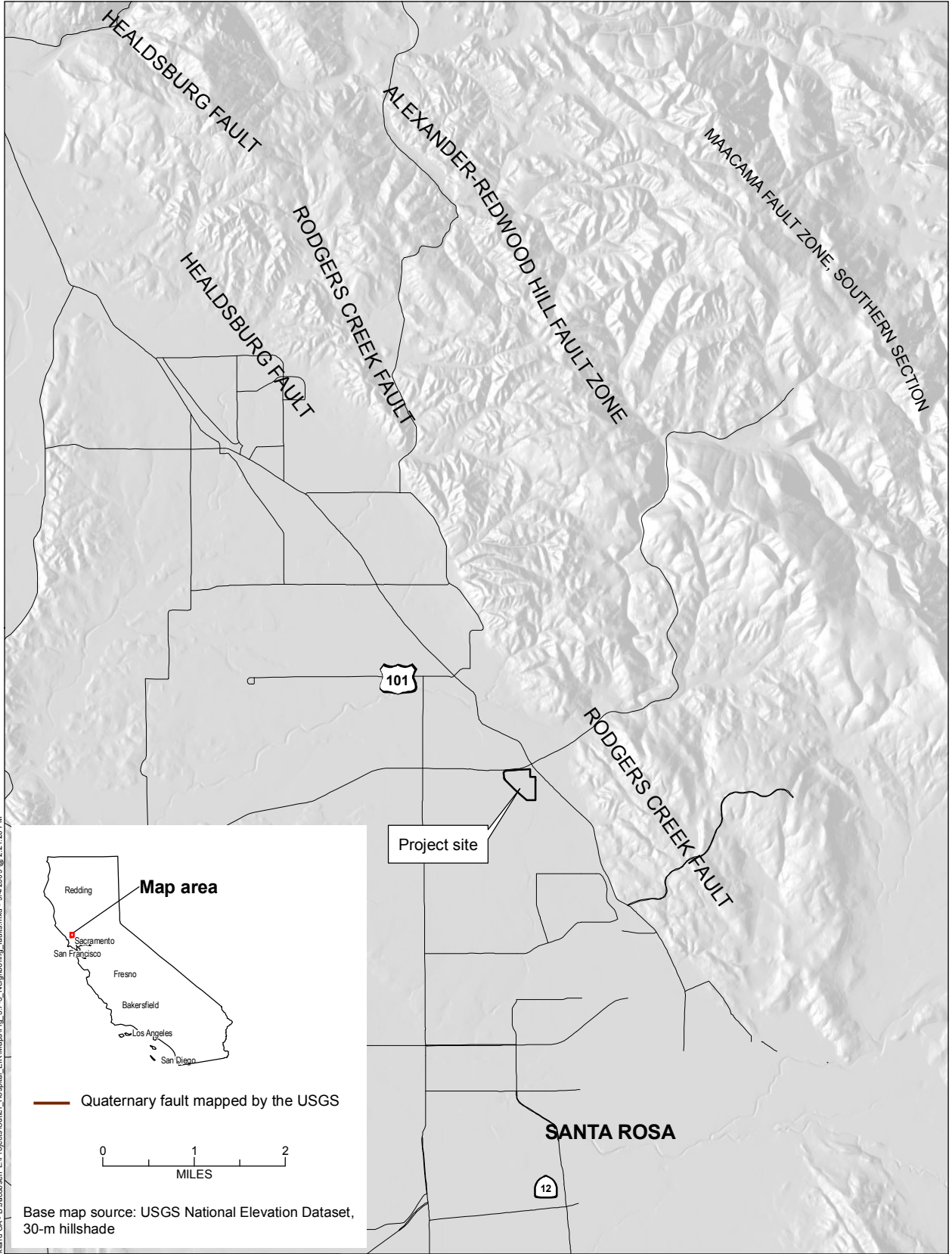
URS Corp. - Oakland CA - B. Jacobsen, L:\Projects\Sutter - Hospital_EIR\Map\Fig_3.7-1_Geologic_data.mxd - 9/4/2009 @ 2:20:02 PM

Figure 3.7-1
Regional Geology



URS Corp. - Oakland CA - J:\Owen L\Projects\Sutter_Hospital_ER\Maps\Fig_3.7-2_Soils.mxd - 9/4/2009 @ 2:19:55 PM

Figure 3.7-2
Soil Types in the Project Vicinity



URIS Corp. - Oakland CA - B. Jacobsen, Li\Projects\Sutter - Hospital_EIR\Maps\Fig_3.7-3_Neighboring_faults.mxd - 9/4/2019 @ 2:21:26 PM

Figure 3.7-3
Neighboring Faults

3.7.1.4 Secondary Seismic Hazards

Liquefaction and Lateral Spreading

Localized discontinuous thin layers of potentially liquefiable zones were encountered within the project area (ENGE0 2008) (Appendix F-3). Based on the ENGE0 2008 analysis, it appears that the general site conditions have a low potential for liquefaction; however, there are isolated, discontinuous, relatively thin, inter-layers of “marginally liquefiable” soils; these marginally susceptible deposits were encountered at various depths ranging from 5 to 35 feet. It is also estimated that the potential seismically induced settlement (in the event that liquefactions were to occur) during a strong earthquake would generally be less than 2 inches (ENGE0 2008) (Appendix F-3). Lateral spreading is a failure within a nearly horizontal soil zone (possibly due to liquefaction), which causes the overlying soil mass to move toward a free face or down a gentle slope. No free face or slopes are present near the hospital footprint; therefore, the potential for lateral spreading is considered low.

Earthquake-Induced Densification

In addition to potential seismic settlement related to liquefaction/seismic softening below the groundwater levels, there is a potential of settlement from densification of loose to medium-dense sands above the groundwater level if the site is subject to strong earthquake ground shaking. No loose to medium-dense sands above the groundwater level were encountered during the subsurface exploration, and therefore the risk of densification induced by earthquake shaking is considered low at this site (ENGE0 2008) (Appendix F-3).

Earthquake-Induced Landsliding

No landslides have been mapped within or immediately adjacent to the site and the project site is relatively flat; therefore, the potential for earthquake-induced landsliding to occur is considered low.

Expansive Soils

Expansive soils shrink and swell as a result of moisture changes. These soils may cause heaving, cracking, and related distress to structures and site improvements if not properly mitigated. The lab testing results indicate that site soils have low to moderate expansion potential (ENGE0 2008) (Appendix F-3).

3.7.2 Regulatory Setting

The regulations generally governing seismic safety and geologic resources are set forth below. There is a division of jurisdiction between the State of California and Sonoma County regarding seismic safety and building standards for the facilities to be constructed and operated as part of the proposed project.

Under the Alfred E. Alquist Hospital Facilities Seismic Safety Act of 1983, as amended, the seismic safety and building standards for the acute care facilities that are part of the project are under the exclusive jurisdiction of the Office of Statewide Health Planning and Development

(OSHPD), part of the California Health & Human Services Agency. The proposed Sutter Medical Center, the PMC, and the Central Utility Plant that provides power to these facilities are subject to OSHPD's exclusive jurisdiction over building standards and seismic safety standards.

The remaining facilities that are part of the project are subject to the building standards set forth in the California Building Code and the Sonoma County Building Code, under the jurisdiction and enforcement powers of Sonoma County.

3.7.2.1 State

Hospital Facilities Seismic Safety Act of 1983 and Senate Bill 1953

The Alfred E. Alquist Hospital Facilities Seismic Safety Act of 1983 (HFSSA), which was passed after the 1972 Sylmar earthquake, requires that acute care hospitals be designed and constructed to withstand a major earthquake and remain operational immediately after such an event. The HFSSA requires that construction and design plans for acute care hospitals in California be in full compliance with the regulations and standards developed by the OSHPD pursuant to the HFSSA.

Reinforcing the importance of retaining the structural integrity of medical facilities, Senate Bill 1953 (SB 1953), which came into existence as a result of the 1994 Northridge earthquake, is an amendment to the HFSSA. The goal of SB 1953 is that, by December 31, 2007, every general acute care inpatient hospital building in the state would be structurally sound enough to remain standing after a major earthquake. By 2013, every acute care inpatient building must be structurally sound enough to not only remain standing, but also be operational after a major earthquake (California Health and Safety Code Sections 130000–130025). The HFSSA, including SB 1953, would require all new hospitals to meet strict seismic safety standards for the design and construction of their general acute care inpatient hospital buildings.

The HFSSA seismic safety standards apply only to the hospital-building portion of a project. Non-hospital buildings, such as affiliated medical office buildings or garages, would be required to meet the standards of the local building code.

Because the Medical Campus will include acute care facilities,² HFSSA requires that buildings which house acute care patients must meet its heightened seismic safety standards by 2013. The Proposed Project was designed to comply with the HFSSA.

Alquist-Priolo Earthquake Fault Zone

The state legislation protecting the population of California from the effects of fault-line ground-surface rupture is the Alquist-Priolo Earthquake Fault Zoning Act. This state law was passed in response to the 1971 San Fernando Earthquake, which was associated with extensive surface fault ruptures that damaged numerous homes, commercial buildings, and other structures. At the directive of the Act, the State Geologist began delineating Earthquake Fault Zones (called

² Acute care hospitals are traditional hospitals that provide inpatient and outpatient services. Inpatient services are for people admitted to the hospital for care that cannot be provided in a doctor's office or at home, to those who need surgery or specialized procedures and to women giving birth. Outpatient services are provided to individuals who need routine medical care, post-surgery follow-up care, and emergency care.

Special Studies Zones prior to 1994) around active and potentially active faults to reduce fault-rupture risks to structures for human occupancy.³ This Act has resulted in the preparation of maps delineating Earthquake Fault Zones to include, among others, recently active segments of the San Andreas and Hayward faults. The Project Site is not crossed by the Alquist-Priolo Earthquake Fault Zones delineated along the San Andreas and Hayward faults.

California Building Code

The state regulations protecting the public from geo-seismic hazards, other than surface faulting, are contained in California Code of Regulations, Title 24, Part 2 (the California Building Code [CBC]) and California Public Resources Code, Division 2, Chapter 7.8 (the Seismic Hazards Mapping Act). Both of these regulations apply to public buildings (and a large percentage of private buildings) intended for human occupancy. The CBC is based on the current Uniform Building Code, but contains Additions, Amendments, and Repeals that are specific to building conditions and structural requirements in the State of California.⁴ County codes are permitted to be more stringent than Title 24, but must, at a minimum, meet all state standards. Chapter 16 of the CBC deals with General Design Requirements, including, but not limited to, regulations governing seismically resistant construction (Chapter 16, Division IV). Chapters 18 and A33 deal with excavations, foundations, retaining walls, and grading, including (but not limited to) requirements for seismically resistant design, foundation investigations, stable cut and fill slopes, and drainage and erosion control. Seismic zone designations range from Zone 0 to Zone 4. The ascending numbers indicate the respective increase in the required factor of safety applied to structural design equations for resisting earthquake-induced ground accelerations. Seismic zones for the United States based on historical seismicity were first designated in 1978 by the Applied Technology Council and are updated periodically. The Seismology Committee of the Structural Engineers Association of California collaborates with others to produce the Seismic Zone Map to be used in the current CBC Chapter 16 for selecting safety factors to be applied in the design of seismic-resistant structures in California. There are three CBC Seismic Zones in California: Zones 2, 3, and 4. The Seismic Zone numbers (referenced in CBC Table 16-I, Seismic Zone Factor Z) correspond approximately to a range of values from 20 percent of the acceleration of gravity (measured horizontally) in Zone 2 to 40 percent in Zone 4. Because no portion of California is entirely free of seismic activity, the two lowest zone numbers are not used.

The county has adopted the CBC as the basis for the County Building Code: Sonoma County Code §7-13. The Project Site is in CBC Seismic Zone 4, as is about 45 percent of the State of California, and, consequently, construction at the project site would be required to meet the most stringent building code standards.

³ Alquist-Priolo Earthquake Fault Zoning Act, California Public Resources Code, Division 2, "Geology, Mines, and Mining," Chapter 7.5 "Earthquake Fault Zones," Sections 2621 through 2630; signed into law December 22, 1972, most recently amended October 7, 1997.

⁴ International Conference of Building Officials, Uniform Building Code, Volumes 1, 2 & 3; Chapter 16, Structural Forces (earthquake provisions); Chapter 18, Foundations and Retaining Walls; appendix Chapter A33, Evacuation and Grading, 1997.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act became effective in 1991 to identify and map seismic hazard zones for the purpose of assisting cities and counties in preparing the safety elements of their general plans and to encourage land use management policies and regulations that reduce seismic hazards. The recognized hazards include strong groundshaking, liquefaction, landslides, and other ground failure. These effects account for approximately 95 percent of economic losses caused by earthquakes. The Act has resulted in the preparation of maps delineating Liquefaction and Earthquake-Induced Landslide Zones of Required Investigation. According to the USGS Geologic Hazard Zones Map the site is within a zone designated as moderately susceptible to liquefaction.

3.7.2.2 Local

Sonoma County Building Code

The County has adopted the 2007 California Building Code, with modifications, as the basis for the County Building Code. New construction within county lands would have to be built according to state and county building codes.

Sonoma County Grading, Drainage, Vineyard and Orchard Site Development Ordinance

The Board of Supervisors approved the Grading, Drainage, Vineyard and Orchard Site Development Ordinance on December 9, 2008, and the ordinance went into effect on January 8, 2009. The ordinance consolidates all grading, drainage and vineyard and orchard development related code provisions into one comprehensive chapter (Chapter 11) of the Sonoma County Code (SCC).

3.7.3 Impact Analysis

3.7.3.1 Thresholds of Significance

The project would have a significant impact if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Pub. 42.
 - Strong seismic ground shaking;
 - Seismic-related ground failure, including liquefaction; or
 - Landslides.
- Result in substantial soil erosion or the loss of topsoil.

- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

3.7.3.2 *Less Than Significant Impacts Not Requiring Further Analysis*

Septic systems are not planned for the project. All facilities would be connected to the Airport-Larkfield-Wikiup Sanitation Zone. Therefore, the last impact threshold listed above is not pertinent to this project.

3.7.3.3 *Impacts and Mitigation*

Impact GEO-1: Exposure of People or Structures to Fault Rupture Damage to proposed project facilities or injury to persons could potentially occur due to fault rupture.

Significance: Less than significant

Discussion:

No active or inactive faults are known to pass through the proposed site. The closest known active fault to the site is the Rodgers Creek fault, about 0.7 mile to the east. The site is not within a delineated Earthquake Fault Zone as defined by the Alquist-Priolo Earthquake Fault Zoning Act. Therefore, the risk of ground rupture at the proposed project site is considered low (ENGEO 2008) (Appendix F-3). Potential impacts associated with exposure of people or structures to fault rupture are considered less than significant.

Mitigation: No mitigation required

Impact GEO-2: Exposure of People or Structures to Seismic Ground Shaking Strong seismic ground shaking is expected to occur at the project site at some time during the design life of the proposed project. Strong seismic ground shaking has the potential to expose people or structures to substantial adverse effects.

Significance: Less than significant

Discussion:

The most recent summary by the WGCEP (2007) gives a 63 percent aggregate probability of an earthquake for the entire Bay Area. The active Rodgers Creek fault system is estimated to have a 30-year probability of 31 percent for a M6.7 or greater earthquake. The San Andreas fault system was assigned a 30-year probability of 21 percent. According to the WGCEP the probability of an even more powerful earthquake (M 7.5 or greater) in the Bay Area is 15 percent in the next 30 years (WGCEP 2007).

The proposed project could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death from strong seismic groundshaking. Review of regional and local geo-seismic conditions indicates that the proposed project likely would be subjected to at least one major earthquake during the life of the existing buildings.

The proposed project would involve construction of new medical structures and the operation and occupation of those new structures could have a potentially significant impact related to exposure to groundshaking hazards, unless current seismic standards are incorporated into the design of the new structures.

Compliance with Building Code requirements, and incorporation of the recommendations provided in the Supplemental Geotechnical Exploration report for the Sutter Medical Center, Santa Rosa, California (ENGEO 2008) (Appendix F-3) into design, would reduce the potential impacts from groundshaking hazards to a less-than-significant level by the means described in the following paragraphs. These measures are required by law. To reduce the risks associated with seismically induced groundshaking, the location and type of subsurface materials must be considered when designing foundations and structures for a particular project site. In Sonoma County, buildings and their associated infrastructure are required to reduce the exposure to potentially damaging seismic vibrations through seismic-resistant design, in conformance with the California Building Code. The medical facilities at the proposed project site (Sutter Medical Center Hospital, Physician Medical Center, and Central Utility Plant buildings) would be required to meet the strict seismic safety standards of the HFSSA.

In order to prepare the soils in the building envelope for the proposed hospital buildings, (Sutter Medical Center, Physicians Medical Center, and Central Utility Plant buildings) the project applicant proposes a program of soil surcharging.

The subsurface soil conditions encountered in the areas of the future hospital buildings consist of near surface existing fill over alluvium. Within the alluvium layer, there are zones at depths ranging from 5 to 35 feet below the ground surface that are comprised of soft to medium stiff, intermixed clays, silts and lesser sands. The softer portions of these zones are considered potentially compressible when subject to increased loads. Additionally, the soft, fine-grained alluvial layers are classified as low plasticity and may potentially be susceptible to seismically induced settlements.

It is proposed that the building pad grades will be raised on the order of 2 to 5 feet to achieve final design grade. The added fills to be placed above existing grades will result in increased long-term loads. Additionally, the structural loads of the building foundations will impose increased loads. The added grading combined with building structural loads is estimated to result in compression of the soft layers and excessive settlements. Therefore, to reduce settlement of the planned hospital buildings it is proposed that three grading measures be performed to reduce the risk of settlement from the compressible and marginally liquefiable soils, as follows:

- Initially, the hospital building sites will be overexcavated to a depth of 5 feet below final building pad grades, and then the grades will be restored with engineered fill. This measure is intended to provide higher strength and uniform support for the shallow foundation system;
- Placement and compaction of design engineered fills (an additional 2 to 5 feet above existing site grades) to final design grades for the 3 hospital buildings; and

- The placement of “surcharge fills” extending at least 7 ½ feet above final design grades for the hospital buildings. This measure is intended to uniformly preconsolidate the soft alluvial soils encountered from 5 to 35 feet. While the potential for seismically induced settlements within these soft to medium stiff fine-grained soils is relatively small, surcharging will also reduce the risk of potential seismically-induced settlements that could potentially affect the planned building.

Surcharge fills are proposed to be at least 7 ½ feet above design grades, depending on timeline allowance for surcharge duration, and rate of consolidation of soils, and results of the settlement monitoring program. The surcharge program will include the following:

- Prepare site surface by stripping surface vegetation and removing all debris, and stake limits of area to be surcharged.
- Perform overexcavation and recompaction procedures within the building pad.
- Perform placement of engineered fill to pad grades.
- Install settlement monitoring instruments or monuments within the designated surcharge area.
- Place uniform thickness surcharge fill materials extending at least 7 ½ feet above final design grades and 10 feet beyond the building envelope.
- Provide on-going monitoring and readings of settlement measurement initially, during and following surcharge placement. It is estimated that this can be accomplished using the following general procedure: obtain initial readings, and subsequent readings weekly for the first month, every two weeks for at least the next 2 months, and monthly thereafter, or until the desired settlement has been observed.
- Determine the completion of the pre-consolidation by surcharge program, and subsequently allow for removal of the surcharge fills based on the monitoring program.

Preparation of the building site for the Medical Office Building will not require surcharging as described above for the hospital buildings. The soil condition within the vicinity of the planned Medical Office Building also consist of near surface existing fill over alluvium. The existing fills typically consist of stiff to very stiff clays and silty clays with various amounts of gravel and rock fragments. Beneath the existing fill deposits, borings encountered alluvial deposits consisting of clayey sand, sandy clay, silty clay and clays. Local zones of the alluvium between depths of 5 to 35 feet are considered potentially compressible when subject to increased loads.

For the Medical Office Building, it is proposed that site grades will not be raised significantly (generally less than 1 to 2 feet), and therefore increased loads will be limited to the planned shallow foundation loads. As such, surcharging is not necessary for this building provided the following measures are incorporated into the design and plans:

- The foundation supporting soils will be reworked within the upper 5 feet of final grade to promote higher strength and uniform support. This may be achieved by over excavating the building envelope to a depth of 5 feet below final building pad grades, and then restoring the grades with engineered fill.

- After grading is completed, the Medical Office Building will be supported on a shallow foundation system consisting of interconnected strip and column footings designed by a Structural Engineer and reinforced with top and bottom steel to provide structural continuity and to permit spanning of local irregularities. The Medical Office Building site would then be suitable for use of shallow foundation system consisting of footings designed to form a rigid grid and reinforced to accommodate a differential movement of 1½ inches over 20 feet.

Surcharging is an approach that has been successfully performed on many sites in the San Francisco Bay Area; it is a construction method intended to “preconsolidate” compressible soils, thereby reducing risks of future long-term settlements for the planned development. Surcharging as a method of site preparation for foundation construction for the hospital buildings must be approved by the California Office of Statewide Health Planning and Development (OSHPD). If this method is not approved by OSHPD then pile driving would be necessary. Should pile driving be utilized instead of surcharging, approximately 700 piles would be required. Preliminary evaluation indicates, assuming 14-inch square pre-cast concrete piles and site soil conditions, that piles would need to extend into dense alluvial gravel deposits encountered at approximately 45 feet below ground surface.

Adherence to the California Building Code and the HFSSA, as required by state law, would ensure the maximum practicable protection available for structures and their associated trenches, excavations, and foundations. Project design is required to include the application of CBC Seismic Design Category Standards, including the required design spectral response accelerations (S_{DS} and S_{D1}) obtained from recommended design spectra from the site-specific design motion as the minimum seismic-resistant design for the non-hospital portions of the proposed project.

Design of the medical facilities portion of the proposed project would be required to meet the seismic safety standards of the HFSSA. The applicable CBC and HFSSA requirements include seismic-resistant earthwork and construction design criteria, based on the site-specific recommendations of the proposed project’s California-registered geotechnical and structural engineers; and engineering analyses that demonstrate satisfactory performance of any unsupported cut or fill slopes, and of alluvium or fill, where they form part or all of the support for structures, foundations, and underground utilities. Adherence to the Seismic Design Category Standards, including the required design spectral response acceleration, as required by state law, would ensure protection of the proposed project’s occupants and visitors. Compliance with the building code includes additional procedures to ensure protection of structures and occupants from geo-seismic hazards:

- During site preparation, a registered geotechnical professional shall be on site to supervise implementation of the recommended criteria.
- A California Certified Engineering Geologist for the applicant shall prepare an “as built” map/report to be filed by the County showing details of the site geology, and the location and type of seismic-restraint facilities.

- Engineering analyses demonstrating satisfactory performance of compacted fill or natural unconsolidated sediments where either forms part or all of the support for any structures, especially where the possible occurrence of liquefiable, compressible, or expansive soils exists.
- Engineering analyses demonstrating accommodation of settlement or compaction estimates by the site-specific Geotechnical Report for access roads, foundations, and underground utilities in fill or alluvium.

In view of the requirements to comply with the Building Code for the non-hospital portions of the proposed project, the requirements of the HFSSA for the medical facilities, and the design recommendations of the proposed project's Geotechnical Report to be included in the project design, the impact of exposure to seismically induced groundshaking would be reduced to a less-than-significant level.

Mitigation No mitigation required

Impact GEO-3: Exposure of People or Structures to Seismic-Related Ground Failure Some soils at the project site would be susceptible to liquefaction if subject to strong earthquake-generated ground shaking.

Significance: Less than significant

Discussion:

The Rodgers Creek fault is capable of creating earthquakes with a moment magnitude of M7.0. Although the site is not mapped on the Alquist-Priolo Earthquake Fault Zoning Map, its proximity to an active fault might result in strong earthquake motion during a seismic event, resulting in ground shaking requirements as indicated in the *Supplemental Geotechnical Exploration Report* (ENGEO 2008) (Appendix F-3). Localized discontinuous thin layers of soft to medium stiff alluvial soil deposits below the free water at the site are susceptible to liquefaction when subject to strong earthquake-generated ground shaking (ENGEO 2008) (Appendix F-3). The general site conditions have a low potential for liquefaction; however there are isolated, discontinuous, relatively thin, inter-layers of "marginally liquefiable" soils; these marginally susceptible deposits were encountered at various depths ranging 5 to 35 feet (ENGEO 2008) (Appendix F-3).

The potential and consequences of seismically induced settlements related to seismic liquefaction would be minimized by overexcavation of the liquefiable soils, replacement of this soils with engineered fill and surcharging to compact the soils to reduce seismically induced settlements or the placement of piles as described above under Impact GEO-2. Therefore, potential impacts associated with exposure of people or structures to seismic-related ground failure are considered less than significant.

Mitigation: No mitigation required

Impact GEO-4: Exposure of People or Structures to Potential Substantial Adverse Effects Due to Landslides Damage due to landslides at the project site is considered to be low.

Significance: Less than significant

Discussion:

No landslides have been mapped within or immediately adjacent to the site and the site is relatively flat; therefore, the potential for earthquake-induced landsliding to occur is considered low. However, to minimize the possibility of human-made landslides, grading of slopes would be constructed in accordance with recommendations in the Preliminary Geotechnical Exploration Report (ENGEO 2004a) (Appendix F-1) and the Supplemental Geotechnical Exploration Report (2008) (Appendix F-3). Cut and fill slopes up to 15 feet in vertical height may be constructed at slope gradients no steeper than 2:1 (horizontal:vertical). Potential impacts associated with exposure of people or structures to potential substantial adverse effects due to landslides is considered less than significant.

Mitigation: No mitigation required

Impact GEO-5: Soil Erosion On-site soils may be susceptible to erosion and loss of topsoil depending on drainage paths and hydrology design.

Significance: Less than significant

Discussion: Site preparation activities will include excavating loose unconsolidated soils where needed in proposed building locations, depositing approximately 5 feet of clean fill on proposed building footprint locations to raise the building pads elevation, and depositing approximately 7.5 feet of fill on top of proposed medical building footprint locations to prepare the ground (surcharge) for appropriate foundation construction conditions. The surcharge material will be removed after approximately 6 months and most of that soil will be used to fill and grade the rest of the project site to conform to the raised building footprints and construct proper site drainage contours.

As discussed under Impact HY-1, in conformance with the NPDES permitting program requirements, the project will be required to file a Notice of Intent with the RWQCB for construction-related drainage. The project applicant will also provide a construction SWPPP, which will include an erosion control plan, with the application for approval of the final grading and improvement plans. The erosion and sediment control plan will be developed by an erosion and sediment control specialist. The following construction-related control measures will be reflected in the plan, based on area-specific needs within the project site:

- 1) Grading will minimize areas of exposed, erodible material and avoid concentration of rapidly flowing runoff in unprotected, erodible areas.
- 2) Techniques to reduce sediment from runoff waters will conform to County Grading Ordinance requirements and include, but not be limited to, the following:

- i. Restricting the amount of land disturbance;
- ii. Keeping slope gradients as low as possible to reduce erosion;
- iii. Restricting grading during periods of rain;
- iv. Hydroseeding exposed soil slopes;
- v. Installing erosion control blankets, where necessary;
- vi. Installing sediment traps/basins
- vii. Installing effective storm water inlet sediment protection devices; and
- viii. Implementing BMPs to control erosion and minimize the discharge of sediment into drainage channels.

Because grading and erosion control measures to reduce soil erosion and loss of topsoil are required to be implemented in accordance with state and local regulations as reflected in the Storm Water Pollution Prevention Plan (SWPPP) and Site Erosion Control Plan developed for the proposed project, potential impacts associated with erosion and loss of topsoil would be less than significant.

Mitigation: No mitigation required

**Impact GEO-6:
Differential Settlement** Differential settlement at the project site could result in damage to project buildings or other improvements.

Significance: Less than significant

Discussion:

Based on supplemental geotechnical exploration some of the on-site soils at depth between 5 and 35 feet are considered compressible under increased loading. As discussed under Impact GEO-2 above, a surcharge program would be implemented that would involve the placement of temporary fills uniformly blanketing over future building areas until the desired degree of consolidation in these areas has occurred as determined by a site-specific settlement monitoring program. Surcharging the project site would minimize the potential subsidence effects to the proposed project facilities.

If pile driving is utilized instead of surcharging, approximately 700 piles would be required. Preliminary evaluation indicates, assuming 14-inch square pre-cast concrete piles and site soil conditions, that piles would need to extend into dense alluvial gravel deposits encountered at approximately 45 feet below ground surface. With the use of driven piles, potential impacts due to differential settlement would be less than significant.

Mitigation: No mitigation required

Impact GEO-7: Expansive Soils Expansive soils may be encountered during project grading and construction activities. Development on such soils could result in damage to foundations, slabs, or pavements.

Significance: Potentially significant

Discussion:

The supplemental geotechnical exploration report (ENGEO 2008) (Appendix F-3) indicates that on-site soils are low to moderately expansive. Expansive soils shrink and swell as a result of moisture changes. These soils may cause heaving, cracking and related distress to structures and site improvements if not properly mitigated. Lab testing results indicate that site soils have low to moderate plasticity, which is indicative of soils with a low to moderate expansion potential. Soils with a low to moderate expansion potential could cause damage to proposed foundations, concrete slabs, retaining walls, and pavements during seasonal shrinking and swelling. This would be a potentially significant impact.

Mitigation GEO-7a: Exposed subgrade materials shall be kept moist at all times during construction to prevent shrinkage.

Mitigation GEO-7b: Slabs shall be underlain with 12 inches of select fill consisting of low to non-expansive material. For slabs constructed on native, undisturbed material, the slab-on-grade subgrade shall be excavated to a minimum 12 inch depth below the subgrade level and replaced with select fill. The overexcavated exposed grades shall be scarified to a depth of 12 inches, moisture conditioned to at least 4 percentage points above optimum moisture, and recompacted to at least 90 percent relative compaction. Restore grades in the slab area using low- to non-expansive select engineered fill compacted to 90 percent relative compaction at least 2 percentage points above optimum moisture. Engineered fill shall consist of low- to non-expansive soil having a Plasticity Index less than 12. For interior floor slabs on grade abutting strip footing stemwalls, the edge of the slabs do not require thickening; for all other cases the edges of the slab on grade should be increased by 2-inches greater than slab section.

Mitigation GEO-7c: The Structural Engineer shall provide final design thickness and additional reinforcement, if necessary, for the intended structural loads. As a minimum requirement, reinforce slabs-on-grade to control cracking. Provide frequent control joints to reduce the cracking. Provide a thickened edge extending at least 6 inches into compacted soil to minimize water infiltration. Place a 4-inch-thick layer of clean crushed rock or gravel, which conforms to the requirement listed in Section 2.04 of Part I of the Guide Contract Specifications, under all secondary concrete slabs. Slope slabs away from the buildings at a slope of at least 2 percent to prevent water from flowing toward the building.

Significance After Mitigation: Less than significant. Implementation of Mitigation Measures GEO-7a through 7c would reduce the soil expansion potential at the site and reduce the impact to less than significant

Impact GEO-8: Fills Existing onsite fill material may be encountered during project grading and construction activities. Development on such soils could result in damage to foundations, slabs, or pavements.

Significance: Potentially significant

Discussion:

The supplemental geotechnical exploration report indicates that up to 7 feet of existing undocumented fills may extend below the ground surface in some of the proposed building sites (ENGEO 2008) (Appendix F-3). The fill material is susceptible to excessive total and differential settlement.

Mitigation GEO-8: All undocumented fills within proposed building footprints shall be removed and replaced with properly compacted engineered fill.

Significance After Mitigation: Less than significant. All undocumented fills within proposed building footprints shall be removed and replaced with properly compacted engineered fill.

Impact GEO-9: Cumulative Impacts Related to Geology and Soils Construction and operation of the proposed project could result in a considerable contribution to a significant cumulative impact related to geology and soils.

Significance: Less than significant

Discussion:

The entire Sonoma County region is susceptible to impacts from geologic activity. The Sonoma County General Plan 2020 EIR determined that growth in the region would increase the exposure of people and structures to geologic hazards. This was considered a cumulatively significant impact. Although geologic hazards can cause damage to substandard construction, new project designs can significantly reduce potential damage. Earthquake-resistant designs employed on new structures minimize the impact to public safety from seismic events.

The proposed project would construct new hospital and medical office buildings. These buildings would be designed to current earthquake design standards. The Alfred E. Alquist Hospital Facilities Seismic Safety Act of 1983 (HFSSA), which was passed after the 1972 Sylmar earthquake, requires that acute care hospitals be designed and constructed to withstand a major earthquake and remain operational immediately after such an event. Foundations would be designed to account for site soil conditions. These buildings would replace use of the existing hospital building, constructed decades ago when engineering technology to minimize exposure to geologic hazards was much less advanced. By adhering to stringent hospital seismic safety

requirements and current earthquake design standards, the proposed project would not make a cumulatively considerable contribution to cumulative seismic impacts.

Mitigation: No mitigation required

3.8 HAZARDS AND HAZARDOUS MATERIALS

This section evaluates the potential for impacts related to the presence and use of hazardous materials during construction and operation of the proposed project. Hazards related to helicopter operations are also addressed.

The term hazardous material is defined in different ways for different regulatory programs. This EIR uses the definition provided in California Health and Safety Code Section 25501(n) and (o), which defines hazardous material as:

Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous wastes, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Because regulations for hazardous materials were developed over time, hazardous materials are regulated by numerous agencies whose jurisdictions and responsibilities sometimes overlap. Federal agencies that regulate hazardous materials include the USEPA and the Occupational Safety and Health Administration (Fed/OSHA). At the state level, agencies such as California Occupational Safety and Health Administration (Cal/OSHA) and the Office of Emergency Services govern the use of hazardous materials. State and local agencies often have either parallel or more stringent rules than federal agencies.

Generation, transportation, and disposal of hazardous wastes also can be regulated by different agencies. The lead federal agency is the USEPA. The Department of Toxic Substances Control (DTSC) has primary state regulatory responsibility but may delegate enforcement authority to local jurisdictions that enter into agreements with the state agency.

This section includes information from the *Phase One Environmental Site Assessment* (ENGE0 2004b), *Phase Two Environmental Site Assessment* (ENGE0 2005), *Phase One Environmental Site Assessment* (ENGE0 2009a), *Supplemental Agrichemical Assessment Report* (ENGE0 2009b), *Interview with FAA and Helicopter Operators* (Mead & Hunt 2009b) and *Helicopter Safety Issues* (Mead & Hunt 2009c), which are included as **Appendix G** in the Technical Appendices, Vol. 2 of this document.

3.8.1 Environmental Setting

The project site is approximately 53 acres and is located in unincorporated Sonoma County roughly northwest of the Santa Rosa city limits. The site is bordered by the US 101/Mark West Springs Road interchange and US 101 to the west; Mark West Springs Road to the north; a vineyard to the south; and a vineyard and a residential neighborhood, the Berrybrook subdivision, to the east. The site is relatively flat at an elevation of approximately 156-159 feet above mean sea level.

The current uses of the proposed project site include the existing 85,000-square-foot Wells Fargo Center, a barn used as a maintenance facility by the Wells Fargo Center, out buildings and undeveloped pasture land.

3.8.1.1 Hazardous Materials

Existing and past land use activities are potential indicators of hazardous materials use or contamination. Sites where industrial or agricultural activities have occurred, both historic and current, may contain soil or groundwater contaminated by hazardous substances. Other hazardous material sources include leaking underground tanks in commercial and industrial areas, surface runoff from contaminated sites, and migration of contaminated groundwater plumes into areas that may be excavated by the project.

ENGEO Incorporated (ENGEO) conducted a number of studies at the proposed project site. In 2004, a Phase One Environmental Site Assessment identified areas of concern including improper storage of batteries near the barn on Parcel A (**Figure 2-2**) and the former use of a portion of the site as an orchard, indicating the potential for past chemical pesticide use (ENGEO 2004b) (Appendix G-1). A Phase Two Environmental Site Assessment was subsequently conducted to test soils at the project site for contamination (ENGEO 2005) (Appendix G-2). In 2009, an updated Phase One Environmental Site Assessment was prepared (ENGEO 2009a) (Appendix G-3), as well as a supplemental agrichemical assessment, wherein additional areas of soil were tested (ENGEO 2009b) (Appendix G-4).

The result of the soil sample analysis for organochlorine pesticides and metals identified the presence of the pesticides DDT (dichlorodiphenyltrichloroethane), DDE (dichlorodiphenyldichloroethylene), and DDD (dichlorodiphenyldichloroethane) as well as metals including arsenic, barium, chromium, cobalt, copper, lead, nickel, vanadium, zinc, and mercury. The reported levels of DDT, DDE, and DDD were well below the California Human Health Screening Levels established by the California Environmental Protection Agency (Cal/EPA). The metal concentrations were also relatively low and are below cancer risk and hazard quotient thresholds. Arsenic concentrations for the composite samples ranged from 4.4 milligrams per kilogram (mg/kg) to 12 mg/kg. Natural background concentrations of arsenic in California are often above the health-based, direct-exposure goals in soil of 0.07 mg/kg for residential land use. The reported arsenic levels were within the anticipated background concentrations and would not be from an anthropomorphic source.

The Phase One assessments included a review of local, state, tribal, and federal environmental record sources; standard historical sources; aerial photographs; fire insurance maps; and physical setting sources. A reconnaissance of the project site was conducted to assess site use and current conditions for the storage, use, production, or disposal of hazardous or potentially hazardous materials. Interviews were also conducted with persons knowledgeable about current and past use of the project site.

A review of regulatory databases maintained by county, state, tribal, and federal agencies found no recorded hazardous materials violations or discharge on the property. The records search identified several off-site properties with potential contamination; however, these facilities were not within the appropriate American Society for Testing and Materials (ASTM) search distances that would reasonably be expected to affect the proposed project site (ENGEO 2009a) (Appendix G-3).

The site reconnaissance noted several areas where hazardous materials are stored and areas of potential environmental concern, including the following.

- Chlorine gas has been used to treat effluent water at the on-site wastewater treatment facility. This may have resulted in the production of trihalomethane (THM) compounds such as chloroform in the soil and groundwater beneath the wastewater treatment ponds.
- Site structures were built at a time when asbestos-containing building materials (ACBM) and lead-based paints may have been used.
- Batteries and an assortment of containers were observed in the vicinity of the barn. Improper material storage may lead to release of contents by spillage or structural failure of a container.
- A remnant septic system was reported to be in the vicinity of the barn.

3.8.2 Regulatory Setting

3.8.2.1 Federal

Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984. Federal hazardous waste laws are generally promulgated under the Resource Conservation and Recovery Act (RCRA). These laws provide for the “cradle-to-grave” regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed.

The USEPA has primary responsibility for implementing the RCRA, but individual states are encouraged to seek authorization to implement some or all RCRA provisions. California received authority to implement the RCRA program in August 1992. The California DTSC is responsible for implementing the RCRA program as well as California’s own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980, commonly called the Superfund program, created a national policy and procedures to identify and clean up sites contaminated by releases of hazardous substances. The law was amended in 1986 by the Superfund Amendments and Reauthorization Act. The USEPA has primary responsibility for implementing Superfund regulations, but state agencies may be authorized to take the lead at some cleanup sites. In California, the DTSC is the state’s lead agency for the federal Superfund and also enforces the state’s own Superfund law. Where groundwater contamination is the primary concern, one of the state’s RWQCBs may be the lead agency or a cooperating agency for the cleanup.

3.8.2.2 State

Title 22, California Hazardous Waste Control Law. The DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under the RCRA and the California Hazardous Waste Control Law. Both laws impose “cradle to grave” regulatory systems for handling hazardous waste in a manner that protects human health and the

environment. The DTSC has delegated some of its authority under the Hazardous Waste Control Law to county health departments.

Senate Bill 14, Hazardous Waste Source Reduction and Management Review Act of 1989.

Federal amendments to hazardous and solid waste laws made waste minimization a national policy in 1984. Under this congressional action, a Generator's Certification is required on each Uniform Hazardous Waste Manifest to help ensure that each generator of hazardous waste has a program in place to reduce the volume and toxicity of waste generated. Additional regulatory oversight was provided in state legislation, the Hazardous Waste Source Reduction and Management Review Act of 1989 (Senate Bill 14). The goal of the act is to achieve optimal minimization of the generation of hazardous waste. Most recently, Hazardous Waste Source Reduction and Management Act Modifications (Senate Bill 1726) reduced the reporting threshold, which increased the number and types of generators governed by the 1989 act.

Hazardous Materials Business or Management Plan. Chapter 6.95 of the California Health and Safety Code requires facilities that use, produce, store, or generate hazardous substances or have a change in business inventory to have a Hazardous Materials Management Plan or Business Plan. The plan must disclose the type, quantity, and storage location of materials. The law also requires a site-specific emergency response plan, employee training, and designation of emergency contact personnel.

The Hazardous Materials Management Plan describes hazardous materials storage and handling practices and contains procedures for monitoring storage, performing regular inspections, detecting releases, and testing the detection systems on a regular basis.

Title 8 CCR, California Occupational Safety and Health Act. In California, under the California Occupational Safety and Health Act, Cal/OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices. In order for the federal OSHA program to be delegated to the state, Cal/OSHA standards must be at least as stringent as Fed/OSHA standards, and they are generally more stringent. Cal/OSHA hazardous materials regulations include requirements for safety training, availability of safety equipment, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which include identifying and labeling hazardous substances, providing employees with Material Safety Data Sheets, and describing employee-training programs. Cal/OSHA regulations would apply to all workers during construction and to hospital employees during operation of the facility.

California Medical Waste Management Act (California Health and Safety Code Sections 117600–118360). Enforced by the California Department of Health Services Medical Waste Management Program, this act regulates the generation, handling, storage, treatment, and disposal of medical waste. The Medical Waste Management Program permits and inspects all medical waste at off-site treatment facilities and medical waste transfer stations. Medical waste is generally regulated in the same manner as hazardous waste, except that special provisions apply to storage, disinfection, containment, and transportation. The act imposes a cradle-to-grave tracking system and a calibration and monitoring system for on-site treatment. The Environmental Health Division of the Sonoma County Department of Health Services is charged with administering the State of California's Medical Waste Program within Sonoma County.

3.8.2.3 Local

Emergency Medical Services

The Sonoma County Emergency Medical Services Ordinance (NO. 4386) regulates ambulance service for emergency medical purposes in Sonoma County. The ordinance establishes guidelines for permits and annual inspections of ambulance services, including air ambulances (helicopters).

Hazardous Materials

Hazardous materials are regulated locally through the Sonoma County Environmental Health Division of the Sonoma County Department of Health Services and the Sonoma County Department of Emergency Services (DES). These agencies work in conjunction with the Sonoma County Permit and Resource Management Department (PRMD) to establish compliance with laws regulating the storage, use, and disposal of hazardous materials.

The Hazardous Materials Division of the DES is responsible for the County's Certified Unified Program Agency (CUPA) programs. CUPA programs include the Hazardous Materials Business Plan Program, Hazardous Waste Generator Program, Underground Tank Program, Accidental Release Program, and the portions of the Uniform Fire Code that address hazardous materials. This program includes inspections of businesses and review of permit conditions and procedures for the handling, storage, use and disposal of hazardous materials. Hazardous Materials Business Plans are used to keep track of the use of hazardous materials by businesses in accordance with both State and federal laws. The Hazardous Waste Generator Program is based on the Hazardous Waste Control Law found in the California Health and Safety Code Division 20, Chapter 6.5 and regulations found in the California Code of Regulations, Title 22, Division 4.5.

In addition to the regulations and programs discussed above, Sutter Medical Center of Santa Rosa has detailed guidelines relating to the handling of hazardous materials. Specific policies and rules are promulgated in the following areas.

- **Biohazardous Waste** sets forth medical guidelines that govern the management of medical waste to prevent the dissemination of potentially infectious organisms and the spread of infection to others within the medical center and in the community.
- **Hazardous Materials and Waste Storage Practice** implements procedures for the safe handling and storage of hazardous materials and chemicals.
- **Handling and Disposal of Regulated Waste** implements procedures for the safe handling of hazardous waste chemicals and infectious/regulated medical wastes and sharps. Radioactive wastes are managed outside of these procedures.
- **Hazardous Materials and Waste Acquisition** provides guidelines for the appropriate means of selection and acquisition of hazardous materials and chemicals to ensure the highest degree of safety to material-handlers.
- **Hazardous Chemical Communication Program** ensures that hazardous chemicals used by each department at the hospital are evaluated and that information concerning the hazardous material is transmitted to affected personnel within each department.

- **Hazardous Materials and Waste Ordering and Receiving** sets forth policies to ensure that hazardous materials are ordered, received, and handled in a safe and expeditious manner.
- **Hazardous Materials and Waste Receiving Material Safety Data Sheet (MSDS)** requires certain procedures when Materials Management receives an MSDS on a new or existing product used in the hospital.

The Sutter Hospital Hazardous Materials Business Plan required by state law provides information regarding the handling, storage, and disposal of hazardous materials for the Hospital's engineering department. The Plan also contains information regarding the Engineering Department's chemical inventory, Hazard Communication Program, and employee training. The Plan also includes a list of emergency contacts and emergency response and evacuation procedures.

3.8.3 Impacts Analysis

3.8.3.1 Approach and Methodology

The analysis of impacts associated with hazardous materials is based on environmental studies of the proposed project site, conducted by ENGEO (2004b, 2005, 2009a,b) as described in Section 3.8.1. The City of Santa Rosa and County of Sonoma General Plans were also reviewed.

3.8.3.2 Thresholds of Significance

The project would have a significant impact if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;
- For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

3.8.3.3 *Less Than Significant Impacts Not Requiring Further Analysis*

The project site is not within an airport land use plan or within 2 miles of a public airport or public use airport. The site is approximately 3.5 miles from the Charles M. Schultz–Sonoma County Airport. According to the Sonoma County Comprehensive Airport Land Use Plan Update (Sonoma County Airport Land Use Commission 2001), the project site is not within the boundaries of the airport area of influence.

The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The City of Santa Rosa Draft Emergency Operations Plan (City of Santa Rosa 2008) does not address the proposed project site or adjacent roadways as being of any particular importance to emergency plans. Locating the new hospital next to the freeway, with improved access for emergency vehicles, will enhance emergency medical response.

The project would not expose people or structures to risk involving wildland fires. The project site is bordered by existing development and US 101, and is not adjacent to or intermixed with wildlands.

3.8.3.4 *Impacts and Mitigation*

Impact HAZ-1: Excavation of soils and construction of project features could potentially cause health hazards to construction workers, the public, and the environment should hazardous materials be encountered or accidentally released.

Temporary Risk of Exposure to Hazardous Materials During Construction

Significance: Potentially significant

Discussion: Construction activities such as building demolition, excavation, and soil handling on or near sites that are potentially contaminated or contain hazardous materials increase the risk that workers and the public may be exposed to hazardous materials. In addition, workers or the public may be exposed to hazardous materials if known or unknown contaminants are encountered or an accidental spill or release of hazardous materials occurs during construction activities. Subsurface migration of mobile contaminants in groundwater may provide a conduit to project excavation areas. Shallow groundwater may be encountered at excavations. Groundwater elevations at the site are as shallow as 5 feet below ground surface (ENGEO 2008).

As discussed in Section 3.8.1, database searches for the project site found no recorded hazardous materials violations or discharges. However, several areas of potential environmental concern were identified in the Site Assessment studies. THM compounds from the chlorine gas used for effluent treatment could be present in soil and groundwater beneath the wastewater treatment ponds. A closure plan for decommissioning and removing the wastewater treatment facility is under development. Environmental characterization, including the testing for THM compounds, will be conducted in accordance with Regional Water Quality Control Board (RWQCB) requirements.

Other hazardous materials including paint, chlorine, and lead acid batteries have been stored at the site. The project would demolish one or more structures that may contain asbestos materials and lead. Exposure to airborne contaminants from these materials during demolition could affect safety and health. It is also possible, though unlikely given the level of study the site has undergone, that contamination not identified in the studies could be discovered during construction.

Though low levels of arsenic were detected in the groundwater, the levels are below federal safety thresholds, are common to the general project area, and are lower than arsenic levels in groundwater found further inland. The arsenic in the groundwater will be treated by the project sponsor as part of its on-site water treatment facility.

**Mitigation HAZ-1a:
Dispose Existing On-site Hazardous Materials Before Construction** Prior to construction, known hazardous materials such as paint and solvents no longer in use at the site and empty containers for paint and chlorine shall be properly disposed. Batteries shall be disposed in accordance with regulatory requirements.

**Mitigation HAZ-1b:
Implement Health and Safety Plan** A health and safety plan shall be used to protect the general public and all workers in the construction area. The plan shall describe the practices and procedures to protect worker health in the event of an accidental release of hazardous materials (for example, fuels or solvents during construction) or if previously undiscovered hazardous materials are encountered during construction. The plan shall include items such as spill prevention, cleanup and evacuation procedures. The plan will help protect the public and workers by providing procedures and contingencies that will help reduce the exposure to hazardous materials.

**Mitigation HAZ-1c:
Evaluate Structures for Potential Presence of Asbestos and Lead** Existing structures shall be evaluated for the presence of ACBM and lead-based paints prior to their renovation or demolition. The evaluation shall be conducted by a Cal-OSHA certified ACBM and lead-based paint contractor. Any ACBM or lead identified as a result of the evaluation shall be removed by a Cal-OSHA certified ACBM and lead-based paint contractor and be transported and disposed off-site in accordance with regulatory requirements.

**Mitigation HAZ-1d:
Remove and Backfill Septic Systems and Leach Fields** Septic systems and related leach fields located within the proposed project site shall be removed in accordance with Sonoma County permitting requirements.

**Mitigation HAZ-1e:
Inspect, Test, and Remove Potentially Contaminated Soil and Groundwater** During excavation at all construction areas, the contractor shall inspect the exposed soil for visual evidence of contamination, particularly near the areas identified during site reconnaissance. If contamination indicators (e.g., obvious soil staining, odors, etc.) are encountered during excavation or grading activities, all work in the affected area shall stop and an investigation shall be designed and

performed to verify the presence and extent of contamination at the site. Results shall be reviewed and approved by the County's Environmental Health Division or DTSC before construction. The investigation could include collecting samples for laboratory analysis and quantifying contaminant levels within the proposed excavation and surface disturbance areas. Subsurface investigation will determine the appropriate worker protection and the hazardous material handling and disposal procedures. Areas with soil and groundwater determined to be hazardous waste shall be removed by personnel who have been trained through the OSHA-recommended 40-hour safety program (29 CFR 1910.120) with an approved plan for groundwater extraction, soil excavation, control of contaminant releases to the air, and off-site transport or on-site treatment.

**Mitigation HAZ-1f:
Implement Measures in
SWPPP for Accidental
Spill Containment and
Cleanup**

A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared and implemented as discussed in Section 3.9. This plan will describe practices and procedures for spill containment and cleanup. The practices developed for the SWPPP will help protect water and soils from hazardous materials spills during construction.

**Significance After
Mitigation:**

Less than significant. Implementation of mitigation measures HAZ-1a through HAZ-1f would reduce the impact from potential exposures of construction workers, the public, and the environment to hazardous materials during construction should hazardous materials be encountered or accidentally released, to less than significant.

**Impact HAZ-2:
Exposure to Hazardous
Materials Through
Routine Transport,
Use, and Storage**

Operation of the Medical Campus would involve the routine transport, use, and storage of small quantities of hazardous materials. Materials classified as hazardous include chemicals that are used routinely at medical facilities as well as building maintenance materials such as paint and solvents. Exposure to these materials could affect safety and health.

Significance:

Less than significant

Discussion:

The proposed project would not involve the transport, use, or storage of large quantities of hazardous materials. However, employees and visitors could be exposed to hazardous materials at the project site and potentially experience adverse health effects from the following:

- Improper handling or use of hazardous materials or hazardous wastes, particularly by untrained personnel;
- Environmentally unsound disposal methods; or
- Fire, explosion, or other emergencies.

Medical facility operations typically involve the transport, storage, and use of relatively small quantities of materials that would be classified as hazardous. Types of hazardous materials found in medical facilities include pharmaceuticals; chemicals used to sterilize equipment; formaldehyde for specimen preservation; solvents, oxidizers, corrosives, and stains used in clinical laboratories; photographic processing chemicals used in some x-ray equipment; and certain biohazardous toxins used in treatment and processing. Facilities maintenance activities require various common hazardous materials, including cleaners (typically soaps and detergents, but also solvents and corrosives), paint, pesticides and herbicides (used in building maintenance), fuels (e.g., diesel), and oils and lubricants.

The medical facility would also use and store radioactive material, used primarily to treat certain types of cancer. X-ray equipment is also regulated as radioactive material. Radioactive materials decay (become non-radioactive) over time. The time it takes for a material to shed approximately one-half of its radioactivity is referred to as the material's half-life. Radioactive materials with half-lives greater than 90 days are considered long-lived radioactive materials, while those with half-lives less than 90 days are considered short-lived radioactive materials. Some long-lived radioactive materials that may be used at the facility, such as those used in x-ray equipment, would essentially be a sealed, stationary source of radiation. Both short-lived and long-lived radioactive materials would be used for patient treatment, primarily for the treatment of cancer. Long-lived radioactive materials (such as Cesium 137 used in cancer radiation therapy) are not disposed of but are retained over time for patient treatment.

State and federal laws require detailed planning to ensure that hazardous materials are properly transported, handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. Certified Unified Program Agencies (CUPAs) are responsible for local regulation and enforcement of hazardous materials laws and regulations. The Hazardous Materials Division of the Sonoma County Department of Emergency Services serves as the County's CUPA. Additionally, the Environmental Health Division of the Sonoma County Department of Health Services is the Local Enforcement Agency for the California Integrated Waste Management Board (CIWMB). In this capacity, Sonoma County is tasked with the inspection and registration of medical waste generator facilities, including hospitals with medical waste treatment, medical waste haulers, treatment and disposal facilities; and liquid waste hauler vehicles registration and inspection. All state and federal regulations relating to hazardous materials must be complied with.

The Radiologic Health Branch of the California Department of Health Services (CDHS) administers the federal and state radiation safety laws that govern the storage, use, and transportation of radioactive materials and the disposal of radioactive wastes.

Low-level radioactive wastes are either held for decay to below background, or removed by licensed radioactive waste contractors. Such wastes are the responsibility of the Radiation Safety Officer, who maintains the license and all records of waste.

Project construction and operation would involve transport of hazardous materials to and from the project site. The U.S. Department of Transportation (DOT) and the USEPA have developed regulations pertaining to the transport of hazardous materials and hazardous wastes by all modes of transportation. The U.S. Postal Service has developed additional regulations for the transport of hazardous materials by mail. DOT and USEPA regulations specify packaging requirements for different types of materials, and require tracking shipments with manifests to

ensure that wastes are delivered to their intended destinations. In California, the California Highway Patrol, the California Department of Transportation (Caltrans), and the DTSC also play a role in enforcing hazardous materials transportation requirements. Therefore, although the transportation of hazardous materials would occur during project construction and operation, compliance with all applicable federal and state laws related to the transport of hazardous materials would ensure that impacts to the surrounding residents and the environment would be at a less-than-significant level.

Mitigation: No mitigation required

**Impact HAZ-3:
Potential for Spills of
Hazardous Materials
During Operations** Medical Campus operations could potentially result in upset and accident conditions involving the release of hazardous materials into the environment. Exposure to these materials could affect safety and health.

Significance: Less than significant

Discussion: The proposed project would not involve the use of large quantities of hazardous materials. No large quantities of liquid or gaseous hazardous substances would be stored on-site. Only small quantities of materials, such as those described in the discussion of Impact HAZ-2, would be used, and transport, storage and disposal of such materials would be required to comply with all applicable federal, state, and local regulations. See the discussion of Impact HAZ-2 for additional information.

Mitigation: No mitigation required

**Impact HAZ-4:
Handling of Hazardous
Materials Within 0.25
Mile of a School** Operation of the Sutter Medical Center would involve handling of hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

Significance: Less than significant

Discussion: The Santa Rosa Christian School is located on the proposed project site in the WFC and would continue operation under the proposed project. Other educational facilities near the proposed project include the Village Charter School, approximately 0.20 mile north of the proposed project site, and Ursuline High School, just over 0.25 mile west of the site. The hospital and other facilities included in the proposed project do not emit hazardous materials, although materials that would be classified as hazardous would be stored and used at the facility. As described above, the facilities will handle hazardous materials subject to the requirements of local, state and federal regulations, which will ensure that potential impacts from these materials remain less than significant.

Mitigation: No mitigation required

**Impact HAZ-5:
Helicopter Operations** The proposed project includes development and operation of a helistop, the operation of which could pose a safety hazard to people living, working and traveling in the area.

Significance: Potentially significant

Discussion: The proposed project would include a helistop for helicopter ambulances to be able to pick up and drop off patients. The helistop would be located on the west side of the project site close to US 101. An average of 17 helicopter flights per month (or approximately 200 flights per year) have occurred at Sutter's Chanate Road campus during the past 4 years. It is assumed that up to 20 flights per month (or 240 flights per year) may occur with full buildout of the proposed project due to growth in the future.

For the proposed project, the optimum alignment for the approach/departure paths for the helistop are from the south-southeast and north-northwest. This alignment coincides not only with the prevailing winds at the site, but also provides the opportunity for helicopters to approach and depart the helistop by flying over US 101. As such, the paths are aligned so as to ensure that helicopters do not fly directly over Wells Fargo Center buildings or the residential area north of Mark West Springs Road. This path also helps ensure that redwood trees near the site will not be obstructions, although the height and proximity of light poles and redwood trees near the site do limit other options for approach/departure path alignments.

The accident rate of helicopter emergency medical services (HEMS) operations has been steadily decreasing, but experienced a marked increase in 2008. From 1998 through 2007, an average of 10.8 HEM accidents occurred annually in the U.S (HAI 2008). Whether the 2008 increase is an anomaly is uncertain, but the National Transportation Safety Bureau has investigated and offered recommendations pertaining to flight procedures (Appendix G). The rate of accidents for all types of helicopter operations has trended downward over the last decade. The increased numbers of twin-engine turbined-powered helicopters in the helicopter fleet (the type that will be used by REACH, the operator for the project) has been an apparent contributing factor in this positive trend, due to greater engine reliability and the multiple engines (NTSB 2009) (Appendix G).

The vast majority of helicopter accidents, particularly HEMS accidents, take place either en route or at a remote landing site, rather than at an established heliport/helistop or airport. Weather was a significant factor in 19% of all HEMS accidents. The tendency of HEMS pilots to attempt to accomplish their life-saving missions despite adverse weather conditions is considered a factor in this regard. With a majority of the accidents occurring at a remote landing site or en route decreases the chances of impacts to third party individuals in the nearby vicinity.

In conversations with the Sonoma County Sheriff Helicopter Unit, the Sheriff identified the power lines that cross US 101 at the project site represented a potential hazard to helicopter operations and recommended that lighting be placed on the power poles (Appendix G-5). Further pursuant to Federal Aviation Administration Advisory Circular No. 150/5390-2B, *Heliport Design*, the helistop will have lights that will help safely guide a pilot in and out of the site.

Given the low number of helicopter flights, the low accident rate at established helistops, appropriate lighting to safely guide in pilots, as well as lights being placed on nearby power poles, risks to third parties from helicopter operations can be considered less than significant.

Helicopters could have a potentially disruptive effect on highway traffic, but the time required for a helicopter to pass by and land would be brief. At the project site, the proposed approach and departure routes would put the helicopter in view of motorists along US 101 for less than a minute, with only approximately 5 flights a week occurring at full buildout. The pad's visibility from the highway could also be a factor. Lights associated with the helistop would be mostly blocked from view of the motorists by vegetation that would be planted between the helipad and US 101. In both cases the effects are likely to diminish over time as helicopter activity becomes more familiar to motorists who regularly use the route. Also, planned landscaping will largely shield the view of the pad from the highway.

Elsewhere in California, there are several existing helicopter facilities situated close to (within approximately 500 feet) a freeway. These include: Calstar (Auburn), Children's Hospital (Oakland), Good Samaritan Hospital (San Jose), Maguire Heliport (Los Angeles), San Joaquin General Hospital (Stockton), and St. Elizabeth Community Hospital (Red Bluff).

Based on the County's review of information provided by Sutter, there is no data available on the topic of traffic accidents related to helicopter overflights (see Appendix G). The Statewide Integrated Traffic Records System (SWITRS) stated that there are no records available that would determine if automobile accidents were caused by nearby aircraft activity. (One reason is the fault is placed on the driver of automobile(s), not outside influences such as aircraft activity.) Research was also conducted in the National Highway Safety Administration's online database, but no records of accidents involving aircraft or helicopters were found. Staff at the California Department of Transportation Division of Aeronautics and Helicopter Operations indicated that they are not aware of any general conditions or specific incidents in which helicopter operations have been cited as a vehicle traffic hazard. A similar response was received from the Air Operations Commander of the California Highway Patrol Team, Keith Dittimus.

Lights associated with the helistop are also likely to be unobtrusive as seen from the highway. The perimeter lights will be green and lead-in lights yellow; both are intended to be seen from the air and will be largely unnoticeable from the highway among parking lot and other lights on the property. The flood light or lights required to allow helicopter and ground crews to work around the helistop at night would normally be on only when a helicopter is present and will be off during helicopter takeoffs and landings so as not to interfere with the vision of pilots.

Therefore, the risk of traffic accidents on US 101 caused by proposed helicopter operations are also considered less than significant.

Mitigation HAZ-5: Lighting shall be placed on the power poles crossing US 101 at the project site in a manner that will make the poles readily visible from the air by helicopter pilots at night and in such a manner as to not distract drivers on US 101.

Install lighting on Power Poles Crossing US 101 at the Project Sites

Significance After Mitigation: Less than significant. In view of stringent safety regulations that control operations of medical emergency helicopters and the low number of flights, the risk of safety hazards from medical helicopter operations at the proposed site is low. Installation of lighting on the power poles would ensure that the risk from helicopter operations in proximity to the poles is less than significant.

Impact HAZ-6: Cumulative Impacts from Operational Hazards and Hazardous Materials The operation of the proposed project in conjunction with past, current, and probable future projects in the area would not result in a significant cumulative impact related to medical helicopter operations or the transport, handling, storage, or disposal of hazardous materials in the area.

Significance Less than significant

Discussion: The safe operation of helistops is highly regulated by the Federal Aviation Administration and the state. No evidence linking increased traffic accidents on roadways due to the proximity of helicopter operations has been found. Accidents related to medical helicopter operations in the vicinity of hospital helistops are low. As well, there are no existing, permitted or reasonably foreseeable projects in the vicinity of the proposed project which would include a heliport or helistop.

Since the passage of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, and numerous other related federal, state, and local laws, the incidents of improper handling, storage, or disposal of hazardous wastes have been reduced dramatically throughout the United States. Existing regulations ensure that the cumulative impacts associated with release / transport of hazardous materials would be less than significant. The proposed project would comply with all applicable federal, state, and local regulations.

Mitigation HAZ-6: No mitigation required

3.9 HYDROLOGY AND WATER QUALITY

This section describes water resources in the project vicinity and the potential impacts to those resources from the proposed project. This section includes information from the *Groundwater Aquifer Test and Water Quality Analysis* (ENGEO 2006b), the *Groundwater Study* (ENGEO 2009c), the *Preliminary Stormwater Mitigation Plan and Preliminary Hydrology and Storm Water Detention Plan* (Brelje & Race 2009a) and the *Well Installation and Testing* (ENGEO 2009d), which are included as **Appendix H** in the Technical Appendices, Vol. 2 of this document.

3.9.1 Environmental Setting

Regional Climate and Hydrology

The project site is located in the Santa Rosa Valley, which is bounded by the Mendocino Range to the west and the Mayacmas and Sonoma mountains to the east. The site is part of the larger Russian River watershed. Water supply in the region is provided by a combination of groundwater and surface water primarily from the Russian River and Dry Creek (a tributary of the Russian River). The region has a Mediterranean climate, with cool, wet winters and hot, dry summers. Annual precipitation ranges from approximately 30 inches in the south to about 40 inches in the north, with the majority of the rain occurring from October through April.

As designated in California's Groundwater Bulletin 118, the site is located in the Santa Rosa Plain sub-basin of the Santa Rosa Valley groundwater basin (DWR 2004). The Santa Rosa Plain sub-basin is primarily drained by Santa Rosa and Mark West Creeks. These creeks, which are shown on **Figure 3.9-1**, generally flow from east to west. Santa Rosa Creek discharges into the Laguna de Santa Rosa, which flows to the north until the confluence with Mark West Creek, which then discharges into the Russian River.

As discussed in Section 3.9.2, the Russian River watershed is on the Section 303(d) list as impaired for sediment and temperature. The Santa Rosa Creek watershed and segments of the Russian River have also been listed as impaired for pathogens. Water quality sampling for bacteria is performed weekly, starting in June and continuing through the dry season.

The Santa Rosa Plain sub-basin is composed of one main water-bearing unit (Merced Formation) and several units with lower water-bearing capacities (Glen Ellen Formation and Alluvium) (DWR 2004). The alluvium covers most of the Santa Rosa Valley, and the water quality is generally good (DWR 2004). The Glen Ellen formation crops out in the center of the Santa Rosa Plain and extends beneath the eastern hills (DWR 2004). It generally overlies the Merced Formation, which also extends beneath the western hills (DWR 2004). The SCWA and USGS are cooperatively performing a study to evaluate the groundwater resources in the Santa Rosa Plain sub-basin (USGS 2009); this study is planned for completion in 2010. Previous studies performed in the 1980s had showed that the groundwater basin as a whole was in balance (DWR 2004). However, demands on groundwater have increased significantly since then, and additional information is required to determine whether the current rates of groundwater withdrawal are sustainable. Regional water quality concerns in the basin include iron, manganese, and arsenic (USGS 2009). Also, some areas have contamination from volatile organic compounds (USGS 2009).

Local Drainage

Existing drainage patterns at the project site are shown on **Figure 3.9-2**. The site drains generally from east to west, with a mild slope of about 0.5 percent. Four main tributary areas were delineated. Runoff from Tributary Areas A, B, and C flows through an array of three-pipe culverts under US 101 that discharge to the west into agricultural lands currently cultivated with vineyards. From there, runoff eventually drains to Abramson and Piner creeks—and ultimately the Santa Rosa Creek—in the northwest Santa Rosa area.

The Mark West Springs Road area, located north of the project site and designated Tributary Area D, drains westerly to the Mark West Springs / River Road interchange and then under US 101 and on to the Fulton Creek drainage basin. Creeks in the vicinity of the project site are shown on **Figure 3.9-1**.

The site is not located in a 100-year floodplain, as mapped by the Federal Emergency Management Agency (FEMA). Downstream areas mapped in the 100-year floodplain are at least two miles from the site, as shown in **Figure 3.9-1**.

3.9.2 Regulatory Setting

This section describes key federal, state, and local surface water regulations and summarizes the regulatory background for the project.

3.9.2.1 Federal

The Clean Water Act (CWA) is a 1977 amendment to the federal Water Pollution Control Act of 1972 (33 USC), which established the basic structure for regulating pollutant discharges to navigable waters of the United States. The CWA provides two general types of pollution control standards:

- Effluent standards, which are technology-derived standards that limit the quantity of pollutants discharged from a point source such as a pipe, ditch, tunnel, etc., into a navigable waterbody (nonpoint source pollution is subject to state control); and
- Ambient water quality standards, which are based on beneficial uses and limit the concentrations of pollutants in navigable waters.

The primary focus of the 1977 CWA amendment was toxic substances. In 1987, the CWA was reauthorized; the reauthorization focused on toxic substances, citizen suits against polluters, and the funding of sewage treatment plants under the Construction Grants Program. The National Pollutant Discharge Elimination System (NPDES) Permitting System was established under CWA Section 402 to regulate discharges from point sources into navigable waters (Water Pollution Control Federation 1987).

Management of nonpoint source discharges is regulated under Section 319 of the CWA. Section 319 requires the states to submit an assessment report that identifies navigable waters that are not expected to achieve applicable water quality standards or goals, categories of nonpoint sources or specific sources that add significant pollution that contributes to nonattainment of water quality standards or goals, and the process to develop best management practices and measures to control each category of nonpoint source or specific sources. The states are then required to

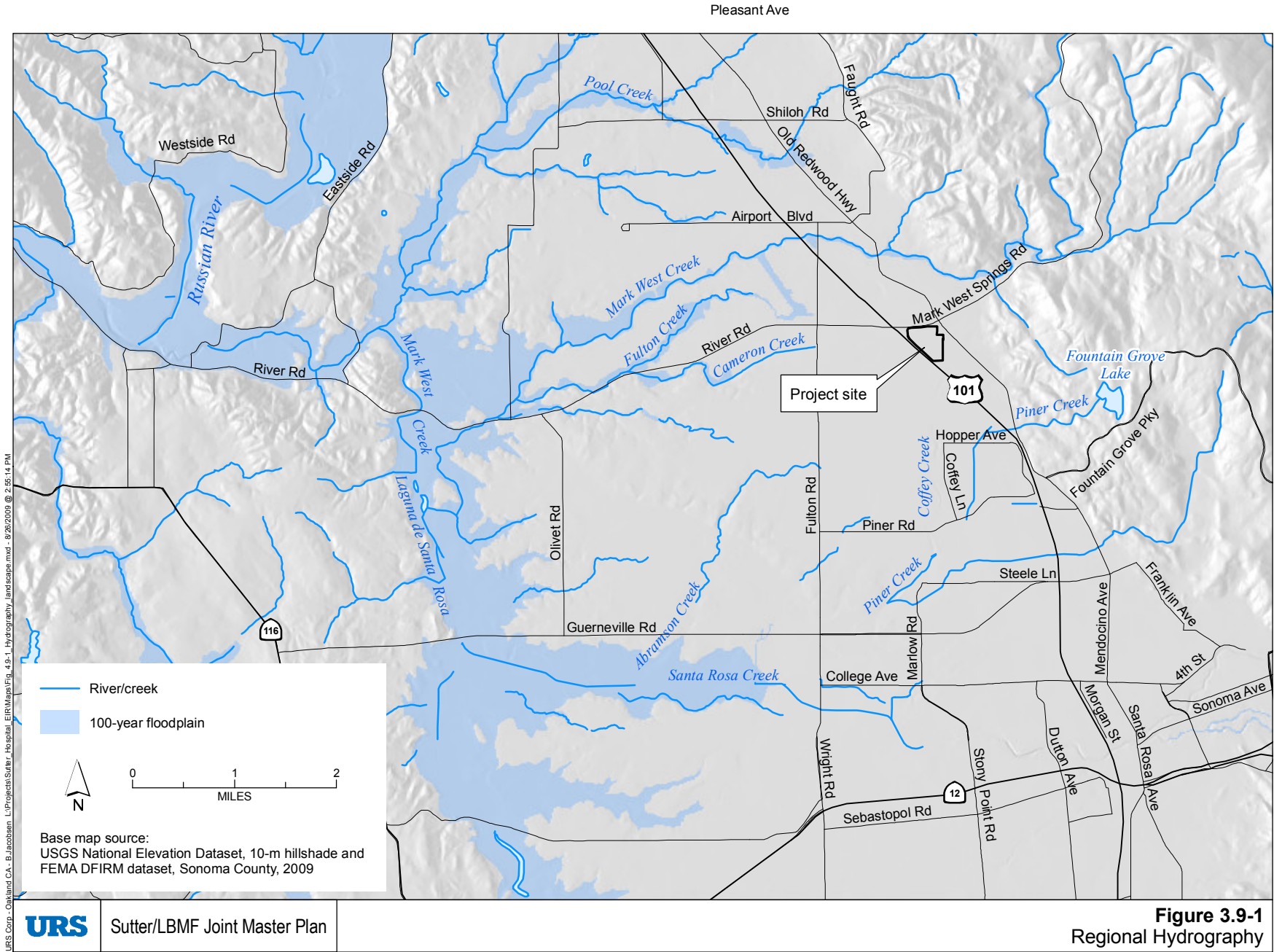
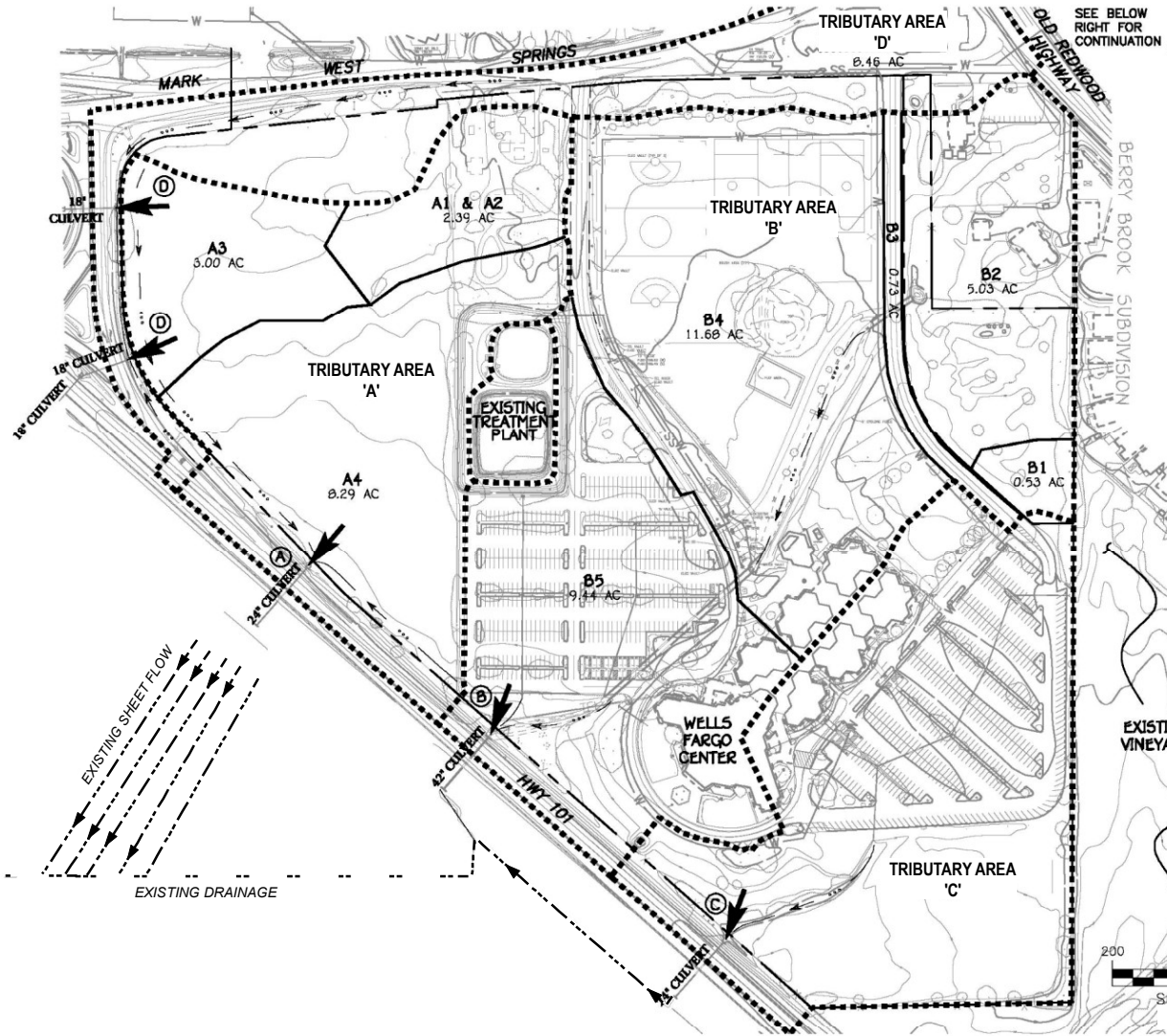


Figure 3.9-1
Regional Hydrography

URS Corp. - Oakland CA - B.Jacobson, Li/Projects/Sutter_Hospital_EIR/Maps/Fig. 3.9-2_Existing_site_drainages.mxd - 9/4/2009 @ 2:24:03 PM



SUTTER MEDICAL CENTER

EXISTING SITE DRAINAGE HYDROLOGY EXHIBIT JANUARY 2009

LEGEND

- EXISTING PROPERTY LINES
- EXISTING TRIBUTARY DRAINAGE BASIN
- SUB-BASIN AREA
- - - - - EXISTING SWALE
- Ⓐ TRIBUTARY COLLECTION LOCATION

TRIBUTARY AREA 'A'

- TOTAL AREA = 8.29 ACRES C=0.36
- EXISTING 10-YEAR STORM FLOW = 6.3± CFS (PEAK FLOW)
- EXISTING 2-YEAR STORM FLOW = 5.0± CFS (PEAK FLOW)

TRIBUTARY AREA 'B'

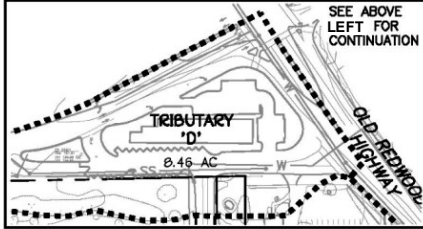
- TOTAL AREA = 27.41 ACRES C=0.53
- EXISTING 10-YEAR STORM FLOW = 16.5± CFS (PEAK FLOW)
- EXISTING 2-YEAR STORM FLOW = 13.1± CFS (PEAK FLOW)

TRIBUTARY AREA 'C'

- TOTAL AREA = 13.3 ACRES C=0.59

TRIBUTARY AREA 'D'

- TOTAL AREA = 8.46 ACRES C=0.61
- EXISTING 10-YEAR STORM FLOW = 8.2± CFS (PEAK FLOW)
- EXISTING 2-YEAR STORM FLOW = 6.5± CFS (PEAK FLOW)



develop a management program that proposes to implement the nonpoint source control program.

Section 305(b) of the CWA requires the states to perform a biannual assessment of the water quality of navigable water within the state. The assessment is required to analyze the extent to which beneficial uses are supported and provide an analysis of the extent to which elimination of pollution and protection of beneficial uses have been achieved. The assessment is also required to describe the nature and extent of nonpoint sources of pollution and provide recommendations for control programs that includes costs.

Section 303(d) of the CWA requires the states to identify waters that are not expected to meet water quality standards after application of effluent limitation for point sources, develop a priority ranking, and determine the total maximum daily load (TMDL) of specific pollutants that may be discharged into the water and still meet the water quality standards.

3.9.2.2 State

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) of 1969, which became Division 7 of the California Water Code, authorized the State Water Resources Control Board (SWRCB) to provide comprehensive protection for California's waters through water allocation and water quality protection. The SWRCB implements the requirements of CWA Section 303 that water quality standards be set for certain waters by adopting water quality control plans through the Porter-Cologne Act. The Porter-Cologne Act also established the responsibilities and authorities of the nine Regional Water Quality Control Boards (RWQCBs). These responsibilities and authorities include preparing water quality plans for areas within the region (Basin Plans), identifying water quality objectives (WQOs), and issuing NPDES permits pursuant to the Clean Water Act. WQOs are defined as limits or levels of water quality constituents and characteristics established for reasonable protection of beneficial uses or prevention of nuisance. Under the Porter-Cologne Act, discharges of storm water from the project area would require NPDES permits due to the size of the project.

In addition to implementing the NPDES permitting program, the Porter-Cologne Act authorizes the RWQCBs to issue Waste Discharge Requirements (WDRs). Generally, WDRs are issued for discharges that are exempt from the CWA NPDES permitting program, discharges that may affect groundwater quality, and/or wastes that may be discharged in a diffused manner. WDRs are established and implemented to achieve the WQOs for receiving waters as established in the Basin Plans.

3.9.2.3 Local

Under the NPDES program, the North Coast RWQCB has established permit requirements for storm water runoff for the project area. Project applicants with construction activities on 1 acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Stormwater Runoff Associated with Construction Activity (General Construction Permit). The General Construction Permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) for construction activities. The SWPPP must include specifications for Best Management Practices (BMPs) that would be implemented during site preparation (including demolition) and construction. BMPs are measures taken to control

degradation of surface water by preventing soil erosion or the discharge of pollutants from the construction area. The SWPPP must describe measures to prevent or control runoff after construction is complete and identify procedures for inspecting and maintaining facilities. Examples of typical construction BMPs include scheduling or limiting activities to certain times of year, installing sediment barriers such as silt fence and fiber rolls, maintaining equipment and vehicles used for construction, stabilizing entrances to the construction site, and developing and implementing a spill prevention and cleanup plan. The SWRCB has identified BMPs to effectively reduce degradation of surface waters to an acceptable level.

Beneficial uses, WQOs, and the implementation program for achieving the WQOs for the water bodies in the project area are stipulated in the Water Quality Control Plan for the North Coast Region (2007 Basin Plan) (North Coast RWQCB 2007). The Russian River watershed has been listed under Section 303(d) of the CWA as an impaired water body for sediment and temperature. The Santa Rosa Creek watershed and segments of the Russian River have also been listed as impaired for pathogens. Work has begun on the development of a TMDL for pathogens, and the development of sediment and temperature TMDLs for the Russian River watershed is set to begin in 2010 (SWRCB 2009).

Discharges to the storm sewer system in the Santa Rosa area are regulated by the Storm Water Management Plan (SWMP) for the City of Santa Rosa, the County of Sonoma, and the Sonoma County Water Agency (SCWA). The SWMP is required as part of the NPDES permit for the Santa Rosa area. The main purpose of the SWMP is to identify pollutant sources potentially affecting the quality and quantity of storm water discharges and to implement measures to reduce the discharge of pollutants to the maximum extent practicable, as defined by the U.S. Environmental Protection Agency. The SWMP also provides guidelines for the implementation of the post-construction/development Standard Urban Storm Water Mitigation Plan (SUSMP). The SUSMP applies to projects that would add over 1 acre of impervious surface. Implementation of the SUSMP involves source control and treatment control BMPs and promotes the use of low-impact development in the project design process.

PRMD reviews projects for drainage design consistent with SCWA flood control requirements. The SCWA guidelines specify different criteria for hydrologic design depending on the size of the watershed draining to the area of interest. For major waterways with a drainage area of at least 4 square miles, constructed drainage systems must be designed for the 100-year event. For secondary waterways with drainage areas of between 1 and 4 square miles, drainage systems must be designed for at least the 25-year event. For minor waterways with drainage areas of less than 1 square mile, the 10-year event is used for the minimum design event. The tributary area draining to the project site is much less than 1 square mile, which indicates that designing for the 10-year storm event would be consistent with the SCWA design criteria for flood control.

The Sonoma County Grading, Drainage, and Vineyard and Orchard Site Development Ordinance (County Grading Ordinance) was adopted on December 9, 2008. The provisions for regulating stormwater quality are consistent with the NPDES program and the CWA. The provisions for regulating grading, drainage, and site development are designed to prevent soil loss and erosion, protect water quality, protect watercourses from obstruction, and prevent flooding. The County Grading Ordinance relies on BMPs as well as specific criteria relating to grading and drainage to meet the provisions.

3.9.3 Impacts and Mitigation

Approach and Methodology

Project impacts were evaluated using information provided in *Preliminary Stormwater Mitigation Plan and Preliminary Hydrology and Storm Water Detention Plan*, prepared by Brelje and Race (2009a), a groundwater study performed by ENGEO (2009c) (Appendix H-2), and the standards of significance listed below.

Thresholds of Significance

The project would have a significant impact if it would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Expose people or structures to inundation by seiche, tsunami, or mudflow.

Less Than Significant Impacts Not Requiring Further Analysis

The potential project impacts associated with the final four threshold items above have been evaluated and determined to be less than significant. These impacts are not evaluated in this EIR in further detail. According to the FEMA flood map for the project area, the project site and its surroundings are not in or near a 100-year flood hazard area, so the project would not place housing or other structures in such an area. The site is not in an area subject to flooding from a dam or levee failure, or at risk of inundation from seiche, tsunami, or mudflow.

Impacts and Mitigation

**Impact HY-1:
Temporary Water
Quality Effects** Project construction has the potential to increase the amount of urban pollutants and sediment in storm water runoff and to degrade runoff water quality.

Significance: Less than significant

Discussion:

Site preparation activities will include excavating loose unconsolidated soils where needed in proposed building locations, depositing approximately 5 feet of clean fill on proposed building footprint locations to raise the building pads elevation, and depositing approximately 7.5 feet of fill on top of proposed medical building footprint locations to prepare the ground (surcharge) for appropriate foundation construction conditions. The surcharge material will be removed after approximately 6 months and most of that soil will be used to fill and grade the rest of the project site to conform to the raised building footprints and construct proper site drainage contours.

In conformance with the NPDES permitting program requirements, the project will be required to file a Notice of Intent with the RWQCB for construction-related drainage. The project applicant will also provide a construction SWPPP, which will include an erosion control plan, with the application for approval of the final grading and improvement plans. The erosion and sediment control plan will be developed by an erosion and sediment control specialist. The following construction-related control measures will be reflected in the plan, based on area-specific needs within the project site:

- 1) Grading will minimize areas of exposed, erodible material and avoid concentration of rapidly flowing runoff in unprotected, erodible areas.
- 2) Techniques to reduce sediment from runoff waters will conform to County Grading Ordinance requirements and include, but not be limited to, the following:
 - i. Restricting the amount of land disturbance;
 - ii. Keeping slope gradients as low as possible to reduce erosion;
 - iii. Restricting grading during periods of rain;
 - iv. Hydroseeding exposed soil slopes;
 - v. Installing erosion control blankets, where necessary;
 - vi. Installing sediment traps/basins
 - vii. Installing effective storm water inlet sediment protection devices; and
 - viii. Implementing BMPs to control erosion and minimize the discharge of sediment into drainage channels.

The project design team is responsible for including BMPs in the project's construction plans and specifications. The BMPs will include construction of detention/sedimentation ponds to minimize the discharge of sediment from the site. Unless otherwise directed by the County, the sedimentation ponds for construction shall be located at the site of the proposed detention

basins shown in **Figure 3.9-3**.

Compliance with applicable regulations, including the SUSMP for the Santa Rosa area, the NPDES General Construction Permit, and the County Grading Ordinance, will result in the incorporation into the project design of measures to reduce runoff and prevent polluted runoff from leaving the project site. Compliance with applicable regulations will be required by the project conditions of approval and will ensure the implementation of these measures during construction. These measures will prevent polluted runoff from leaving the site and result in a less than significant impact to water quality.

Mitigation: No mitigation required

**Impact HY-2:
Permanent Water
Quality Effects** Project operation has the potential to increase the amount of urban pollutants in storm water runoff and to degrade runoff water quality.

Significance: Less than significant

Discussion:

The proposed project will result in a loss of vegetative cover and an increase of nearly 18 acres in impervious surfaces. Untreated runoff from the completed project site could contain elevated levels of chemicals, pollutants, and sediments. Urban runoff can carry a variety of accumulated materials such as oil and grease, heavy metals, and sediment and pesticide residues from roadways, driveways, rooftops, and other surfaces. The most critical time for urban runoff effects is in the fall under low-flow conditions. Pollutant concentrations are typically highest during the first major rainfall event after the dry season or during subsequent rainfall events after dry periods. The precipitation that falls on impervious surfaces tends to wash off the accumulated pollutants, which can then affect downstream water quality. The Russian River watershed is already impaired with regard to sediment concentrations, so the project will implement measures to prevent the contribution of additional runoff with elevated suspended sediment concentrations to comply with existing water quality standards.

The project will comply with Sonoma County's adopted storm water mitigation plan entitled *Guidelines for the Standard Urban Stormwater Mitigation Plan* (SUSMP) (EOA and BKF 2005). Part of the requirements are that the applicant will prepare a Preliminary Storm Water Mitigation Plan, which outlines the measures proposed to meet the mandated storm water quality. This plan has been developed by Brelje and Race (2009a).

To the maximum extent possible, post-construction runoff from impervious surfaces shall be directed into vegetated swales and detention basins that will function as bioretention facilities and allow for treatment during smaller storms. Roof drain downspouts shall be connected to media filters or other structural storm water treatment devices (such as proprietary subsurface systems available from commercial vendors) before discharging into the storm drain system and eventually off-site. The water quality facilities shall be designed to trap floating material (litter, oil, etc.), sediment, and other pollutants, including heavy metals, which tend to adhere to sediment particles. Pollution prevention measures will include, but not be limited to:

- Vegetated swales;
- Bioretention facilities;
- Roof drain downspout filters;
- Subsurface treatment structures;
- Storm drain stenciling;
- Irrigation systems designed to minimize overspray;
- Landscaping using plants with minimal water requirements;
- Designing and maintaining landscaping to prevent runoff from contacting bare earth;
- Covered trash areas; and
- Connecting drains in trash areas to the sanitary sewers, and in the case where food waste is present, having regularly maintained grease interceptors.

Figure 3.9-3 provides a drawing of a typical vegetated swale that would be installed throughout the parking areas and around the perimeter of Tributary Area A. The figure also shows the proposed detention basins that would receive runoff from Tributary Area B and provide additional treatment. These measures would be incorporated into the project design so that the post-development peak discharges from the 2-year storm would not exceed pre-development peak flows for the same storm event.

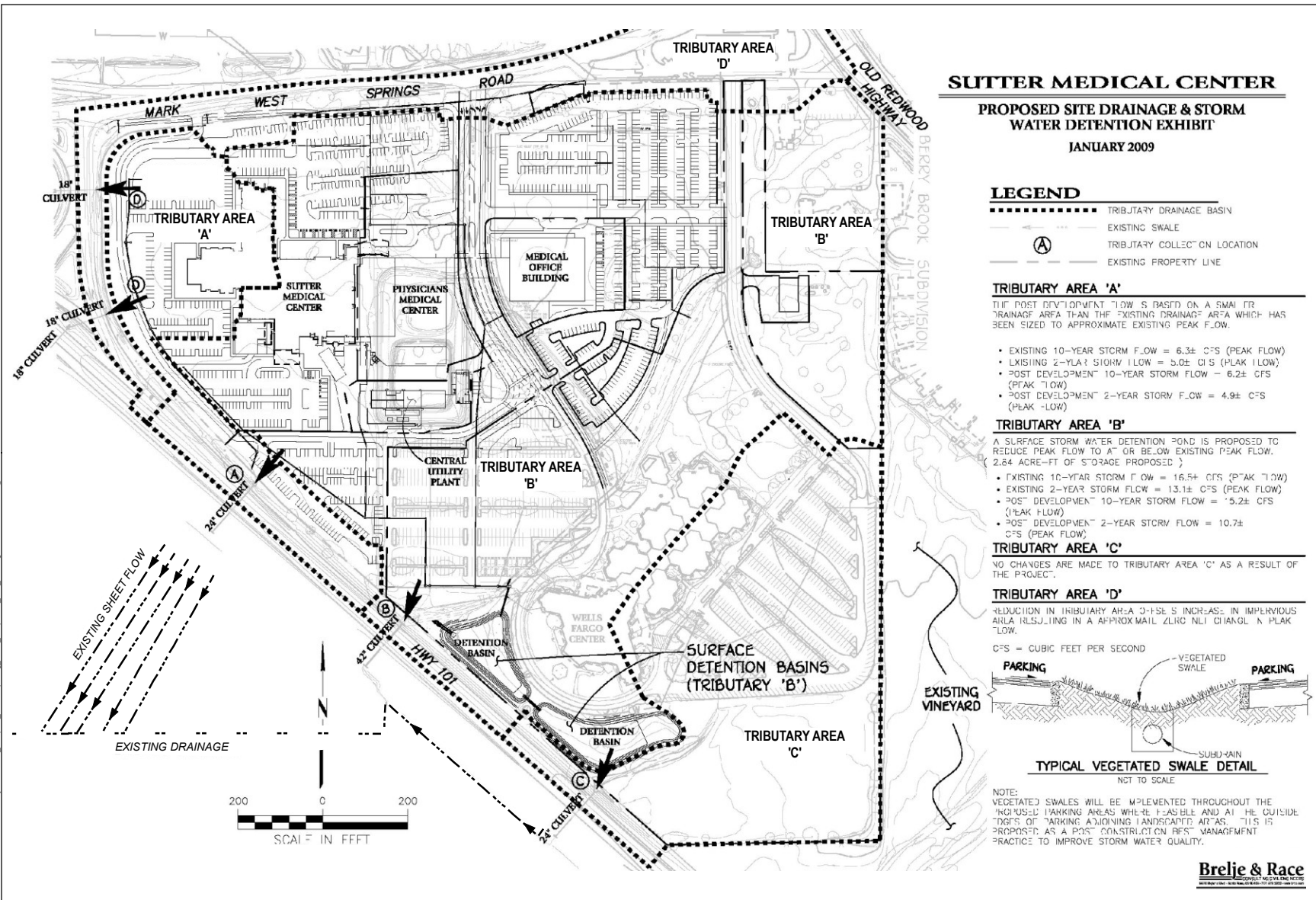
As specified in *Preliminary Stormwater Mitigation Plan and Preliminary Hydrology and Storm Water Detention Plan* (Brelje and Race 2009a), Sutter Medical Center will be responsible for maintaining the storm water quality facilities. This responsibility includes regular street sweeping and the removal of debris and trash from the hospital grounds and parking lots. Vegetated swales would be inspected annually before the rainy season so that they can be reconstructed if they become clogged with fine sediment particles. Structural treatment facilities will need to be inspected frequently and cleaned or serviced regularly. The detention basins will need to be maintained through a joint agreement with Sutter Medical Center and the LBMF. Maintenance of the storm water quality facilities will ensure that they function as designed.

Mitigation: No mitigation required

**Impact HY-3:
Permanent Effects on
Groundwater Supplies** The proposed project could deplete groundwater supplies through pumping of groundwater and interfere with groundwater recharge. Operation of the two proposed wells could create a net deficit in aquifer volume or lower the local groundwater table level.

Significance: Less than significant

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Sutter/LBMF Joint Master Plan

Figure 3.9-3
Proposed Site Drainage

Brelje & Race
ARCHITECTS ENGINEERS PLANNERS

Discussion:***Infiltration/Recharge***

The proposed project would increase the amount of impervious surfaces by about 18 acres. According to ENGEO (2009c) (Appendix H-2) the Sutter Medical Center occupies a natural recharge area, therefore the proposed project has the potential to decrease recharge to the underlying aquifer. The Sonoma County Soil Survey (USDA NRCS, 2009) indicates that soils in the project area include silt loam, clay loam, and a small area of gravelly sandy loam. These soils have moderately high to high rates of infiltration and would support the claim that the site is within a natural recharge area. However, the subsurface conditions described in the *Supplemental Geotechnical Exploration, Proposed Hospital Building, Sutter Medical Center of Santa Rosa* (ENGEO 2008) (see Appendix F-3) indicate that the soils underlying the proposed impervious surfaces at the project site consist of alluvial deposits of inter-layered sandy clay, silty clay, and clayey sand. The soils encountered above groundwater (13 to 14 feet deep) generally consisted of medium stiff to very stiff clays (ENGEO 2008), which would tend to have low infiltration rates. The description of the subsurface conditions was based on 35 exploratory borings and 38 cone penetration test holes within the area of the proposed hospital buildings. Given the large number of samples collected by ENGEO at the site, it is likely that these exploratory borings would more accurately characterize the conditions at the site than the Sonoma County Soil Survey.

The proposed project will be required under the new Santa Rosa Standard Urban Stormwater Management Plan (SUSMP) (Order No. R1-2009-0050) to capture the difference in runoff between the runoff volume generated by the post-construction 85th percentile rainfall event and the pre-project condition, to the maximum extent practicable. The 85th percentile storm event for the Santa Rosa area is a rainfall event with a depth of approximately 1 inch. Best Management Practices (BMPs), which may include cisterns, landscape soil amendments, and vegetated infiltration swales, will be used to achieve this goal. In addition, the project includes detention basins (see **Figure 3.9-3**) that would help infiltrate storm water.

Even though the project would add approximately 18 acres of impervious surfaces, it would not be in an area with high infiltration rates, and some of the additional impervious surface would be offset by recharge in the detention basins and the BMPs that will be installed in compliance with the new Santa Rosa SUSMP regulations.

Groundwater Impacts and Sustainability

ENGEO (2009c) conducted a groundwater study that includes the project site (see Appendix H-2). The study area was defined as the portion of Mark West Creek watershed that overlies the Santa Rosa plain groundwater sub-basin plus a portion of the Piner Creek watershed in the vicinity of the project site. **Figure 3.9-4** shows the study area and the Larkfield District Water System service area supplied by California American Water (CalAm). Cal-Am operates four production wells in the study area, which encompasses about 5,840 acres.

Well Hydrographs

ENGEO (2009c) (Appendix H-2) reviewed the hydrographs from CalAm and DWR wells in the study area. Hydrographs from the five DWR wells ENGEO (2009c) identified in the study area

that show long term trends in water level are shown in **Figures 3.9-5 through 3.9-9**. **Figures 3.9-5 and 3.9-6** show hydrographs from the wells located closest to the project site (<2 miles to the NNW). They are located within the area influenced by the CalAm water supply wells (see **Figure 3.9-10** for location of wells and CalAm's area of influence). Both figures indicate a relatively constant water level from 1986 to 2009. The year-to-year variability is likely due to variations in precipitation and possibly changes in local pumping volumes. **Figure 3.9-11** shows the variation in total annual rainfall in Santa Rosa from 1980 to 2009 and the 5-year running average total rainfall. The 5-year running average provides an indication of the trend in rainfall which may be more important relative to groundwater levels than the annual total. At the beginning of the study period in the mid-1980s, precipitation was below average and on a declining trend. After the drought of the early 1990s (1990-1992), water levels recovered to higher levels reflective of the increasing rainfall during this period. Water levels in both wells near the project site dropped in 2000-2001 due to the below average rainfall (2001 had rainfall that was just over 50% of average). From then up to 2007, rainfall was about average and water levels in the wells recovered. Since 2007, water levels have been dropping in both wells. This reflects the below average rainfall that occurred during 2007, 2008 and 2009 (note, all years are expressed as water years, that is from October 1 of the previous year through September 30).

Well hydrographs shown in **Figures 3.9-7 through 3.9-9** are from wells located about 3 miles to the west of the project site. Hydrographs shown in **Figures 3.9-7 and 3.9-8** show an almost constant water level since the late 1980s with some small variability likely due to the variability in precipitation. The hydrograph shown in **Figure 3.9-9** (located near the wells whose hydrographs are depicted in **Figures 3.9-7 and 3.9-8**) extends back to 1949. This hydrograph shows a relatively constant water level from 1949 to the mid 1980s (except for the drought in the mid 1970s) then an increase in water level from the late 1980s to present. The reason for the increase is unknown. It is possible that the increase in this well is due to a local change in pumping and is not reflective of conditions in the area-wide aquifer.

Examination of available groundwater level data and well hydrographs indicates that water levels in the area-wide aquifer generally have been relatively constant from the 1980s to present. Year to year variability in groundwater levels is likely due to changes in annual precipitation and other factors, such as changes in pumping. This is true for wells located near the project site and wells located far from the project site. The hydrographs do not show any sustained declines and the aquifer does not appear to be in an overdraft condition.

Area Wide Water Balance

The groundwater study in Appendix H-2 reports that the average annual inflow to the study area is about 2,830 acre-feet/year. The distribution of the inflows is shown in **Table 3.9-1**. The largest source of inflow is precipitation, which accounts for 76% of the total inflow (either directly or percolation in Mark West Creek). Most of the remainder of the inflow is from subsurface inflow from eastern portions of the study area (note that the subsurface inflow is due to rainfall in the mountains located to the east of the study area).

Outflows from the study area were primarily from pumping and subsurface outflows (see **Table 3.9-1**). Pumping accounts for about 70% of the total outflow. The last column in **Table 3.9-1** shows the difference between inflows and outflows for each year included in the

SECTION 3.9

Hydrology and Water Quality

Table 3.9-1. Water Balance from ENGEO Groundwater Report (2009c) (all values in acre-feet/year unless otherwise noted)

Year	Precip. (inches)	Inflows (acre-feet/year)						Outflows (acre-feet/year)			(Inflows - Outflows)
		Net Precip. Recharge to Basin	Imported Water Infiltration	Pumped Groundwater Infiltration	Mark West Percolation	Subsurface Inflow	Total Annual Inflow	Gross Pumping	Subsurface Outflows	Total Annual Outflow	
1986-1987	18.95	847	29	117	260	510	1763	2735	838	3,573	-1809
1987-1988	22.09	1025	29	118	260	510	1943	2124	838	2,962	-1020
1988-1989	26.62	1482	30	118	260	510	2400	1996	838	2,834	-433
1989-1990	21.38	407	30	119	260	510	1326	1344	838	2,182	-856
1990-1991	22.67	1107	31	119	260	510	2027	2228	838	3,066	-1040
1991-1992	24.29	1082	31	119	260	510	2003	1983	838	2,821	-818
1992-1993	37.28	2451	31	120	260	510	3372	1669	838	2,507	865
1993-1994	21.39	810	32	120	260	510	1732	1973	838	2,811	-1078
1994-1995	47.29	3726	32	120	260	510	4648	1322	838	2,160	2488
1995-1996	38.37	2676	33	121	260	510	3599	1958	838	2,796	803
1996-1997	33.86	2174	33	121	260	510	3098	2095	838	2,933	165
1997-1998	52.94	4287	29	129	260	510	5216	1443	838	2,281	2934
1998-1999	32.13	2110	28	125	260	510	3034	2271	838	3,109	-75
1999-2000	30.57	1652	25	132	260	510	2579	1811	838	2,649	-69
2000-2001	20.95	737	22	134	260	510	1663	2595	838	3,433	-1771
2001-2002	32.51	2174	31	125	260	510	3100	2345	838	3,183	-84
2002-2003	34.88	2326	19	133	260	510	3249	2070	838	2,908	341
2003-2004	29.35	2179	27	132	260	510	3108	2868	838	3,706	-598
2004-2005	37.83	2279	25	128	260	510	3203	584	838	1,422	1780
2005-2006	45.72	3712	26	122	260	510	4630	2118	838	2,956	1674
2006-2007	20.75	805	29	124	260	510	1729	2505	838	3,343	-1614
TOTAL		40,048	601	2,597	5,465	10,710	59,421	42,038	17,598	59,636	-215
AVERAGE	31.04	1,907	29	124	260	510	2,830	2002	838	2,840	-10
Percentage of Total Inflow or Outflow		67%	1%	4%	9%	18%	100%	70%	30%	100%	2%

study. The calculated average difference is -10 acre-feet. This small difference indicates that local groundwater inflows and outflows are in balance, recognizing that the average difference is well within the probable net error of the analysis (note that the average difference is less than 1% of the estimated average inflow).

Of the parameters included in the water balance, the annual variability is primarily due to the annual precipitation volume and gross pumping. The other parameters are either assumed constant (e.g., subsurface flows) or negligible (e.g., imported water infiltration, pumped groundwater infiltration). Most of the variability is due to precipitation. **Figure 3.9-12** compares the annual deviation from average precipitation volume to the surplus or deficit in the groundwater storage. As shown in the figure during years when the precipitation is below average, there is a deficit in groundwater storage; during years when precipitation is above average, there is a surplus. The regression line shown on the figure has a slight negative intercept, which is less than 1% of the average total inflow to the basin of 2,830 acre-feet.

Therefore, the groundwater basin inflows and outflows are in balance with variation in year-to-year storage due to variations in precipitation. This finding is consistent with the evaluation of groundwater level hydrographs, which indicate a general equilibrium.

Local Water Balance

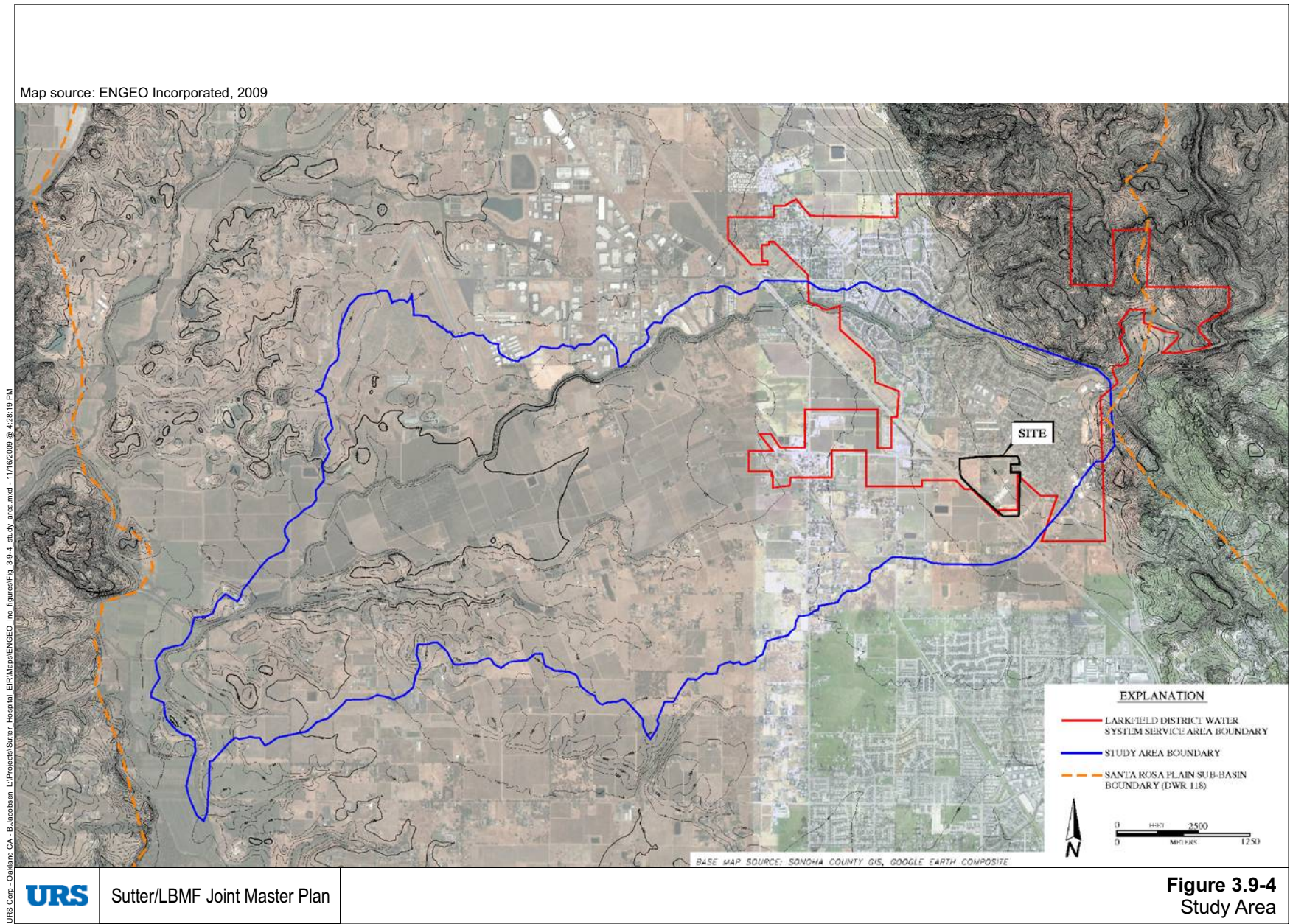
The pumping from the CalAm water supply wells creates a cone of depression (cone) as shown on **Figure 3.9-10**. The cone of depression creates a groundwater divide between the two 120 foot contours as shown on **Figure 3.9-10**. The general flow of subsurface water in this area moves from east to west. Water to the east of the cone of depression moves into the cone of depression. Water to the north or south outside of the 120 foot contour moves around the cone of depression to the west. Since there is a divide created by the cone, the area contained within the cone is hydraulically independent of the area outside of the cone. The Sutter property is shown as inside the cone of depression in **Figure 3.9-13**, as the Sutter pumping will pull the contours about 1,500 feet farther to the south. Outside of this small region, the Sutter wells will have no impact on groundwater levels.

The average annual rainfall for the project area is 30.4 inches. The annual net precipitation recharge to groundwater is 1,907 acre-feet/year (see **Table 3.9-1**). The study area is 5,876 acres. The fraction of rainfall that recharges groundwater is then:

$$\frac{1907 \text{ acre} - \text{feet}}{\frac{30.4 \text{ inches} * 5876 \text{ acres}}{12 \text{ inches} / \text{foot}}} = 0.13$$

That is, 13% of the average annual rainfall goes into direct recharge to groundwater. The area of the cone of depression is about 1,650 acres. Using a calculation similar to the above calculation, the rainfall recharge to groundwater within the existing cone of depression is 543 acre-feet. The groundwater study in Appendix H-2 reports that CalAm pumped an average of 749 acre-feet from 1997-2007, with pumping levels decreasing in recent years. This is 206 acre-feet greater than the amount of local recharge from precipitation; however, two other sources of recharge to the cone of depression are subsurface inflows and percolation in Mark West Creek from upstream flows. These are estimated to provide a total of 510 and 260 acre-feet per year,

Map source: ENGEO Incorporated, 2009



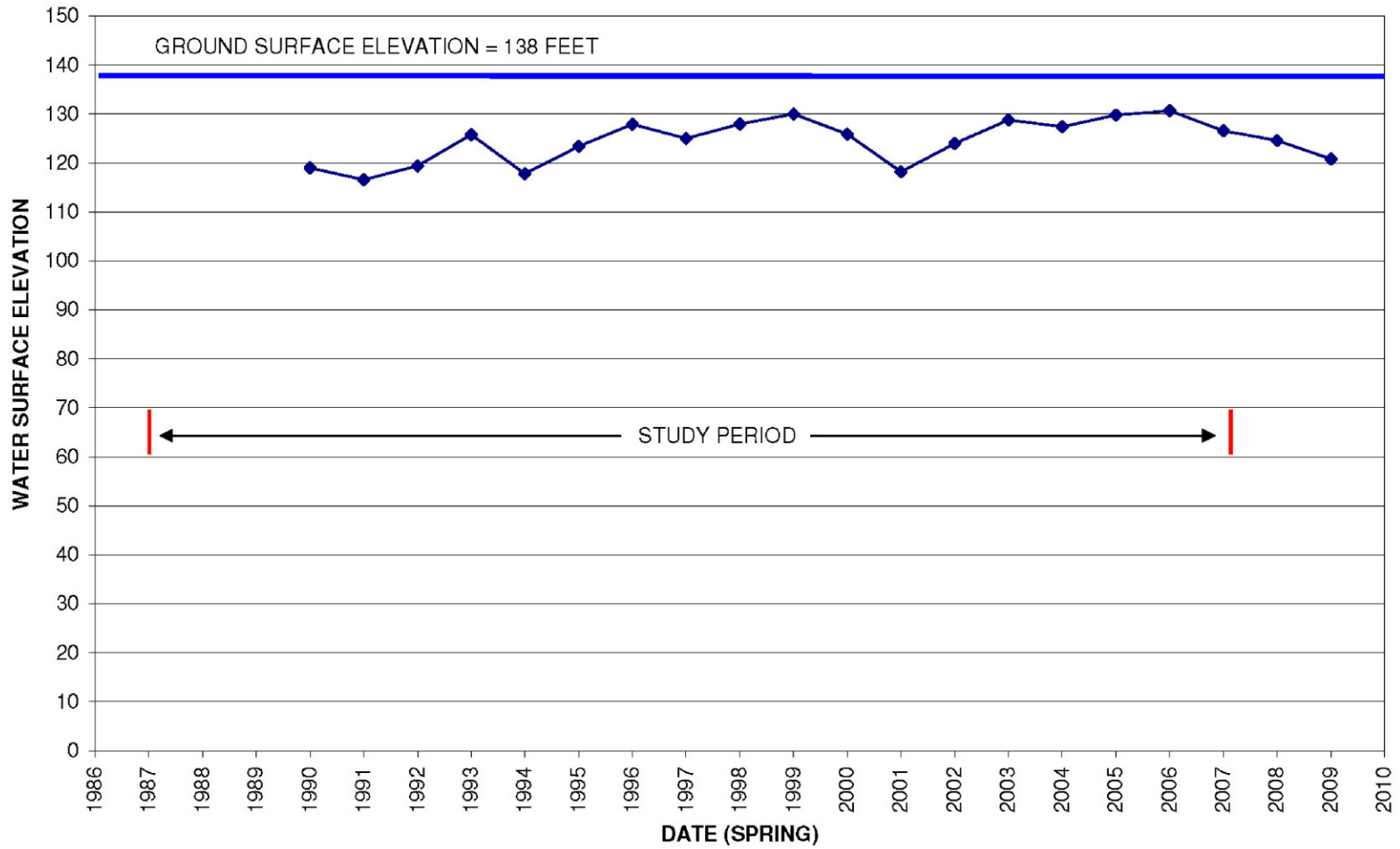
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Sutter/LBMF Joint Master Plan

Figure 3.9-4
Study Area

08N/08W-29B1 HISTORIC SPRING GROUNDWATER LEVELS



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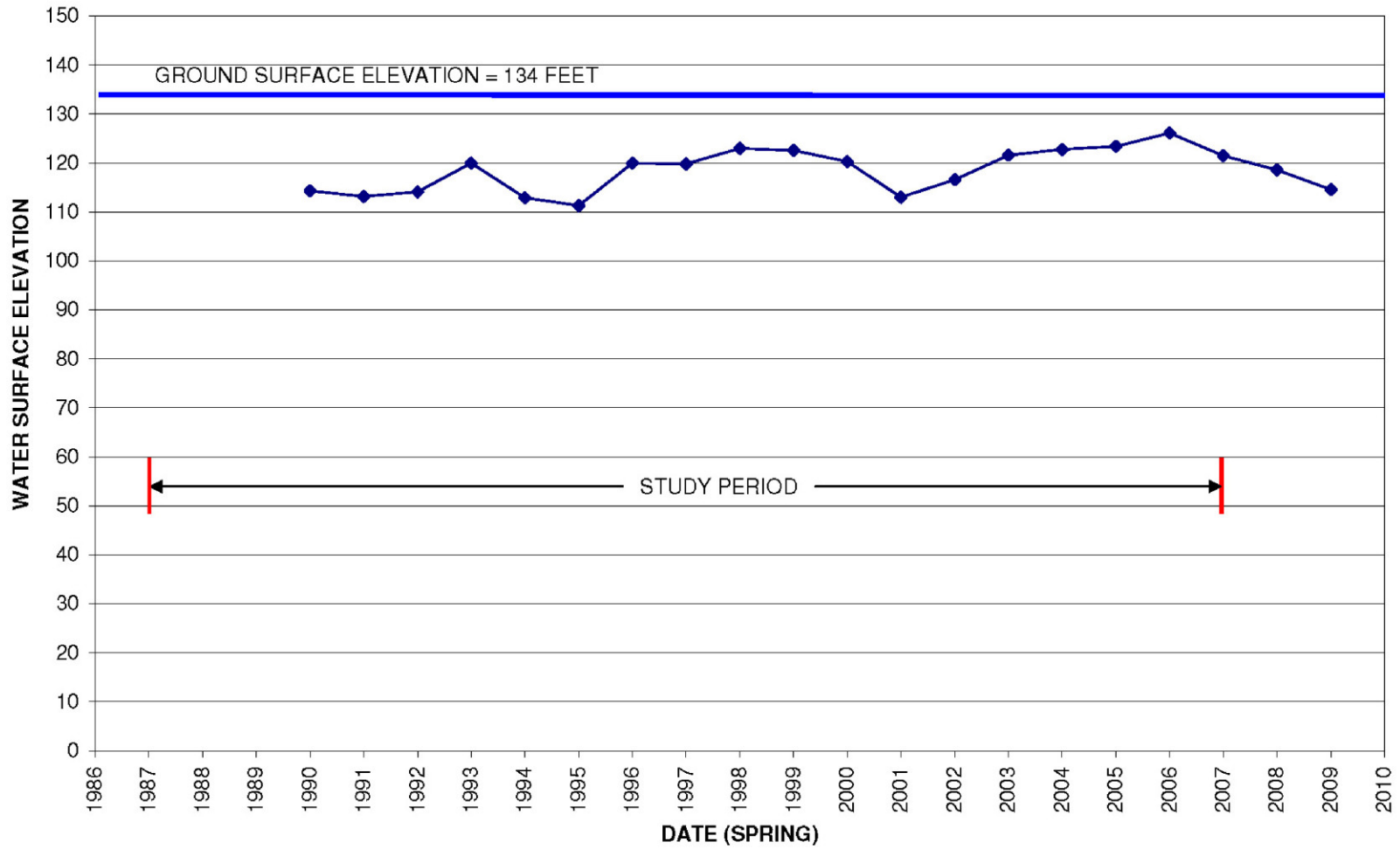
Graph source: ENGEO Incorporated, 2009



Sutter/LBMF Joint Master Plan

Figure 3.9-5
Spring Groundwater Levels

08N/08W-29C3 HISTORIC SPRING GROUNDWATER LEVELS



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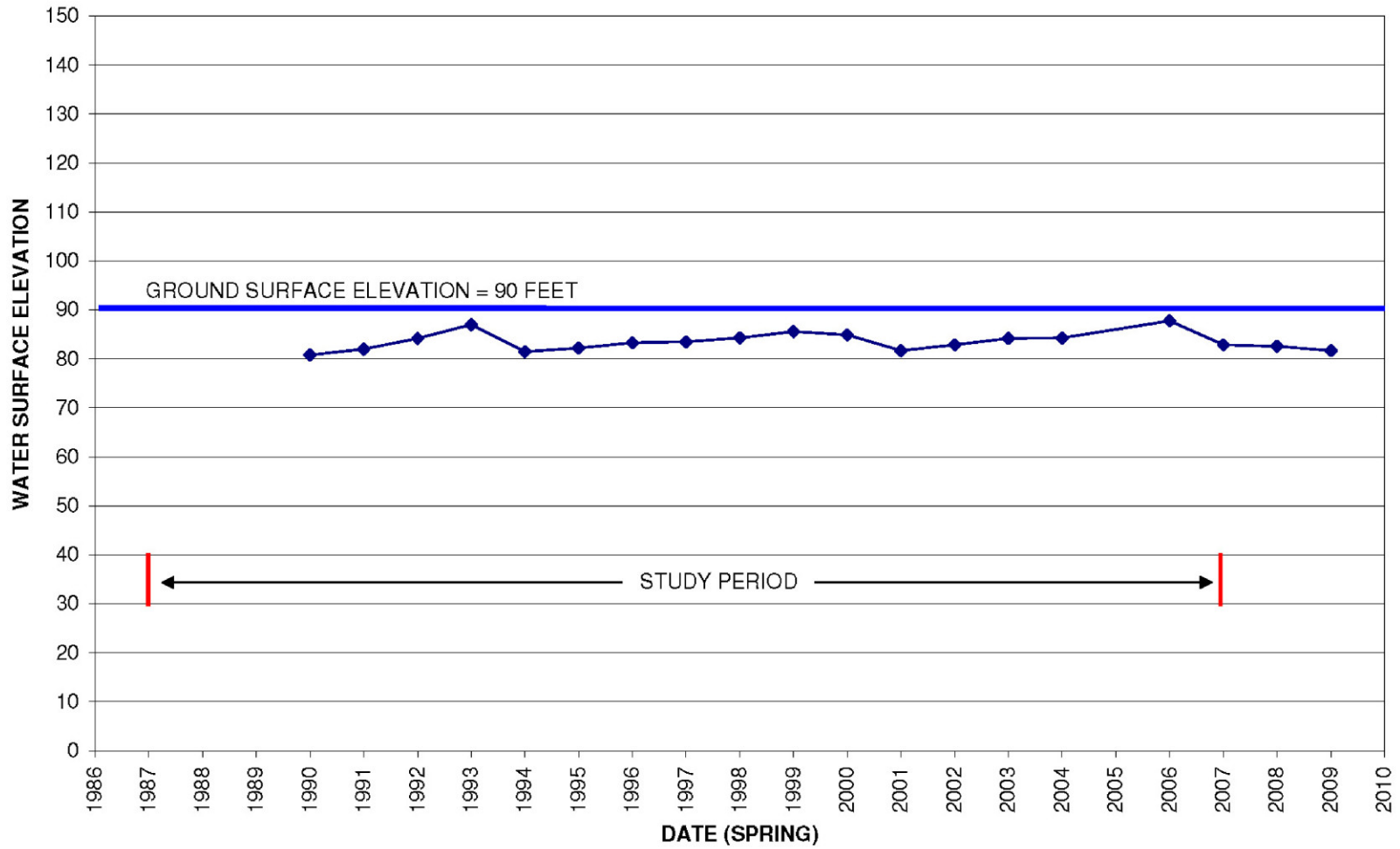
Graph source: ENGEO Incorporated, 2009



Sutter/LBMF Joint Master Plan

Figure 3.9-6
Spring Groundwater Levels

08N/09W-36N1 HISTORIC SPRING GROUNDWATER LEVELS



URIS Corp. - Oakland CA - B. Jacobsen, L:\Projects\Sutter_Hospital_EIR\Maps\ENGE0_Inc_Figures\Fig_3_7_Historical_spring_groundwater.mxd - 11/16/2009 @ 4:00:30 PM

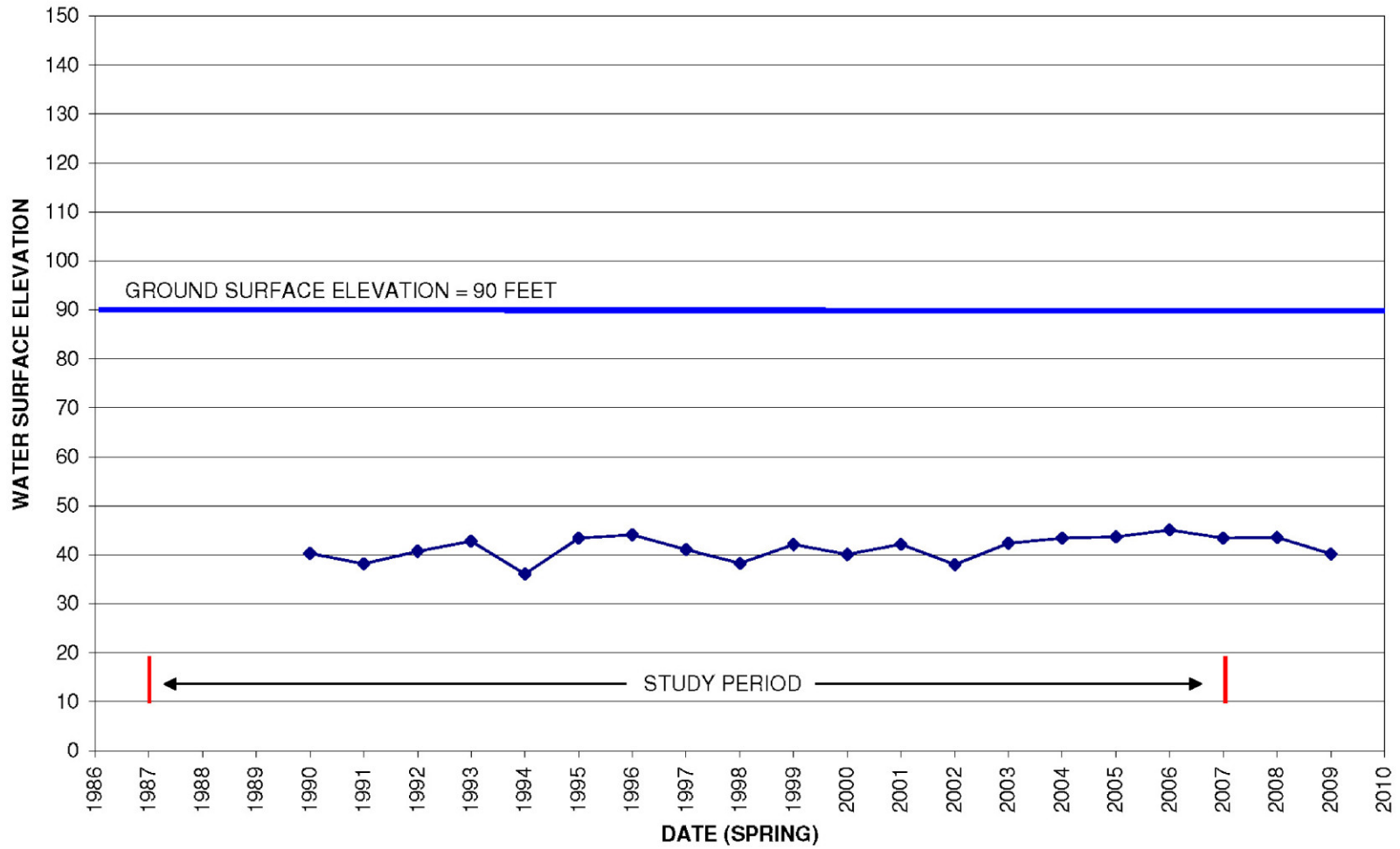
Graph source: ENGEO Incorporated, 2009



Sutter/LBMF Joint Master Plan

Figure 3.9-7
Spring Groundwater Levels

08N/09W-36P1 HISTORIC SPRING GROUNDWATER LEVELS



URIS Corp. - Oakland CA - B. Jacobsen, L:\Projects\Sutter_Hospital_EIR\Mapst\ENGE0_Inc_figures\Fig_3_9_8_Historical_spring_groundwater.mxd - 11/16/2009 @ 4:00:16 PM

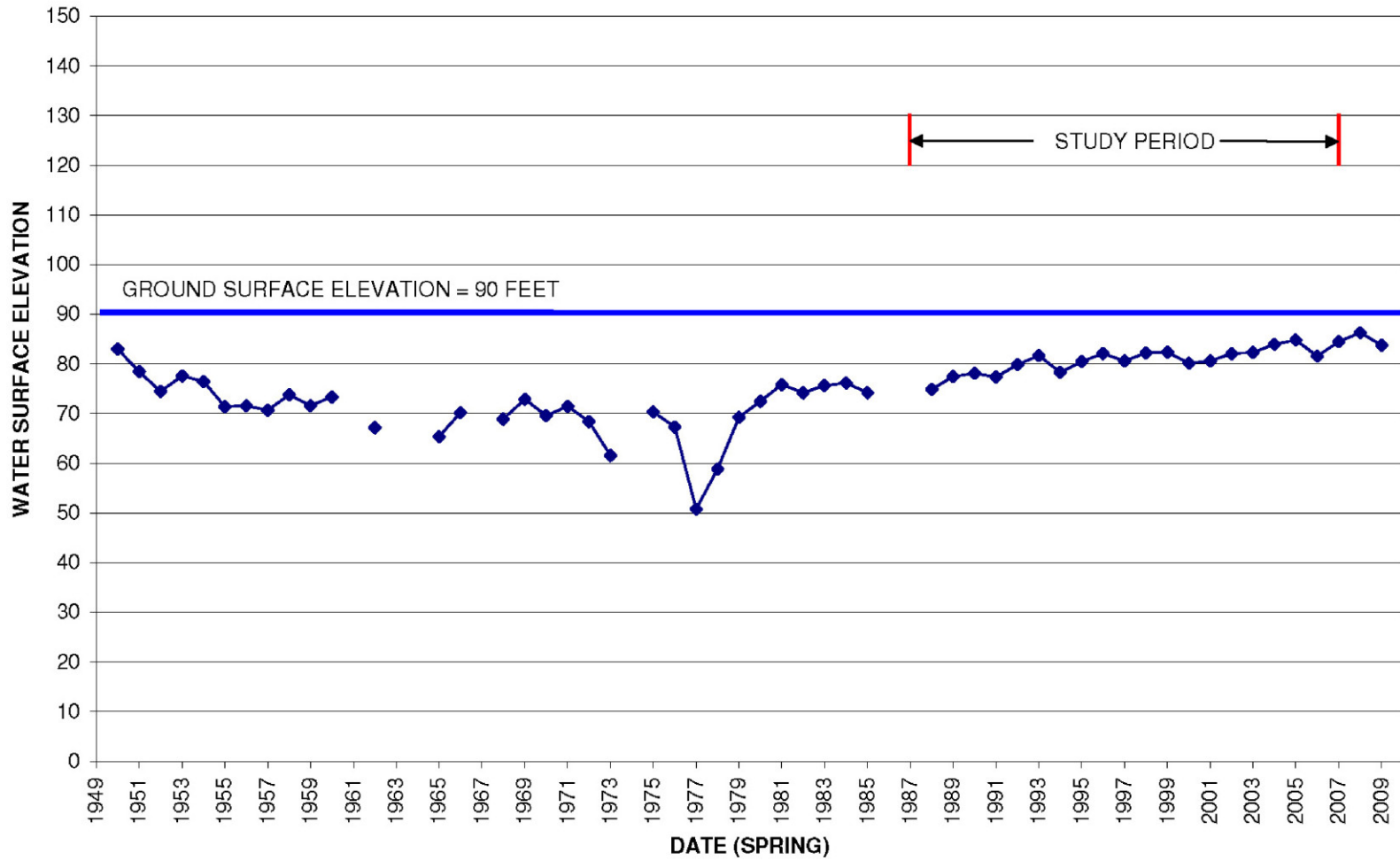
Graph source: ENGEO Incorporated, 2009



Sutter/LBMF Joint Master Plan

Figure 3.9-8
Spring Groundwater Levels

07N/09W-01C1 HISTORIC SPRING GROUNDWATER LEVELS



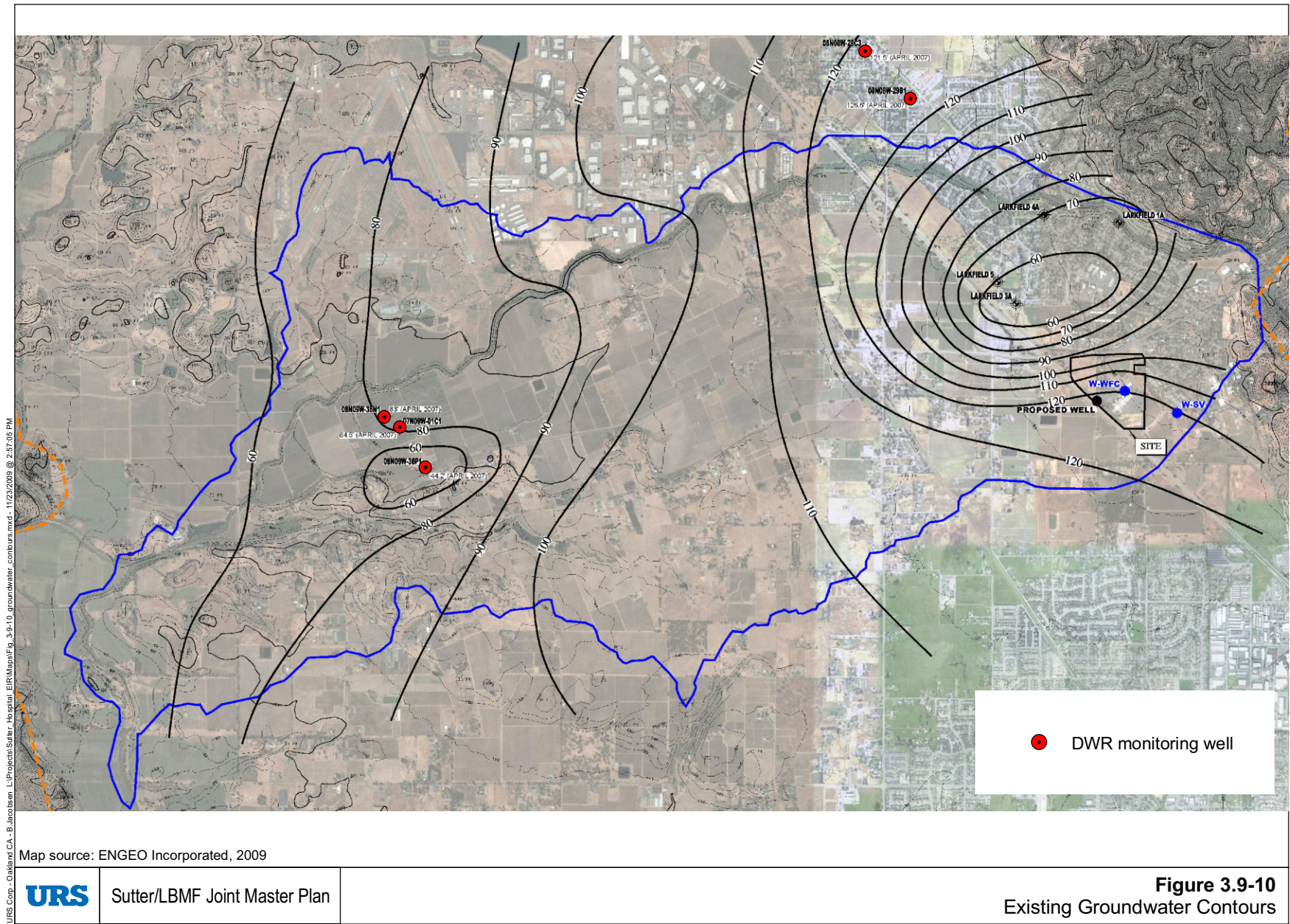
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Graph source: ENGEO Incorporated, 2009



Sutter/LBMF Joint Master Plan

Figure 3.9-9
Spring Groundwater Levels



Map source: ENGEO Incorporated, 2009



Sutter/LBMF Joint Master Plan

Figure 3.9-10
Existing Groundwater Contours

URS Corp. - Oakland CA - B.Jacobsen, L:\Projects\Sutter_Hospital_EIR\Mapst\ENGE0_Inc_figures\Fig_3_9_10_annual_precipitation_at_Santa_Rosa.mxd - 11/16/2009 @ 4:42:09 PM

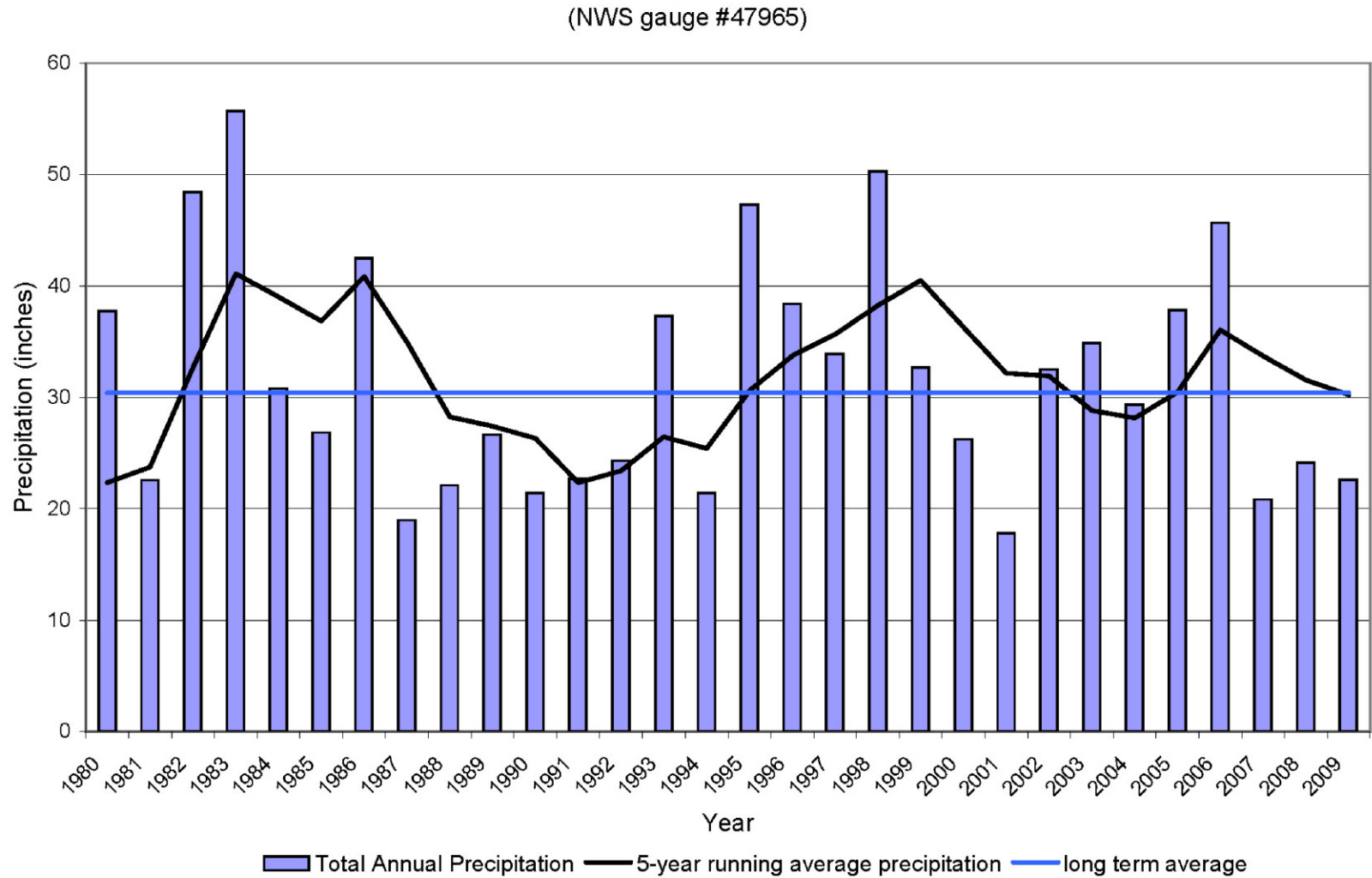


Figure 3.9-11
Annual Total Precipitation at Santa Rosa

URS Corp. - Oakland CA - B.Jacobsen_L:\Projects\Sutter_Hospital_EIR\Maps\ENGE0_Inc_figures\Fig_3_9_Comparison_deficit.mxd - 11/16/2009 @ 4:48:28 PM

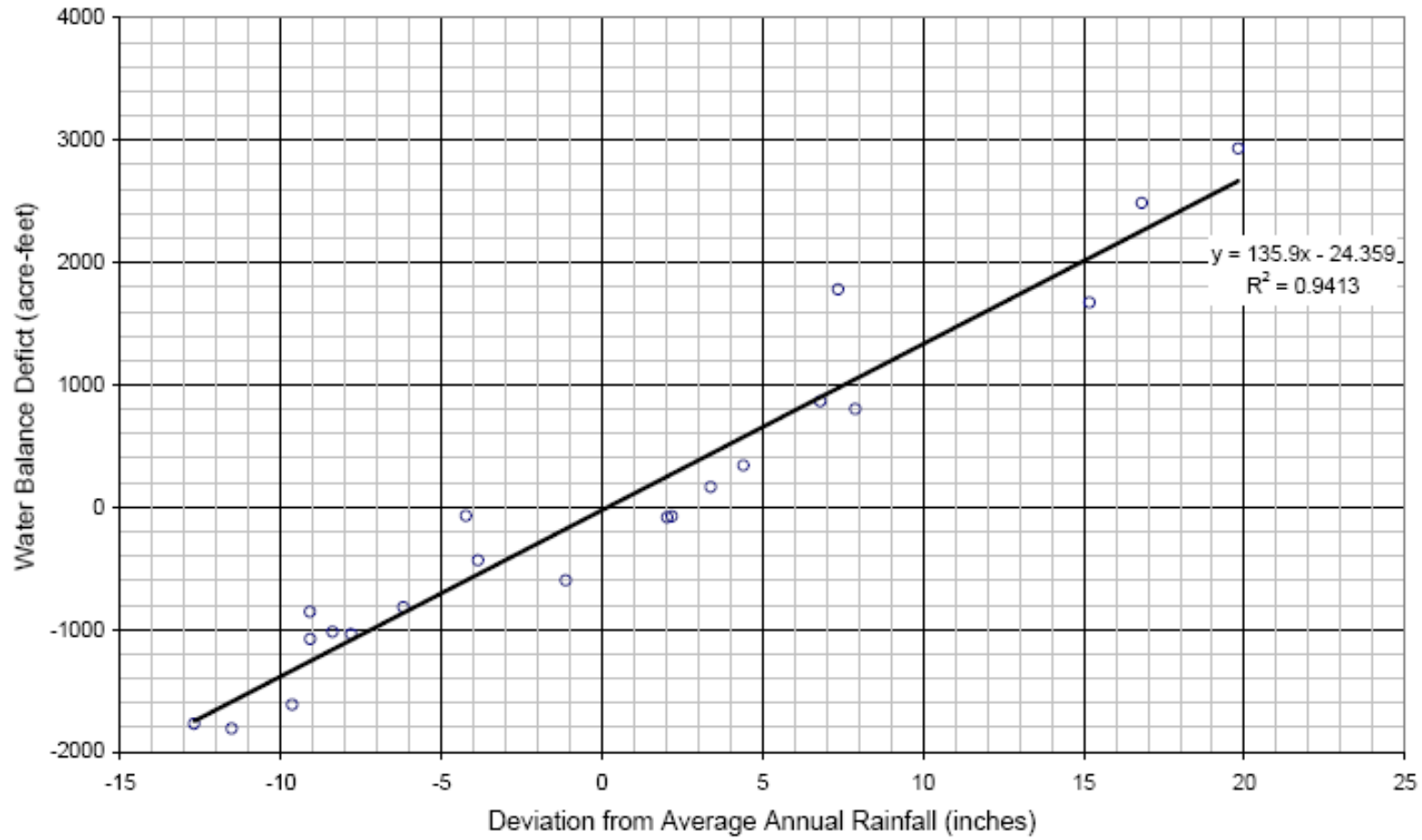
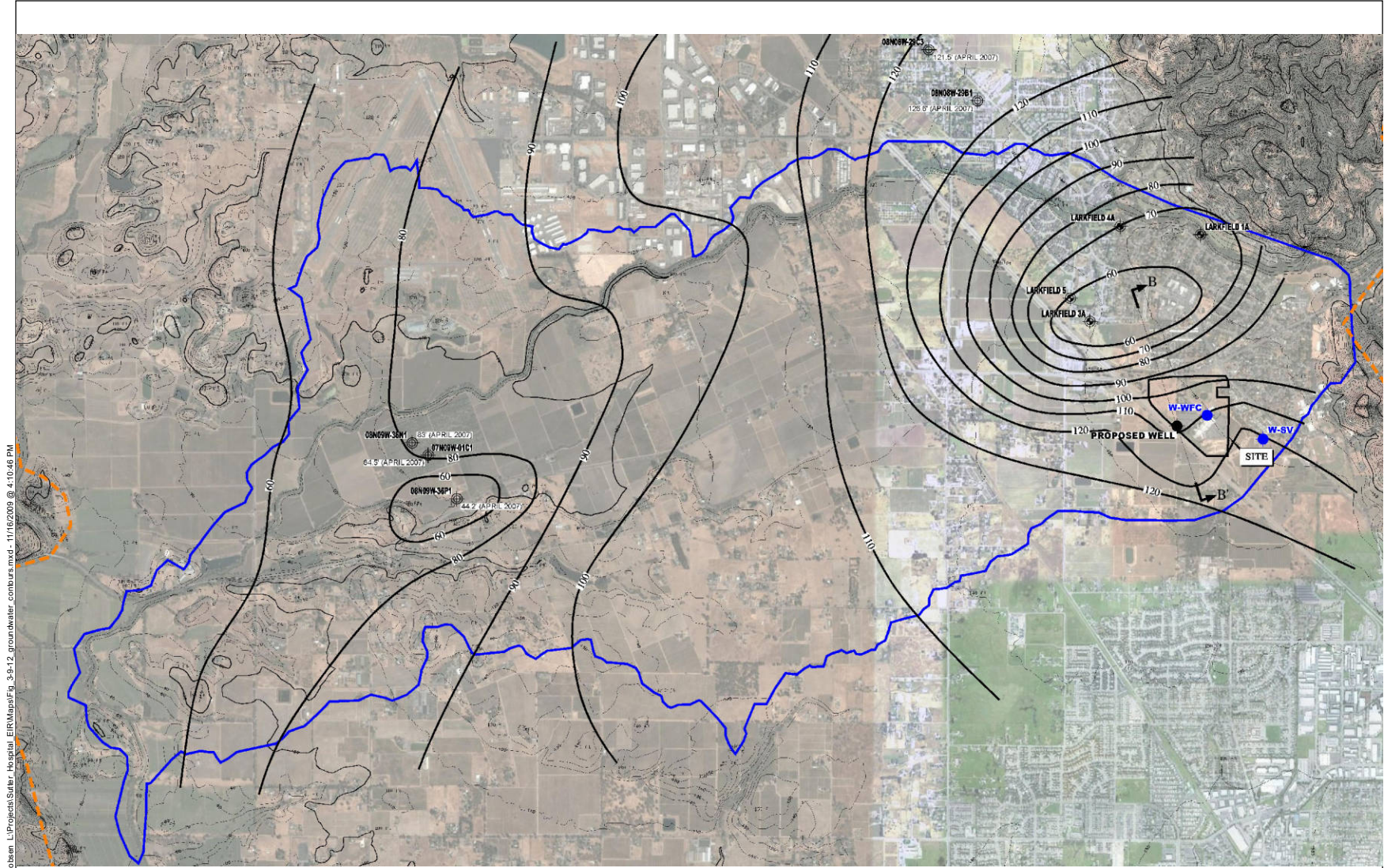


Figure 3.9-12



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Map source: ENGEO Incorporated, 2009

Figure 3.9-13
Projected Groundwater Contours with Sutter Well System

Table 3.9-2. List of Wells Within 2,000 feet of Proposed Sutter Wells

Well Log Number or ID	Parcel Number	Address	Use	Date Installed	Well Depth (feet bgs)	Static Water Level (feet bgs)	Screen Interval (feet bgs)	Expected Drawdown due to Proposed Sutter Wells ¹ (feet)
W-WFC	058-040-045	50 Mark West Springs Rd	irrigation	8/11/2000	400	40	100-160, 180-320, 360-400	< 3
Vintners Inn Property	058-040-021	4350 Barnes Rd	irrigation	NA	700	55	80-280, 320-400, 480-700	< 2
Coffey Lane Vineyards	058-040-014	4207/ 4205 Coffey Lane	domestic/ irrigation	1994	NA	NA	NA	< 2
Unknown	058-040-035	Coffey Lane	NA	NA	NA	NA	NA	< 0.5
Cargile Well	058-040-036	4585 Old Redwood Hwy	domestic	NA	160	NA	NA	< 0.5
49-1219	058-040-023	East Fulton Rd	domestic	5/4/1953	54	NA	NA	< 0.5
433183A-I	NA	4601 Old Redwood Hwy	test well	7/19/1991	NA	13-16.5	NA	*
313897	058-171-022	4605 Old Redwood Hwy	monitoring	7/15/1988	35	20.5	8-35	*
313898	058-171-022	4605 Old Redwood Hwy	monitoring	7/15/1988	35	20.5	8-35	*
313899	058-171-022	4605 Old Redwood Hwy	monitoring	7/15/1988	35	24	8-35	*
15532	058-360-044	4391 Old Redwood Hwy	domestic	8/20/1971	87	20	66-86	< 0.5
Unknown	058-040-052	Coffey Lane	domestic	NA	NA	NA	NA	< 0.5
778381	058-040-053	4121 Coffey Lane	domestic	8/7/2001	160	50	60-160	< 0.5
123464	058-040-042	4099 Coffey Lane	domestic	1/30/1974	81	10	61-81	< 0.5
532951	058-031-023	4033 Coffey Lane	domestic	8/21/1997	203	49	105-115 and 155-203	< 0.5
Unknown	058-031-024	NA	NA	NA	NA	NA	NA	< 0.5
Unknown	058-040-056	NA	NA	NA	NA	NA	NA	< 0.5

¹Based on 80 gpm pumping in 18 hours.

NA = Not available

* Drawdown was not estimated for monitoring or test wells.

Sources: *Groundwater Study, Proposed Sutter Water Well Supply System, Sutter Medical Center* (ENGEO, 2009c).

respectively. Given the location and breadth of the existing cone of depression, it is probable that a substantial portion of this water recharges the aquifer in the cone of depression (depending on specific groundwater level and flow conditions) and stabilizes groundwater levels. The remainder bypasses the cone of depression to recharge other downgradient portions of the basin. This is consistent with the hydrographs shown in **Figures 3.9-5** and **3.9-6** that show relatively constant water levels near CalAm water supply wells.

The above summaries for regional and local water balances indicate that the aquifer locally and regionally is presently in balance. The average annual water demand for the Sutter project (domestic and irrigation use) will be about 58 acre-feet per year. Since there appears to be sufficient recharge from upgradient subsurface inflow, the increase in pumping due to the project will not create a net deficit in the groundwater aquifer.

Radius of Influence

Construction of two new wells is proposed to provide groundwater for the medical complex's domestic use and landscape irrigation. If pumping rates are high enough, they could influence the water level in neighboring wells.

As discussed above, the proposed project will require approximately 58 acre-feet per year on average for domestic use and irrigation use (approximately 36 gallons per minute on average and a maximum of 102 gallons per minute over 24 hours).

A pump test was performed at a recently drilled well in the southwest corner of the site at the location of the proposed water supply wells (ENGE0, 2009c) (Appendix H-2). Using the results of the pump test, the radius of influence was calculated based on pumping for 18 hours at 80 gallons per minute. The results indicated that the radius of influence of the well could vary between approximately 1,000 to 2,400 feet, based on a range of storativity values for the aquifer (ENGE0, 2009c). **Figure 3.9-14** shows the location of wells in the vicinity of the proposed Sutter Medical Center well. The wells within 2,000 feet of the proposed well are listed in **Table 3.9-2**. Four active wells were identified within a 1,000-foot radius: the WFC well at about 750 feet, a well on the Vintners Inn property at 850 feet, and two wells on Coffey Lane at 950 feet. Drawdown at these wells is expected to be less than 3 feet (ENGE0, 2009c). This would have a less than significant effect on production at these wells. It is estimated that wells beyond 1,500 feet of the proposed wells would have a drawdown of less than half a foot.

The proposed project's demand of 58 acre-feet per year will not deplete groundwater supplies through pumping of groundwater. In addition, project components including detention basins, vegetated swales and compliance with the Santa Rosa SUSMP will reduce the interference with groundwater recharge due to the increase in impervious surfaces. Therefore, the proposed project would have a less than significant effect on local groundwater supplies.

Mitigation: No mitigation required

**Impact HY-4:
Permanent Alteration
of Drainage Patterns
and Potential Increase
In Siltation or Erosion** Project development would alter drainage patterns in the project area and could increase the rate or amount of surface runoff such that substantial siltation or erosion would occur on- or off-site.

Significance: Potentially significant

Discussion:

Alterations to the existing drainage pattern due to the proposed development are minor with respect to potentially causing substantial erosion or siltation on- or off-site. The site development will cover large portions of the site with buildings, parking lots, and landscaping elements and result in less exposed soil for potential erosion. However, the increased impervious area will result in increased runoff. If the increased runoff were allowed to leave the project site without being controlled, it could lead to increased erosion in downstream drainages. However, the project includes detention basins, vegetated swales (see **Figure 3.9-3**), and other measures to infiltrate storm water; these measures would reduce peak discharges from the 2-year storm such that post-development peak flows would not exceed pre-development peak flows. In the SUSMP, the 2-year flow was selected to represent the “channel-forming” flow, which is the flow that transports the majority of the sediment load over a number of years (EOA and BKF, 2005). The vegetated swales used for conveying on-site storm water shall be designed to slow the velocity of runoff and minimize erosion.

**Mitigation Measure
HY-4:** The following measures will ensure that increased runoff associated with increased impervious area will result in a less-than-significant impact with regard to siltation or erosion:

- Detention basins shall be used in conjunction with source- and treatment-control BMPs to maximize infiltration and prevent increases in peak runoff from the 2-year storm.
- Landscaping shall be designed and maintained to prevent runoff from contacting bare soil, and silt fences, berms, or sediment control basins shall be installed.

**Significance After
Mitigation** Less than significant. Creation of detention basins and proper design and maintenance of landscaping would reduce impacts associated with site runoff to less than significant.

Impact HY-5: Permanent Alteration of Drainage Patterns and Potential Increase in Flooding Project development would alter drainage patterns in the project area and increase the rate or amount of surface runoff, which could exceed the capacity of storm water drainage systems and result in significant flooding on- or off-site.

Significance: Potentially significant

Discussion: The project has the potential to increase the volume and peak flow rate of runoff from the site due to the increased amount of impervious surface. The majority of runoff from the site is directed under US 101 through three culverts (two 24-inch culverts and one 42-inch culvert). The culverts discharge into vineyards west of the highway. The runoff drains through ditches and culverts to the west and south, with some drainage discharging to Piner Creek and the rest discharging to Abramson Creek (Brelje and Race 2009a). The northern portion of the site along Mark West Springs Road discharges under US 101 to the west through a series of 18-inch culverts. The drainage then flows north along the southerly on-ramp before following River Road to the west and eventually discharging in Fulton Creek (Brelje and Race 2009a).

Due to the location of the project site at the upper end of the watershed, even very large storm events are unlikely to cause significant flooding on-site. The on-site storm water drainage system will be designed with sufficient capacity for a 10-year storm, as required by the SCWA flood control design criteria. The following discussion is a summary of the project design components for each tributary area described in *Preliminary Stormwater Mitigation Plan and Preliminary Hydrology and Storm Water Detention Plan* (Brelje and Race 2009a) and shown in **Figure 3.9-3**.

Tributary Area A

Storm water runoff from this area of the site, including pavements, will be collected in vegetated swales located in the parking areas and a perimeter vegetated swale located along the northern and western boundaries and conveyed to the existing 24-inch freeway culvert at US 101. The post-construction tributary drainage area to this culvert will be reduced in size such that the peak 10-year storm water runoff will approximate existing pre-construction conditions. The rest of the pre-construction tributary area that drained to this culvert will be incorporated into Tributary Area B.

Tributary Area B

Tributary Area B is composed of the largest portion of the site (38± acres), including most of the proposed Medical Campus buildings, roadways, and parking as well as the northwestern half of the existing site of the WFC. To achieve pre-construction peak storm water runoff conditions, drainage will be routed through vegetated swales located throughout the parking areas and then into a series of shallow surface detention basins located at the southwestern part of Tributary Area B that will detain runoff from the design storm event (10-year storm) established by the County of Sonoma. Outlet structures will be installed in the downstream detention basins that limit the discharge to pre-construction conditions during the 10-year storm event.

Tributary Area C

No proposed changes to this drainage area will result in an increase in runoff.

Tributary Area D

The post-construction tributary drainage area to the existing culverts located along the freeway off-ramp shall be reduced in size such that the peak 10-year storm water runoff will approximate existing pre-construction conditions. The minor increases in runoff due to the small addition of impervious surface in Tributary Area D will be offset by directing some of the pre-construction tributary area to drain into adjacent tributary areas (compare **Figures 3.9-2 and 3.9-3**).

The project design civil engineer will include the above measures in the project's construction plans and specifications. The plans will be reviewed by County drainage review staff. Implementation of Mitigation HY-5 would limit post-project runoff to pre-project levels for the 10-year, 24-hour rainfall event to avoid significantly contributing to flooding off-site.

By designing the storm drainage system for a 10-year event and implementing Mitigation HY-5, as specified below, flow rates in downstream drainage systems will not be increased due to the project for rainfall events with more than a 10 percent chance of occurring in any year. For rainfall events with less than a 10 percent chance of occurrence, increases in runoff contributions due to the project would be comparatively minor. The detention basins would contribute to a reduction in the peak flows, and as the storms get larger, the addition of impervious surfaces has less of an effect on runoff because the soils become saturated. Therefore, the potential for the project to cause flooding would be less than significant.

Mitigation HY-5: The proposed project shall modify drainage patterns or detention of
Prevent Increase in 10- runoff such that post-development peak flows in a 10-year storm
Year Peak Flows will not exceed the pre-development 10-year peak flows at the point
 where runoff leaves the project site.

Significance After Less than significant
Mitigation:

Impact HY-6: Cumulative Construction and operation of the proposed project could
Impacts to Hydrology and result in a considerable contribution to a significant
Water Quality cumulative impact related to hydrology and water quality.

Significance: Less than significant

Discussion:

The EIR for the Sonoma County General Plan 2020 concluded that development in the County could lead to adverse cumulative effects on hydrology and water quality, in part because not all development would be subject to discretionary permit conditions.

Such potential impacts could include construction impacts related to increases in stormwater runoff and pollutant loading to local creeks. However, the proposed project would be required to comply with drainage and grading ordinance requirements intended to control runoff and regulate water quality. The project is also designed to comply with NPDES permitting

requirements, including the SUSMP for the Santa Rosa area. With these controls, the project would not make a cumulatively considerable contribution to adverse impacts on water quality and hydrology including recharge to groundwater.

The proposed project site and its surroundings are not located within or near a 100-year flood hazard area. The project would not result in cumulative impacts from development on a floodplain.

The significance criteria for groundwater impacts are that the project would “Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted).” Applying this criteria, the proposed project by itself will not have a significant impact. It maintains recharge and currently there is sufficient recharge to more than account for the withdrawals for the project.

Over the life of the project, additional development would result in increased demand for groundwater supply. This section examines the potential for additional development, in combination with the project, to substantially deplete groundwater supplies, defined as a sustained regional condition in which the outflows (including pumping) from the groundwater system would increase, exceed inflows to groundwater, and result in groundwater level and storage declines (groundwater overdraft).

This discussion considers two potential future scenarios with increased groundwater demands that could affect groundwater supplies: those that may occur within the study area portion of the groundwater basin and those that may occur upgradient of the proposed project in the bedrock uplands. If the water demands for reasonably foreseeable future projects within the study area exceed the groundwater supply, then the cumulative impact would be significant. If the future upgradient development reduces the subsurface inflow to the downgradient groundwater basin to the extent that groundwater demand exceeds groundwater supply within the basin, then similarly the cumulative impact would be significant.

Future Use within the Groundwater Basin Study Area

As noted in the discussion of Impact HY-3, the ENGEO groundwater study (2009c) (Appendix H-2) evaluated the current water balance for the watershed study area, which estimated average annual inflows to groundwater of 2,830 AFY (see Table 3.9-1). Groundwater pumping (2,002 AFY) currently accounts for about 70% of this amount, indicating that no overdraft condition exists, which is corroborated by the independent examination of hydrographs showing stable groundwater levels.

The ENGEO study also estimated the additional future water demand for the entire watershed study area. This study quantified the number of existing residences, businesses and institutions and examined zoning data to estimate future buildout. Future water demand was estimated using reasonable assumptions about future water supply (CalAm or private wells) and wastewater treatment and disposal (septic systems or connection to regional systems). Agricultural water demand was reasonably assumed to remain relatively constant.

The analysis indicated that water demand (not including the project) would increase by 203 AFY. In addition, future development would result in a loss of recharge (estimated at 8 AFY), for a total impact of 211 AFY. The project net demand is estimated to be 28 AFY at full project buildout, including the assumption that the proposed Sutter project offsets (see below) would benefit the study area. Therefore, the estimated overall future increase in water demand with the project is 239 AFY at buildout. Addition of this demand to existing groundwater pumping (2002 AFY) results in an estimated groundwater pumping of 2,241 AFY, which is less than the current inflow to groundwater of 2,830 AFY.

Sutter has proposed, and Mitigation UT-5 includes, an offset program to reduce the wastewater flow to the Airport/Larkfield-Wikiup Sanitation Zone wastewater treatment plant, which serves the project area. The goal of the offset program is to have a net zero contribution of wastewater volume to the treatment plant. Although this offset program is designed to reduce the volume of wastewater going to the wastewater treatment plant, it will also reduce water demand by an equivalent amount since it attempts to achieve its goal through the use of low flow toilets and showerheads. To the extent that the participants in the offset program receive their water from groundwater in the ENGEO study area, the impacts of the project on groundwater will be reduced. The maximum reduction possible is 30 AFY.

(A more conservative approach would be not to include the assumptions that the planned offsets (30 AFY) would be achieved in full and benefit the study area. Deleting any consideration of the offsets would result in an estimated increase in demand of 269 AFY. Addition of this net demand to existing groundwater pumping results in an estimated net groundwater pumping of 2,271 AFY, which is still less than the current inflow to groundwater of 2,830 AFY. However, as noted in the discussion of the offset program in Section 3.16, Sutter must demonstrate that the offsets have been achieved before an occupancy permit will be granted by the County; accordingly, consideration of the offset water demand in calculating the cumulative effect on the groundwater basin is appropriate.)

Upgradient Future Use

A ground water conditions study in the Mark West Springs area was conducted by Kleinfelder (2003). The Mark West Springs area is located just to the east and adjacent to the study area for the ENGEO groundwater study. The Kleinfelder study did not identify any recognized areas with water availability problems. However, the nature of the geologic formations in the Mark West Springs area (primarily fractured bedrock of the Sonoma Volcanics) leads to an unpredictable availability of water (Kleinfelder, 2003). PRMD estimates that 206 more residential units are still allowed by zoning in the Mark West Springs area (Kleinfelder, 2003), resulting in a potential future demand of about 100 acre-feet of water per year (assuming residential water use of 0.5 acre-feet per year).

If groundwater were used for the future development in the Mark West Springs area, it would decrease the inflow available to recharge the downgradient groundwater study area that will supply the proposed project. The estimated inflow provided in the ENGEO groundwater study and shown in **Table 3.9-1** is 564 acre-feet/yr, including subsurface inflow and Mark West Creek percolation. Development of groundwater supply in the bedrock uplands will result in an adjustment of the local bedrock water balance, including some decrease in storage, and changes in groundwater inflows and outflows. Making the extremely conservative assumption that new

development would be supplied entirely by water that would otherwise flow into the downgradient study area, the estimated development in the Mark West Springs area could reduce this availability by 100 acre-feet/year to 464 acre-feet/year, still sufficient to supply the proposed project and other future uses.

It is noted that the above are comparisons between *current* groundwater inflow and *future* estimated demands. These comparisons should be considered with the realization that the water balance of the groundwater system will change with any increase in pumping. Potential impacts that might decrease the current inflow to the groundwater system have been addressed; accordingly, the inflow can be expected to remain stable or to increase as additional recharge is induced by pumping. In the future, the groundwater basin will come into a new equilibrium of inflows, outflows, and storage that accounts for the increased pumping from the Sutter project and other development.

Combined Future Demand

If the upgradient Mark West Springs area, the proposed project, and the remainder of the study area were to be fully developed, the increase in demand would 339 AFY. Added to the existing pumping, the total demand on groundwater would amount to an estimated 2,341 AFY. This estimated amount approaches the current estimated inflow to the groundwater basin (2,830 AFY), but does not exceed it. With reference to the stated threshold of significance, the potential cumulative impact is less than significant.

In the future, the groundwater basin is likely to be affected not only by probable increases in groundwater pumping and use, but also by improved conservation and groundwater management. If the Larkfield-Wikiup area adopts the Governor of California's proposed water conservation goals of 20 percent reduction in per capita water demand by 2020, reductions in groundwater pumping would be achieved that have not been included in the calculations for this cumulative impact analysis. (See ENGEO, *Groundwater Study*, 2009c, Appendix H-2)

With respect to groundwater management, the cooperative SCWA and USGS study, which is nearing completion, will provide the technical basis to evaluate groundwater conditions across the Santa Rosa Plain. The study has four principal elements: (1) to compile and analyze data as part of a comprehensive geographic information system (GIS); (2) characterize and assess the hydrogeologic and geochemistry conditions of the Santa Rosa Plain; (3) develop a multi-aquifer groundwater flow model for Santa Rosa Plain; and (4) evaluate the hydrologic impacts of alternative groundwater management strategies for the basin. The study, slated for completion in 2010, is intended by SCWA and key groundwater users and stakeholders to provide the foundation for improved groundwater management. While the progress of groundwater management is specific to each basin, in Sonoma Valley, a USGS foundational study¹ was completed in 2006, followed by development of *The Sonoma Valley Groundwater Management Plan* in 2007. The Plan, currently being implemented on a voluntary basis through a broad and active stakeholder process, has resulted in improved monitoring and groundwater quality

¹ Farrar, Christopher, et al., 2006, *Geohydrological Characterization, Water-Chemistry, and Ground-Water Flow Simulation Model of the Sonoma Valley Area, Sonoma County, California*, USGS Scientific Investigations Report 2006-5092.

protection.² If the SCWA/USGS study demonstrates a need for groundwater management in the Santa Rosa Plain, it is reasonable to expect that some degree of management will be implemented.

Mitigation: **No mitigation required.**

² Sonoma County Water Agency, 2009, *2008 Annual Report Sonoma Valley Groundwater Management Program*, March 2009. Also see <http://www.scwa.ca.gov/svgroundwater/>

3.10 LAND USE AND PLANNING

This section describes existing land uses and land use designations for the project site and identifies Sonoma County General Plan policies and zoning regulations that relate to land use. The purpose of this section is to provide the regulatory and environmental setting necessary to analyze potential impacts on land use and planning associated with the project and to present the land use impact analysis.

Note that consistency with the County General Plan will be determined by the Board of Supervisors for this project. The following analysis is intended to inform that ultimate decision.

3.10.1 Environmental Setting

The project development site is approximately 53 acres and is located in unincorporated Sonoma County roughly northwest of the Santa Rosa city limits. The site is bordered by Mark West Springs Road to the north (with residential beyond), US 101 to the west (with vineyard beyond); vineyard to the south; and a vineyard, commercial, and residential neighborhood, the Berrybrook subdivision, to the east.

The development site is designated PQP (Public/Quasi Public) in the General Plan, zoned PF (Public Facilities), and historically been used for public/quasi public/institutional uses, primarily the Wells Fargo Center for the Arts, owned and operated by the Luther Burbank Memorial Foundation (LBMF), and associated uses.

In addition to the development site, the project includes placing one additional adjacent 1.41-acre parcel (APN 058-040-036) inside the Larkfield-Wikiup Urban Service Boundary. This parcel is designated Rural Residential 1 acre density in the General Plan, is zoned RR (Rural Residential) – B6 – 1 acre density – VOH (Valley Oak Habitat), and is currently developed with one single family dwelling served by a well and septic system. The purpose of including this parcel within the Urban Service Boundary is to prevent the formation of ‘island’ parcels which do not have sewer service available inside the Urban Service Boundary (if the overall development project is approved). Including the subject residential parcel inside the Urban Service Boundary would not change the land use designation or the allowed uses on that property.

3.10.2 Regulatory Setting

3.10.2.1 *State*

Article XI, Section 7 of the State Constitution authorizes California cities and counties to regulate land use in their communities. The California State Planning and Land Use Law (California Government Code Section 65000 et seq.) promulgates minimum standards for land use and planning regulation at the local level. It requires cities and counties to adopt general plans and zoning ordinances. California Government Code Section 65300 et seq. requires cities to implement and maintain general plans that are internally consistent and consistent with other applicable land use plans, laws, and policies, including those contained in the zoning ordinance and other planning documents. Cities are required to adopt and enforce zoning ordinances under California Government Code Section 65850 et seq. The Subdivision Map Act (California

Government Code Section 66410 et seq.) requires local government approval for all subdivisions of land in California.

3.10.2.2 *Local*

The project site is located in unincorporated Sonoma County and is subject to the land use and planning policies set forth in the *Sonoma County General Plan 2020* (the General Plan; PRMD 2008, revised 2009) and in the *Sonoma County Zoning Regulations* (the Zoning Regulations), which are in Chapter 26 of the *Sonoma County Municipal Code*. The Zoning Regulations prescribe permitted land uses on individual parcels of land throughout Sonoma County.

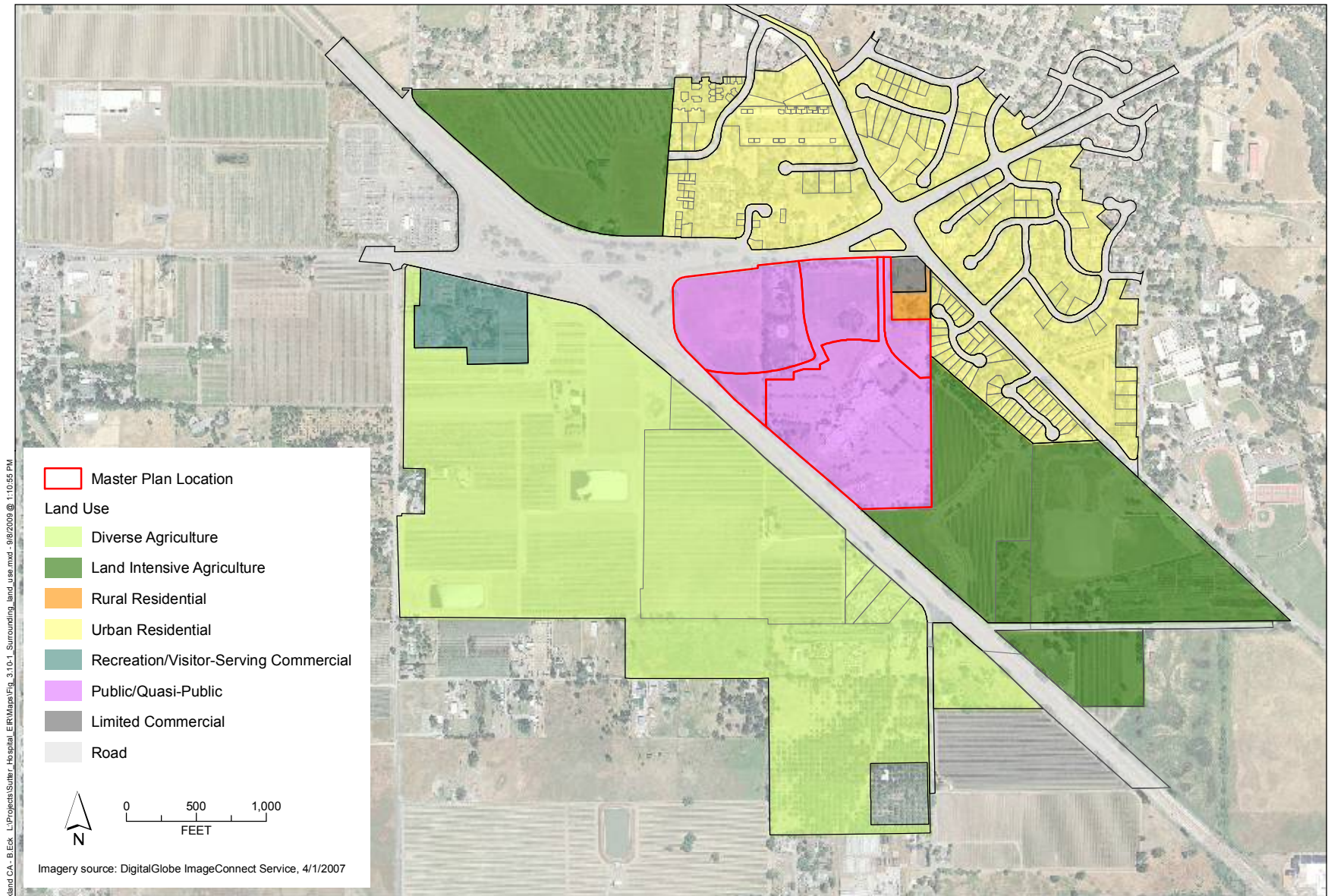
3.10.2.3 *Land Uses Adjacent to the Project Site*

Figure 3.10-1 shows land use designations in the project vicinity. A residential neighborhood composed of a mixture of single-family homes and apartments is located to the north of the project site (across Mark West Springs Road) in an area with a General Plan land use classification of Urban Residential (UR) 11 units per acre. This area has a base zoning of R2 (Medium Residential) - B6 – 11 dwelling unit per acre, and R2 - B7 (Frozen lot size). The parcels immediately northeast of the project site contain commercial and detached residential buildings and have General Plan land use classifications of Limited Commercial (LC) and Rural Residential (RR), 1 unit per acre. These parcels are base zoned LC (Limited Commercial), and CO (Administrative and Professional District), and RR (Rural Residential) – B6 – 1 acre density. The Berrybrook residential subdivision to the east of the project has a General Plan land use classification of Urban Residential (UR), 11 dwelling units per acre and a base zoning of R1 (Low Density Residential) – B6 – 3.49 dwelling units per acre. East and south of the project site and south of the Berrybrook subdivision is a vineyard, which has a General Plan land use classification of Land Intensive Agricultural (LIA) 1 unit per 20 acres and a base zoning district of LIA (Land Intensive Agriculture) – B6 – 1 unit per 20 acres. The agricultural fields south and west of the project site (across US 101) have a General Plan land use classification of Diverse Agriculture (DA) 1 unit per 10 acres and a base zoning of Diverse Agricultural – B6 – 1 unit per 10 acres.

3.10.2.4 *Project Site Land Uses*

The project development site is composed of four contiguous Assessor's Parcels, which are referred to in this EIR as Parcels A, B, C, and D and shown in **Figure 2-2**. The land uses and sizes of the parcels are as follows:

- Parcel A (Assessor's Parcel Number [APN] 058-040-058) is approximately 15 acres and is owned by Sutter. It contains a barn used for LBMF maintenance activities, a wastewater treatment plant used by LBMF, and undeveloped land used for pasture. It is bordered by US 101 to the west, Mark West Springs Road to the north, and Parcel B to the east and south.
- Parcel B (APN 058-040-059) is approximately 10 acres and is also owned by Sutter. The land on this parcel consists primarily of athletic fields used by LBMF; the rest is undeveloped. Generally, it is bordered by Parcel A to the west, Mark West Springs Road to the north, Parcel C to the east and south, and US 101 to the southwest.



URS Corp., Oakland CA, B.Eck, L:\Projects\Sutter_Hospital_ER\Map\Fig_3.10-1_Surrounding_land_use.mxd - 9/8/2008 @ 1:10:56 PM



Sutter/LBMF Joint Master Plan

Figure 3.10-1
Surrounding Land Use

- Parcel C (APN 058-040-060) is approximately 25 acres and contains the Wells Fargo Center for the Arts (WFC), which is owned and operated by LBMF. Parcel C is used to host community and arts events at the WFC. The parcel has 903 parking spaces and a lawn area known as the East Lawn, which is used for civic and community-based functions, private receptions, and limited amplified events within County General Plan parameters. The parcel is bordered by US 101 to the west and south, Parcels B and D to the north, and a vineyard to the east.
- Parcel D (APN 058-040-061) is approximately 3 acres and is owned by LBMF. It is undeveloped and is primarily covered with grassy areas bordered by trees to the north and the east. It is bordered by Parcel C to the west and south and residential development to the east and north.

The project also includes placing one additional adjacent 1.41-acre parcel (APN 058-040-036) inside the Larkfield-Wikiup Urban Service Boundary. This parcel is designated Rural Residential 1 acre density in the General Plan, is zoned RR (Rural Residential) – B6 – 1 acre density – VOH (Valley Oak Habitat), and is currently developed with one single family dwelling and a number of outbuildings served by a well and septic system. It is owned by the Severns-Cargile Pietrina Trust and the Thomas W. Cargile Trust.

3.10.2.5 *Existing Land Use Classification and Policies*

The Sonoma County General Plan classifies the current land uses on all four development parcels at the project site as Public/Quasi Public (PQP). The stated purpose of this designation is to “provide sites that serve the community or public need and are owned or operated by government agencies, non profit entities, or public utilities” (PRMD 2008, revised 2009). The operation of hospitals is among the land uses permitted within areas designated as PQP.

The additional 1.41-acre parcel to be included in the Larkfield-Wikiup Urban Service Boundary has a General Plan designation of Rural Residential 1 acre density. Including the subject residential parcel inside the Urban Service Boundary would not change the land use designation or the allowed uses on that property.

The project site is in the Santa Rosa and Environs Planning Area, as designated by the Sonoma County General Plan. This area surrounds the Santa Rosa city limits and includes the flat terrain of the Santa Rosa Plain, several small valleys surrounded by rolling hills, and the mountainous areas of the Sonoma and Mayacamas mountain ranges. Major drainages within this area include Santa Rosa Creek, Mark West Creek, and the Laguna de Santa Rosa natural resource area. According the Sonoma County General Plan, the primary land use issues confronting this area are:

- The ability of public services to accommodate projected residential, commercial, and industrial growth;
- Protection of agricultural lands, as proximity to urban Santa Rosa has resulted in pressure to convert such lands to rural residential use; and
- Future development in southwest Santa Rosa before the annexation by the City and annexation of the Roseland area and other existing developed land within the City’s Urban Growth Boundary (SCPRMD 2008, revised 2009).

The General Plan includes the following two specific objectives for the Santa Rosa and Environs Planning Area:

- Objective LU-16.1: Avoid urban development within the Urban Service Boundary of Santa Rosa until annexation except where allowed by Specific or Area Plan as of 1986.
- Objective LU-16.2: Limit future rural residential development to infill within areas already designated for such use (SCPRMD 2008, revised 2009).

In regard to LU-16.1, it is noted that the proposed project is both located outside of the Santa Rosa Urban Service Boundary, and is proposed to be included within the Larkfield-Wikiup Urban Service Boundary (not Santa Rosa).

In regard to LU-16.2, it is noted that the project does not involve any land use changes or development related to residential uses.

3.10.2.6 Existing Zoning Regulations

All four development parcels that comprise the project area are subject to the same four zoning designations and regulations: a base zoning designation of Public Facilities (PF; County Zoning Regulations Article 52); and three Combining District Overlay zoning designations—Scenic Design (SD; County Zoning Regulations Article 62), Scenic Resources (SR; County Zoning Regulations Article 64), and Valley Oak Habitat (VOH; County Zoning Regulations Article 67). Combining District zoning regulations apply to parcels in addition to the regulations prescribed by base zoning designations. Each zone is defined in the County Zoning Regulations as follows:

- PF: The purpose of areas zoned PF is “to provide sites which serve the community or public need and to protect those sites from encroachment of incompatible uses.”
- SD Combining District: The purpose of this designation is to “provide for the preservation of the scenic beauty of the county.”
- SR Combining District: The purpose of this designation is to “preserve the visual character and scenic resources of lands in the county.” SR Combining District zoning contains criteria for structures located within Scenic Corridors, Community Separators, and Scenic Landscape Units.
- VOH Combining District: The purpose of this overlay is to “protect and enhance valley oaks and valley oak woodlands and to implement the provisions of Section 5.1 of the general plan resource conservation element.” VOH zoning regulations require specific mitigation measures for the removal of any valley oak trees resulting from a project. These mitigation measures are specific to the size of valley oak tree that is removed.

In addition to the development site, the project includes placing one additional adjacent 1.41 acre parcel (APN 058-040-036) inside the Larkfield-Wikiup Urban Service Boundary. This parcel is zoned RR (Rural Residential) – B6 – 1 acre density – VOH (Valley Oak Habitat). The purpose of the Rural Residential zoning district is to “preserve the rural character and amenities of those lands best utilized for low density residential development pursuant to Section 2.2 of the general plan. Rural residential uses are intended to take precedence over permitted agricultural uses, but the district does not allow agricultural service uses. The rural residential district may also be

applied to lands in other land use categories where it is desirable to use zoning to limit development.”

3.10.2.7 Text Amendment

Although not proposed by the project applicant, PRMD Planning staff has indicated that if the project is approved, a General Plan Area Policy text amendment may be implemented with it to specifically identify the intent of the Board of Supervisors for the site. Such a text amendment may include language such as:

Policy LU-16z: The intent of County of Sonoma Board of Supervisors in extending the Urban Service Boundary to include the Sutter/Wells Fargo Center site is to allow for a project of significant public benefit consisting of and limited to: A medical hospital and ancillary medical facilities and offices on APN=s 058-040-058 & 059; and a performing arts community center and ancillary community serving uses on APN=s 058-040-060 & 061. All new uses and structures on the 53 acre site shall be subject to use permit review to demonstrate: 1) A significant overriding public benefit, 2) Integration within the larger 53 acre site area in regards to shared infrastructure, roads, parking and open space, and 3) A high level of architectural and landscape quality suitable to a highly visible major community-serving site.

Such a General Plan Area Policy would have the effect of limiting the uses on site to only those specifically approved with the proposed project; therefore, such a policy would not be expected to create any environmental impacts or inconsistencies with the General Plan.

3.10.3 Impact Analysis

3.10.3.1 Approach and Methodology

The analysis in this section focuses on the compatibility of the project with existing and planned land uses and planning policies within the vicinity of the project site. In addition, the analysis focuses on the compatibility of project with the Sonoma County General Plan 2020 and the Sonoma County Zoning Regulations.

3.10.3.2 Thresholds of Significance

According to Appendix G of the *CEQA Guidelines*, the project would have a significant impact if it would:

- Physically divide an established community.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

3.10.3.3 *Less Than Significant Impacts Not Requiring Further Analysis*

The following potential project impacts have been evaluated and determined to be less than significant. These impacts thus are not evaluated in this EIR in further detail.

The project would not physically divide an established community. The project site is surrounded by open space and agricultural land to the south, US 101 to the west, and primarily unincorporated commercial and residential development to the north and east. The project would not establish new development between existing components of an established community. Mark West Springs Road divides the project site from the residential neighborhood to the north. All homes in the Berrybrook subdivision, which adjoins a small portion of the project site's eastern boundary, face away from the site and toward an existing residential street, Darbster Place. Darbster Place provides access to the Berrybrook subdivision independent of the project site. Development of the project site would introduce new land uses between US 101 and residential areas to the east. However, the project would not physically divide an existing community as a result of the new land uses.

The proposed project is within the boundaries of the study area for the Santa Rosa Plain Conservation Strategy. The Conservation Strategy identifies eight conservation areas for special-status species, but the project site is not located within any of these areas. The proposed project would not conflict with implementation of the Santa Rosa Plain Conservation Strategy or any other habitat conservation plan or natural community conservation plan.

3.10.3.4 *Impacts and Mitigation*

Impact LU-1: Conflict with an established land use plan, policy, or regulation Potential inconsistencies with General Plan adopted land use designations, and the proposed amendment to include the project site within the Larkfield-Wikiup Urban Service Boundary established in the County General Plan. As part of the project, this boundary would be relocated to include the project site and maintain consistency with adopted land use plans and policies.

Significance: Less than significant

Discussion:

The proposed project would convert the vacant land in Parcels A and B to the institutional uses associated with a hospital and medical offices (see Section 2.3.2). The project would relocate the athletic field on Parcel B to the south end of Parcel C. Land uses at WFC (Parcel C) would not be significantly altered after implementation of the proposed project. A small WFC maintenance facility would be relocated from parcel A to parcel D.

All of these uses are related to the proposed hospital and existing large scale community event facility of the Wells Fargo Center. As previously noted, the stated purpose of the General Plan Public/Quasi Public designation is to “provide sites that serve the community or public need and are owned or operated by government agencies, non profit entities, or public utilities”. The operation of hospitals is among the land uses permitted within areas designated as PQP. Given the above, it appears the proposed uses in the development project would be consistent with the intent of the Public/Quasi Public General Plan land use designation on site to serve large institutional and quasi public uses.

In addition to the development site, the project includes placing one additional adjacent 1.41 acre parcel (APN 058-040-036) inside the Larkfield-Wikiup Urban Service Boundary. This parcel is designated Rural Residential 1 acre density in the General Plan. The purpose of including this parcel within the Urban Service Boundary is to prevent the formation of ‘island’ parcels which do not have sewer service available inside the Urban Service Boundary (if the overall development project is approved). Such ‘island’ parcels are inconsistent with LAFCO (Local Agency Formation Commission) policies. Including the subject residential parcel inside the Urban Service Boundary would not change the allowed uses on that property, although it would allow the existing dwelling on site to potentially connect to public sewer at some point in the future. The General Plan does not contain any prohibitions against Rural Residential designated properties connecting to public sewer. Given the above, it would appear the continued use of the Rural Residential designated property for residential purposes would be consistent with the intent of the Rural Residential land use designation.

The project also includes a General Plan amendment to place the 53 acre development area of the property inside the Larkfield-Wikiup Urban Service Boundary (in addition to the Rural Residential parcel noted above), to ultimately allow annexation of the site to the local sewer district. That amendment and other aspects of the project are analyzed for potential inconsistencies with the General Plan policies below.

General Plan Land Use and Policies

The General Plan includes land use policies designed to achieve the plan’s objectives for the County and Santa Rosa and Environs Planning Area. **Table 3.10-1** identifies the applicable policies to the proposed project and describes how the proposed project would comply.

Table 3.10-1. Land Use Policy Consistency Analysis

General Plan Land Use Policies (PRMD 2008, revised 2009)	Project Consistency Analysis
LU-16a: Require full urban improvement standards and services for discretionary commercial, industrial, and urban residential projects within the Urban Service Boundary.	The Urban Service Boundary would be relocated to include the project site. Full urban improvement standards, including bicycle and pedestrian improvements, would be implemented for the proposed project.
LU-16b: Consider requiring joint city/county design review for projects within the Santa Rosa Urban Service Boundary.	The project site is not within the Santa Rosa Urban Service Boundary. The Larkfield-Wikiup Urban Service Boundary would be relocated to include the project site. Joint city/county design review does not apply to that Urban Service area, but full County Design Review does.
LU-16e: Recognize existing commercial, industrial, and public/quasi public uses outside Urban Service Boundaries. Limit expansion of these uses to that which does not necessitate extension of water and sewer.	If the project is approved, the Larkfield-Wikiup Urban Service Boundary would be relocated to include the project site within it. The decision of whether or not to relocate the Urban Service Boundary is a policy determination of the Board of Supervisors that must weigh the potential public benefits of the project compared to the potential environmental impacts.

Table 3.10-1. Land Use Policy Consistency Analysis

General Plan Land Use Policies (PRMD 2008, revised 2009)	Project Consistency Analysis
LU-16f: Avoid amendments to include additional commercial or industrial use outside Urban Service Areas.	The project is for a Public/Quasi Public use (not commercial or industrial), and the Larkfield-Wikiup Urban Service Boundary would be relocated to include the project site.
LU-16w: Encourage interrelatedness of the Larkfield-Wikiup community and connection of the two commercial nodes and the residential developments. Encourage development of a park and community recreation center adjacent to Mark West School on Lavell Road and a passive recreational trail along Mark West Creek.	The project site is not located between the two established commercial nodes in the Larkfield-Wikiup community. However, the project would improve the continuity of development in the Larkfield-Wikiup community by providing bicycle and pedestrian improvements, such as designated paths and trails.
OSRC-3d: Establish a building setback of 20 feet along Highway 101 Scenic Corridor in Urban Service Areas to be reserved for landscaping. Where a sound barrier or other sound mitigating structure must be located along a Scenic Corridor, ensure that the landscaped area is visible from the highway. Cooperate with State agencies to achieve compatible goals with regard to visual quality along Scenic Corridors.	See Section 3.2.
OSRC-4a: Require that all new development projects, County projects, and signage utilize light fixtures that shield the light source so that light is cast downward and that are no more than the minimum height and power necessary to adequately light the proposed use.	See Section 3.2.
OSRC-4b: Prohibit continuous all night exterior lighting in rural areas, unless it is demonstrated to the decision making body that such lighting is necessary for security or operational purposes or that it is necessary for agricultural production or processing on a seasonal basis. Where lighting is necessary for the above purposes, minimize glare onto adjacent properties and into the night sky.	See Section 3.2.
OSRC-4c: Discourage light levels that are in excess of industry and State standards (Sonoma County 2008).	See Section 3.2.
OSRC-16k: Require that discretionary projects involving sensitive receptors (facilities or land uses that include members of the population sensitive to the effects of air pollutants such as children, the elderly, and people with illnesses) proposed near the Highway 101 corridor include an analysis of mobile source toxic air contaminant health risks. Project review should, if necessary, identify design mitigation measures to reduce health risks to acceptable levels.	See Section 3.4.
PF-1d: Require as part of discretionary project applications within a water or sewer service area	The proposed project would supply its own water through two new onsite wells. The project will be

Table 3.10-1. Land Use Policy Consistency Analysis

General Plan Land Use Policies (PRMD 2008, revised 2009)	Project Consistency Analysis
written certification that either existing services are available or needed improvements will be made prior to occupancy.	required through mitigation to offset its wastewater treatment demand by retrofitting water fixtures in the Wells Fargo Center and funding a program to retrofit off site residences and businesses.
PF-1e: Avoid General Plan amendments that would increase demand for water supplies or wastewater treatment services in those urban areas where existing services cannot accommodate projected growth as indicated in Table LU-1 (Historic and Projected Annual Population Growth Rates) or any adopted master plan.	The proposed project would supply its own water through two new onsite wells. The project will be required through mitigation to offset its wastewater treatment demand by retrofitting water fixtures in the Wells Fargo Center and funding a program to retrofit off site residences and businesses.
PF-1f: Avoid extension of public sewer services outside of either a sphere of influence adopted by LAFCO or the Urban Service Area.	The Larkfield-Wikiup Urban Service Boundary would be relocated to include the proposed project site. Ultimately, the site would be included in the sewer district sphere of influence and the sewer district boundary.
WR-2f: Require that discretionary projects in the Urban Service Areas maintain the site's pre-development recharge of groundwater to the maximum extent practicable.	The proposed project would maintain the site's pre-development recharge of groundwater to the maximum extent practicable. As discussed in Section 3.9, Hydrology and Water Quality, the project would include detention basins (see Figure 3.9-3), vegetated swales and other best management practices as required by MS4, all of which would help infiltrate storm water.
WR-2g: In cooperation with Sonoma County Water Agency (SCWA), DWR, and other public agencies and well owners, support the establishment and maintenance of a system of voluntary monitoring of wells throughout the county, utilizing public water system wells and private wells where available. Encourage participation in voluntary monitoring programs, and if funds are available, consider funding of well monitoring where determined necessary in order to stimulate participation.	The proposed project would participate in well monitoring programs, as required by ordinance.

Table 3.10-1. Land Use Policy Consistency Analysis

General Plan Land Use Policies (PRMD 2008, revised 2009)	Project Consistency Analysis
WR-3o: Encourage public water suppliers to avoid or minimize significant adverse impacts on the environment resulting from water supply, storage and transmission facilities, including impacts on other water users.	Two new wells would be developed on site to supply the project with water; however, the hospital would not be a public water supplier. No offsite water supplies or transmission facilities would be developed. As discussed in Section 3.9, a groundwater basin study performed for this EIR has shown that the new water wells would not significantly impact other water users or the environment. The proposed project would participate in an ongoing well monitoring program.
WR-4e: Require water conserving plumbing and water conserving landscaping in all new development projects and require water conserving plumbing in all new dwellings. Promote programs to minimize water loss and waste by public water suppliers and their customers. Require County operated water systems to minimize water loss and waste.	As described in Section 3.16, the proposed project would be constructed using water conserving plumbing, including ultra-low flow plumbing fixtures and other water conservation devices. In addition, the WFC would be retrofitted with low flow toilets and other water conserving devices. As discussed in Section 3.9, as part of pollution prevention methods the proposed project would landscape using plants with minimal water requirements.
WR-4g: Require that development and redevelopment projects, where feasible, retain stormwater for on-site use that offsets the use of other water.	On site stormwater will be detained through a series of bio-swales and detention basins to meet County and Water Quality Control Board requirements before being discharged from the site. This will also aid ground water recharge, and help reduce water needed on site for landscape purposes.
NE-1b: Avoid noise sensitive land use development in noise impacted areas unless effective measures are included to reduce noise levels. For noise due to traffic on public roadways, railroads and airports, reduce exterior noise to 60 dB Ldn or less in outdoor activity areas and interior noise levels to 45 dB Ldn or less with windows closed. Where it is not possible to meet this 60 dB Ldn standard using practical application of the best available noise reduction technology, a maximum level of up to 65 dBH may be allowed but interior noise level shall be maintained so as not to exceed 45 dB Ldn. For schools, libraries, offices, and other similar uses, the interior noise standard shall be 45 dB Leq in the worst case hour when the building is in use.	As discussed in Section 3.11, the proposed project would include effective measures to reduce noise levels, both during construction and operation. This would include the use of temporary noise barriers and limiting hours of construction. Noise levels at the proposed project site could exceed County and exterior and interior noise limits since the entire site is exposed to roadway noise levels exceeding 60 dBA Ldn. The mitigation discussed in Section 3.11 would reduce noise exposure to both outdoor use areas and interior spaces to achieve compliance with county and state noise exposure standards. Helicopter operations might occasionally exceed noise standards, even with all feasible mitigation measures, and a Statement of Overriding considerations may be necessary for that impact.

Table 3.10-1. Land Use Policy Consistency Analysis

General Plan Land Use Policies (PRMD 2008, revised 2009)	Project Consistency Analysis
NE-1c: Control non-transportation related noise from new projects. The total noise level resulting from new sources shall not exceed the standards in Table NE-2 (Maximum Allowable Exterior Noise Exposures for Non-transportation Noise Sources) as measured at the exterior property line of any adjacent noise sensitive land use, with certain exceptions.	The mitigation discussed in Section 3.11 would reduce non-transportation related noise exposure to both outdoor use areas and interior spaces to achieve compliance with county and state noise exposure standards.
NE-1d: Consider requiring acoustical analysis prior to approval of any discretionary project involving a potentially significant new noise source or a noise sensitive land use in a noise impacted area.	The proposed project was subject to acoustical analysis, the results of which are included in Section 3.11.
NE-1m: Consider requiring the monitoring of noise levels for discretionary projects to determine if noise levels are in compliance with required standards. The cost of monitoring shall be the responsibility of the applicant.	As described in Section 3.11, a program of monitoring helicopter operations noise will be conducted and a community noise disturbance coordinator shall be designated to reduce noise annoyance in nearby residential areas.
CT-2d: Require major traffic generating projects on existing or planned transit routes to provide fixed transit facilities, such as bus turnouts, passenger shelters, and seating needed to serve anticipated or potential transit demand from the project.	As described in Section 3.15, the proposed project would provide fixed transit facilities, including bus stops and shelters, which would be provided on both sides of Mark West Springs Road at the signalized main access intersection. Sidewalks would be provided from the intersection to all project buildings.
CT-2r: Encourage measures that divert automobile commute trips to transit whenever possible.	As described above and in Section 3.15, the proposed project would include bus stops and shelters on both sides of Mark Springs West Road at the signalized main access intersection. The proposed project would be providing County-required bike racks. A Class II bicycle lane would also be provided in the eastbound direction along the project's Mark West Springs Road frontage.
CT-2t: Encourage measures to modify the timing of peak commute and school trips to reduce congestion, including reduced work weeks, flexible, variable or staggered work hours. Consider adoption of standards requiring Traffic Demand Management programs and telecommuting for new business and employment centers.	As described in Section 3.15, during surcharging of the project site, flagmen would be available to minimize traffic disruption. The typical afternoon shift change at the hospital would occur outside the p.m. peak. To the extent feasible, reduced work weeks, variable or staggered work hours, and telecommuting would be implemented during project operation.
CT-2v: Provide for pedestrian friendly and safe design features in unincorporated communities including sidewalks, street crossings, landscaping, and related amenities that are consistent with the character of the community.	As described in Section 3.15, the proposed project would provide sidewalks along much of the project frontage, around each building or group of buildings, and extensively throughout the project site. The proposed project would include extensive landscaping that is consistent with the character of

Table 3.10-1. Land Use Policy Consistency Analysis

General Plan Land Use Policies (PRMD 2008, revised 2009)	Project Consistency Analysis
	the community.
CT-2w: In unincorporated communities, provide for pedestrian, bicycle, and other alternative transportation mode connections among commercial, service, public (such as schools, libraries), and transit uses where compatible with community character and consistent with the Vehicle Code.	As described in Section 3.15, the proposed project would include a Class II bicycle lane in the eastbound direction along the project’s Mark West Springs Road frontage, bike racks, two bus stops and shelters, and extensive sidewalks along and within the project site.
CT-3a: Use the levels of service established in Objectives CT-3.1 and 3.3 to determine whether or not roadway segment congestion would exceed the desired LOS on the countywide road system.	As described in Section 3.15, the appropriate levels of service were used to determine whether congestion would exceed the desired LOS on county roads.
CT-3b: Use area and/or project traffic analyses to determine if intersections meet the LOS standards of Objectives CT-3.2 and CT-3.3. Based on this analysis, identify and implement intersection improvements needed to achieve LOS D.	As described in Section 3.15, traffic analyses demonstrate that project traffic itself would not exceed the LOS standards in the General Plan. On a cumulative basis, however, project traffic when combined with anticipated future traffic in the cumulative condition would adversely affect the LOS at certain intersections. To mitigate the project’s contribution to these adverse cumulative effects, the project would provide a fair share contribution to traffic system improvements at certain intersections, as detailed in Section 3.15. There would be a significant and unavoidable cumulative impact at certain intersections where mitigation is presently infeasible, as detailed in Section 3.15. Project approval would require a Statement of Overriding Considerations with respect to the project’s contribution to these cumulative impacts.
CT-5f: Review and condition discretionary development projects in the unincorporated area to assure that the LOS and/or public safety objectives established in Policy CT-3a and CT-3b are met. If the proposed project would result in a LOS worse than these objectives, consider denial of the project unless certain circumstances exist.	As described in Section 3.15, project traffic itself would not exceed the LOS standards in the General Plan. On a cumulative basis, however, project traffic when combined with anticipated future traffic in the cumulative condition would adversely affect the LOS at certain intersections. To mitigate the project’s contribution to these adverse cumulative effects, the project would provide a fair share contribution to traffic system improvements at certain intersections as detailed in Section 3.15. There would be a significant and unavoidable cumulative impact at certain intersections where mitigation is presently infeasible, as detailed in Section 3.15. Project approval would require a Statement of Overriding Considerations with respect to the project’s contribution to these cumulative impacts.

Table 3.10-1. Land Use Policy Consistency Analysis

General Plan Land Use Policies (PRMD 2008, revised 2009)	Project Consistency Analysis
CT-5g: Require that a new development provide project area improvements necessary to accommodate vehicle and transit movement in the vicinity of the project, including capacity improvement, and other mitigation measures necessary to accommodate the development.	As detailed in Section 3.15, the project would provide traffic system improvements including signalization, additional turn lanes, additional lanes, and road widening, where feasible. The project would have significant and unavoidable impacts in some locations where mitigation is infeasible, as detailed in Section 3.15. Project approval would require a Statement of Overriding Considerations with respect to these impacts.

Zoning Consistency

No changes to the zoning of the project site would occur with the project. The zoning designations regulating the project site and the project's compliance with each set of regulations are described in detail below.

- **PF (Public Facilities):** The PF zoning district is applied to properties which have a PQP General Plan land use designation. As noted above, the PQP land use designation specifically allows hospitals, although they are not specifically listed in the PF zoning code. However the intent of the PF zoning district is to "provide sites which serve the community or public need and to protect these sites from encroachment of incompatible uses". Given the above, the project may be permitted by a Conditional Use Permit per Section 26-52-040(n) of the County Zoning Regulations, which conditionally permits uses of a similar and compatible nature to those expressly permitted under a use permit in areas zoned PF. The project would comply with all building intensity and development criteria laid out in (Section 26-52-050) of the PF Zoning Regulations.
- **SD (Scenic Design):** A portion of the project would be constructed in an SD Combining District, and it would be subject to design review and approval by the Sonoma County Design Review Committee for consistency with County and community design standards. The project is currently undergoing preliminary design review, a process that began on April 29, 2009. Because implementation of the project requires Conditional Use Permits and a General Plan Amendment, it would also be subject to review and approval by the Planning Commission and Board of Supervisors. Under the SD Combining District zoning, the project is subject to the height, bulk, and area development criteria set forth under its base zoning designation of PF.
- **SR (Scenic Resource):** A portion of the project adjacent to Hwy 101 and Mark West Springs Road would fall within the SR Combining District. The SR Combining District contains criteria for structures located within Scenic Corridors, Community Separators, and Scenic Landscape Units. As shown in Figure OSRC-5e of the County General Plan (Open Space Map: Santa Rosa and Environs) the project site is not within a Community Separator or a Scenic Landscape Unit and is therefore not subject to those criteria. The project is partly

within the US 101 and Mark West Springs Road Scenic Corridors, and therefore those provisions would apply, including full Design Review of the project, and a building setback along US 101 of 20 feet to be reserved for landscaping. As noted above, the design of the project would also be subject to the review and approval of the County Planning Commission and Board of Supervisors.

- **VOH (Valley Oak Habitat):** The project would comply with all mitigation measures prescribed under VOH zoning regulations (see Section 3.5 of this Draft EIR). Moreover, all uses permitted within any zoning regulation combined with a VOH Combining District are permitted in the district. Because the project is subject to design review approval under SR and SD zoning regulations, design review for the project will require measures to protect, enhance, and mitigate loss of valley oaks on the project site in accordance with County ordinances.
- **RR (Rural Residential):** The existing 1.46 acre rural residential parcel would be included in the Larkfield-Wikiup Urban Service Area as part of the project. There would be no changes to the existing rural residential use of that site, therefore no inconsistencies with the RR zoning are expected.

Impact Summary

The proposed project appears generally consistent with applicable land use plans, policies and regulations. Use of the site for a community-serving medical center appears to be consistent with both the General Plan 2020 land use designation (Public/Quasi Public) and the County Zoning Code (Public Facilities). In addition, the project appears generally consistent with applicable General Plan 2020 land use policies, as described above. The General Plan Larkfield-Wikiup Urban Service Boundary, and ultimately, the sewer district boundary, would be relocated to include the project area. As stipulated in the Zoning Regulations, the project would also undergo design review and be subject to the issuance of a Conditional Use Permit by the Planning Commission and Board of Supervisors.

The Board of Supervisors will make the ultimate determination of whether the project is consistent with the County General Plan.

Mitigation: No mitigation required

Impact LU-2: Cumulative land use and planning impacts

In general, development consistent with the County General Plan would result in an increase in developed land uses in the County. As stated in the Sonoma County General Plan 2020 EIR, this development would result in significant cumulative land use impacts due to the intensification of land use conflicts.

Although the proposed project is consistent with County land use plans and policies, the proposed project would result in a cumulative considerable impact because it would contribute to the significant cumulative impact of increased developed land uses in the County that, while consistent with the County General Plan, could result in increased land use conflicts.

Significance: Potentially significant

Discussion:

Land Use

According to the Sonoma County General Plan 2020 EIR, significant cumulative impacts on land use would result from the cumulative growth at full build out that is planned to occur under the County General Plan. The Sonoma County General Plan 2020 EIR states that this cumulative growth could result in intensified land use conflicts between agricultural and residential/urban land uses, especially at the urban fringes of cities. The proposed project area is located in such an urban fringe area, north of the city limits of Santa Rosa and near agricultural land uses. The Sonoma County General Plan 2020 EIR states that while most of the impact of the future County General Plan growth scenario would result from growth within cities, development in unincorporated areas of the County would make a “cumulatively considerable contribution” to the impact of intensified land use conflicts (Sonoma County 2006). Although the proposed project is consistent with the land use designation (P/QP) and zoning (PF, SD, SR, VOH) of the proposed project site, as described in this section, it would create a considerable contribution to this significant cumulative impact.

Mitigation: To mitigate the significant impact of intensified land use conflicts as a result of the proposed project, the mitigation measures described in the following sections would be implemented:

- Section 4.2 Aesthetics
- Section 4.4 Air Quality
- Section 4.5 Biological Resources
- Section 4.6 Cultural Resources
- Section 4.7 Geology and Soils
- Section 4.8 Hazards and Hazardous Materials
- Section 4.9 Hydrology and Water Quality
- Section 4.10 Land Use and Planning
- Section 4.11 Noise
- Section 4.13 Public Services
- Section 4.15 Traffic
- Section 4.16 Utilities and Service Systems

Significance After Mitigation: Less than significant

3.11 NOISE

Introduction

This section presents the results of the noise impact assessment conducted for the proposed project. The project site is in the southeast quadrant of the Mark West Springs Road/US 101 interchange, as shown in **Figure 3.11-1**. This assessment presents the fundamentals of environmental noise, provides a discussion of policies and standards applicable to the project, presents the results of a noise monitoring survey conducted at the site, and provides an evaluation of the potential for significant noise impacts resulting from the proposed project. This assessment addresses potential noise impacts associated with: (1) the construction of all phases of the proposed project, (2) traffic noise exposure from the local street systems, (3) the noise generated by on-site mechanical equipment at the new Medical Center buildings and Central Utility Plant, and parking and traffic circulation, and (4) helicopter noise resulting from flights to and from the proposed emergency helistop.

This section includes information from the *Environmental Noise Assessment* (Illingworth & Rodkin, 2009b) and the *Heliport Design Report* (Mead & Hunt, 2009a), which are included in **Appendix I** in the Technical Appendices, Vol. 2 of this document.

Background

Noise is generally defined as unwanted sound that interferes with or disrupts normal activities and is typically associated with human activity. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to typical environmental noise exposure levels is annoyance. The responses of individuals to similar noise events are diverse and influenced by many factors including the type of noise, the perceived importance of the noise, its appropriateness to the setting, the time of day and the type of activity during which the noise occurs, and noise sensitivity of the individual.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by several variables, including frequency and amplitude. Frequency describes the sound's pitch (tone) and is measured in cycles per second (Hertz [Hz]), while amplitude describes the sound's pressure (loudness). Because the range of sound pressures that occur in the environment is extremely large, it is convenient to express these pressures on a logarithmic scale that compresses the wide range of pressures into a more useful range of numbers. The standard unit of sound measurement is the decibel (dB). Technical terms are defined in **Table 3.11-1**.

There are several methods of characterizing sound. The most common in California is the A-weighted sound level or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive.

Table 3.11-1. Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max} , L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01} , L_{10} , L_{50} , L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 PM and 7:00 AM.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 PM to 10:00 PM and after addition of 10 decibels to sound levels measured in the night between 10:00 PM and 7:00 AM.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Illingworth & Rodkin 2009b

Representative outdoor and indoor noise levels in units of dBA are shown in **Table 3.11-2**. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Environmental sounds are commonly described in terms of an average level that has the



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Figure 3.11-1
Noise measurement locations

same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{eq} .

Table 3.11-2. Typical Noise Levels in the Environment

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	120 dBA	
Jet fly-over at 300 meters		Rock concert
	110 dBA	
Pile driver at 20 meters	100 dBA	
		Nightclub with live music
	90 dBA	
Large truck pass by at 15 meters		
	80 dBA	Noisy restaurant
		Garbage disposal at 1 meter
Gas lawn mower at 30 meters	70 dBA	Vacuum cleaner at 3 meters
Commercial/Urban area daytime		Normal speech at 1 meter
Suburban expressway at 90 meters	60 dBA	
Suburban daytime		Active office environment
	50 dBA	
Urban area nighttime		Quiet office environment
	40 dBA	
Suburban nighttime		
Quiet rural areas	30 dBA	Library
		Quiet bedroom at night
Wilderness area	20 dBA	
	10 dBA	Quiet recording studio
Threshold of human hearing	0 dBA	Threshold of human hearing

Source: Illingworth & Rodkin 2009b

The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration. The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Due to the increased sensitivity to noise during the evening and at night, 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Community Noise Equivalent Level (CNEL),

unique to the State of California, is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 PM to 10:00 PM) and a 10 dB addition to nocturnal (10:00 PM to 7:00 AM) noise levels. The Day/Night Average Sound Level, L_{dn} , is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

Effects of Noise

Noise standards are designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. The thresholds for speech interference indoors are approximately 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noise of sufficient intensity above 35 dBA and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn} . For transportation noise sources such as vehicular traffic, the noise levels will fluctuate throughout the day. The highest hourly average noise level during the daytime is numerically about equal to the overall L_{dn} value, and nighttime levels are typically 10 dBA lower. Typical structural attenuation is 12-17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Therefore, the 45 dBA L_{dn} interior residential standard would be exceeded with exterior noise levels between 57 and 62 dBA L_{dn} with open windows, and 65 and 70 dBA L_{dn} if the windows are closed. Levels of 55 to 60 dBA are common along collector streets and secondary arterials, while 65 to 70 dBA is a typical value for a primary/major arterial. Levels between 75 and 80 dBA are normal at the first row of development outside a freeway right-of-way (Illingworth and Rodkin 2009b) (Appendix I-1).

3.11.1 Environmental Setting

The project site is located on the east side of US 101, south of Mark West Springs Road. The area west of the Redwood Freeway include rural residential and agricultural land uses. The west side of the project site is vacant land while the east side includes some agricultural use. There are existing residential dwellings east of the project site and north of the project site across Mark West Springs Road. South of the project site there is the Wells Fargo Center which includes commercial spaces as well as a school. A noise monitoring survey was conducted from Tuesday, November 2, to Wednesday, November 3, 2004, to establish existing noise levels in the project vicinity. The primary ambient noise source in the project area is due to traffic. Although the noise measurements were taken in 2004, traffic in the project area has changed very little. Environmental noise was measured at three locations in the project study area. The first location was selected to quantify existing noise levels generated by US 101 at the approximate setback of the proposed hospital. The second and third noise measurement locations were selected to represent the noise environment at residential land uses in the immediate vicinity of the project site. The locations of these noise measurements are shown on **Figure 3.11-1**, and the data charts for these measurements are presented in **Appendix I**.

Measurement location LT-1 was located at the same distance from the freeway as the proposed buildings in order to characterize the existing noise environment at the location of the proposed hospital building. Noise measured at this site resulted primarily from vehicular traffic along US

101, and the measured day-night average noise level was 70 L_{dn} (**Appendix I, Chart 1**). Hourly average noise levels during the daytime (7 AM to 10 PM) were typically 64 to 68 dBA L_{eq} . During the night (10 PM to 7 AM), hourly average noise levels were generally 56 to 68 dBA L_{eq} .

Noise measurement LT-2 was conducted at the easternmost property line of the site adjacent to residential uses accessed from Darbster Place. Noise levels measured at this site were primarily the result of local and distant (highway) vehicular traffic. Typical hourly average noise levels ranged from 55 to 59 dBA during the daytime and dropped to a minimum level of 48 dBA L_{eq} during the middle of the night (**Appendix I, Chart 2**). The calculated day-night average noise level at this location was 61 dBA.

The daily trend in noise levels was also measured at a position north of the project site along Lavell Road (LT-3). Noise levels measured at this site were predominantly the result of vehicular traffic along US 101. **Appendix I, Chart 3** summarizes the noise data collected at measurement location LT-3. Hourly average noise levels ranged from as low as 52 dBA L_{eq} at 3 AM to 65 to 70 dBA L_{eq} throughout the majority of the day. The calculated L_{dn} noise level at this measurement position was 69 dBA.

3.11.2 Regulatory Setting

Regulatory criteria that apply to the proposed project include guidelines, goals, policies, and standards established by the State of California and Sonoma County. The State Building Code and the Sonoma County Noise Element establish quantifiable noise levels deemed acceptable for a specified land use. The State Aeronautics Act and California Airport Noise Regulations regulate aviation-related noise exposure including noise from special-use helistops at hospitals.

3.11.2.1 Federal

Aircraft source noise levels are regulated through Federal Aviation Regulations (FAR) Part 36 Noise Standards: Aircraft Type and Airworthiness Certification (Title 14, Part 36 of the Code of Federal Regulations). This regulation establishes certification noise levels for aircraft including fixed wing aircraft and helicopters.

The compatibility of the proposed project has been evaluated against supplemental sleep disturbance criteria recommended by the Federal Interagency Committee on Aviation Noise (FICAN) in the December 2008 finding titled, "FICAN Recommendation for use of ANSI Standard to Predict Awakenings from Aircraft Noise."¹ In this finding, FICAN recommends the use of the American National Standards Institute (ANSI) standard S12.9-2008, "Quantities and Procedures for Description and Measurement of Environmental Sound - Part 6: Methods for Estimation of Awakenings Associated with Outdoor Noise Events Heard in Homes" to predict behavioral awakenings from aircraft noise. ANSI S12.9-2008 Part 6 provides a method to predict sleep disturbance in terms of percent awakenings or numbers of people awakened associated with noise levels in terms of indoor A-weighted sound exposure level (ASEL). It also enables the estimation of awakenings from an entire night of noise events. The three equations used to calculate these percentages of awakenings are presented in Appendix I-1.

¹ Available at http://www.fican.org/pdf/Final_Sleep_Dec2008.pdf

According to the first equation, there would be a less than 5 percent probability of awakening from a single event, which produces a single indoor ASEL level of 85 dB or less. However, using the second equation shows that if an 85 dB SEL event occurs more than four hours after retiring then the probability of awakening begins to increase beyond 5 percent. Further use of this equation shows that an indoor ASEL of 78 dB or less will result in the probability of awakening remaining at or below 5 percent as long as the event occurs within 6 hours of the time since retiring. The results also show a maximum probability of awakening of 6 percent for an entire seven-hour night of sleep.² Also, using the relationship of the number of noise events in a single nighttime period as given in the third equation, it can be seen that two noise events with an interior level of 78 dB ASEL or less in a single night would result in the probability of awakening remaining at or below 6 percent. With one flight per night at an indoor ASEL of 78 dB or less, the probability of awakening would remain at or below 3 percent.

Based on the above, an indoor ASEL of 78 dB is the sound level at which helicopter noise would begin to significantly affect the sleep of residents in the surrounding community. Typical wood-framed residential structures provide exterior to interior noise attenuation of 12 to 17 dBA with open windows and around 20 to 25 dBA with closed windows. With the lower range of exterior to interior residential structural attenuation (i.e., 12 dB with open windows and 20 dB with closed windows), exterior ASEL levels of 90 and 98 dB would produce respective interior SEL levels of 78 dB with open and closed windows. Therefore, the use of the 90 dB exterior ASEL contour is used in this analysis as a predictor of areas exposed to a heightened degree of potential sleep disturbance during helicopter operations in the worst-case condition with windows open.

The U.S. Environmental Protection Agency has developed noise level guidelines that are consistent with the protection of public health and welfare against hearing loss, annoyance, and activity interference³. These guidelines are presented in the document entitled “Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety” (EPA 550/9-74-004). Within this document, 45 dB L_{dn} is the interior level identified for hospitals to protect the public health and welfare with an adequate margin of safety. The contents of this document do not constitute Agency regulations or standards. The decision whether to adopt them is left to the states and localities themselves.

3.11.2.2 State

California Airport Noise Regulations

Section 5006, Title 21, Division 2.5, Chapter 6 of the California Code of Regulations establishes the level of noise acceptable to a ‘reasonable’ person at a CNEL of 65 dB and identifies the following types of land uses as incompatible with a noise level of 65 dB CNEL or greater:

- Residences of all types;
- Public or private schools; and
- Hospitals and convalescent homes.

² ANSI S12.9-2008 Part 6 considers that adults typically sleep for an average of 7 hours per night.

³ EPA Levels Document, (EPA 550/9-74-004), USEPA, 1974

This information is provided to be thorough regarding all of the background information that relates to aircraft noise and noise sensitive land uses, including hospitals. It is also referenced in Section 1207.11.3 of the California Building Code with respect to aircraft noise sources by noise sensitive land uses.

State Aeronautics Act

The State Aeronautics Act (Public Utilities Code Sections 21001 et seq.) covers a range of aeronautical issues governed by the State of California. It references the California Airport Noise Regulations (above) and the California Department of Transportation Airport Land Use Planning Handbook regarding noise issues. The Act also specifically exempts individual emergency aircraft flights from restrictions on time of departure and arrival as described below. Section 21662.4(a) of the State Aeronautics Act titled “Emergency Flights for Medical Purposes” states:

Emergency aircraft flights for medical purposes by law enforcement, fire fighting, military, or other persons who provide emergency flights for medical purposes are exempt from local ordinances adopted by a city, county, or city and county, whether general law or chartered, that restrict flight departures and arrivals to particular hours of the day or night, that restrict the departure or arrival of aircraft based upon the aircraft’s noise level, or that restrict the operation of certain types of aircraft.

State Building Code

The interior noise environment inside hospital patient rooms is subject to the environmental noise standards set forth in Appendix Chapter 12, Section 1207 of the California State Building Code (2007). The purpose of the regulations as stated therein is “*to establish uniform minimum noise insulation performance standards to protect persons within new hotels, motels, dormitories, long-term care facilities, apartment houses, and dwellings, other than detached single-family dwellings from the effects of excessive noise, including but not limited to, hearing loss or impairment and interference with speech and sleep*”. The allowable interior noise level attributable to exterior sources shall not exceed 45 dBA in any habitable room. The noise metric shall be either the day/night average noise level (L_{dn}) or the community noise equivalent level (CNEL) consistent with the Noise Element of the local General Plan.

3.11.2.3 Local

Sonoma County Noise Element

The Sonoma County Noise Element of the 2020 General Plan identifies a goal to:

Protect people from the adverse effects of exposure to excessive noise and to achieve an environment in which people and land uses function without impairment from noise.

Since the project site is currently subject to a traffic noise level of 70 dB L_{dn} , the following policies would apply:

NE-1a: Designate areas within Sonoma County as Noise Impacted if they are exposed to existing or projected exterior noise levels exceeding 60 dBA L_{dn} , 60 dBA CNEL, or the performance standards of **Table NE-2**.

NE-1b: Avoid noise sensitive land use development in noise impacted areas unless effective measures are included to reduce noise levels. For noise due to traffic on public roadways, railroads and airports, reduce exterior noise to 60 dB Ldn or less in outdoor activity areas and interior noise levels to 45 dB Ldn or less with windows and doors closed. Where it is not possible to meet this 60 dB Ldn standard using a practical application of the best available noise reduction technology, a maximum level of up to 65 dB Ldn may be allowed but interior noise level shall be maintained so as not to exceed 45 dB Ldn. For uses such as Single Room Occupancy, Work-Live, Mixed Use Projects, and Caretaker Units, exterior noise levels above 65 dB Ldn or the **Table NE-2** standards may be considered if the interior standards of 45 dB Ldn can be met. For schools, libraries, offices, and other similar uses, the interior noise standard shall be 45 dB Leq in the worst case hour when the building is in use.

Table NE-2. Maximum Allowable Exterior Noise Levels for Non-transportation Sources

Hourly Noise Metric¹, dBA	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
L50 (30 minutes in any hour)	50	45
L25 (15 minutes in any hour)	55	50
L08 (5 minutes in any hour)	60	55
L02 (1 minute in any hour)	65	60

¹ The sound level exceeded n% of the time in any hour. For example, the L50 is the value exceeded 50% of the time or 30 minutes in any hour; this is the median noise level. The L02 is the sound level exceeded 1 minute in any hour.

NE-1c: Control non-transportation related noise from new projects. The total noise level resulting from new sources shall not exceed the standards in **Table NE-2** of the recommended revised policies as measured at the exterior property line of any adjacent noise sensitive land use. Limit exceptions to the following:

1. If the ambient noise level exceeds the standard in Table NE-2, adjust the standard to equal the ambient level, up to a maximum of 5dBA above the standard, provided that no measurable increase (i.e. +/- 1.5 dBA) shall be allowed.
2. Reduce the applicable standards in **Table NE-2** by five dBA for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises, such as pile drivers and dog barking at kennels.
3. Reduce the applicable standards in **Table NE-2** by 5 decibels if the proposed use exceeds the ambient level by 10 or more decibels.
4. For short-term noise sources, which are permitted to operate no more than six days per year, such as concerts or race events, the allowable noise exposures shown in **Table NE-2** may be increased by 5 dB. These events shall be subject to a noise management plan including provisions for maximum noise level limits, noise monitoring, complaint response and allowable hours of operation. The plan shall address potential cumulative noise impacts from all events in the area.

5. Noise levels may be measured at the location of the outdoor activity area of the noise sensitive land use, instead of at the exterior property line of the adjacent noise sensitive use where:
 - (a) the property on which the noise sensitive use is located has already been substantially developed pursuant to its existing zoning, and
 - (b) there is available open land on these noise sensitive lands for noise attenuation. This exception may not be used on vacant properties, which are zoned to allow noise sensitive uses.

The Noise Element states that noise-sensitive areas include the following land uses:

- All residential uses
- Schools
- Long-term care medical facilities, such as hospitals, nursing homes, etc.
- Places of public worship
- Libraries

The Noise Element also states:

Infrequent single events such as passage of a train, truck, or airplane may interfere with adjacent uses even though the cumulative noise exposure is within acceptable limits. These events call for a single event noise standard. The potential for sleep disturbance is often the main concern in these cases. This is addressed in Policy NE-1d.

NE-1d: Consider requiring an acoustical analysis prior to approval of any discretionary project involving a potentially significant new noise source or a noise sensitive land use in a noise impacted area. The analysis shall:

1. Be the responsibility of the applicant,
2. Be prepared by a qualified acoustical consultant,
3. Include noise measurements adequate to describe local conditions,
4. Include estimated noise levels in terms of L_{dn} and/or the standards of Table NE-2 for existing and projected future (20 years hence) conditions, based on accepted engineering data and practices, with a comparison made to the adopted policies of the Noise Element. Where low frequency noise (ex: blasting) would be generated, include assessment of noise levels and vibration using the most appropriate measuring technique to adequately characterize the impact,
5. Recommend measures to achieve compliance with this element. Where the noise source consists of intermittent single events, address the effects of maximum noise levels on sleep disturbance.
6. Include estimates of noise exposure after these measures have been implemented, and
7. Be reviewed by the Permit and Resource Management Department and found to be in compliance with PRMD guidelines for the preparation of acoustical analyses.

The State of California and Sonoma County typically use a noise descriptor based on average day/night levels (L_{dn} or CNEL) when judging the compatibility of noise with various land-uses.

The L_{dn} /CNEL metric includes a penalty for noises that occur during the nighttime and evening hours and has proven to be an excellent indicator of potential adverse community response in cases where the dominant noise source is highway or major roadway noise. However, in cases where the noise environment is composed of relatively infrequent high noise level events, such as in the vicinity of an emergency helistop, the L_{dn} /CNEL descriptor has a tendency to average out the effect that high noise level events can have in terms of sleep disturbance and annoyance. The compatibility of the proposed project has, therefore, been evaluated against supplemental sleep disturbance criteria recommended by the Federal Interagency Committee on Aviation Noise (FICAN), which utilizes the SEL metric for single event noise levels.

3.11.3 Impacts and Mitigation

3.11.3.1 Approach and Methodology

Evaluation of noise impacts associated with the proposed project includes the following:

- Determination of the short-term construction noise impacts on off-site noise-sensitive uses; and
- Determination of the long-term noise impacts, including helicopter operations, vehicular traffic, stationary noise sources, on on-site and off-site noise-sensitive uses;
- Determination of the required mitigation measures to reduce long-term noise impacts from all sources.

Construction Noise

Noise levels generated by construction equipment was calculated using the Roadway Construction Noise Manual, which was developed by the Federal Highway Administration. Construction noise is not addressed in the General Plan 2020 Noise Element. However, as a matter of past practice in PRMD's review of construction projects lasting more than one year, we have applied the **Table NE-2** standard to construction noise for this analysis. Therefore, a significant temporary noise impact would result if construction noise levels generated by the project would exceed the noise levels and durations listed in **Table NE-2**.

Roadway Noise

Future noise impacts resulting from vehicular traffic on roadways were modeled using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108), which includes the California specific vehicle noise curves (CALVENO). The model is used to calculate an energy average noise level for the different classes of vehicles (automobiles, medium truck, heavy trucks) using the roadways. The model also incorporates the total number of vehicles using the road each day, the vehicle speed, and the percentage of vehicles on the road during the three time periods of the day used to calculate CNEL, in order to calculate the total noise exposure for the roadway for a given case. Site-specific information is entered, such as distances from the roadway to a noise barrier or to the receptor, along with the elevations and heights of the roadway, noise barrier and receptor.

Ambulance Noise

In general, emergency vehicles are exempt from noise regulations as public health and safety takes precedence over annoyance. Sirens are designed to be heard above loud ambient noise levels and are expected to temporarily exceed the noise standards at the noise sensitive land uses nearest to the hospital. Noise impacts from ambulances are analyzed qualitatively.

Helicopter Noise

To determine the expected noise levels produced by helicopter operations on the site and in its vicinity, the Federal Aviation Administration's (FAA) Integrated Noise Model (INM) version 7.0a was used to establish ground level noise contours for the projected operations. The noise model uses flight parameters, such as helicopter type, number of operations, and arrival and departure profiles to calculate both noise exposure levels in L_{dn} , or single-event noise levels in SEL.

The proposed emergency helistop location is at ground level between the Sutter Medical Center Building and US 101, as shown in **Figure 2-4**. The helicopter type used in the noise calculations was the Bell 222, which lands at the current Sutter Medical campus at Chanate Road and is the primary helicopter model expected to use the facility and is among the largest helicopter models found in aeromedical use.⁴ The helicopters that use the facility would approach the helipad from the south, flying over US 101 then turning north slightly to approach and land at the helipad. When helicopters leave the helipad, they will depart toward the northwest and continue flying over US 101 until sufficient altitude is achieved to divert to the desired destination. The flight profiles expected to be used during departure and arrival operations are presented in **Figure 3.11-2**. This alignment coincides with the prevailing winds at the site and provides the opportunity for helicopters to approach and depart the heliport by flying over US 101. This is an ideal flight route for both noise and safety reasons. During departures and arrivals, helicopters tend to fly into the wind for better control. For helicopters, lift is more a function of main rotor speed as opposed to wind speed. Under favorable wind conditions, once lift is developed the helicopters would be able to take off in the direction they landed.

An average of 17 helicopter flights per month (or approximately 200 flights per year) have occurred at Sutter's Chanate Road campus during the past 4 years. As a worst-case condition, 20 flights per month (or 240 flights per year) were modeled to account for any potential usage growth in the future. With regard to day/night operational split, 37 percent of the helicopter trips were modeled during the nighttime hours (10:00 PM to 7:00 AM) with the remaining flights taking place during daytime and evening hours (7:00 AM to 10:00 PM). This is a conservative assumption, since for the past 4 years approximately 15 percent of the helicopter trips have occurred during the nighttime hours and 85 percent occurred during the daytime or evening hours at Sutter's Chanate Road campus. With regard to direction, 75 percent of the flights were modeled approaching from the north and departing to the south, with the remaining number flying from south to north. This assumption is based on prevailing wind direction and alignment of US 101 in proximity to the project site.

Given the aforementioned parameters, the existing and potential future noise levels produced by helicopter operations on the site and the surrounding vicinity were modeled using the INM 7.0a.

⁴ Draft Heliport Design Report, Mead & Hunt, January 2009.

The future noise exposure contours are presented in **Figure 3.11-3**, and the 90 dBA single-event level (SEL) contours are presented in **Figure 3.11-4**.

To determine the worst-case noise exposure at residential uses under the proposed approach and departure paths, the ASEL during a single combined takeoff and landing of a Bell 222 helicopter (the design helicopter for the helistop) was modeled with INM 7.0a both for an operation involving an approach from the north and departure to the south and an operation involving an approach from the south and departure to the north. The extent of the 90 dBA SEL ground level contours for north-to-south and south-to-north flight operations are shown in **Figure 3.11-4**.

Mechanical Equipment

Noise levels emanating from project related mechanical equipment were calculated at the nearest receptor locations by using base source sound power levels based on previous measurements and determining the noise reduction due to distance by using the inverse square law. The resulting levels were compared to the Sonoma County noise threshold levels as listed in **Table NE-2** in order to determine impacts.

3.11.3.2 Thresholds of Significance

Significance thresholds for noise are based on review of Appendix G of the *CEQA Guidelines*, local standards and regulations, and applicable significance criteria adopted by the County of Sonoma.

The project would have a significant impact if it would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.
- For a project located within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

The standards for each aspect of this analysis are summarized below.

- Noise Sensitive Use in Noise Impacted Area: 60 dBA L_{dn} exterior / 45 dBA L_{dn} interior
- Off-Site Project-Generated Traffic Noise: Increase of 3 dBA above 60 dBA L_{dn}
- On-Site Mechanical Noise: 45 dBA L_{eq}

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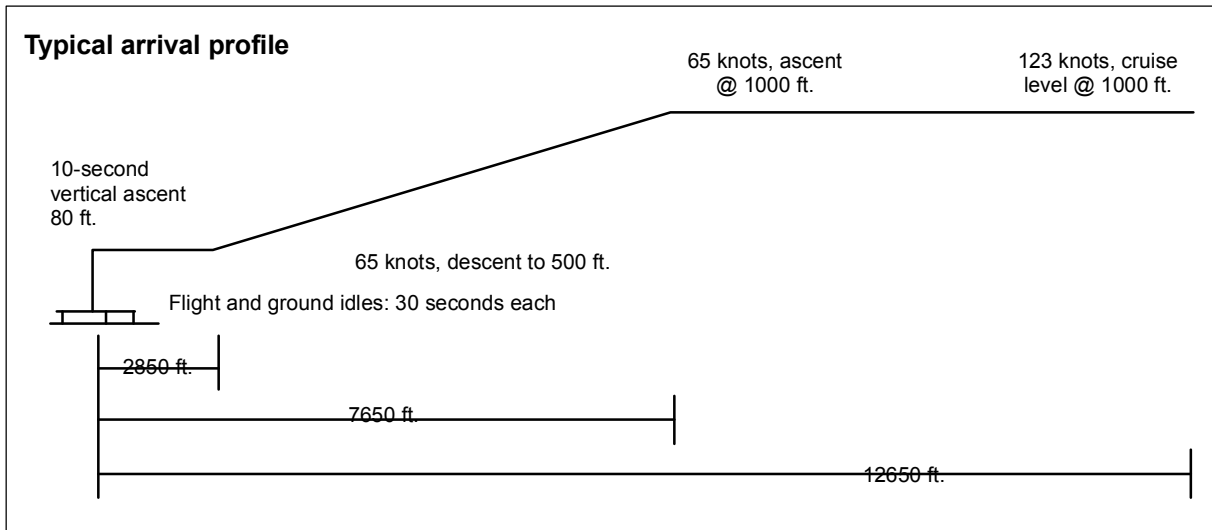
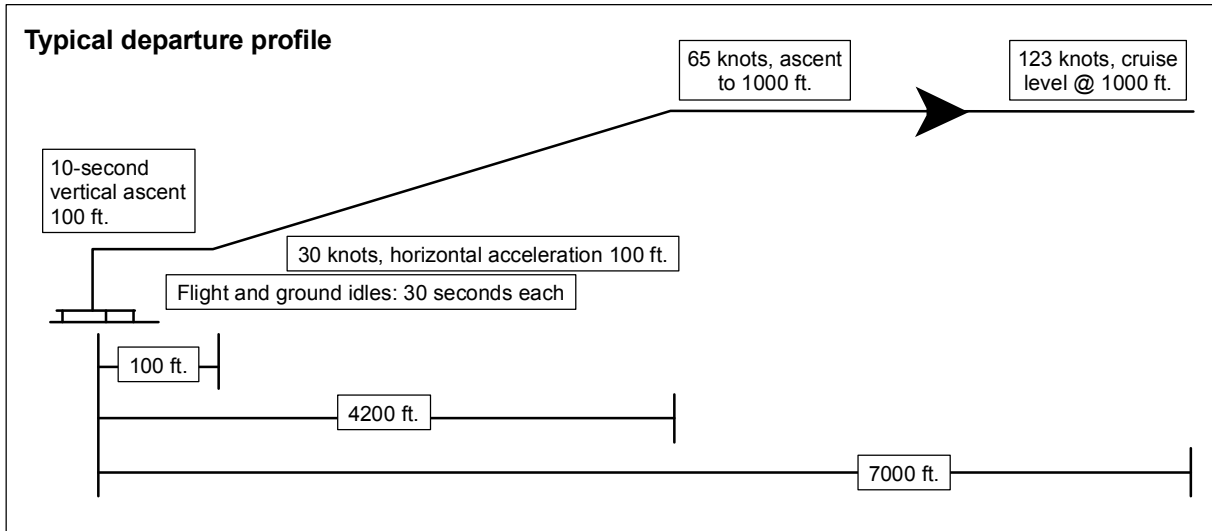
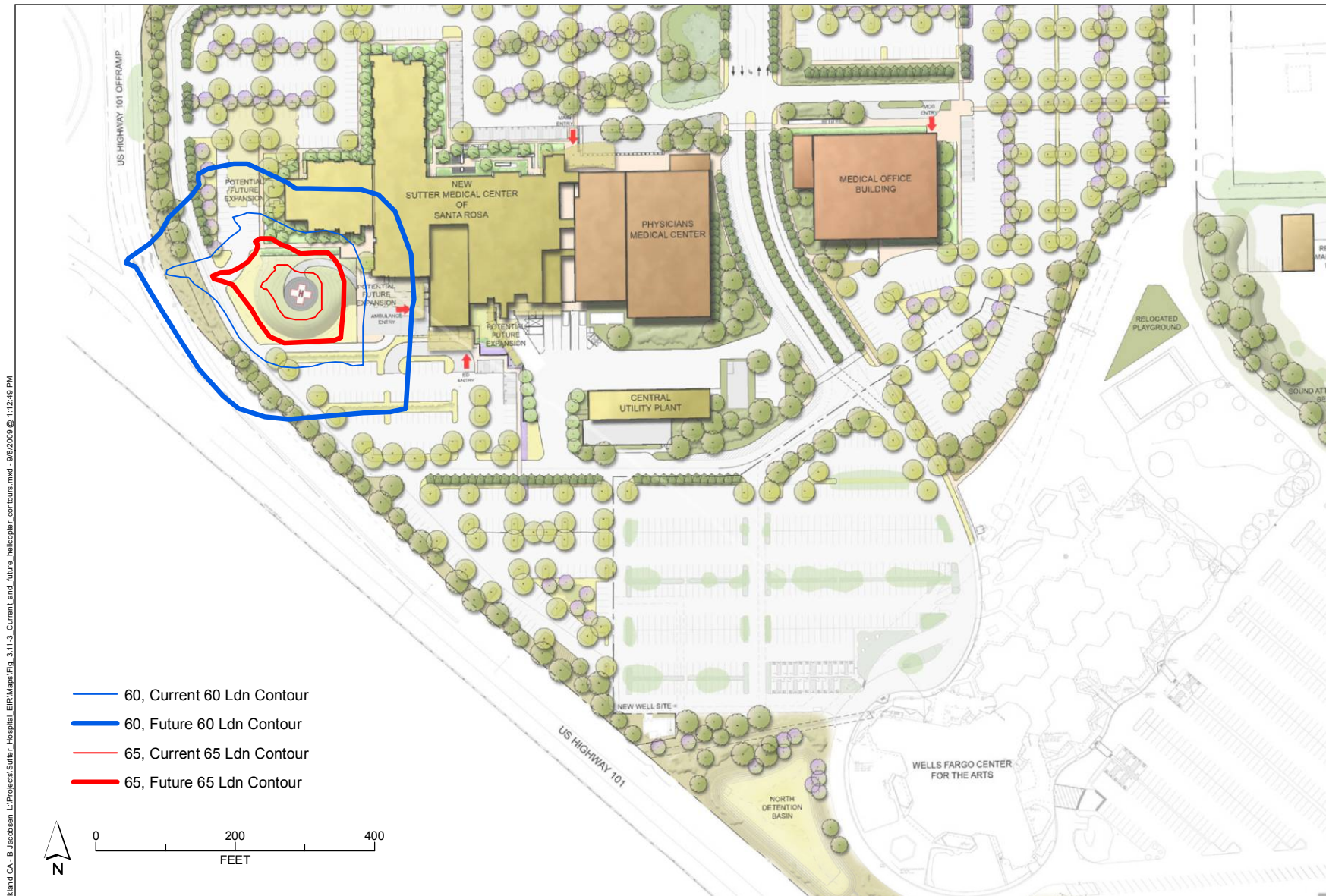


Figure 3.11-2
Departure and Approach Profiles

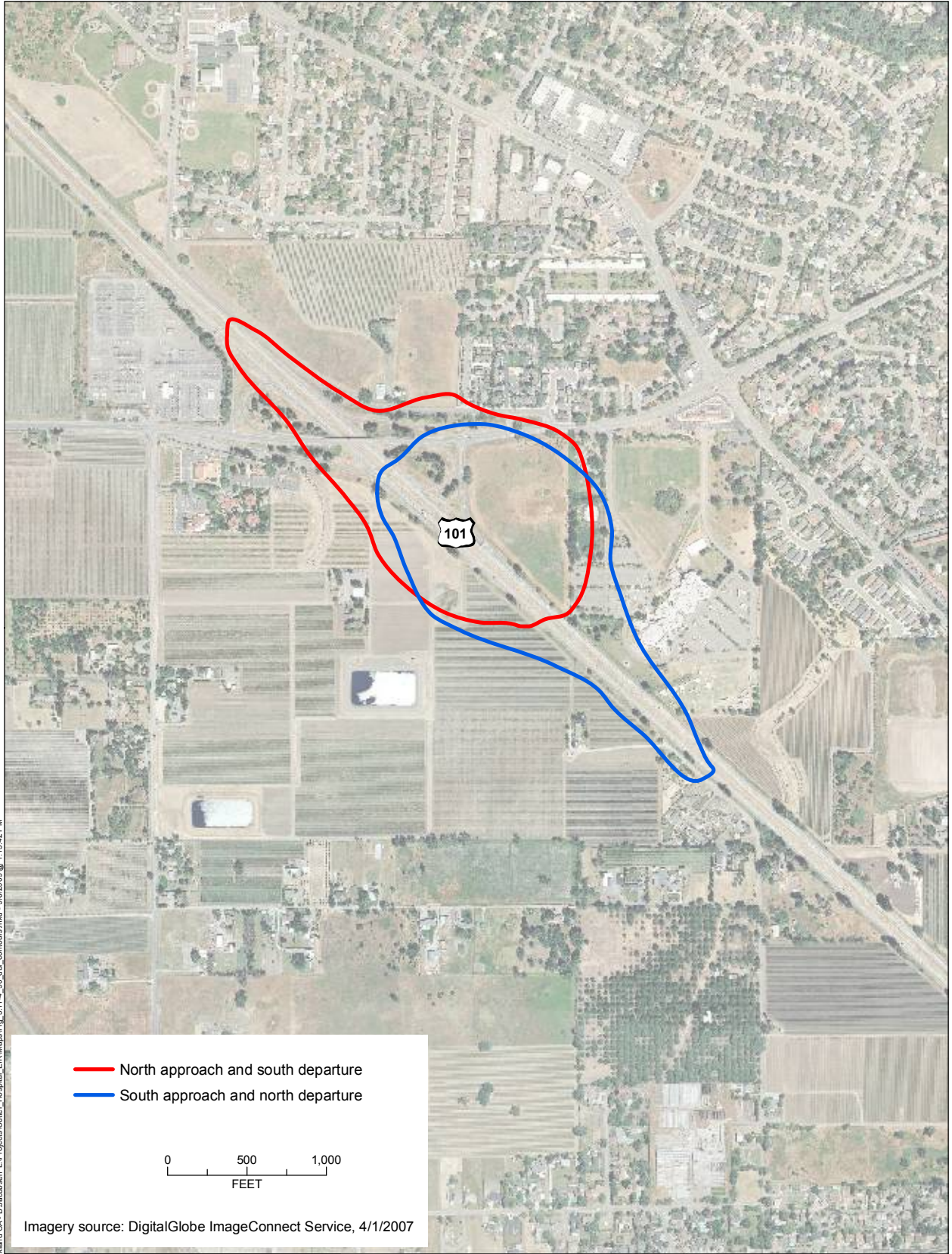


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Sutter/LBMF Joint Master Plan

Figure 3.11-3
60 dBA and 65 dBA Ldn Helistop Contours



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Figure 3.11-4
Helicopter 90-dBA Contours

- Helicopter Noise: 65 dBA CNEL/L_{dn}, and 90 dBA SEL
- Construction Noise: Sonoma County General Plan 2020 **Table NE-2**
- Parking lot and on-site circulation noise: Sonoma County General Plan 2020 **Table NE-2**

3.11.3.3 Less Than Significant Impacts Not Requiring Further Analysis

The following potential project impacts have been evaluated and determined to be less than significant. These impacts thus are not evaluated in this EIR in further detail.

The proposed project is not expected to have any equipment or operations that will generate vibration levels which will be noticeable beyond the project boundaries once the project becomes operational. There are no existing sources of groundborne vibration that would affect development of the project, and the proposed land uses (hospital, medical center and medical office building) do not involve the use of equipment or processes that would result in potentially significant levels of ground vibration that would create any unacceptable levels of ground vibration. (Potential vibration impacts during construction are evaluated in Impact NOI-1a).

Project-related vehicular traffic would increase vehicle trips along roadways used to access the project site. According to the peak hour traffic volumes presented in the traffic analysis, the worst case increase of traffic would be along Mark West Springs Road, east of Lavell. According to the noise impact assessment, the project generated traffic would further increase noise levels on these area roadways by up to 2 dBA L_{dn}. This increase would be less than the 3 dBA significance criteria, and below the typical limit of perceptibility.

The project site is not located within an airport land use plan, within 2 miles of a public airport, or in the vicinity of a private airstrip. The closest airport is the Charles M. Schulz Sonoma County Airport, approximately 3.25 miles from the project site. Therefore, the project would not expose people residing or working in the project area to excessive noise levels from these sources.

3.11.3.4 Impacts and Mitigation

Impact NOI-1a: Noise From Construction Activities (No Pile Driving) Would Impact Adjacent Noise Sensitive Land Uses Construction on the site will temporarily increase noise levels at nearby noise-sensitive receptors.

Significance: Potentially significant

Discussion:

Construction on the site will temporarily increase noise levels at nearby noise-sensitive receptors. As a worst case, construction would occur in phases, over several (not necessarily

consecutive) building seasons. Construction activities would not typically be located adjacent to a particular receptor during the entire construction period. Therefore, noise generated by construction would create a temporary noise impact on adjacent noise sensitive receptors. Noise levels associated with typical commercial construction activities are listed in **Table 3.11-3**. These noise levels are listed for various activities at a distance of 50 feet from the primary source of the noise. Construction noise can reach levels of 92 dBA at this distance. In order to meet the highest level listed in **Table NE-2** (70 dBA) construction activities would have to be located at least 630 feet from the loudest source of construction noise. This means the existing homes north (across Mark West Springs Road) and east of the project site would be exposed to construction noise level and time durations in excess of the values listed in **Table NE-2**.

Table 3.11-3. Typical Construction Activity Noise Levels at 50 Feet, L_{eq} in dBA, at Hospital, Office and Parking Garage Construction Sites

Construction Phase	Noise Level (dBA Leq)	
	All pertinent equipment present on site.	Minimum required equipment present on site.
Ground Clearing	84	83 to 84
Demolition and Excavation	89	71 to 79
Foundations	77 to 78	77 to 78
Erection of Structures	84 to 87	72 to 75
Finishing (rough-in and exterior/interior finish outs)	89	74 to 75

Source: U.S.E.P.A., Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

The Sutter Medical Center will be located about 335 feet from the homes on the north side of Mark West Springs Road. At this distance, the construction noise levels with all pertinent equipment operating would range from 61 to 73 dBA Leq; with the minimum required equipment operating these levels would range from 56 to 68 dBA Leq. The Medical Office Building will be located about 430 feet from the homes to the east of the facility. At this distance, the construction noise levels with all pertinent equipment operating would range from 58 to 70 dBA Leq; with the minimum required equipment operating these levels would range from 53 to 65 dBA Leq. The relocated maintenance facility would be located about 50 feet from the home to the north. At this distance, the construction noise levels would be in the range of values listed in **Table 3.11-3**.

The existing homes along the north side of Mark West Springs Road are currently exposed to noise from traffic on Mark West Springs Road and US 101. According to the noise levels measured at Site LT-3, the hourly average noise levels at this site are above 65 dBA Leq for all hours between 6 a.m. and 6 p.m. and the L02 values were all in excess of 70 dBA. The existing roadway noise will mask much of the noise from construction activities for the homes north of the project site. The corresponding noise levels at the homes to the east of the project site were either at or below 60 dBA Leq. These homes will be more subject to impacts from noise

associated with the construction of the parking lot between the proposed buildings and the existing residences.

The Medical Office Building would be located approximately 440 feet from the Santa Rosa Christian School, which is located within the Wells Fargo Center southeast of the project site. At this distance, the construction noise levels listed in **Table 3.11-3** would range from 57 to 73 dBA Leq.

The relocated maintenance facility would be located approximately 375 from the Santa Rosa Christian School. Due to the size of this proposed structure (one story, ~3,000 square feet) the noise from construction activities at this building are expected to be less than those of the main buildings at the hospital. At this distance, the construction noise levels could range from 58 to 74 dBA Leq.

Construction techniques and materials used to meet the State of California Title 24 energy requirements typically achieve an outdoor-to-indoor noise reduction rating of 22 to 25 dB when the windows are closed. Under these conditions, the construction noise level within the classrooms could range from 35 to 52 dBA. Typically, conversation within a classroom can exceed 65 dBA when the instructor is speaking to the back row of the room. When the room is quiet and the central air system is operating, the ambient noise level will typically range from 45 to 50 dBA. Given these levels, it is expected that the loudest construction noise at the medical center would be audible within the classrooms, but construction noise is not expected to have a significant impact on the students or instruction within the classrooms because the highest level of potential construction noise within the classroom is lower than the expected sound level of the instructor speaking, and is comparable to the background noise level when the air system is operating and the room is otherwise quiet.

A 6 to 8-foot high noise barrier would provide 5-6 dB of reduction from ground based construction activities at a distance of 300 feet from the noise barrier. A noise barrier 10 feet high would provide about 7 dB of noise reduction, and a barrier 12 feet high would provide about 8 dB of noise reduction. For the homes on the north side of the site, the mitigated construction noise levels from the Sutter Medical Center would be as high as 67 dBA with an 8 foot high barrier, 66 dBA with an 10 foot high barrier, and 65 dBA with an 12 foot high barrier. For homes on the east side, the mitigated construction noise levels from the medical office building would be as high as 64 dBA with an 8 foot high barrier, 63 dBA with an 10 foot high barrier, and 62 dBA with an 12 foot high barrier. For the homes nearest to the relocated maintenance facility, the mitigated construction noise levels would be as high as 83 dBA with an 8 foot high barrier, 82 dBA with an 10 foot high barrier, and 82 dBA with an 12 foot high barrier.

Implementation of Mitigation NOI-1a will limit the overall noise level of construction activities while also giving any persons disturbed by occasional loud noises an identifiable method of recourse. However, the impact will remain significant.

Mitigation NOI-1a: Use Temporary Noise Barriers and Limit Hours of Construction.

- The following mitigation measures are recommended to reduce noise generated by construction:
- Construct temporary noise barriers with a minimum height of 8 feet, such as a solid plywood construction barrier or earthen

berm, between the construction activity and residences within 630 feet before site grading and earthwork begins. Openings for site access between the project site and adjacent residential land uses during these phases of construction must be minimized. Noise barriers may be removed once all ground level work is complete and upper floor construction is underway.

- Limit significant noise-generating construction activities, including truck traffic coming to and from the site for any purpose, to daytime, Monday through Saturday, non-holiday hours (7:00 AM to 6:00 PM).
- Properly muffle and maintain all construction equipment powered by internal combustion engines.
- Prohibit unnecessary idling of internal combustion engines by limiting idling to 5 minutes, per State idling restrictions.
- Locate all stationary noise-generating construction equipment, such as air compressors, as far as practical from existing nearby residences and other noise-sensitive land uses. Acoustically shield such equipment by using piles of aggregate, project trailers, other non-noise generating equipment, or with temporary portable noise barriers.
- Select quiet construction equipment, particularly air compressors, whenever possible. Fit motorized equipment with proper mufflers in good working order.
- Designate a "construction noise disturbance coordinator" to be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and would require that reasonable measures to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule. (The project sponsor should be responsible for designating a construction noise disturbance coordinator and posting the phone number and providing construction schedule notices).

Significance After Mitigation:

Significant and unavoidable. Most of the loudest construction activities are expected to take place where the hospital buildings would be constructed, which are away from the existing homes. When all pertinent equipment is operating and all of the aforementioned mitigation measures are in place, construction noise would be reduced to levels 2 to 4 dBA above daytime Leq levels with an 8 foot barrier. Therefore construction activities have the potential to create a short-term significant, noise impact on adjacent noise sensitive receptors.

Impact NOI-1b: Noise From Construction Activities (With Pile Driving) Would Impact Adjacent Noise Sensitive Land Uses

Construction on the site could involve pile driving and will temporarily increase noise levels at nearby noise-sensitive receptors.

Significance:

Potentially significant

Discussion:

This construction method would include all of the construction activities listed above and associated noise impacts under Impact NOI-1a with the addition of noise from pile driving. Therefore this section only addresses the potential noise from pile driving activities. At this time the project proponent intends to surcharge the property rather than develop the site using driven or drilled piers. Such surcharging will have to be approved by Office of Statewide Health Planning and Development (OSHPOD) as part of its review of site design and seismic safety. If surcharging is not approved by OSHPD, then driven piles or possibly drilled pier foundations will be required.

The Roadway Construction Noise Model (RCNM v.1.1), developed by the FHWA and commonly used in California, was used to calculate the maximum and average noise levels anticipated during pile driving activities. This construction noise model includes representative sound levels for the most common types of construction equipment and the approximate usage factors of such equipment that were developed based on an extensive database of information gathered during the construction of the Central Artery/Tunnel Project in Boston, Massachusetts (CA/T Project or "Big Dig"). The usage factors represent the percentage of time that the equipment would be operating at full power. Based on the RCNM results, the L_{eq} during impact or vibratory pile driving activities at 50 feet would be the same at 95 dBA.

Pile driving would only occur at the hospital building sites (Sutter Medical Center, Physicians Medical Center, and Central Utility Plant buildings). The nearest residences are located approximately 335 feet north of the proposed Sutter Medical Center site, and approximately 430 feet east of the Physicians Medical Center site. Average noise levels during impact or vibratory pile driving activities at 335 and 430 feet would be 78 and 75 dBA Leq, respectively. Peak noise levels from pile driving would be 84 and 82 dBA Lmax at 335 and 430 feet, respectively and would exceed the noise levels from other continuously operating construction equipment

analyzed in Impact NOI-1a.

The Physicians Medical Center building is the closest building where pile driving may occur and would be located about 580 from the Santa Rosa Christian School. If the foundation of this building were to be constructed using driven piles, then at this distance, the pile driving noise levels could be as high as 73 dBA Leq.

If pile driving is utilized, there will be vibration associated with pile driving. For construction related vibration, the Federal Transit Administration manual⁵ was used for calculation of the vibration impact evaluation. The manual provides some vibration sources levels for various pieces of construction equipment and includes the vibration levels listed in peak particle velocity (PPV) in inches per second, at a distance of 25 feet from the source. This metric is the most common vibration metric in assessing potential damage to structures. According to the data listed within the manual, the upper range of vibration levels for impact pile drivers (worst case) is a PPV of 1.518 inches per second at 25 feet. The fall of rate of vibration levels is directly proportional to distance. At a distance of 270 feet, the PPV would be 0.141 inches per second and at 335 feet, the distance of the closest residence, the PPV would be 0.0. The construction vibration damage criteria is 0.20 inches per second. Therefore, due to the distance of the closest residences from the construction, this impact is considered to be less than significant.

Mitigation NOI-1b: Use Temporary Noise Barriers and Limit Hours of Construction

While construction using pile driving is not anticipated, the following mitigation measures are provided should OSHPD disallow the use of surcharge:

- Where feasible based on a consideration of geotechnical conditions and structural requirements, implement “quiet” pile driving technology (using the drill and cast-in-place method).
- Erect temporary plywood noise barriers or noise control blankets around pile driving rigs to reduce noise emissions from the site and shield adjacent uses.

Significance After Mitigation:

Significant and unavoidable. If the foundations for the new buildings can be drilled, with cast-in-place piers (also referred to as “quiet” pile driving), then the noise level from this foundation work would be reduced to 86 dBA at a distance of 50 feet, 69 dBA at 335 feet, and 67 dBA at 430 feet. Temporary noise barriers could provide 5 – 10 dB of additional noise reduction depending upon site geometry. A conservative estimate would be a noise level of 64 dBA at the nearest residence. Although this level is below the **Table NE-2** threshold of 65 dBA it is uncertain if drilled, cast-in-place piers can be used. Therefore, this impact is considered to be significant and unavoidable.

⁵ Transit Noise and Vibration Impact Assessment manual (FTA-VA-90-1003-06, May 2006)

Impact NOI-2: Exposure of the Hospital to Highway Noise Levels That Exceed County Exterior and Interior Noise Standards The entire project site is exposed to highway noise at levels exceeding 60 dBA L_{dn} , the Sonoma County threshold of acceptability for noise-sensitive development. Noise levels at the proposed hospital could exceed the county's exterior and interior noise limits.

Significance: Potentially significant

Discussion:

The entire project site is exposed to noise levels exceeding 60 dBA L_{dn} , the Sonoma County threshold of acceptability for noise-sensitive development. The highest noise levels occur along the US 101 frontage, where the existing noise exposure level at the approximate setback of the proposed hospital is about 70 dBA L_{dn} . According to the General Plan, noise-sensitive developments are considered acceptable where exterior noise levels are 60 dBA L_{dn} . The site plan for the proposed project includes many outdoor areas that are sheltered from perimeter vehicular traffic noise by the buildings themselves. The buildings, as depicted on the site plan, would be expected to reduce noise exposure levels in some of the proposed common outdoor activity areas to below the 60 dBA L_{dn} threshold.

The maximum allowable interior noise level for a noise-sensitive use resulting from environmental noise sources is 45 dBA L_{dn} . Standard construction methods for hospitals includes air-conditioning. The building typically provides approximately 25 to 30 dBA of noise reduction when going from outside to inside when the windows are assumed to be closed. Because the noise exposure levels are approximately 70 dBA L_{dn} or higher at the facade of the proposed hospital building, there is the potential for interior levels to exceed the interior noise limit with windows closed for noise control.

The implementation of Mitigation NOI-1a and NOI-1b would reduce noise exposure to both outdoor use areas and interior spaces to achieve compliance with county and state noise exposure standards.

Mitigation NOI-2a: Shield Exterior by Modifying Site Layout or Incorporating Noise Barriers Use building massing to shield outdoor activity areas from traffic noise. Outdoor activity areas shall be developed within the acoustically sheltered portions of the site to the extent feasible. If all of the common outdoor areas cannot be shielded with proposed buildings, noise barriers shall be incorporated into the design to ensure the common areas are properly mitigated from existing traffic noise to less than 60 dBA L_{dn} .

Mitigation NOI-2b: Incorporate Sound Insulation Treatments and Building Upgrades to Reduce Interior Noise Levels Incorporate sound insulation treatments and building upgrades into the buildings so as to achieve an interior L_{dn} of 45 dBA or less with windows closed. Such treatments may include, but would not be limited to, acoustically rated windows and doors, acoustical caulking at all exterior wall penetrations, and noise control treatments for all air transmission paths associated with mechanical ventilation systems. An acoustical analysis of the project’s design and the preparation of a report detailing the necessary noise mitigation features shall be completed during the project design and incorporated into the building plans and submitted to PRMD.

Significance After Mitigation: Less than significant

Impact NOI-3: Exposure of Noise-Sensitive Receptors to Mechanical Noise Levels That Exceed County Standards Mechanical equipment on the roofs of the proposed structures or in the Central Utility Plant could produce noise levels in excess of Sonoma County’s noise standards applicable to on-site mechanical noise.

Significance: Potentially significant

Discussion:

Mechanical equipment, which could include chillers, cooling towers, hot water boilers, medical vacuum pump(s), compressor(s), and emergency power generator(s), typically consists of electrical-powered devices that are located on the roofs of some of the buildings, or within a central plant area on-site. The noise level of nominal commercial grade mechanical equipment has been measured at a maximum level of 90 dBA at a distance of 3 feet. In order for the noise level emanating from this equipment to be less than the County nighttime noise standard of 45 dBA L_{eq} , the units at the project site would need to be located at least 535 feet from the nearest noise-sensitive receptor. Depending upon the location of the mechanical equipment at the site, the projected noise levels from this equipment could exceed the General Plan Noise Elements standards for sensitive receptors, and noise mitigation may be required. The implementation of Mitigation NOI-2 would be effective in reducing mechanical noise levels to achieve compliance with Sonoma County noise level standards.

Mitigation NOI-3: Perform Acoustical Design Review During the design phase of the mechanical equipment for the proposed project, an acoustical consultant shall review the final design of the Central Utility Plant facility as well as the placement of any auxiliary outdoor mechanical equipment, such as roof top ventilation fans. The acoustical consultant shall determine that sufficient noise mitigation, such as noise barriers around the equipment, is incorporated into the project design to ensure that noise from all mechanical equipment is limited to 45 dBA or less at the noise sensitive receptors. The acoustical consultant’s evaluation shall be submitted to PRMD.

Significance After Mitigation: Less than significant

Impact NOI-4: Intermittent Increase in Ambient Noise and Exceedance of County Standards From Parking and On-Site Circulation On-site parking and circulation of motor vehicles could intermittently increase ambient noise levels and could potentially exceed the Sonoma County General Plan **Table NE-2** noise standards at the noise sensitive land uses adjacent to the parking lot.

Significance: Potentially significant

Discussion:

The proposed site plan includes parking approximately 300 feet from residences along the project's eastern property boundary. Sounds resulting from on-site parking and circulation of motor vehicles including low-speed driving, engine starts, and door slams could intermittently exceed Sonoma County General Plan noise standards and disturb nearby residents. Noise levels from car startups and door slams can be as high as 61 to 63 dBA at a distance of 25 feet. Since noise levels diminish by 3 dBA with each doubling of distance from the source, exterior noise levels at the nearest residences would be approximately 51 to 53 dBA. For purposes of this analysis L50 (30 minutes in any hour) from **Table NE-2** is used as the significance criteria. That is, the analysis assumes that an exceedance of 55 dBA during the daytime and 50 dBA during the nighttime would be a significant impact. Only a small portion of the parking is proposed near the residences and these parking areas are somewhat removed from the medical campus facilities and are therefore not expected to be used as frequently as there are parking areas closer to the medical campus facilities.

The Wells Fargo Center Maintenance Building will be relocated to the eastern portion of the project site approximately 200 feet west of the residences along the eastern boundary of the project site. Activities that would occur at the maintenance building include repairing or painting items that would be difficult to repair or paint in the field. Some light fabrication (steel and wood) would take place at the shop on occasion. The shop would also be used for storage. The frequency of drop offs and pick ups would be about twice per week. Other vehicle traffic associated with the maintenance building would consist of a tractor (twice a week and seasonal), a ride-on mower (twice a week and seasonal), two electric carts (several times per day) and a WFC truck (approximately twice a day). Noise impacts associated with operation of the maintenance building would be less than significant.

With the implementation of Mitigation NOI-4, the noise and land use compatibility guidelines of the Sonoma County General Plan should be met at the residential uses adjacent to project parking areas.

Mitigation NOI-4: Provide a Noise Barrier to Shield Residences Adjacent to Parking Area	Construct a solid 6-foot-high noise barrier on the project side of the eastern property line where parking areas are adjacent to residential properties. The location of the noise barrier is shown in Figure 3.11-5 . In order to be effective, the barrier must be constructed airtight over its face and at the base and have a minimum surface weight of 3.5 pounds per square foot. Suitable materials include wood, pre-cast masonry or pre-cast concrete panels. A 6-foot high noise barrier would provide 7-8 dB of reduction from these types of noises.
Significance After Mitigation:	Less than significant as the noise impact would be mitigated to below the noise standards listed in Table NE-2 .
Impact NOI-5: Exposure of Sensitive Off-Site Receptors to Intermittent Noise from Helicopter Operations	Some residential areas near the project site would be exposed to an SEL in excess of 90 dBA during helicopter operations, which represents an intermittent but substantial increase over the ambient noise that could disturb a number of occupants.
Significance:	Potentially significant



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Figure 3.11-5
Proposed Noise Barrier

Discussion:

The worst-case noise exposure of residences to helicopter noise under the proposed departure and approach paths is shown in **Figure 3.11-4**. This figure shows that a part of the residential areas north of the project site would be exposed to an SEL in excess of 90 dBA during helicopter operations. Thus, it is expected that these residential areas may be exposed to noise levels sufficient to result in periodic sleep disturbance of some residents. (Historically, 81 percent of the helicopter flights to Sutter's Chanate facility have occurred during the day.) Due to the possible number of helicopter flights, particularly at nighttime, the noise levels could be annoying and awaken a number of residents and are regarded as locally significant.

There are currently no established criteria setting forth at what point sleep disturbance would occur, or what is considered acceptable. While helicopter noise would affect people for short periods of time, people living within the noise contour shown in **Figure 3.11-4** could be significantly affected during the short duration of their exposure to the helicopter noise, especially if the noise occurs during the nighttime hours when they are sleeping.

Sonoma County cannot designate specific flight paths that must be flown by helicopters or restrict the hours of operation of a helistop used by emergency helicopters. Under the California Aeronautics Act (Public Utilities Code, section 21662.4), emergency aircraft flights for medical purposes are exempt from local ordinances that restrict flight departures and arrivals to particular hours of the day or night, restrict aircraft based upon the aircraft's noise level, or that restrict the operation of certain types of aircraft. Although flight tracks cannot be dictated, during departure and arrival operations, pilots fly aircraft into the prevailing winds to achieve lift sooner. The noise contours for this analysis were calculated based upon the prevailing winds in the area which are generally out of the northwest.

Under worst-case conditions, the project would result in significant noise annoyance from new emergency helicopter operations. Establishing a program of monitoring helicopter operations, recommending preferential flight paths when wind conditions allow, and responding to community noise disturbance complaints could reduce potential annoyance by avoiding flight elevations and paths that are most annoying to residents, to the extent feasible for individual emergency flights and by providing information on the nature and purpose of emergency flights. However, since the timing and frequency of helicopter operations is a function of when nonscheduled (emergency) evacuations are required, the effects of the project would be considered significant and unavoidable.

It should be noted that anticipated noise exposure from emergency helicopters using the helistop would be very brief occurrences. Unlike law enforcement helicopters which often hover or patrol in an area at low altitude for an extended period of time, an emergency helicopter would remain at altitude until commencing the approach to the hospital and then quickly descend to the helistop, land and drop the patient, and quickly take-off and exit the area.

Additional mitigation measures to reduce intermittent noise from emergency helicopters are either not feasible or not enforceable. Upgrading of residences is sometimes suggested as possible mitigation, but such a measure is not enforceable or feasible because it requires the cooperation of numerous third parties and potentially could require a significant expenditure, yet would not be effective because the mitigation is defeated if residents open their windows at night during warmer periods (or generally for fresh air). It is not feasible to limit emergency flights to a hospital because such a limitation is not compatible with the fundamental purposes and
Subject to the California Hospital which must receive and make medically necessary transfers of patients
Luther Burbank Memorial Foundation Joint Master Plan
that might be pushed into nighttime hours by unexpected or unpredictable factors such as the patient's medical needs, weather and aircraft availability.

**Mitigation NOI-5a:
Adopt Preferential
Approach and
Departure Profiles**

Adopt preferential directional approach and departure profiles. According to the analysis, the SEL levels will be greater when the helicopters are approaching from the north and departing to the south. Recommend to helicopter pilots that anytime the conditions are favorable all approaches shall be made from the south with subsequent departures made to the north. This will help reduce the SEL levels and the potential for sleep disturbance to the residences to the north of the project site.

**Mitigation NOI-5b:
Implement Monitoring
and Adaptive
Management**

A program of monitoring helicopter operations and designating a community noise disturbance coordinator shall be implemented to address noise annoyance in nearby residential areas. As a part of these measures, helicopter ambulance companies and pilots shall be informed by hospital staff of approved flight paths to and from the hospital helistop to avoid or reduce short-term noise exposures to noise sensitive areas. Sutter shall maintain a helistop log that includes arrival and departure times, the approach route taken, and explanation of any flight path deviation from the designated flight paths. A noise disturbance coordinator shall be identified at Sutter who would record citizen complaints and review the helistop log to determine the source of the noise disturbance. Communicate any helicopter noise complaints to the pilots and request they modify their flight approach whenever possible.

**Significance After
Mitigation**

Significant and unavoidable. Designation of preferred approach and departure routes and preferred angle of approach will help to minimize disturbances, as pilots can reasonably be expected to comply when they can do so safely. However, since there is no way to ensure that noise from these operations can be fully mitigated, the impact remains significant and unavoidable.

**Impact NOI-6: Exposure
of Sensitive On-Site
Receptors to
Intermittent Noise from
Helicopter Operations**

The majority of the project site would be exposed to an SEL in excess of 90 dBA during helicopter operations, an intermittent but substantial increase in ambient noise that could disturb hospital patients and others at the project site.

Significance:

Potentially significant

Discussion:

The operation of the proposed helistop would result in the majority of the site being exposed to an SEL of 90 dBA or more under future conditions. Depending on the construction of the exterior walls and windows of patient rooms and other hospital areas requiring relative quiet, the exterior facades of the hospital may be exposed to single-event noise levels high enough to result in significant disturbances inside the hospital.

Maximum noise levels produced by helicopters at the helistop may result in daytime disturbances and nighttime sleep disturbances (awakenings) within patient rooms of the hospital facilities.

The implementation of Mitigation NOI-6 should ensure that indoor noise levels during helicopter operations do not result in disturbances to hospital patients.

The Santa Rosa Christian School located within the Wells Fargo Center is considered a noise sensitive use by the General Plan Noise Element, and thus would be considered noise impacted at sound levels over 60 dBA Ldn. Due to the distance from the proposed helistop, the school will be well out side the 60 dBA Ldn contour due to helicopter operations. Therefore the school would not be considered to be impacted by excessive noise exposure from helicopter operations.

**Mitigation NOI-6:
Conduct Acoustical
Analysis and
Incorporate Findings
into Project Design** Noise mitigation features such as window sound insulation or upgraded wall assemblies shall be incorporated into the project design. To determine the specific features required to reduce these adverse noise effects, an acoustical analysis of the project design shall be conducted that details the necessary noise mitigation features required for patient rooms and other sensitive hospital use areas to meet an interior SEL of 65 dBA and/or maximum noise level (L_{max}) of 55 dBA during helicopter operations. The findings of this acoustical analysis shall be incorporated into the design of the hospital.

**Significance After
Mitigation:** Less than significant

**Impact NOI-7: Exposure
of Sensitive Receptors to
Intermittent Noise from
Ambulance Operations** Ambulance and emergency vehicle noise will occur in the vicinity of the project site as a result of the project.

Significance Less than significant

noise levels would increase from project-related traffic and intermittent noise would increase from helicopter operations. These increases would make a cumulatively considerable contribution to a significant cumulative impact.

Mitigation NOI-8: Implement Mitigation Measures NOI-1 through NOI-6.

Significance After Mitigation: Significant and unavoidable

3.12 POPULATION AND HOUSING

This section reviews population and housing conditions for Sonoma County and the vicinity of the proposed project. Although the project would be constructed within a specific group of parcels, population and housing impacts have the potential to extend beyond the physical project area. As such, the study area analyzed in this section is Sonoma County Planning Region 5, the Santa Rosa and Environs Planning Area, as designated in the Sonoma County General Plan. The Santa Rosa and Environs Planning Area includes the proposed project site, the City of Santa Rosa, and the unincorporated Mark West Springs area to the north.

3.12.1 Environmental Setting

The site is located at the interchange of US 101 and Mark West Springs Road. It is generally bordered by US 101 on the west, Mark West Springs Road on the north, Old Redwood Highway on the east, and vineyards on the south. Residential development surrounds the site to the east and north.

Growth in Sonoma County and its incorporated cities is the result of both new residential development and annexations of existing households. Net population changes in the unincorporated areas include losses due to annexations into urban service areas as well as growth attributed to new residential development, while growth in cities is attributed to increases from annexations as well as new development. By 2020, the population of the nine Sonoma County cities is expected to increase by approximately 68,350 persons and contain 73 percent of the county's total population, compared to 68 percent in 1990. The unincorporated areas are expected to add a net growth of about 19,100 persons and contain 27 percent of the total county population, down from 32 percent in 1990. This pattern of growth with most of the new development occurring in cities as opposed to unincorporated areas is in compliance with the General Plan 2020 policy of slowing the growth in unincorporated areas of Sonoma County and having new development locate within pre-existing city boundaries.

The two most significant demographic trends shown in the 2000 census data are the percent change in Latino populations, doubling from 6.9 percent in 1980 to 17.3 percent in 2000, and the aging of the county's population. Between 1990 and 2000, the total number of persons between the ages of 18 and 44 grew by 2 percent compared to 36 percent over the 1980 to 1990 period. At the same time, the number of persons between the ages of 45 and 64 age range grew by nearly 65 percent, compared to 26 percent over the 1980 to 1990 period. These trends were more pronounced in the unincorporated areas, where housing costs during the late 1990s discouraged families with children from living in Sonoma County, particularly in costly rural areas.

Overall, housing unit growth in Sonoma County has decreased in the unincorporated county since 1990 and is projected to continue on that track. Between 1990 and 2000 the county added 19,353 units of which 4,157 (21%) were constructed outside of city limits. From 2000 to 2006 13,397 units were added with 2,520 (19%) units constructed within the unincorporated county. Projections for housing growth from 2007 to 2014 estimate 13,650 units within the county with 1,364 (10%) units constructed in the unincorporated county (Sonoma County General Plan 2020, ABAG 2014 housing projections, California Department of Finance E-5 Estimates).

3.12.2 Impact Analysis

3.12.2.1 *Thresholds of Significance*

According to Appendix G of the *CEQA Guidelines*, the proposed project could have a significant impact if it would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- Displace substantial amounts of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

3.12.2.2 *Approach and Methodology*

The population and housing effects that could result from the implementation of the proposed project are evaluated in the context of current and projected population for the Santa Rosa and Environs Planning Area.

3.12.2.3 *Less Than Significant Impacts Not Requiring Further Analysis*

No housing exists at the project site, and no people reside there. Therefore, no residences or people will be displaced by the proposed project.

3.12.2.4 *Impacts and Mitigation*

Impact PH-1: Indirect Growth Inducement Implementation of the proposed project could indirectly induce growth in the area.

Significance: Less than significant

Discussion:

Changes in population, employment, and housing demand are social and economic effects, not environmental effects. According to CEQA and *CEQA Guidelines* (see Section 15382), these effects should be considered in an EIR only to the extent that they create adverse impacts on the physical environment. Typically, a significant impact on population and housing stems from the construction of new housing or facilities for services. An increase in population could result in increases in the demand for services and housing, the construction of which could result in significant environmental impacts.

The project would not directly or indirectly induce new growth. Sutter Hospital is replacing facilities that currently exist at the Chanate facility in Santa Rosa with new facilities at the proposed site at 50 Mark West Springs Road. The LBMF is not expanding their presentation of fine arts entertainment and education at the WFC and will not increase the number of full-time employees. The project would improve road conditions and provide signalization of the shared entry road, provide new infrastructure on-site, and enhance fire flow. However, the

improvement of road conditions addresses existing deficiencies and provides adequate access to the hospital, rather than providing access to currently undeveloped areas. Road improvements address safety issues (e.g., signalization, or ambulance access to the hospital).

A General Plan amendment would be required to include the project site within the Urban Service Boundary, in order to allow annexation to the Airport-Larkfield-Wikiup Sanitation Zone. While these actions are requested only for the project site, it is possible that expansion of these boundaries could induce nearby development. Medical support businesses, as well as retail and other goods and services that support the employees may establish themselves in the project vicinity. These would have the potential to induce growth through the jobs they create, however this growth is expected to be within the projected growth predicted by the Sonoma County General Plan 2020 and analyzed in the General Plan EIR.

The project could attract support and ancillary business development to the area. However, this localized growth in businesses should not have an impact on population and housing because there would not be a net increase in the creation of jobs. While new businesses may locate near the new hospital facility, businesses that serve the current hospital will either shut down or relocate near the new hospital site. With no new jobs being created, impacts associated with population and housing increases as a result of the proposed project will be less than significant.

No people or housing units are being displaced by the proposed project due to no residences being located on the project site. As a result no new housing units will need to be constructed because of the project. With the project not inducing population growth and not displacing residents population and housing impacts will be less than significant.

Mitigation: No mitigation required

**Impact PH-2:
Cumulative Population
and Housing Impacts** Implementation of the proposed project could result in a considerable contribution to significant cumulative population and housing impacts.

Significance: Less than significant

Discussion:

The project consists of the replacement of an existing hospital with new facilities and thus does not result in the creation of new jobs or an increased demand for housing. Thus, no cumulative impact on population and housing is expected.

Mitigation: No mitigation required

3.13 PUBLIC SERVICES

This section characterizes existing and proposed public services in the project area and evaluates changes that may result from project implementation. Public services include services that address community needs and are usually provided by local or regional government, although they may be provided through private contracts. Public services include fire and emergency response, police protection, airports, schools, libraries, and parks. Parks are discussed in Section 3.14. This section includes information from the *Fire System Proposal* (Brelje 2009c) and *Correction to Fire System Proposal Dated August 18, 2009* (Brelje 2009d), which are included as **Appendix J** in the Technical Appendices, Vol. 2 of this document.

3.13.1 Environmental Setting

Fire and Emergency Medical Services (EMS) Responders

The project site is in unincorporated Sonoma County to the north of the City of Santa Rosa. This area is under the jurisdiction of the Sonoma County Department of Emergency Services, Fire Services Division, County Service Area #40. Fifteen volunteer fire companies comprise CSA #40 and are funded primarily through donations, with equipment and administrative support provided by the county. In addition, 17 Fire Protection Districts are funded through county taxes and operated by the Fire Division of the Department of Emergency Services. Additional fire protection in the unincorporated areas of the county is provided by the California Department of Forestry and Fire Protection.

Fire protection service for the project site would be provided by the Rincon Valley Fire Protection District. The nearest station is located 0.5 mile away in Larkfield. The station is manned by a captain, two firefighting engineers, and approximately 50 volunteers. Equipment includes a Type 1 Engine, a Type 3 Engine, a water tender/engine combination, and a SQUAD (support unit). Response time to the project site varies but is approximately 4 minutes.

The Rincon Valley Fire Protection District has three other fire stations with both full-time and volunteer firefighters from which mutual aid would be available. The district has a mutual aid agreement with the City of Santa Rosa Fire Department (SRFD). The SRFD has equipment that can reach up to a seven-story structure.

Emergency Medical Service (EMS) systems in Sonoma County is a blend of First Responder agencies, ground and air ambulance providers, EMS – Fire Dispatch Center, and acute care receiving facilities. The County's EMS system contains an Exclusive Operating Area ambulance franchise, assessment district ambulance providers, privately owned air ambulance (helicopter) service, and a law enforcement based Advanced Life Support resource helicopter. In addition, the County's EMS system has one of the state's only public-private partnership based EMS-Fire Dispatch centers, which provides Emergency Medical Dispatch instruction to callers using the 9-1-1 system.

Law Enforcement

The project site receives police protection and coroner and correctional services from the Sonoma County Sheriff's Department. The Sheriff maintains 24-hour patrol from five substations and a main office. Peace officers work in patrol, administration, the helicopter unit, boating, civil bureau, and investigations. A number of other agencies provide law enforcement in Sonoma County including the existing WFC, which employs security for large events. Sutter Hospitals also employ full-time security guards for hospital facilities.

Schools

The proposed project site is located in the Mark West Union School District. The district serves students from kindergarten through grade 6 in its three elementary schools: Mark West, Riebli, and San Miguel. The district also offers a middle school experience at the Mark West Charter School for grades 7 and 8 and Mark West Home Study Program for kindergarten through grade 8. Students from the Mark West Union School District attend Santa Rosa City High School.

The Santa Rosa Christian School is located at the proposed project site in the WFC. The Wells Fargo Center Education Through the Arts is a program currently at the WFC, which uses the arts as a teaching tool for all core subjects (math, science, and literature) to assist with school district curriculum for kindergarten through grade 12.

3.13.2 Regulatory Setting

3.13.2.1 National

The National Fire Protection Association (NFPA) is a national organization that is focused on the development of standards and guidelines to reduce fire danger. Even when not written in as laws by either the state or county NFPA codes are many times used as mitigation requirements.

5-15.5.2 Hose Connection for Fire Department Use. In buildings of light or ordinary hazard occupancy, 2 1/2 inch hose valves for fire department use are permitted to be attached to wet pipe sprinkler system risers. The following restrictions shall apply:

- 1) Sprinklers shall be under separate floor control valves.
- 2) The minimum size of the riser shall be 4 inches unless hydraulic calculations indicate that a smaller size riser will satisfy sprinkler and hose stream demands.
- 3) Each combined sprinkler and standpipe riser shall be equipped with a riser control valve to permit isolating a riser without interrupting the supply to other risers from the same source of supply.

3.13.2.2 State

California Emergency Services Act

This act permits all emergency services functions of the state to be coordinated as far as possible with the comparable functions of its political subdivisions, of the federal government including

its various departments and agencies, of other states, and of private agencies, to the end that the most effective use may be made of all manpower, resources, and facilities for dealing with any emergency that may occur. (California Code of Regulations, Title 2, Chapter 7)

California Fire Code

Sonoma County has adopted the California Fire Code (California Code of Regulations, Title 24, 2007 Edition) as its primary fire safety document. In several cases the code was modified to be specific to Sonoma County and those changes are discussed below in the Local Regulatory Settings Section.

3.13.2.3 Local

Sonoma County Civil Defense and Disaster Code

The purpose of this article is to comply with the provisions of the California Emergency Services Act (commencing with Section 8550 of the Government Code); to provide for the preparation and carrying out of plans for the protection of persons and property within the Sonoma County/operational area in the event of an emergency; to provide for the mitigation of the effects of natural, man-made, or war-caused emergencies which result in conditions of disaster or extreme peril to life, property, or the resources of the county; and to create an organization based on the standardized emergency management system (SEMS) (Government Code Section 8607) and the National Incident Management System (NIMS) and Homeland Security Presidential Directive-5 (HSPD-5) to coordinate the efforts of the various emergency services agencies, both public and private, within the County of Sonoma dealing with emergencies. (Chapter 10, Civil Defense and Disaster, Sonoma County Code)

Sonoma County Fire Safety Ordinance

Sonoma County has adopted the California Fire Code and amended it in certain places to be specific to Sonoma County. The following amendments to the California Fire Code are potentially relevant to the project (Chapter 13, Fire Safety Ordinance, Sonoma County Code):

- **105.6.14.1 Fire alarm systems, fixed rate of rise¹ and manual².** An operational permit is required to install any fire alarm system.
- **105.6.14.3 Fire alarm systems, smoke detectors and manual².** An operational permit is required to install any fire alarm system.
- **105.6.15.1 Fire water underground piping.** A separate utility permit from the building official is required prior to installing any private fire water underground piping and associated appliances.

¹ Rate of rise is a type of detector that will be set off when the rate of temperature increase from a fire exceeds a predetermined level, normally set at 15 degrees Fahrenheit per minute

² Manuel is a type of alarm that is set off when an individual manually activates the alarm

- **105.6.15.2 Fixed extinguishing systems, other than automatic fire-extinguishing systems.** An operational permit is required to install a fixed fire extinguishing systems other than automatic fire-extinguishing systems.
- **105.7.8.1 Medical gas system.** An operational permit is required to install a medical gas system.
- **D101.1 Scope.** Fire apparatus access roads shall be in accordance with this appendix as amended and all other applicable requirements of the International Fire Code. This section applies to residential and commercial developments. Design and construction shall be in accordance with the following sections unless otherwise authorized by the fire code official in accordance with 104.9 Alternative Materials and methods.
- **D102.1 Access and loading.** Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an approved fire apparatus access road with an asphalt, concrete or other approved driving surface capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds (34050 kg) or as approved by the Fire Code Official.
- **D103.3 Turning radius.** The minimum turning radius shall be determined by the fire code official or as approved by local standards.
- **D103.6 Signs.** Where required by the fire code official, fire apparatus access roads shall be marked with permanent NO PARKING-FIRE LANE signs complying with California Vehicle Code.
- **D104.1 Buildings exceeding three stories or 30 feet in height.** Buildings or facilities exceeding 30 feet (9,144 mm) or three stories in height shall have at least two means of fire apparatus access for each structure.
- **D104.2 Buildings exceeding 62,000 square feet in area.** Buildings or facilities having a gross building area of more than 62,000 square feet (5,760 m²) shall be provided with two separate and approved fire apparatus access roads.

3.13.3 Impact Analysis

3.13.3.1 Approach and Methodology

This analysis evaluates the potential for the proposed project to have adverse physical impacts on public service facilities. Adverse impacts would include the need for additional or expanded facilities to accommodate increases in demand for services and service personnel, or to enable service providers to maintain level of service standards. The potential for increased demand for public services that could result from project implementation was assessed by comparing performance objectives identified for each service to determine whether there would be unmet need. An unmet need for services could indicate that new facilities or additional staff would be needed, which could result in a need for expanded facilities.

3.13.3.2 *Thresholds of Significance*

According to Appendix G of the *CEQA Guidelines*, the proposed project could have a significant impact if it would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

- Fire protection;
- Police protection;
- Schools; or
- Parks.

3.13.3.3 *Impacts Not Analyzed Further*

The nearest park to the project site is Coffey Park, approximately 1.5 miles to the south. It is unlikely that the project would substantially increase the use of existing neighborhood and regional parks or other recreational facilities and require the need for new facilities. This impact is not discussed further.

Impacts and Mitigation

Impact PS-1: Need for Additional Fire Protection Services Implementation of the proposed project may result in the need for additional fire protection services.

Significance: Potentially significant

Discussion:

Primary fire protection issues include specialized firefighting needs with respect to the helistop, increased call volume, and new challenges to firefighters associated with new building characteristics, especially multistory buildings. Increases in the demand for fire protection to maintain acceptable service levels could result in the need for new or expanded fire stations of which could cause significant environmental impacts.

The existing WFC facilities include fire hydrants and a looped water system. However, the existing WFC buildings are not fitted with sprinklers.

For the SMCSR, PMC and MOB (with a total floor area of approximately 306,000 square feet) with Type 1 construction, the Uniform Fire Code requires 3,750 gallons per minute (gpm) of fire flow capacity with a 20 pounds per square inch (psi) residual pressure in the water main. With an automatic sprinkler system, the fire marshal may reduce the fire flow requirement by up to 75 percent. Typically, a 50 percent reduction is assumed, which would mean that a fire flow capacity of approximately 1,875 gpm would need to be available (**see Appendix J**).

The project proposes that each of the three main structures be improved fire resistant structures with a minimum construction type of I-B. The CUP which is much smaller than the other

building is proposed to be built to at least II-B standards. On every floor at each stairwell enclosure and rooftop access point hose connections consistent with 1999 NFPA-13 § 5-15.5.2 shall be installed. To supply water to the project site a connection to the California American Water Company (Cal Am) system that currently serves the WFC site is proposed. Cal Am has confirmed that they can provide, with their current infrastructure at Mark West Springs Road, 2,500 gpm for up to two hours. The system being proposed is a looped system that provides significant redundancy and therefore reliability to the emergency water supply. The fire flow capacity provided by Cal Am is well above the 1,875 gpm estimate required to provide adequate fire protection services.

Mitigation PS-1 would reduce any impacts associated with providing specialized fire fighting services to a less than significant level. The proposed project would not have any impacts on the response times and as a result the current level of response times would be maintained. The close proximity of a fire station (0.5 miles) would not create the need for a new or altered fire station.

Mitigation PS-1: The project shall be reviewed and approved by Sonoma County and state firefighting agencies to determine the appropriate equipment, personnel needs, and training required to fight specialized fires.
Determine Need for and Provide for Additional Firefighting Services Mitigation shall include but not be limited to³:

1. Fitting any new structures with sprinklers;
2. Training for specialized (helistop) firefighting underwritten by the hospital.

Significance After Mitigation: Less than significant

Impact PS-2: Need for Additional Police Protection Services Implementation of the proposed project could result in the need for additional police protection services.

Significance: Less than significant

Discussion:

The proposed project site receives police protection from the Sonoma County Sheriff's Department. The WFC employs security for large events which will remain the same because no increase in the number or size of events is proposed. Sutter Hospitals also employ full-time security guards for hospital facilities and this practice will continue with the proposed project. While the proposed project represent a new site for the Sheriff's Department to patrol the presence of security guards on site will result in less than significant impacts on Sheriff demand and response times. There will be no need to increase the number of Sheriff officers as a result of the project and therefore no new or altered facilities would be required.

Mitigation: No mitigation required

³ Jack Rosevear, Rincon Valley Fire Department 2009

Impact PS-3: Need for Additional Schools Implementation of the proposed project could result in the need for additional schools.

Significance: No impact

Discussion:

The proposed project would not result in any impacts to public schools. The proposed project would replace an existing medical facility and would not induce population growth. The private school currently at the WFC would continue operations. The project would be required to pay school fees at the rate of \$0.30 per square foot of new construction. The approximately 306,000 square feet could generate almost \$92,000 in school fees. With no population growth there would be no impacts or the current level of service provided by the local school system. With no new students there would be no need for altered or new schools.

Mitigation: No mitigation required.

Impact PS-4: Cumulative Impacts from additional Public Service Demands The continued operation of the proposed project could result in a significant increase in the demand for public services and the need for new facilities to serve that need.

Significance: Less than significant

Discussion:

Land uses and development consistent with the Sonoma County General Plan 2020 would result in a significant cumulative demand for fire protection and police services. The proposed project could incrementally increase the need for emergency services and contribute to the significant cumulative impact of Countywide development. However, the proposed project is not expected to result in cumulatively considerable impacts. The existing WFC facilities already employ security for their larger events and no increase in the number or size of events is proposed. Sutter Hospitals also employ full time security guards for their hospitals, and thus demand for additional police services is not expected to be substantial. Any impacts to fire services are being mitigated by installing sprinklers and following the Sonoma County Fire Safety Ordinance. Financial assistance will be provided to the fire department to offset any incurred fees and costs in response to the need for more training.

The proposed project would have no impact on educational services as it will not create additional demand for those services.

Mitigation: No mitigation required

3.14 RECREATION

This section describes the local and regional recreational uses in the project vicinity and the project's potential effects on existing recreation facilities. The discussion explores whether the project would require creation or expansion of recreational facilities or result in other potential adverse physical effects.

3.14.1 Environmental Setting

Existing development on the proposed project site consists of a public entertainment venue (Wells Fargo Center for the Arts) and other LBMF facilities, including an athletic field and playground. The Santa Rosa Christian School is also located at the proposed project site in the WFC.

3.14.1.1 Existing Recreational Facilities

Regional Context

Sonoma County has two state park districts, the USACE Lake Sonoma Recreation Area, the Sonoma County Regional Park Department, the parks and recreation departments of five cities, and three special parks districts that together provide a variety of parklands. Additional recreation facilities are operated by nonprofit agencies.

The types of parklands found in Sonoma County are classified based on category recommendations from the National Recreation and Parks Association. Federal recreation areas and state parks provide recreational opportunities intended to serve national or statewide populations. Regional parks provide opportunities for a broad range of recreational activities, generally within a 30- to 60-minute drive from urban areas, at a rate of 20 acres per 1,000 persons. Community parks are large enough to accommodate a variety of activities within a 30-minute drive of population centers, at a rate of 2.5 acres per 1,000 persons. Neighborhood parks are smaller, multi-use facilities within 0.5 mile of the population served. The standard is 2.5 acres per 1,000 persons (Sonoma County Board of Supervisors 2003).

Visitor use of Sonoma County recreational facilities has increased faster than the county population over the past decade, indicating that the demand for outdoor recreational facilities may exceed population growth (Sonoma County Board of Supervisors 2003). Public response from a 1995 survey (Sonoma County Board of Supervisors 2003) indicated that future acquisition and development of county park facilities should emphasize open space, trails, and other forms of passive use.

Potential future state acquisitions total 1,600 acres. Proposed additions to the county regional park system (5,923 acres) would result in a ratio of about 19 acres per 1,000 persons. The ratio is substantially higher when region-serving state parks are included. Up to 290 acres of community and neighborhood parks are proposed, which would result in a ratio of 5.7 acres per 1,000 persons in unincorporated areas.

City of Santa Rosa and the Project Area

The City of Santa Rosa has 57 parks totaling 514 acres. Twenty-three parks are in the northeastern quadrant of the city, closest to the project site. The parks offer a wide variety of recreational activities including trails for hiking, mountain biking, and trail riding; miniature trains and carousel; skate parks; boating; sailing; sports fields; playgrounds; and picnicking.

The nearest large park to the project site is the Shiloh Ranch Regional Park to the north, which includes 850 acres of natural wooded area and over 3 miles of trails for hiking, biking, and horseback riding; picnicking; a gazebo; a lawn area; and flush restrooms. Nearby neighborhood parks include Coffey Park and Bicentennial Park on the west side of US 101, which have playgrounds and picnic areas, flush restrooms, and lawn areas.

The proposed project site currently has athletic fields on Parcel B in the northeastern section and a playground associated with the school in the WFC (see **Figure 2-2**).

Recent and Planned Facility Improvements

The Sonoma County Regional Parks Department lists the following improvements to county recreation facilities (Sonoma County Regional Parks Department 2009):

- Central Sonoma Valley Bikeway – Larson Park to Highway 12. This multi-phased project plan proposes to start with the construction of a 2.76-mile bike and pedestrian facility from Verano Avenue to Agua Caliente Road in Sonoma Valley.
- Cheney Creek Bridge and Trail Project – New 110-foot metal bridge and crushed rock trail links the California Coastal Trail. Completed in May 2008.
- Crane Creek Regional Park Frisbee Golf Course – Expected in spring 2009.
- Ernie Smith Community Park Expansion Project – New and renovated trails, retaining walls, a fenced dog park, landscaping, and picnic tables. Completed in April 2007.
- Guerneville River Park – Group and individual picnic sites, outdoor stage area, restrooms, parking. Expected in spring 2009.
- Maxwell Farms Regional Park – Americans with Disabilities Act playground installation of upper body play equipment. Completed in fall 2008.

3.14.2 Impact Analysis

3.14.2.1 Approach and Methodology

This section does not evaluate impacts on recreational facilities in terms of additional acreage that may be needed to meet local standards. Rather, this section examines the additional demand, if any, for recreational facilities as a result of the project and any potential environmental effects from the development of additional lands for recreational uses to meet that demand.

3.14.2.2 *Thresholds of Significance*

The following standards of significance are based on Appendix G of the *CEQA Guidelines*. For the purposes of this EIR, an impact to recreation would be considered significant if the implementation of the proposed project would:

- Increase the use of existing neighborhood and regional parks or other recreation facilities such that substantial physical deterioration of the facilities would occur or be accelerated; or
- Propose the construction of recreational facilities or require the expansion of recreational facilities that might have an adverse physical effect on the environment.

3.14.2.3 *Less Than Significant Impacts Not Requiring Further Analysis*

The project, because of its commercial/public facilities nature, would not substantially increase the use of parks or recreational facilities. The population served by the project is predominately local and therefore will not require new recreational facilities. The project would have a less-than-significant impact on the use or condition of existing recreational facilities.

3.14.2.4 *Impacts and Mitigation*

**Impact REC-1:
Construction of
Recreational Facilities
That Might Have an
Adverse Physical Effect
on the Environment**

The project would relocate existing athletic fields and a playground at the WFC and construct passive recreation facilities at the Medical Campus. Relocation of the WFC facilities could have temporary minor impacts on recreationists during construction.

Significance: Less than significant

Discussion:

During Phase I of the proposed project, the existing athletic fields would be moved to the southeastern corner of Lot C, and the playground would be moved to the northern portion of Lot C. The temporary closure of the athletic fields and playground during Phase I construction has the potential to inconvenience recreation users.

The proposed Medical Campus would provide on-site passive recreation facilities for staff and clients in the form of outdoor areas, including meditative paths, outdoor gardens, courtyards, and open space. These recreational facilities would be visually unobtrusive and would not generate any traffic, emissions, or substantial noise. Construction impacts associated with these on-site passive recreation facilities have been included in the project impact analysis throughout this Draft EIR.

Relocation of the existing athletic fields and playground and construction of new passive recreation facilities would have a less than significant impact.

Mitigation: No mitigation required

**Impact REC-2:
Cumulative Recreation
Impacts** Implementation of the proposed project could result in a considerable contribution to significant cumulative recreation impacts.

Significance: Less than significant

Discussion:

The Sonoma County General Plan 2020 EIR determined that development in the County would have a significant cumulative effect on parks and recreation services because of the uncertainty of adequate ability to provide increased services in the County. However, the proposed project would not increase demand for recreational services and would not substantially increase the use of existing recreational services. Use of the WFC for entertainment and the arts would continue. The proposed project would provide onsite recreational facilities for staff and clients in the form of outdoor areas, including meditative paths, outdoor gardens, courtyards and open space. Therefore, the project would not contribute to a cumulative impact on recreation.

Mitigation: No mitigation required

3.15 TRANSPORTATION AND TRAFFIC

This section evaluates the circulation and parking impacts due to development of the proposed Sutter project. The setting section describes the existing surface street and freeway network, existing operating conditions in the vicinity of the project site and expected Base Case (without project) operating conditions for two future horizon years that reflect the first year of initial project operation (2014), and the most distant horizon year for which traffic modeling projections are available (2035). The impact and mitigation section details significant off-site and access impacts due to project traffic for each horizon year, impacts associated with pedestrian and bicycle circulation and impacts associated with the project's proposed on-site parking supply and its adequacy to meet projected parking demand. The section then recommends, if feasible, measures to mitigate each significant impact.

Details of circulation system operating conditions with and without the project as well as a detailed analysis of project parking supply and demand is provided in the *Traffic Impact Study for the Sutter Santa Rosa Medical Center Hospitals and Medical Office Building* (Dowling Associates, Inc. 2009), which are included as **Appendix K** in the Technical Appendices, Vol. 2 of this document.. Tables, figures and excerpts of some text have been taken from the September 2009 Dowling study for the preparation of the EIR circulation section.

3.15.1 Environmental Setting

3.15.1.1 Project Location

The proposed development is located north of the City of Santa Rosa in the Larkfield-Wikiup community. It includes approximately 53 acres near the US 101 northbound off-ramp at River Road/Mark West Springs Road. Approximately 25 acres are proposed for use as a medical center (identified as the Sutter project), with the remainder of the site continuing to be used by the existing Wells Fargo Center (WFC). **Figure 3.15-1** shows the roadways in the immediate project vicinity. There are no changes in WFC traffic or parking activity being proposed as part of the project. Therefore, all circulation and parking impacts are associated with the proposed Sutter project.

Existing uses surrounding the site include the US 101 freeway to the west, residential uses to the east and north; vineyards to the south, and the WFC. WFC currently has approximately 140,000 gross square feet of building floor area consisting of:

- The Person Theater (1,668 person capacity, including standees)
- Carston Cabaret (225 seats)
- Fireside Room (multipurpose/banquet room, 150 seats)
- Merlo/East Wing Theater (380 seats)
- East Wing Classrooms (Santa Rosa Christian School, 235 students) and playfields
- Conference facility (50,000 square feet)
- Mechanical structures and wastewater treatment plant

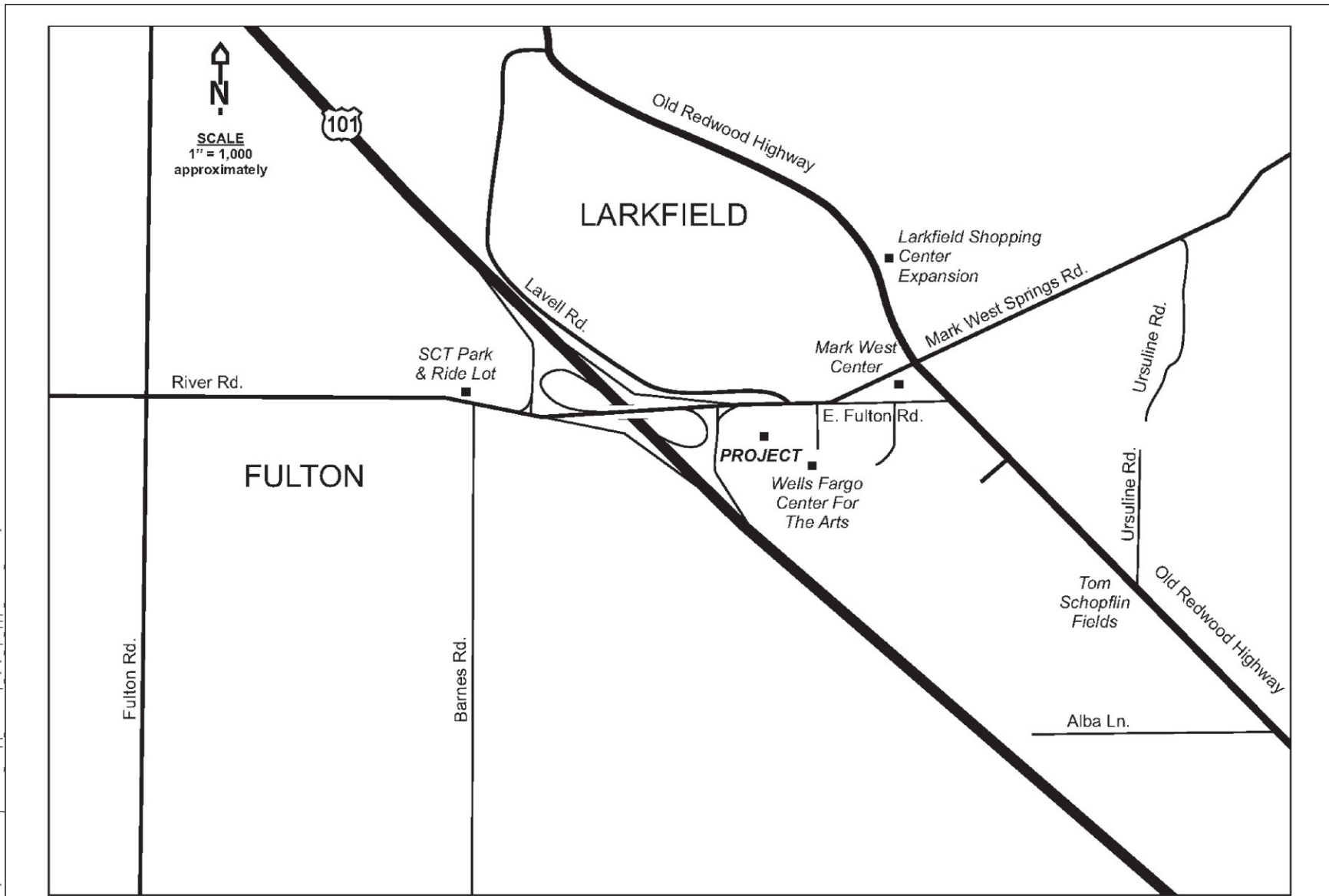
- Ancillary office space for WFC staff
- Approximately 903 paved surface parking spaces

Access to the proposed Sutter project would be primarily via the existing main WFC driveway, which connects to Mark West Springs Road about 800 feet east of the Mark West Springs-River Road interchange with the US 101 freeway. Secondary Sutter access would also be possible via the existing WFC driveway connection to East Fulton Road, near the East Fulton Road connection to Old Redwood Highway. A new emergency vehicle (ambulance) access would connect to Mark West Springs Road about 250 feet east of the Mark West Springs Road-River Road interchange with the US 101 freeway.

3.15.1.2 Roadways

Mark West Springs Road and **River Road** form a continuous east-west regional route. The designation Mark West Springs Road pertains to the arterial east of the US 101 freeway and River Road to the arterial west of the freeway. Both provide one travel lane in each direction at most locations, with left turn pockets at major intersections. River Road “flares” out to four travel lanes at the Fulton Road intersection, while Mark West Springs Road flares out to four travel lanes at the Old Redwood Highway intersection. Signals are provided at the Mark West Springs Road intersections with Old Redwood Highway and the US 101 Northbound Off-Ramp, and at the River Road intersection with Fulton Road. In the immediate project vicinity, the Mark West Springs Road-River Road overpass of the US 101 freeway contains two travel lanes. Mark West Springs Road along the north project boundary has one travel lane in each direction, an eastbound left turn pocket at the Lavell Road intersection and a 280-foot-long left turn lane on the westbound approach to the Wells Fargo Center main entry intersection. There is a continuous two-way left turn lane (TWLTL) extending easterly from the WFC main entry intersection to the approach to the Old Redwood Highway intersection. Mark West Springs Road is classified as a Rural Principal Arterial in the *Sonoma County General Plan 2020*. The posted speed limit is 40 miles per hour (mph) between US 101 and Pacific Heights Drive. The posted speed limit increases to 45 miles per hour east of Pacific Heights. A school zone (25 miles per hour when children are present) exists from Lambert Drive to Quiet Water Road. River Road is classified as a Rural Principal Arterial. Left turn lanes are provided at Barnes Road and at Fulton Road. There are paved shoulders on River Road. The posted speed limit is 35 miles per hour within the community of Fulton, increasing to 50 miles per hour between Fulton and southbound US 101 off-ramp. The speed on the overcrossing is 40 miles per hour due to sight-distance limitations on the vertical curve on the overcrossing structure.

Old Redwood Highway is a two-lane roadway with paved shoulders and left turn lanes provided at intersections. Within the Santa Rosa city limits, there are Class II on-street bike lanes and a posted speed limit of 40 miles per hour (mph). North of the city limits, in unincorporated county territory near the project site, there are shoulders but no bike lanes, and a posted speed limit of 45 mph. Continuous two-way turn lanes are provided adjacent to commercial areas. Old Redwood Highway is classified as an Urban Principal Arterial. There is a posted speed limit of 45 mph from the Santa Rosa city limits to about 500’ south of East Fulton Rd., where it drops to 35 mph. It continues at 35 mph to Airport Blvd. There are school zones (25 mph) near Alba Lane, Ursuline Road, and Lavell Road.



Map source: Dowling Associate, Inc.



Sutter/LBMF Joint Master Plan

Figure 3.15-1
Site Vicinity and Approved Developments

The *US 101 freeway* is a federal National Highway System (NHS) route, but is not part of the Federal Interstate system. It has two lanes in each direction in the project vicinity and a posted speed limit of 65 mph. Currently, High Occupancy Vehicle (HOV) carpool lanes are being constructed in the vicinity of the Mark West Springs Road-River Road interchange as part of a project to extend HOV lanes from northern Santa Rosa to the Town of Windsor. The Mark West Springs Road-River Road interchange has a two-lane overcrossing with a sidewalk on the south side only. The northbound off-ramp (east side of the freeway) has a signalized T-intersection, with single left and right turn approach lanes. The current storage lengths are 415 feet for the left turn and 415 feet for the right turn lane, excluding the shared ‘throat’ area that extends back to the freeway mainline. The southbound off-ramp is currently stop or yield controlled on its approach to River Road. The 150-foot-long southbound right turn lane has yield control, while left turn movements are stop sign controlled. The River Road-Mark West Springs Road interchange is a partial cloverleaf with on-ramp loops in the northwest and southeast quadrants. Freeway access from the south is provided via the existing northbound diagonal off-ramp connection to Mark West Springs Road. Returning to the south (from the vicinity of the project) involves proceeding west on Mark West Springs Road over the two-lane US 101 overpass, then using the existing right turn loop on-ramp to US 101 southbound. From the north, freeway egress is provided by the unsignalized diagonal off-ramp to River Road, and the return (from the vicinity of the project) is provided by the diagonal right turn slip on-ramp from Mark West Springs Road, which separates from the westbound flow of traffic east of (before) the signalized northbound off-ramp intersection.

East Fulton Road is a two-lane facility at its east end and a one-way (westbound) roadway at its west end. There is no posted speed limit.

Lavell Road is a two-lane facility and has a posted speed limit of 30 miles per hour from Mark West Springs Road to about 500 feet northwest. The speed limit then increases to 45 miles per hour.

The *WFC Main Entry* is a private road which currently has one inbound and two outbound lanes. The two outbound lanes are more than 500’ long, providing more than 1,000 feet of storage.

The *WFC East Driveway* (Santa Rosa Christian School Access) extends south from East Fulton Road. There are one inbound and two outbound lanes (a left and a right turn lane).

3.15.1.3 Traffic Volumes

Schematic presentations of intersection approach lanes and control are presented in **Figures 3.15-2** and **3.15-3**.

Existing daily traffic counts were collected for this project in May 2008, as well as on September 30, October 1, and October 2, 2004. These counts are shown in **Figure 3.15-4**. Freeway and freeway ramp data came from Caltrans, based on *2007 Traffic Volumes*.

Turning movements at key intersections used in the analysis were counted from 7:00-9:00 AM and 4:00-6:00 PM in May 2008 by Crane Transportation Group; additional counts were made by Dowling Associates on November 24 and 25, 2008 (Appendix K). Resultant weekday AM and PM peak hour turn movement volumes are presented in **Figure 3.15-4**.

Traffic counts conducted on Thursday, September 30, 2004 indicate that WFC generated 1,250 vehicle trip ends on its two driveways (625 inbound and 625 outbound trips). No major changes

have taken place or are foreseen for the future, so this information is still considered valid. In the AM peak hour, there were 125 inbound and 68 outbound trips. Much of the traffic between 7:30-8:30 AM was related to the existing Santa Rosa Christian Academy using WFC facilities. The afternoon peak is staggered because the school peak was 3:30-4:30 PM at the east WFC drive, while the outbound volume during the ‘traditional’ 4:30-5:30 PM peak hour was low, totaling only 50 vehicles (22 on the main drive and 28 on the east/Santa Rosa Christian Academy driveway). WFC driveway counts from 2004 were slightly higher than those taken in 2008.

3.15.1.4 Pedestrian and Bicycle Volumes

Pedestrians, like vehicles, were counted 7:00-9:00 AM and 4:00-6:00 PM. The total pedestrian crossings for each two-hour peak period are summarized in **Figure 3.15-5**. Detailed crossing information by 15-minute intervals and intersection leg is provided in the Dowling traffic study (Appendix K). The highest volumes were experienced at River/Fulton Roads in the AM (13 total), and Mark West Springs Road/Old Redwood in the PM (15 crossings). The corner of River/Fulton Roads has a market and is a place where day laborers sometimes wait for work in the morning. The peak pedestrian activity at the Mark West Springs Road/Old Redwood Highway intersection due to local schools potentially occurs earlier than the evening commute period. There are several schools in the area, including Mark West Elementary, John Riebli Elementary, Ursuline High and Cardinal Newman. There is also a school on site.

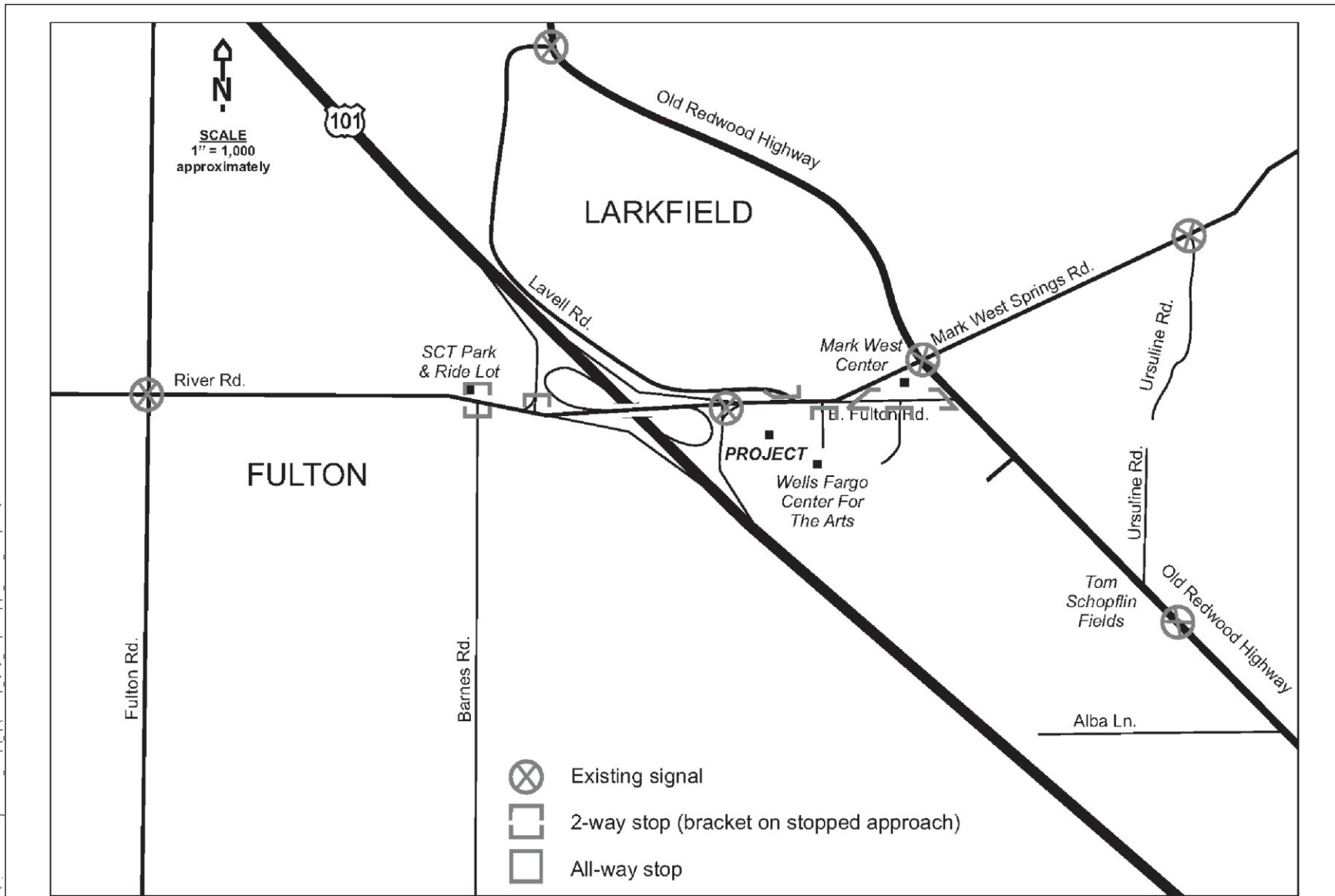
In the project vicinity there is only limited availability of sidewalk along Mark West Springs Road on the north side of the street, west of the intersection with Lavell Road. There are no sidewalks on the south side of the street adjacent to the site, and pedestrians must use a bermed asphalt path and dirt paths. A sidewalk is provided on the south side of the Mark West Springs Road-River Road overpass of the US 101 freeway (west of the site) and along the south side of Mark West Springs Road adjacent to the Mark West Retail Center (east of the site). Sidewalks are lacking on the east side of Old Redwood Highway to the north of Mark West Springs Road along several property frontages (between Mark West Springs Road and a large shopping center).

Bicycles, like vehicles, were counted 7:00-9:00 AM and 4:00-6:00 PM. The total bicycle approach volumes for each two-hour peak period are summarized in **Figure 3.15-6**. Detailed information by 15-minute interval and intersection leg is provided in the Dowling report (Appendix K). The highest volumes were experienced at River Road/Fulton Road (6 bicycles in each two-hour peak), and at Mark West Springs Road/Old Redwood Highway in the PM (10 in each two-hour peak).

3.15.1.5 Intersection Operation

Analysis Methodology

Transportation engineers and planners commonly use a grading system called level of service (LOS) to measure and describe the operational status of the local roadway network. LOS is a description of the quality of a roadway facility’s operation, ranging from LOS A (indicating free-flow traffic conditions with little or no delay) to LOS F (representing oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays).

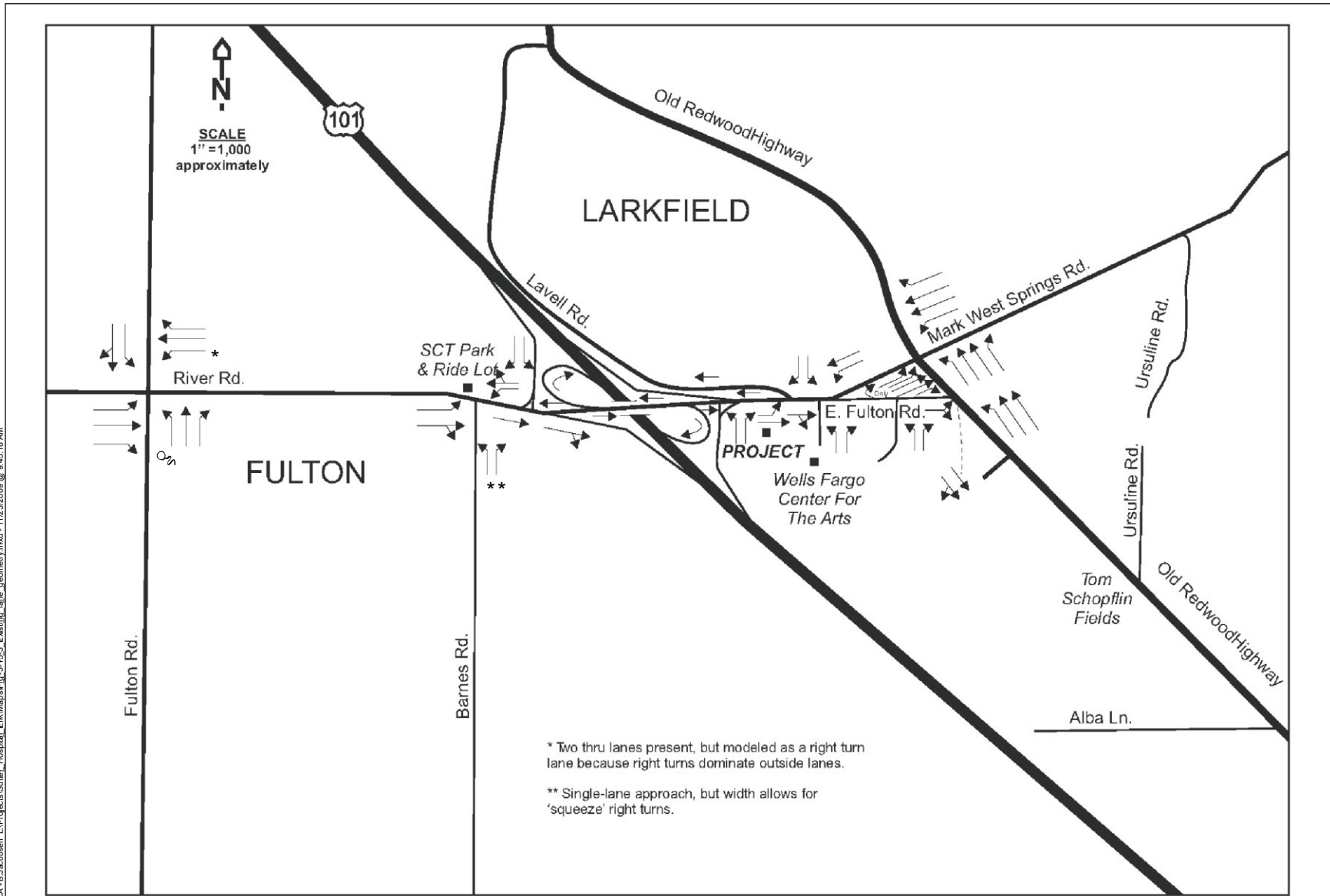


Map source: Dowling Associate, Inc.



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Figure 3.15-2
Traffic Circulation System and Controls



Map source: Dowling Associate, Inc.

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Figure 3.15-3
Existing (2008) Lane Geometry

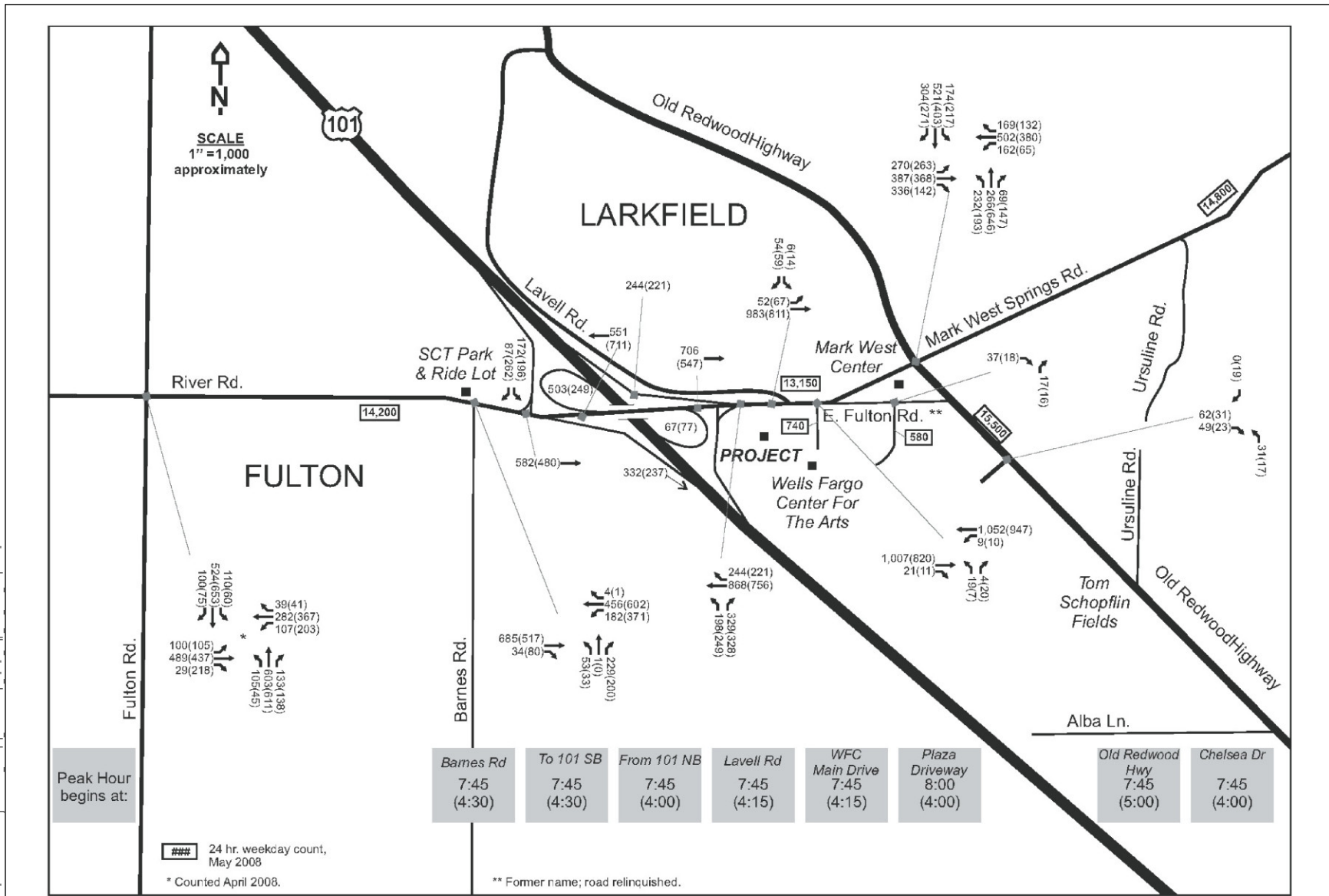
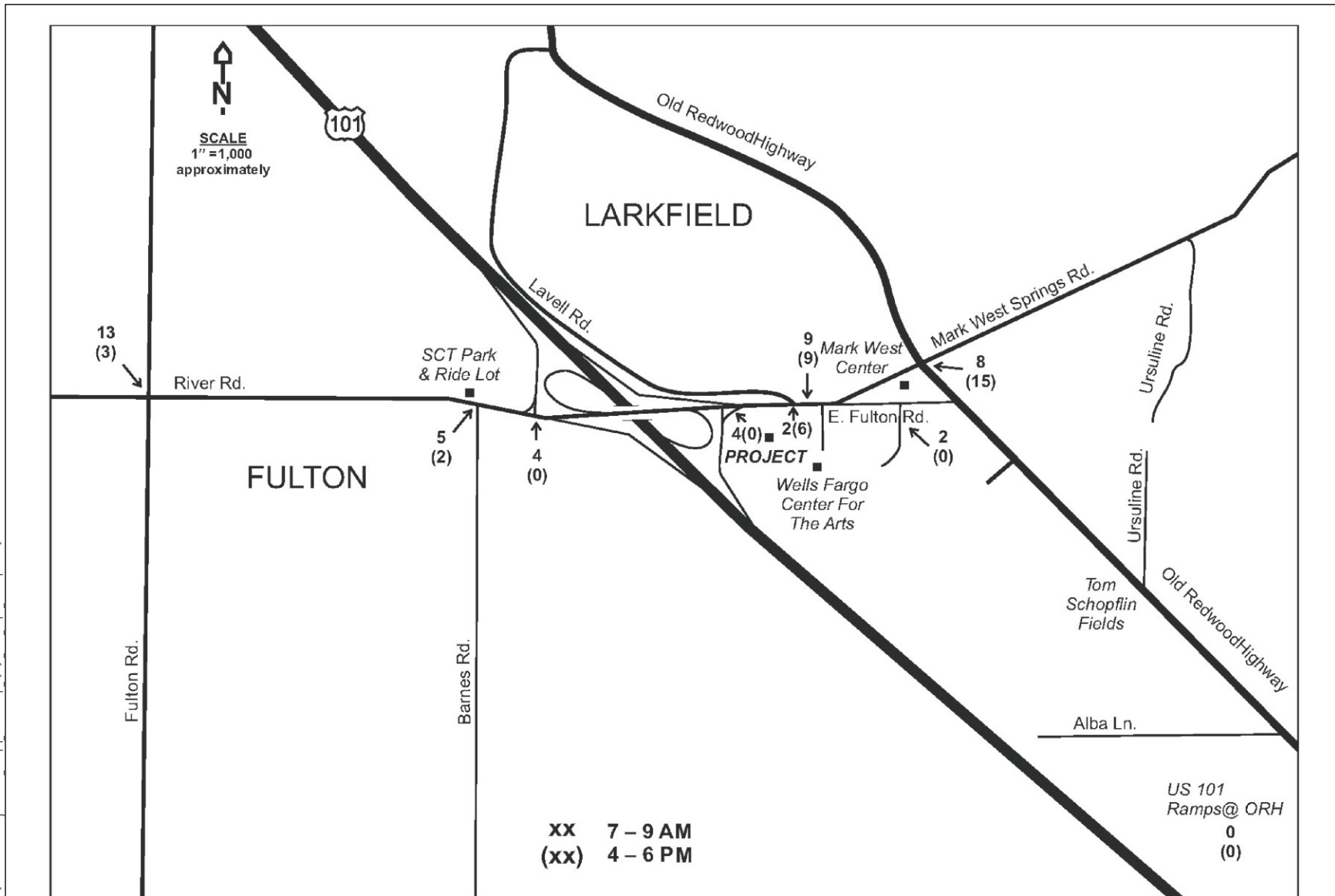


Figure 3.15-4
Daily and Peak Hour Traffic Counts - 2008 AM(PM)

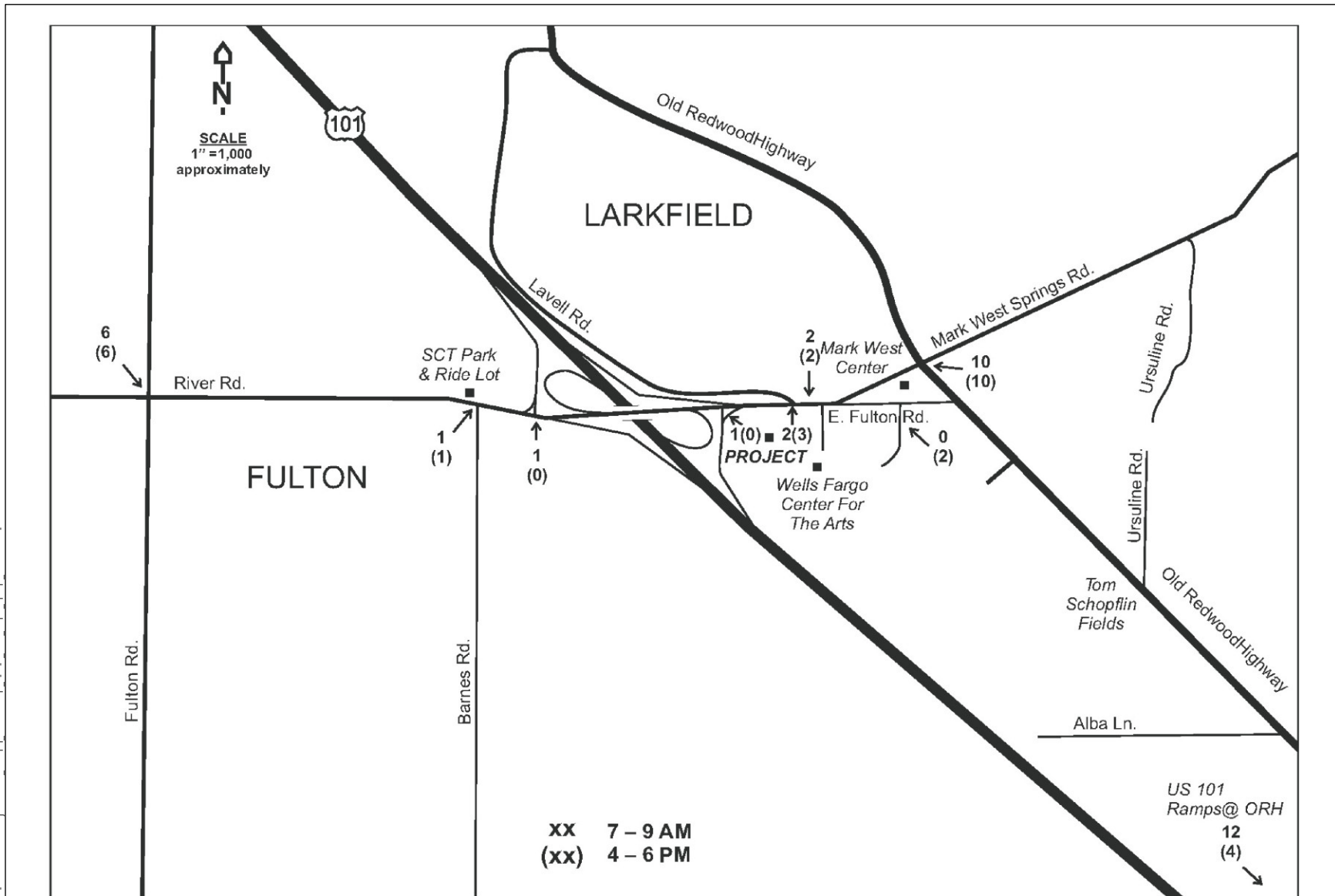


Map source: Dowling Associate, Inc.



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Figure 3.15-5
Peak Period Pedestrian Crossing Counts at Intersections



Map source: Dowling Associate, Inc.



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Figure 3.15-6
Peak Period Bicycle Crossing Counts at Intersections

Intersections, rather than roadway segments between intersections, are almost always the capacity controlling locations for any circulation system.

Signalized Intersections

For signalized intersections, the 2000 *Highway Capacity Manual* (Transportation Research Board, National Research Council) methodology was utilized. With this methodology, operations are defined by the level of service and average control delay per vehicle (measured in seconds) for the entire intersection. For a signalized intersection, control delay is the portion of the total delay attributed to traffic signal operation. This includes delay associated with deceleration, acceleration, stopping, and moving up in the queue. **Table 3.15-1** summarizes the relationship between delay and LOS for signalized intersections.

Table 3.15-1. Signalized Intersection LOS Criteria

Level of Service	Description	Average Control Delay (Seconds Per Vehicle)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and/or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.1 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	> 80.0

Source: 2000 Highway Capacity Manual (Transportation Research Board).

Unsignalized Intersections

For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, the 2000 *Highway Capacity Manual* (Transportation Research Board, National Research Council) methodology for unsignalized intersections was utilized. For side-street stop-controlled intersections, operations are defined by the level of service and average control delay per vehicle (measured in seconds), with delay reported for the stop sign controlled approaches or turn movements, although overall delay is also typically reported for intersections along state highways. For all-way stop-controlled intersections, operations are defined by the average control delay for the entire intersection (measured in seconds per vehicle). The delay at an unsignalized intersection incorporates delay associated with deceleration, acceleration, stopping,

and moving up in the queue. **Table 3.15-2** summarizes the relationship between delay and LOS for unsignalized intersections.

Table 3.15-2. Unsignalized Intersection LOS Criteria

Level of Service	Description	Average Control Delay (Seconds Per Vehicle)
A	Little or no delays	≤ 10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays with intersection capacity exceeded (for an all-way stop), or with approach/turn movement capacity exceeded (for a side street stop controlled intersection)	> 50.0

Source: 2000 Highway Capacity Manual (Transportation Research Board).

Minimum Acceptable Operation

County of Sonoma

The County of Sonoma traffic impact threshold standard is Level of Service D or better.

Caltrans

In the *Guide for the Preparation of Traffic Impact Studies*, Caltrans indicates that they endeavor to maintain operation at the transition from LOS C to LOS D; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing state highway facility is operating at less than the appropriate target LOS, the existing operating condition should be maintained. For impacts to US101, there is no feasible mitigation (i.e. widening the freeway beyond 6 lanes is not considered feasible). Therefore, if Base Case (without project) operating conditions cannot be maintained, the additional freeway impacts attributed to a project would be classified as significant and unavoidable.

Existing Level of Service

The following intersections were evaluated in this study.

- River Road/ Fulton Road (signalized)
- River Road/Barnes Road (two-way stop on Barnes)
- River Road/US 101 southbound off ramp (two-way stop on ramp—signal under construction)
- Mark West Springs Road/US 101 northbound ramp (signalized)

- Mark West Springs Road/Lavell Road (two-way stop on Lavell)
- Mark West Springs Road/Wells Fargo main entry drive (two way stop on drive)
- Mark West Springs Road/Old Redwood Highway
- East Fulton Road (Mark West Center)/ Old Redwood Highway

Table 3.15-3 presents existing condition levels of service. As shown, during the AM peak hour 3 of the 8 intersections evaluated are experiencing unacceptable operation.

- River Road/Barnes Road
- LOS F operation for left and right turns on the stop sign controlled Barnes Road approach.
- Mark West Springs Road/Lavell Road
- LOS E operation for the right turn on the stop sign controlled Lavell Road approach.
- Mark West Springs Road/Wells Fargo Center Main Entry
- LOS F operation for the left turn on the stop sign controlled Main Entry approach.

Table 3.15-3. 2008 Intersection Levels of Service

Intersection		AM Peak Hr.	PM Peak Hr.
River Road/Fulton Road		D (40.3)	E (55.3)
River Road/Barnes Road*	Right turn Left turn	F (56.6) F (>100)	C (21.5) F (>100)
US 101 Southbound Off-ramp/ River Road (assumes signal under construction)		B (12.9)	B (10.8)
US 101 Northbound Off-ramp/ Mark West Springs Road		B (17.0)	B (16.3)
Mark West Springs Road/ Lavell Road*	Right turn Left turn	E (35.3) F (>100)	C (22.0) F (>100)
Mark West Springs/ WFC Main Entry*	Right turn Left turn	D (25.2) F (>100)	C (15.6) F (>100)
Old Redwood Hwy/ Mark West Springs Road		C (32.1)	C (27.3)
E. Fulton Road/Old Redwood Highway*		D (23.3)	C (15.7)

Method: *2000 Highway Capacity Manual* using TRAFFIX 7.9. Average control delay, in seconds, is shown in parentheses, rounded to nearest tenth second. "F>100" indicates that the calculated delay exceeded 100 seconds and cannot be reliably estimated.

Based on May 2008 counts supplied by Crane Transportation Group.

* Unsignalized intersection; level of service is shown for the STOP controlled movement.

Source: Dowling Associates

During the PM peak hour, 3 of the 8 intersections evaluated are experiencing unacceptable operation.

- River Road/Barnes Road
LOS F operation for left turns on the stop sign controlled Barnes Road approach.
- Mark West Springs Road/Wells Fargo Center Main Entry
LOS F operation for the left turn on the stop sign controlled Main Entry approach.
- River Road/Fulton Road
LOS E signalized operation.

Please note that while the left turn movement on the Lavell Road approach to Mark West Springs Road is operating at LOS F conditions, there are less than 30 vehicles/hour making this turn. County criteria only apply to turns with more than 30 vehicles. (County of Sonoma Traffic Study Guidelines.)

Existing Vehicle Queuing

Analysis Methodology

Vehicle queuing has been evaluated using the 95th percentile queue (reported on the TRAFFIX level of service worksheets) as the length that should be accommodated in available storage. The 95th percentile queue means that queues should be no longer than this length 95 percent of the time during the peak traffic hours. It is based on year 2000 *Highway Capacity Manual* methods and assumes that an average stopped vehicle takes up 25 feet.

Field Observations

Analysis as well as field observation indicate that the principal queuing problem occurs for westbound Mark West Springs Road traffic backing up from the US 101 Northbound Off-Ramp/Mark West Springs Road signalized intersection. Westbound queues have been observed backing up to, or beyond, the WFC main entrance driveway (and during some cycles to the Old Redwood Highway intersection). The calculated queue length during the AM peak is roughly a quarter mile, and during the PM peak, more than 800 feet. During the hour or two before main events at WFC traffic will typically back on the US 101 northbound offramp to the freeway mainline.

Signalization Needs

Analysis Methodology

Traffic signals are used to provide an orderly flow of traffic through an intersection. Many times they are needed to offer side street traffic an opportunity to access a major road where high volumes and/or high vehicle speeds block crossing or turn movements. They do not, however, increase the capacity of an intersection (i.e., increase the overall intersection's ability to accommodate additional vehicles) and, in fact, often slightly reduce the number of total vehicles that can pass through an intersection in a given period of time. Signals can also cause an increase in traffic accidents if installed at inappropriate locations.

There are 8 possible tests for determining whether a traffic signal should be considered for installation. These tests, called "warrants", consider criteria such as actual traffic volume,

pedestrian volume, presence of school children, and accident history. The intersection volume data together with the available collision histories were compared to warrants contained in the *Manual on Uniform Traffic Control Devices* (MUTCD), Federal Highway Administration, 2003, California Supplement, which has been adopted by the State of California as a replacement for *Caltrans Traffic Manual*. Section 4C of the MUTCD provides guidelines, or warrants, which may indicate need for a traffic signal at an unsignalized intersection. As indicated in the MUTCD, satisfaction of one or more warrants does not necessarily require immediate installation of a traffic signal. It is merely an indication that the local jurisdiction should begin monitoring conditions at that location and that a signal may ultimately be required.

Warrant 3, the peak hour volume warrant, is often used as an initial check of signalization needs since peak hour volume data is typically available and this warrant is usually the first one to be met. Warrant 3 is based on a curve and takes only the hour with the highest volume of the day into account. Please see Appendix K for the warrant chart. To meet this warrant, a minimum of 100 vehicles per hour must approach the intersection on one of the side streets.

Signal Warrant Evaluation

Currently, the River Road/Barnes Road intersection has both AM and PM peak hour volumes exceeding peak hour signal warrant criteria levels.

Arterial (Corridor) Operation

Analysis Methodology

Arterial operating conditions have been evaluated based upon criteria in the year 2000 *Highway Capacity Manual*. Conditions are primarily determined based upon the operation of signalized intersections along the corridor, the separation between signalized intersections and the number of through travel lanes. Results are presented as a level of service and an average vehicle speed. **Table 3.15-4** presents the relationship between level of service and vehicle speeds.

Table 3.15-4. Urban Street Level of Service Definitions by Class (HCM Chapter 15)

Level of Service	Class I	Class II	Class III	Class IV
Typical range of free-flow speeds	45-55 mph	35-45 mph	30-35 mph	25-35 mph
A	> 42	> 35	> 30	> 25
B	>35-42	>28-35	>24-30	>19-25
C	>27-34	>22-28	>18-24	>13-19
D	>21-27	>17-22	>14-18	>9-13
E	>16-21	>13-17	>10-14	>7-9
F	≤ 16	≤ 13	≤ 10	≤ 7

Note:

The only Class I street is River Road east of Fulton to the US 101 southbound ramps.
Source: 2000 Highway Capacity Manual, Exhibit 15-2, Transportation Research Board.

Minimum Acceptable Operation

County criteria indicate that LOS C is the poorest acceptable operation for roadway segments.

Existing Roadway Level of Service

Arterial analysis has been conducted for Mark West Springs Road-River Road between Old Redwood Highway and Fulton Road and for Old Redwood Highway between Mark West Springs Road and the north end of Mendocino Avenue in Santa Rosa. As shown in **Table 3.15-5**, all segments are operating acceptably, with the following exceptions.

AM PEAK HOUR

Old Redwood Highway Southbound – LOS D

PM PEAK HOUR

Old Redwood Highway Southbound – LOS D

Mark West Springs Road-River Road Eastbound – LOS D

Table 3.15-5. 2008 Arterial Level of Service

Level of service – rounded speed in mph

Arterial Route and Direction	Class	Existing	
		AM	PM
River Rd.-Mark West Springs Rd. EB	II	C- 22.6	D- 20.4
River Rd.-Mark West Springs Rd. WB	II	C- 25.0	C- 24.6
Mendocino Ave-ORH NB	II	B- 32.6	B- 33.1
Mendocino Ave-ORH SB	II	D- 21.5	D- 19.5

Source: Dowling Associates

US 101 Freeway Operation*Analysis Methodology*

The US 101 freeway is presently two mixed-flow travel lanes in each direction. Based on Appendix “C” of the Caltrans “Guidelines for the Preparation of Traffic Impact Studies,” the maximum flow rate (at LOS “E”) is 2,350 vehicles per lane per hour. **Table 3.15-6** presents the relationship between freeway level of service, maximum density, minimum speed, volume to capacity ratio and maximum service flow rate.

Table 3.15-6. Basic Freeway Segments Level of Service Definitions at 65 miles per hour

Level of Service	Maximum Density	Minimum Speed	Maximum v/c Ratio	Max. Service Flow Rate
Units	pc/mi/ln	mph		pc/hr/ln
A	11	65.0	0.30	710
B	18	65.0	0.50	1,170
C	26	64.6	0.71	1,680
D	35	59.7	0.89	2,090
E	45	52.2	1.00	2,350
F	>45	<52.2	>1.00	Undefined

Source: Caltrans

Minimum Acceptable Operation

For state-owned facilities, Caltrans endeavors to maintain a target LOS at the transition between LOS “C” and “D”, however, Caltrans acknowledges that this may not always be feasible.

Existing Freeway Level of Service

Table 3.15-7 shows that the US 101 freeway both north and south of the River Road-Mark West Springs Road interchange is currently operating at acceptable levels of service during both the AM and PM peak traffic hours. Recent widening through central Santa Rosa reduced the bottlenecking of traffic that frequently occurred to the south of the project area (through central Santa Rosa). However, congestion remains to the north (at the Airport/Fulton interchange) that creates queues that can extend into the vicinity of the Mark West Springs Road-River Road interchange. In addition, construction activity (e.g., narrowed lanes, lack of shoulders) is currently reducing the capacity of this section of freeway.

Table 3.15-7. Existing Mainline Freeway Level of Service

Location	Direction	Volume (vph)	Capacity	V/c ratio	LOS
Between River Road ramps and Airport/Fulton Rd. ramps	NB	2,598 AM	4,700	.55	C
		1,816 PM		.39	B
	SB	2,170 AM	4,700	.46	B
		2,540 PM		.54	C
Between Mendocino/Hopper ramps and River Road ramps	NB	2,800 AM	4,700	.60	C
		2,234 PM		.48	B
	SB	2,911 AM	4,700	.62	C
		2,932 PM		.62	C

Note:

This table includes single occupant and high-occupancy vehicles. Other freeway tables shown later in this report includes single-occupant vehicles only.

Source: Dowling Associates

Transit Service

Bus

Sonoma County Transit (SCT) provides service to the area with three existing bus routes near the site (see **Figure 3.15-7** for map).

- Route 20X – River Express operates on Old Redwood Highway and Mark West Springs Road, and along with Route 62, is the closest public transit to the proposed project (there is a stop on both sides of Mark West Springs Road at Lavell Road). However, the 20X operates only one trip a day in each direction (eastbound AM, westbound PM), timed to meet commuter schedules; the eastbound (traveling toward Santa Rosa) bus currently arrives at approximately 7:21 AM, and westbound at 6:00 PM.
- Route 60 – Cloverdale/Healdsburg operates on Old Redwood Highway, with bus stops at the Mark West Springs Road intersection. Route 60 provides transit service between the downtown Santa Rosa Transit Mall on 2nd Street, and Windsor, Healdsburg, and Cloverdale. There are 18 trips each weekday in each direction.
- Route 62 provides service between Santa Rosa and Sonoma County/ Charles Schulz Airport and downtown Windsor. Route 62 travels directly adjacent to the site on Mark West Springs Road (with stops at Lavell Road) and operates seven trips per weekday in each direction.

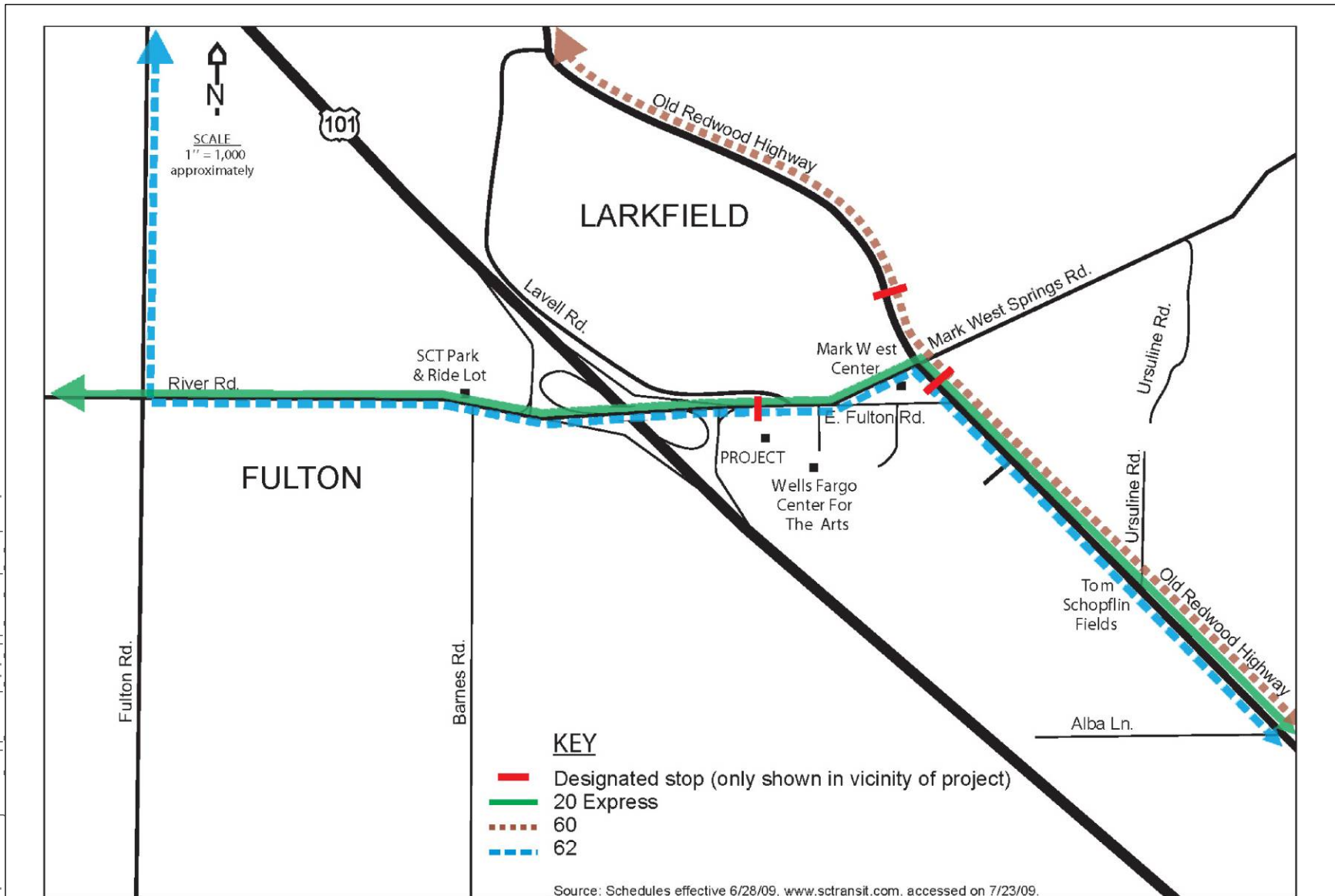
The travel time from the Santa Rosa downtown transit center to the project site is approximately 13 minutes using Route 60.

Commuter Rail

Commuter rail service between Larkspur and Cloverdale is anticipated to start in 2014-2015. However, no nearby stations are planned; the closest stations to the project would be at Jennings Avenue in Santa Rosa (about 4.2 miles south) and in downtown Windsor (about 5.25 miles north).

Planned Improvements

There are no near-term County of Sonoma improvements planned and funded on the circulation network in the vicinity of the project site (expected by 2014). However, Caltrans is currently widening the US 101 freeway from 4 up to 6 lanes between northern Santa Rosa and the Town of Windsor. The added lanes will be for carpool use in the peak travel directions during commute periods and for general flow use in off peak directions during commute periods and during all other time periods. Construction is scheduled for completion by the end of 2010. The US 101 Southbound Off-Ramp intersection with River Road is programmed for signalization as part of the freeway improvement program. No right turn lane is proposed as part of the southbound off-ramp project. (As discussed below, a new right turn lane on the northbound off-ramp is proposed as part of project improvements.)



Map source: Dowling Associate, Inc.



Sutter/LBMF Joint Master Plan

Figure 3.15-7
Existing Sonoma County Transit (SCT) Scheduled Bus Services

Future Horizon Base Case (Without Project) Conditions

Project impacts have been evaluated in the context of year 2014 and 2035 volumes and conditions. This section evaluates background circulation system operating conditions during each of these horizon years.

Year 2014 Base Case Conditions

Volumes

Year 2014 Base Case (without project) traffic levels were developed by applying growth factors¹ to existing volumes.

River Road	½ % per year
Mark West Springs Road	1% per year west of Old Redwood Highway 2% per year east of Old Redwood Highway
Old Redwood Highway	1% per year

Factors were supplied by the County Transportation and Public Works Department and were based upon historic growth trends. In addition, traffic expected from the nearby proposed Larkfield Shopping Center Expansion was also specifically added into the 2014 projections. Based upon the current housing and economic recession, the growth trends potentially overstate 2014 volume levels. Year 2014 Base Case (without project) AM and PM peak hour volumes are presented in **Figure 3.15-8**.

2014 Base Case Intersection Operation

Level of Service. **Table 3.15-8** presents 2014 Base Case (without project) levels of service. As shown, during the AM peak hour 3 of the 8 intersections evaluated would be experiencing unacceptable operation.

- River Road/Barnes Road
LOS F operation for left and right turns on the stop sign controlled Barnes Road approach.
- Mark West Springs Road/Lavell Road
LOS E operation for the right turn on the stop sign controlled Lavell Road approach.
- Mark West Springs Road/Wells Fargo Center Main Entry
LOS F operation for the left turn on the stop sign controlled Main Entry approach.

¹ Growth factors provided by Dave Wallace, Transportation and Public Works Department, 9/20/05.

Table 3.15-8. Year 2014 Base Case and Base Case + Project Phase II Intersection Levels of Service

Intersection	2014 Base Case		2014 Base Case + Project Phase II	
	AM Peak	PM Peak	AM Peak	PM Peak
River Road/Fulton Road (Signal)	D (40.4)	E (57.9)	D (41.5)	E (63.8)
River Road/Barnes Road (Signal) right turn (RT) left turn (LT)	F (97.2) F (>100)	D (26.4) F (>100)	F (>100) F (> 100)	D (28.6) F (>100)
US 101 Southbound Off-ramp/ River Road (Signal)	B (15.0)**	B (13.1)**	B (16.1)**	B (13.8)**
US 101 Northbound Off-ramp/ Mark West Springs Road—assumes dual NB right turn (Signal)	B (18.1)	C (20.3)	B (15.2)	B (18.0)
Mark West Springs Road/ Lavell Road RT LT	E (43.0) F (>100)	D (28.1) F (>100)	F (51.3) F (>100)	E (48.5) F (>100)
Mark West Springs/ WFC Main Entry*	F (>100)	F (>100)	B (10.7)**	B (17.4)**
Old Redwood Hwy/ Mark West Springs Road (Signal)	D (36.1)	C (30.2)	D (37.9)	C (30.7)
E. Fulton Road/Old Redwood Highway	D (25.9)	C (17.8)	D (26.9)	C (18.9)

Bold results = Project traffic produces a significant impact.

Method: 2000 Highway Capacity Manual using TRAFFIX 7.9. Average control delay, in seconds, is shown in parentheses, rounded to nearest tenth second. "F>100" indicates that the calculated delay exceeded 100 seconds.

* Assumes signalization of existing two-way STOP controlled intersection with project.

** Delay is reduced in future by assumed additional lanes at this intersection in this scenario

Source: Dowling Associates

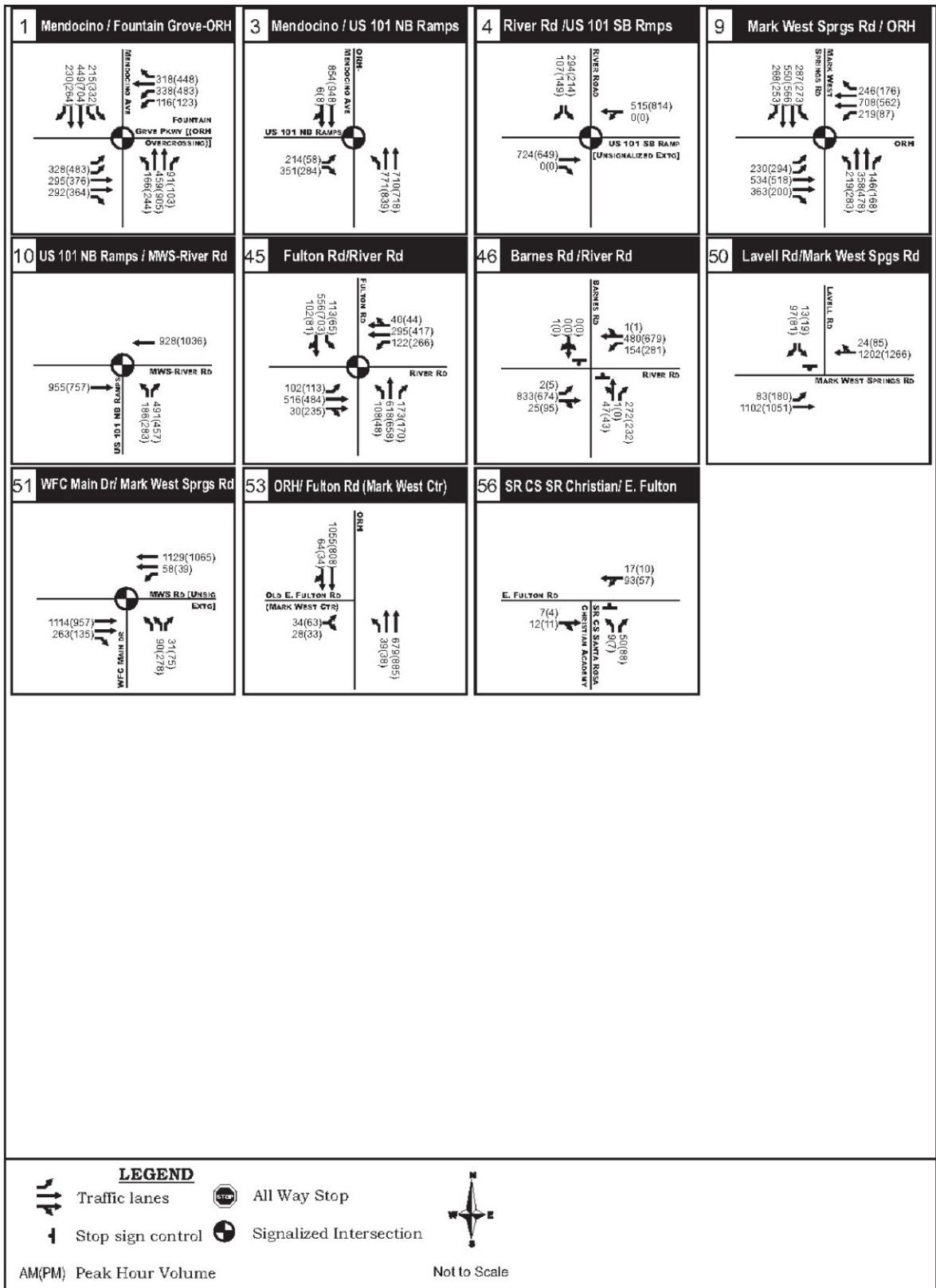
Please note that while the left turn movement on the East Fulton approach to Old Redwood Highway would be operating at LOS E conditions, there would be less than 30 vehicles making this turn. County criteria only apply to turns with more than 30 vehicles.

During the PM peak hour, 3 of the 8 intersections evaluated would be experiencing unacceptable operation.

- River Road/Barnes Road
LOS F operation for left turns on the stop sign controlled Barnes Road approach.
- Mark West Springs Road/Wells Fargo Center Main Entry
LOS F operation for the left turn on the stop sign controlled Main Entry approach.
- River Road/Fulton Road
LOS E signalized operation.

Please note that while the left turn movement on the Lavell Road approach to Mark West Springs Road would be operating at LOS F conditions, there would be less than 30 vehicles/hour making this turn. County criteria only apply to turns with more than 30 vehicles.

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Map source: Dowling Associate, Inc.



Sutter/LBMF Joint Master Plan

Figure 3.15-8
2014 No Project AM(PM) Traffic Volumes

**Table 3.15-9. 95th Percentile Queuing
Year 2014 Base Case (Without Project) Conditions**

2014 No Project		Northbound			Southbound			Eastbound			Westbound			
Node	Intersection		L	T	R	L	T	R	L	T	R	L	T	R
4	River Road/ US 101 SB	AM	--	--	--	461	--	215	--	565	--	--	376	--
		PM	--	--	--	345	--	237	--	338	--	--	586	--
		Avail	--	--	--	975	--	150	--	475	--	--	400	--
9	Mark West Springs Rd./ Old Redwood Highway	AM	338	254	280	540	514	445	246	426	527	399	424	287
		PM	279	300	233	423	346	337	238	333	206	196	396	218
		Avail	200	1,000	50	975*	700	100	300	500	360	225	1,400	50
10	Mark West Springs Rd./ US 101 NB	AM	299	--	661	--	--	--	--	785	--	--	708	--
		PM	412	--	706	--	--	--	--	585	--	--	832	--
		Avail	415	--	900	--	--	--	--	1,250	--	--	860	--
45	River Rd./ Fulton Road	AM	269	905	148	304	787	113	198	774	34	209	384	48
		PM	137	1,221	176	190	1,251	87	268	1,051	385	415	496	48
		Avail	100	265	100	75	2,735	1,000	620*	1,320	--	150	1,000	--
46	River Rd./ Barnes Rd.	AM	200	--	305	--	--	--	--	--	--	23	--	--
		PM	200	--	95	--	--	--	--	--	--	--	--	--
		Avail	>1000	--	--	--	--	--	--	--	--	75	--	--
50	Mark West Springs Rd./ Lavell Rd.	AM	--	--	--	22	--	84	20	--	--	--	--	--
		PM	--	--	--	111	--	51	66	--	--	--	--	--
		Avail	--	--	--	60	--	--	--	--	--	--	--	--
51	Mark West Springs Rd./ WFC Main Entry	AM	54	--	57	--	--	--	--	305	38	30	214	--
		PM	34	--	30	--	--	--	--	205	6	23	186	--
		Avail	575	--	>1000	--	--	--	--	860	--	200	700	--
53	E. Fulton Rd./ Old Redwood Hwy.	AM	-	--	--	--	--	--	-	5	-	--	--	--
		PM	5	--	--	--	--	--	-	5	-	--	--	--
		Avail	80	325	--	--	--	--	--	626	--	--	--	--
56	East Fulton Rd./ WFC East Drive	AM	NA	--	-	--	--	--	--	--	--	-	-	--
		PM	NA	-	-	--	--	--	--	--	--	-	-	--
		Avail	900	--	--	--	--	--	--	--	--	--	200	--

Note: Queue lengths are in feet per lane, and assume improvements documented in traffic report (such as lane additions).

* Left-turn storage extends into two-way left-turn lane provided for mid-block private driveways

Source: Dowling Associates

95th Percentile Vehicle Queuing. Table 3.15-9 shows that the following intersections would have Base Case vehicle queues exceeding available storage on one or more intersection approaches.

AM PEAK HOUR

- Mark West Springs Road/Old Redwood Highway
- River Road/Fulton Road
- River Road/US 101 Southbound Ramps

PM PEAK HOUR

- Mark West Springs Road/Old Redwood Highway
- River Road/Fulton Road
- River Road/US 101 Southbound Ramps
- Mark West Springs Road/Lavell Road

Signalization Needs. The River Road/Barnes Road intersection would have both AM and PM peak hour volumes exceeding peak hour signal warrant criteria levels.

2014 Base Case Arterial (Corridor) Operation

Table 3.15-10 shows that all segments would be operating acceptably with the following exception.

PM PEAK HOUR

Mark West Springs Road-River Road Eastbound – LOS D

Table 3.15-10. Year 2014 Base Case and Base Case + Project Phase II Arterial LOS Analysis Results With Interim Mitigations for “With Project” Conditions

Level of service – rounded speed in mph				
Arterial Route and Direction	No Project		With Project Phase II	
	AM	PM	AM	PM
River Rd.-Mark West Springs Rd. EB	C- 22.9	C-24.0	C-23.3	C-23.2
River Rd.-Mark West Springs Rd. WB	C-23.8	C-23.9	C-24.4	C-23.5
Mendocino-ORH NB	B- 32.1	B- 32.5	B-32.2	B- 32.4
Mendocino-ORH SB	C- 22.8	C- 25.4	C-22.6	C- 25.2

Source: Dowling Associates

2014 Base Case US 101 Freeway Operation

Table 3.15-11 shows that the US 101 freeway both north and south of the River Road-Mark West Springs Road interchange would be operating at acceptable levels of service during both

the AM and PM peak traffic hours. However, operation in the non carpool (HOV) lanes would be expected to degrade measurably from existing conditions. During the AM peak hour, southbound flow would be expected to change from LOS B or C conditions to LOS D, while in the northbound direction operation would be expected to remain LOS C north of the Mark West Springs Road interchange and degrade from LOS C to D south of the interchange. During the PM peak hour, southbound flow would be expected to change from LOS C to LOS D operation both north and south of the Mark West Springs Road interchange, while northbound flow would change from LOS B to LOS C north of the interchange and from LOS B to LOS D south of the interchange.

Table 3.15-11. Year 2014 Base Case (No Project) Freeway Level Of Service – Mixed Flow Lanes, With Freeway Widening Now Under Construction

Location	Direction	Volume (mixed flow lanes)	Capacity	V/c ratio	LOS
Between River Road ramps and Airport/Fulton Rd. ramps	NB	3,272 AM	4,700	.70	C
		3,212 PM		.68	C
	SB	3,487 AM	4,700	.74	D
		3,855 PM		.82	D
Between Mendocino/Hopper ramps and River Road ramps	NB	3,338 AM	4,700	.71	D
		3,364 PM		.72	D
	SB	4,058 AM	4,700	.86	D
		3,822 PM		.81	D

Note:

This table does not include HOV volumes, HOV lanes are expected to operate at LOS C or better.

Source: Dowling Associates

Year 2035 Base Case Conditions

Volumes

Year 2035 Base Case traffic projections were developed using the latest Sonoma County Transportation Authority (SCTA) travel forecasting model. Resultant weekday AM and PM peak hour volumes are presented in **Figure 3.15-9**.

Planned Roadway Improvements

Consistent with the Sonoma County General Plan 2020, it is assumed that for the 2035 scenario, River Road and Mark West Springs Road would be improved to a four-lane facility between Laughlin Road (Brickway Extension) and Old Redwood Highway, including widening of the Mark West Springs Road-River Road/US 101 overcrossing to four lanes. Signalization would be provided at the River Road/Laughlin intersection. In addition, Fulton Road would be widened to four lanes from the Santa Rosa City limits north to Airport Blvd.

These improvements are consistent with the *Sonoma County General Plan 2020* and plans by the Sonoma County Transportation Authority (SCTA) and Caltrans. The proposed mitigations are more detailed than, but do not conflict with, the transportation plans of any of these other

agencies. These projects are primarily necessitated by cumulative traffic growth in the Larkfield-Wikiup and Airport communities, and northern Santa Rosa. **Figure 3.15-10** provides a schematic presentation of the number of lanes proposed on the local circulation system by 2035.

It should be noted that if these improvements, which are called out in the General Plan, are not provided by 2035 due to lack of funding or for other reasons, Base Case (without Sutter) operating conditions along River Road and Mark West Springs Road (other than at the Old Redwood Highway intersection) will be significantly poorer than presented in this document.

No additional improvements are planned at the Mark West Springs Road / Old Redwood Highway intersection in the General Plan.

2035 Base Case Intersection Operation

Level of Service. **Table 3.15-12** shows that during the AM peak hour, 4 of the 8 intersections evaluated would be experiencing unacceptable operation.

- River Road/Barnes Road
LOS F operation for left turns on the stop sign controlled Barnes Road approach.
- River Road/Fulton Road
LOS E signalized operation.
- Mark West Springs Road/Lavell Road
LOS F operation for the right turn from the stop sign controlled Lavell Road approach.
- Mark West Springs Road/Old Redwood Highway
LOS E signalized operation.

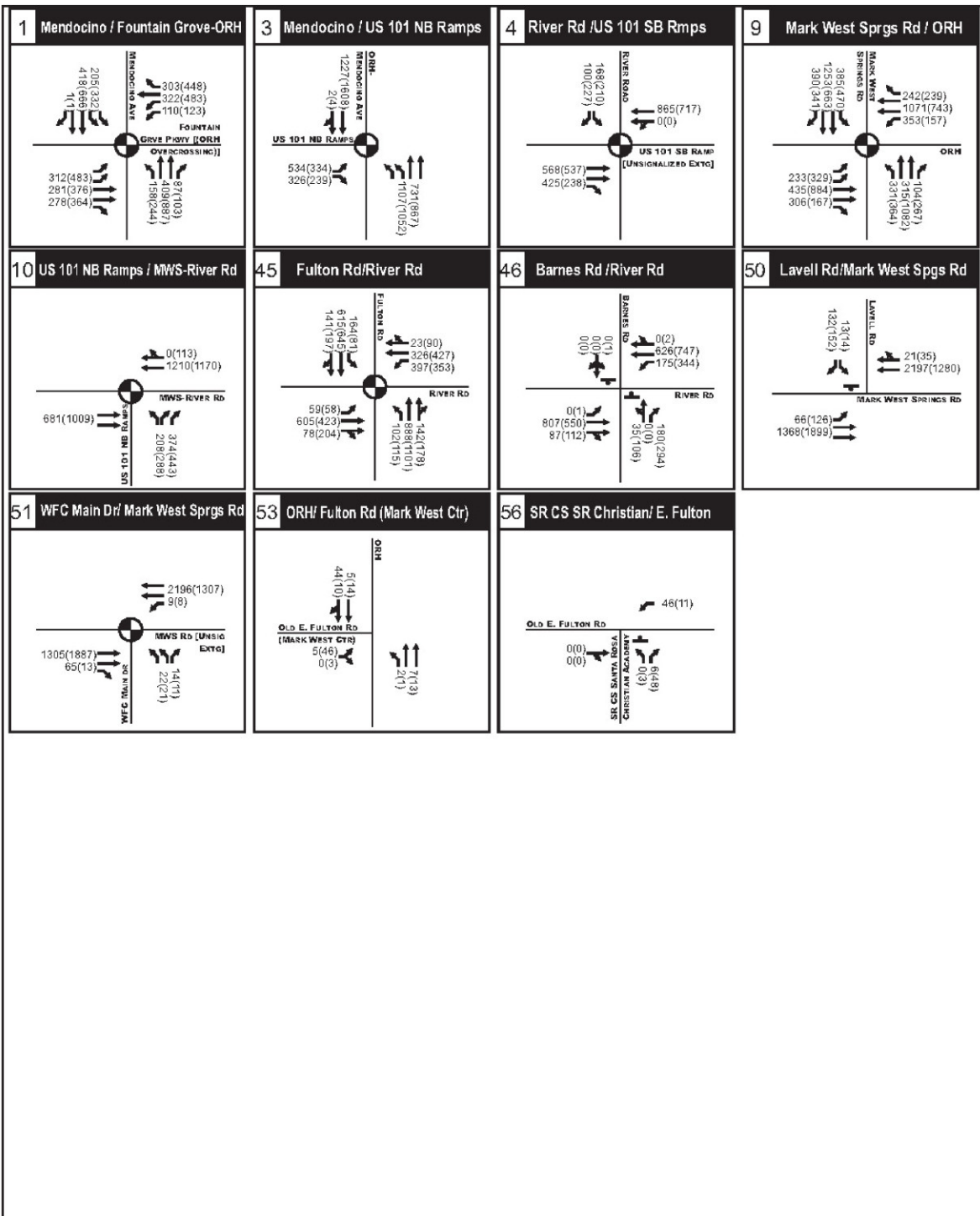
Please note that while the left turn movement on the East Fulton approach to Old Redwood Highway would be operating at LOS E conditions, there would be less than 30 vehicles making this turn. County criteria only apply to turns with more than 30 vehicles. During the PM peak hour, 3 of the 8 intersections evaluated would be experiencing unacceptable operation.

- East Fulton Road/Old Redwood Highway
LOS F operation for left turns from the stop sign controlled East Fulton Road approach.
- River Road/Barnes Road
LOS F operation for left turns from the stop sign controlled Barnes Road approach.
- Mark West Springs Road/Old Redwood Highway
LOS E signalized operation.

Please note that while the left turn movement on the Lavell Road approach to Mark West Springs Road would be operating at LOS F conditions, there would be fewer than 30 vehicles/hour making this turn. County criteria only apply to turns with more than 30 vehicles.

95th Percentile Vehicle Queuing. **Table 3.15-13** shows that the following intersections would have Base Case vehicle queues exceeding available storage on one or more intersection approaches (with at least 30 vehicles making turns from stop sign controlled left turns).

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LEGEND

- Traffic lanes
- Stop sign control
- All Way Stop
- Signalized Intersection

AM(PM) Peak Hour Volume

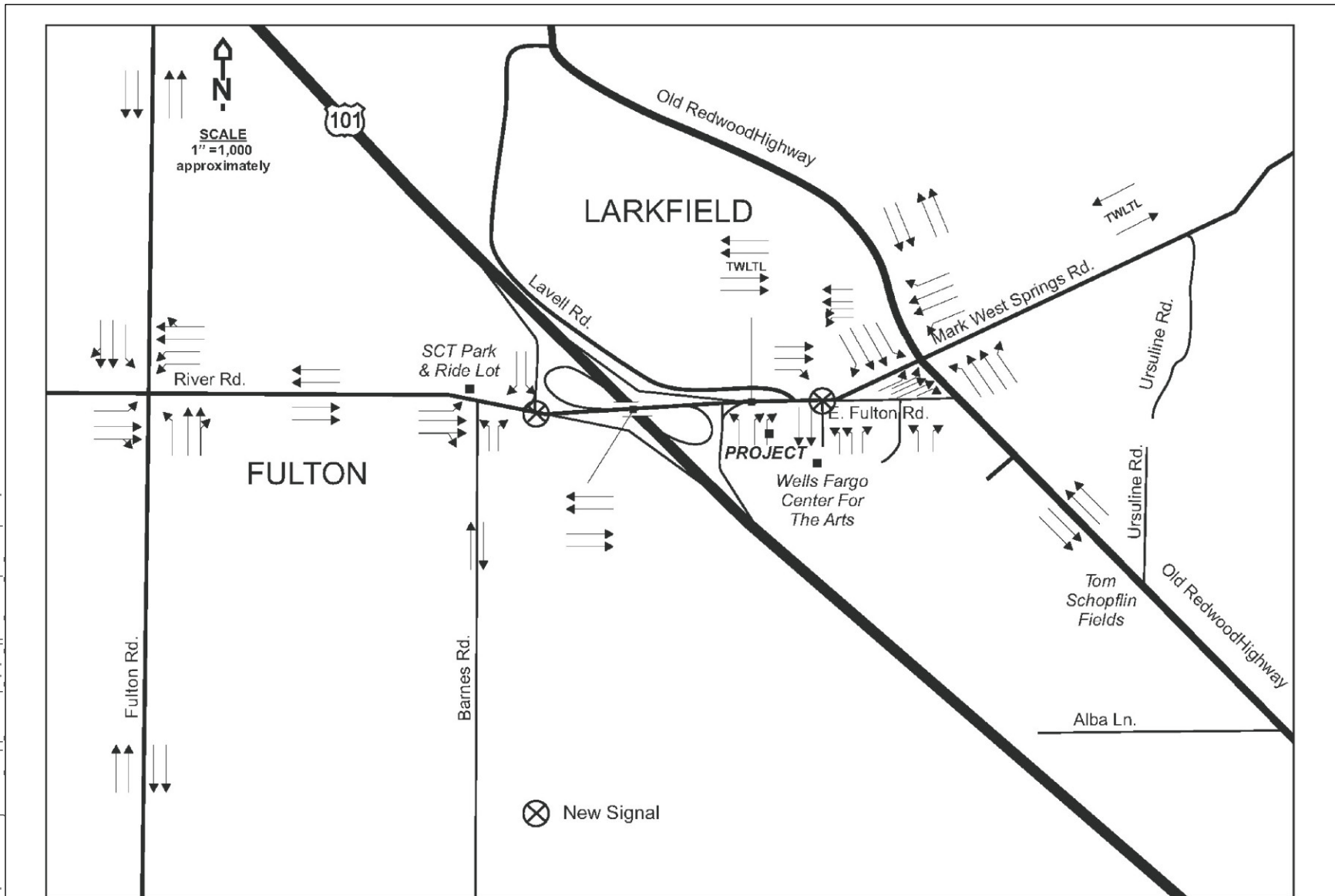
Not to Scale

Map source: Dowling Associate, Inc.



Sutter/LBMF Joint Master Plan

Figure 3.15-9
2035 No Project AM(PM) Traffic Volumes



Map source: Dowling Associate, Inc.



Sutter/LBMF Joint Master Plan

Figure 3.15-10
Ultimate Proposed Lane Geometries and Traffic Controls

AM PEAK HOUR

- Mark West Springs Road/Old Redwood Highway
- River Road/Fulton Road
- Mark West Springs Road/US 101 Northbound Ramps
- Mark West Springs Road/WFC Main Entry

PM PEAK HOUR

- Mark West Springs Road/Old Redwood Highway
- River Road/Fulton Road
- River Road/US 101 Southbound Ramps
- Mark West Springs Road/US 101 Northbound Ramps

Table 3.15-12. Year 2035 Base Case (No Project) Intersection Levels Of Service

Average weekday (includes approved projects and WFC traffic, but no special WFC events; improvements as noted)

Intersection	AM Peak Hr.	PM Peak Hr.
River Road/Fulton Road (Signal) <i>assumes 4L on River & Fulton Roads</i>	E (54.1)	D (48.1)
River Road/Barnes Road* Right turn from Barnes Left turn from Barnes	C (15.6) F (80.5)	C (16.0) F (>100)
US 101 Southbound Off-ramp/ River Road (Signal) <i>assumes signal and 4L on overcrossing (bridge) and River Road</i>	B (11.4)	B (16.4)
US 101 Northbound Off-ramp/ Mark West Springs Road (Signal) <i>Assumes second right turn lane northbound</i>	B (14.7)	B (16.7)
Mark West Springs Road/ Lavell Road* Right turn Left turn	F (76.8) F (>100)	C (21.7) F (>100)
Mark West Springs/ WFC Main Entry (Signal)	A (4.5)	A (3.9)
Old Redwood Hwy/ Mark West Springs Road (Signal)	E (74.2)	E (68.0)
E. Fulton Road/Old Redwood Highway*	F (97.0)	F (>100)

Method: 2000 Highway Capacity Manual. Average control delay, in seconds, is shown in parentheses, rounded to nearest tenth second. "F>100" indicates that the calculated delay exceeded 100 seconds and cannot be reliably estimated. Small number in parentheses is the TRAFFIX network node number.

* Unsignalized intersection; level of service is shown for the STOP controlled movement.

Source: Dowling Associates

**Table 3.15-13. 95th Percentile Queuing
Year 2035 Base Case (Without Project) Conditions**

2035 No Project			Northbound			Southbound			Eastbound			Westbound		
Node	Intersection		L	T	R	L	T	R	L	T	R	L	T	R
4	River Road/ US 101 SB	AM	--	--	--	252	--	149	--	192	--	--	340	--
		PM	--	--	--	259	--	291	--	247	--	--	367	--
		Avail	--	--	--	975	--	150	--	475	--	--	400	--
9	Mark West Springs Rd./ Old Redwood Highway	AM	742	280	132	544	1,389	629	383	423	782	868	1,143	364
		PM	577	1,126	340	1,039	552	594	453	1,031	268	474	805	429
		Avail	200	1,000	50	975*	700	100	300	500	360	225	1,400	50
10	Mark West Springs Rd./ US 101 NB	AM	319	--	--	--	--	--	--	255	--	--	535	--
		PM	426	--	--	--	--	--	--	469	--	--	574	--
		Avail	415	--	--	--	--	--	--	1,250	--	--	860	--
45	River Rd./ Fulton Road	AM	234	1,000	1,000	439	564	564	97	750	750	706	223	223
		PM	261	1,144	1,144	271	622	622	109	695	695	630	338	338
		Avail	100	265	265	75	2,735	1,000	620*	1,320	--	150	1,000	--
46	River Rd./ Barnes Rd.	AM	50	-	42	--	--	--	--	--	--	27	--	--
		PM	325	-	70	-	--	--	-	--	--	53	--	--
		Avail	>1000	--	--	--	--	--	--	--	--	75	--	--
50	Mark West Springs Rd./ Lavell Rd.	AM	--	--	--	74	--	137	39	--	--	--	--	--
		PM	--	--	--	63	--	60	29	--	--	--	--	--
		Avail	--	--	--	60	--	--	110	--	--	--	--	--
51	Mark West Springs Rd./ WFC Main Entry	AM	28	--	--	--	--	--	--	427	29	18	751	--
		PM	27	--	--	--	--	--	--	672	5	19	272	--
		Avail	575	--	>1000	--	--	--	--	860	--	200	700	--
53	E. Fulton Rd./ Old Redwood Hwy.	AM	-	-36	-	--	--	--	-	8	-	--	--	--
		PM	-	-28	-	--	--	--	-	4	-	--	--	--
		Avail	80	325	--	--	--	--	--	626	--	--	--	--
56	East Fulton Rd./ WFC East Drive	AM	NA	--	-	--	--	--	--	--	--	-	--	--
		PM	NA	--	-	--	--	--	--	--	--	-	--	--
		Avail	900	--	--	--	--	--	--	--	--	--	--	--

Note: Queue lengths are in feet per lane, and assume improvements documented in traffic report (such as lane additions).

* Left-turn storage extends into two-way left-turn lane provided for mid-block private driveways

Source: Dowling Associates

Signalization Needs. The River Road/Barnes Road intersection would have both AM and PM peak hour volumes exceeding peak hour signal warrant criteria levels.

2035 Base Case Arterial (Corridor) Operation

Table 3.15-14 shows that the following segments would be operating unacceptably.

AM PEAK HOUR

Old Redwood Highway Southbound – LOS D

Mark West Springs Road-River Road Eastbound – LOS D

Mark West Springs Road-River Road Westbound – LOS D

PM PEAK HOUR

Mark West Springs Road-River Road Eastbound – LOS E

Mark West Springs Road-River Road Westbound – LOS D

Table 3.15-14. Year 2035 Base Case and Base Case + Project Phase III Arterial LOS Analysis Results With Ultimate Improvements

Level of service – rounded speed in mph				
Arterial Route and Direction	No Project		With Project Phase III	
	AM	PM	AM	PM
River Rd.-Mark West Springs Rd. EB	D- 19.8	E- 17.0	D- 19.1	E- 16.3
River Rd.-Mark West Springs Rd. WB	D- 20.8	D- 20.8	D- 20.1	D- 20.4
Mendocino-ORH NB	B- 30.7	C- 26.7	B-30.7	C- 26.7
Mendocino-ORH SB	D- 18.6	C- 22.7	B-18.1	C- 22.3

Source: Dowling Associates

2035 Base Case US 101 Freeway Operation

Table 3.15-15 shows that operation of the US 101 freeway non-HOV lanes both north and south of the River Road-Mark West Springs Road interchange would be expected to degrade measurably from 2014 to 2035. During the AM peak hour, southbound flow would change from LOS D to LOS E operation south of the Mark West Springs Road interchange and remain LOS D north of the interchange, while northbound flow would change from LOS C to LOS D operation north of the interchange and remain LOS D operation south of the interchange. During the PM peak hour, southbound flow would change from LOS D to LOS E operation both north and south of the interchange, while northbound flow would change from LOS C to LOS D operation north of the interchange and remain LOS D operation south of the interchange.

Table 3.15-15. Year 2035 Base Case (No Project) Freeway Level of Service – Mixed Flow Lanes, With Widening Now Under Construction

Location	Direction	Volume (mixed flow lanes)	Capacity	V/c ratio	LOS
Between River Road ramps and Airport/Fulton Rd. ramps	NB	3,845 AM	4,700	.82	D
		3,910 PM		.83	D
	SB	4,008 AM	4,700	.85	D
		4,667 PM		.99	E
Between Mendocino/Hopper ramps and River Road ramps	NB	4,017 AM	4,700	.85	D
		4,021 PM		.86	D
	SB	4,501 AM	4,700	.96	E
		4,363 PM		.93	E

Note:

This table does not include HOV volumes, HOV lanes are expected to operate at LOS C or better. Values represent Parsons' 2030 volumes increased by 7.56% growth, which is ABAG's forecast of job growth in Sonoma County between 2030 and 2035.

Source: Dowling Associates

3.15.2 Regulatory Setting

The development and regulation of the project area transportation network primarily involves state and local jurisdictions. All roads within the project area are under the jurisdiction of state and local agencies. State jurisdiction includes permitting and regulation of the use of state roads, while local jurisdiction includes implementation of state permitting, policies, and regulations, as well as management and regulation of local roads. Applicable state and local laws and regulations related to traffic and transportation issues are discussed below.

State

California Department of Transportation. The California Department of Transportation (Caltrans) manages interregional transportation, including management and construction of the California highway system. In addition, Caltrans is responsible for permitting and regulation of the use of state roadways. The project area includes one roadway that falls under Caltrans' jurisdiction (US 101). Caltrans requires that permits be obtained for transportation of oversized loads and transportation of certain materials, and for construction-related traffic disturbance. Caltrans regulations would apply to project construction that would include the transportation of construction crews and construction equipment throughout the project area.

Local

Sonoma County. Several of the roads in the project corridor are under the jurisdiction of Sonoma County. County policies and regulations regarding the design, use, or obstruction of roadways are detailed in the Sonoma County General Plan 2020 Circulation and Transit Element. The majority of these goals and policy guidelines in the Circulation and Transit Element pertain to the development and planning of roadways and transit systems. SCTA's 2009 Comprehensive Transportation Plan for Sonoma County provides further guidance for transportation planning

and associated goals and policies (SCTA, 2009). This plan focuses on the design and implementation of improvements to the county circulation system, including roadways, bikeways, transit and rail service. Sonoma County's General Plan Circulation Element Objective CT-6.1 (level of service) states that LOS C is to be maintained on major roadways, other than US 101, to the extent practicable on an average daily and peak period basis; in some circumstances, LOS D or E may be acceptable for a short duration of time during peak commute periods. The Sonoma County General Plan also indicates that LOS A, B and C are preferred for signalized and unsignalized intersections. However, poorer levels of service may be acceptable in some situations.

3.15.3 Impact Analysis

Approach and Methodology

Project Trip Generation

The proposed project would relocate the existing Sutter Hospital from its existing site on Chanate Road in the City of Santa Rosa, along with a new medical office building and a Physicians Medical Center (PMC). The proposed project includes a phased development of the site:

PHASE I

2010-2012 Site preparation; import of up to 100,000 cubic yards (CY) of fill via truck

PHASE II

2010-2013 126,000 square foot (sf) Sutter hospital with 70 beds

100,000 sf joint-venture hospital with 28 beds

80,000 sf medical office building

Possible export of up to 30,000 cubic yards of fill via truck

PHASE III

2014 or later 36,000 sf hospital addition

No significant changes are proposed to the Wells Fargo Center (WFC) operations that would impact traffic generation of the site.

Project Phase II trip generation is presented in **Table 3.15-16**, while Phase III trip generation is presented in **Table 3.15-17**. As shown, Phases II and III would be expected to generate the following AM and PM peak hour trips.

Project Phase II Trip Generation Summary

AM Peak Hour Trips		PM Peak Hour Trips	
IN	OUT	IN	OUT
227	75	145	299

Table 3.15-16. Project Trip Generation Analysis – Medical Center Phase II (by 2014)

(note: vehicle trips are shown in this table; values are rounded to two decimal places)

	Average Weekday	AM Peak Hour	PM Peak Hour
Medical Office Bldg., 80,000 square feet, 250 employees*			
Trip Generation Rate per employee*	6.94	0.53	1.01
<i>Source: Trip Generation 8th edition, ITE land use 720, peak hour of adjacent street traffic, fitted curve equation if available</i>			
Total Trips Generated (In and Out)	1,736	133	253
Directional Split of Trips (% inbound/ % outbound from site)	50/50	79/21	34/66
Peak Hour Trips Inbound TO Site	--	105	86
Peak Hour Trips Outbound FROM Site	--	28	167
Hospital 226,000 square feet, 98 beds (includes both Sutter and PMC Hospitals), 486 employees*			
Trip Generation Rate per employee*	5.86	0.35	0.39
<i>Source: Trip Generation 8th edition, ITE land use 610, peak hour of adjacent street traffic, fitted curve equation if available</i>			
Total Trips Generated (In and Out)	2,848	169	191
Directional Split of Trips (% inbound/ % outbound from site)	50/50	72/28	31/69
Peak Hour Trips Inbound TO Site	--	122	59
Peak Hour Trips Outbound FROM Site	--	47	132
Totals for Medical Center			
Total Trips Generated (In and Out)	4,584	302	444
Peak Hour Trips Inbound TO Site	--	227	145
Peak Hour Trips Outbound FROM Site	--	75	299

Source: Institute of Transportation Engineers, Trip Generation, 8th Edition.

* Per ITE, the number of employees is the total of full- and part-time employees, over all shifts. Rates include traffic generated by all components of hospital and medical office operations (employees, patients, visitors, deliveries).

**Project Phase III Trip Generation Summary
(Includes Phase II)**

AM Peak Hour Trips		PM Peak Hour Trips	
IN	OUT	IN	OUT
245	83	152	315

**Table 3.15-17. Project Trip Generation Analysis – Medical Center Phase III
(by 2035 – includes Phase II)**

	Average Weekday	AM Peak Hour	PM Peak Hour
Medical Office Bldg., 80,000 square feet, 250 employees*			
Trip Generation Rate per employee*	6.94	0.53	1.01
<i>Source: Trip Generation 8th edition, ITE land use 720, peak hour of adjacent street traffic, fitted curve equation if available</i>			
Total Trips Generated (In and Out)	1,736	133	253
Directional Split of Trips (% inbound/ % outbound from site)	50/50	79/21	34/66
Peak Hour Trips Inbound TO Site	--	105	86
Peak Hour Trips Outbound FROM Site	--	28	167
Hospital 262,000 square feet, 567 employees (includes both Sutter and PMC Hospitals), * 127 beds			
Trip Generation Rate per employee*	5.65	0.34	0.38
<i>Source: Trip Generation 8th edition, ITE land use 610, peak hour of adjacent street traffic, fitted curve equation if available</i>			
Total Trips Generated (In and Out)	3,206	195	215
Directional Split of Trips (% inbound/ % outbound from site)	50/50	72/28	31/69
Peak Hour Trips Inbound TO Site	--	141	67
Peak Hour Trips Outbound FROM Site	--	55	148
Totals for Medical Center			
Total Trips Generated (In and Out)	4,942	328	467
Peak Hour Trips Inbound TO Site	--	245	152
Peak Hour Trips Outbound FROM Site	--	83	315

Note:

Vehicle trips are shown in this table; values are rounded to two decimal places)

Source: Institute of Transportation Engineers, Trip Generation, 8th Edition.

* Per ITE, the number of employees is the total of full- and part-time employees, over all shifts. Rates include traffic generated by all components of hospital and medical office operations (employees, patients, visitors, deliveries).

This level of trip generation should remain constant. The proposed medical center (hospitals and MOB combined) would generate approximately 4,600 (rounded) weekday vehicle trips at completion of Phase II, and 4,950 at completion of Phase III.

For purposes of analysis, no internal trip reductions were made, resulting in a somewhat conservative analysis. Specifically, trip rates used for the hospital and the medical office building reflect some back and forth auto travel between the two uses, which, for the project, would be trips internal to the campus. However, for analysis purposes, these trips were assumed to travel external to the project site. In reality, there would be some potentially favorable (i.e., trip reducing) interactions between the hospitals and the medical office building as well as between the Sutter project and the WFC facilities. For example, doctors would be able to walk between their office and the hospital; a patient could have a lab test in the hospital after an appointment in the medical office building, etc. Of lesser importance, but still noteworthy, is that the WFC conference facility could provide room for training, meetings, conferences, etc. for medical office/hospital workers.

Only a modest number of trucks are likely to service the site on an individual day. The hospital will need linen, food service, and other similar types of deliveries, as well as solid waste collection. Truck trips are included as part of the overall project trip generation presented in **Tables 3.15-16** and **3.15-17**.

Wells Fargo Center Trip Generation

The existing Wells Fargo Center currently generates approximately 1,250 trips on a non-event day.² The traffic generated by the WFC special event operations vary considerably depending on the events planned. A major event day at WFC could generate more than 2,800 vehicle trips over 24 hours. However, the majority of traffic activity would likely occur during the evening. Currently, most large events on weekdays begin between 7:00 and 8:00 PM, with most traffic traveling inbound to the site and departing some two to three hours later.

Trip generation for WFC events was estimated from a trip generation count done Friday, October 1, 2004, when there were three different shows beginning between 7:00 and 8:00 PM, with the main event beginning at 8:00 PM. Although this count was made several years ago, there are no changes to the physical facilities (e.g., seats) at the WFC that would have significantly changed these numbers. During the peak hour, 7:15-8:15 PM, there were 668 entries and 22 exits from the site. WFC staff reported 1,722 tickets distributed to these three events, leading to a rate of 0.38 peak hour vehicles per ticket inbound, and .01/ticket outbound. A small number of performers and staff are also present, but probably arrive before the evening commute peak hour. The machine traffic count data compared to the ticket sales also tends to confirm the assumption of approximately 2.0 persons per vehicle for show attendees for these events. WFC notes that some events – particularly those appealing to families – will have higher vehicle occupancies.

The WFC also has trucks hauling stage equipment (props, amps, etc.) a few hours before and after events.

² This data was from 2004, but has not significantly changed since then, since it is limited by the physical facilities at WFC. Crane Transportation Group (CTG) did a count on May 14, 2008 (Wednesday) that arrived at a lower count—531 trips in and out of the site, total.

Project Trip Distribution

Project traffic trip distribution was developed from several sources: Sutter Santa Rosa provided zip code information on employees (approximately 1,200 valid home zip codes of Sutter employees), and this information was combined with a trip distribution determined by using the Sonoma County Travel Model (SCTM/02). It was also checked against trip distribution data from employees at the Kaiser Medical Office Building on Old Redwood Highway. This led to the distribution of trips as presented in **Table 3.15-18** and in **Figure 3.15-11**.

Table 3.15-18. Project Trip Distribution

Route / Gateway	Office Space/Medical Center*	WFC Event**
US 101 South	45	55
River Road west of Fulton	4	4
Fulton Road south of River Rd.	13	10
Barnes Road south	2	2
US 101 North	14	15
Old Redwood Hwy North	6	5
Mark West Springs Rd East	2	4
Old Redwood Highway South	12	5
Lavell Road North	2	0
Total	100%	100%

* Distribution during weekday AM and PM commute peak hours.

** Distribution associated with event starting at 8:00 PM.

Source: Dowling Associates

Project traffic distribution corresponds to the general population distribution of Sutter's service area. No data were available on the distribution of the attendees to Wells Fargo Center events, however, for analysis purposes, it was projected that the distribution would be similar to the general population distribution of Sonoma County.

Year 2014 Base Case + Project AM and PM peak hour volumes at all analysis intersections are presented in **Figure 3.15-12**, while year 2035 Base Case + Project AM and PM peak hour volumes are presented in **Figure 3.15-13**.

Proposed Project Circulation System Improvements

The project would use but modify the two existing entrances to the WFC, off Mark West Springs Road and East Fulton Road. In addition, several road improvements would be completed prior to the opening of the facility (i.e., Phase II). These include the following transportation improvements (see **Figure 3.15-14**).

- Signalization of the Main WFC entry on Mark West Springs Road, with interconnection to the existing signal at Old Redwood Highway.
- Addition of a second left turn lane on the Mark West Springs Road westbound approach to the main project entrance.
- Addition of a second inbound-only lane to the main project driveway.
- Addition of a third outbound lane on the main project driveway approach to Mark West Springs Road.
- Widening of Mark West Springs Road to provide an additional eastbound thru travel lane from the US 101 Northbound Off-Ramp intersection through the WFC Main Entrance intersection, plus a right turn only lane into the WFC, a bike lane (Class II), and a shoulder area (minimum of 8', with 10' desirable) between the US 101 northbound off ramp and the emergency vehicle access (EVA) on Mark West Springs Road.
- Addition of a second right turn lane on the US 101 Northbound Off-Ramp approach to Mark West Springs Road.
- Addition of a green arrow (right turn overlap) at the northbound 'hook' off ramp at Mendocino Avenue/Old Redwood Highway in northern Santa Rosa (about two miles south of the Mark West Springs Road/Old Redwood Highway intersection). This measure is required to provide acceptable corridor operation along Old Redwood Highway.
- Provision of an EVA-only entrance connecting to Mark West Springs Road between Lavell Road and the US 101 Northbound Ramps intersection.

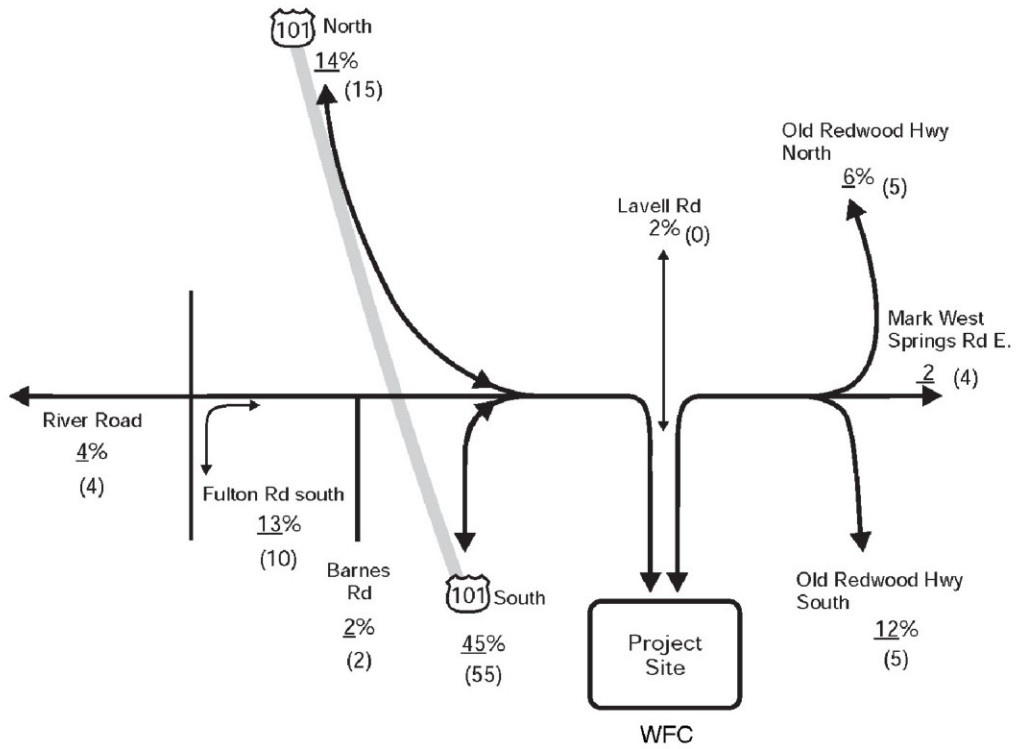
The Interim Improvements can be constructed by the time Phase II is occupied because they do not rely on widening the US 101 overcrossing (bridge) at River/Mark West Springs Road. Some work will be required in state (Caltrans) right-of-way with minimal dedication of property for widening. It should be noted that these improvements are not scheduled to be in place for the importation of 100,000 cubic yards of fill to the site for site preparation (Phase I).

Thresholds of Significance

According to the State CEQA Guidelines (Appendix G), the project would have a significant impact if:

- It would cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e. result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).
- It would exceed, either individually or cumulatively, a level of service standard established by the county congestions management agency for designated roads or highways.
- It would substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- It would result in inadequate emergency access.

Figure 11
 Sutter Medical Center **Weekday AM & PM Commute Peak Hour**
& WFC Major Evening Event Traffic
 Trip Distribution



xx = Final recommended distribution after considering zip codes of employees

(xx) = WFC Event traffic

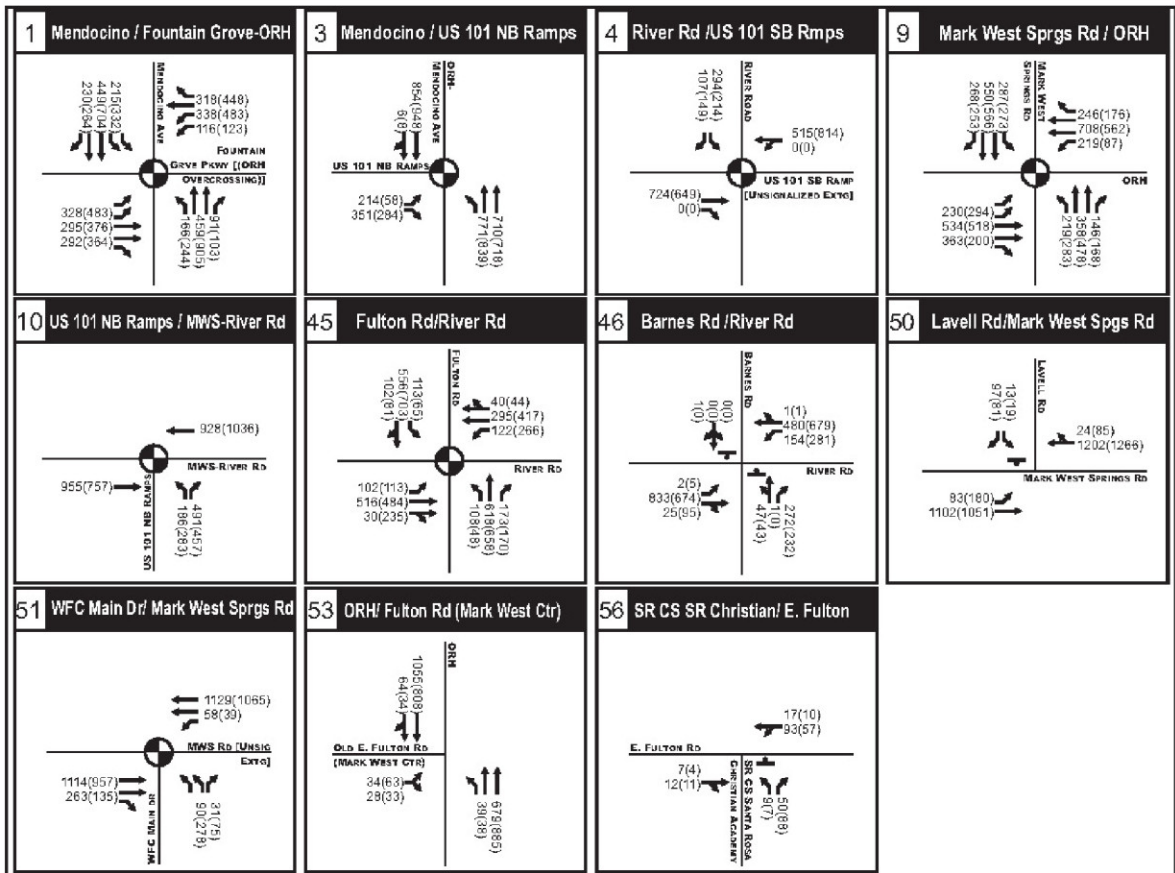
Map source: Dowling Associate, Inc.



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Figure 3.15-11
 Sutter Medical Center and LBC Event Traffic

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Volumes do not include traffic due to major evening event at Wells Fargo Center. Major event traffic would have no impact on AM commute volumes and minimal impact on PM commute volumes.

LEGEND

- Traffic lanes
- Stop sign control
- All Way Stop
- Signalized Intersection

AM(PM) Peak Hour Volume

Not to Scale

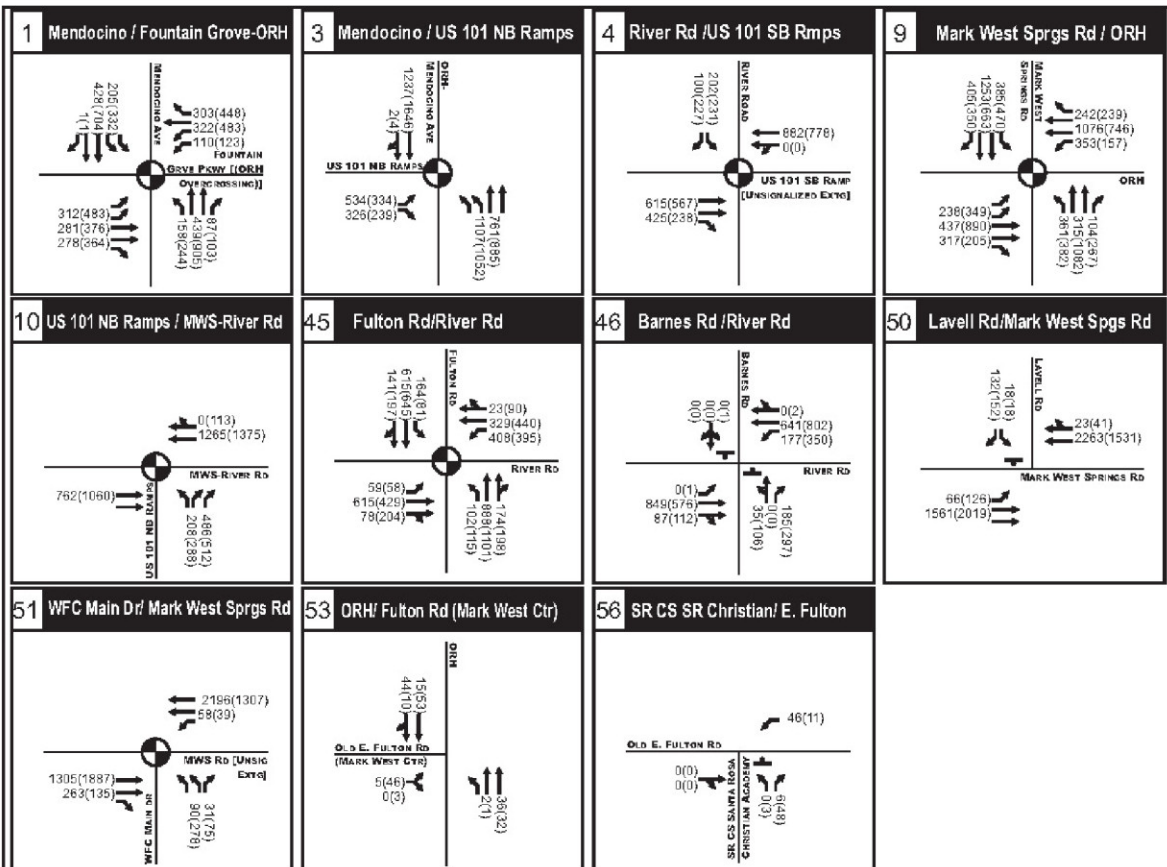
Map source: Dowling Associate, Inc.



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Figure 3.15-12
2014 W/Project AM(PM) Traffic Volumes

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Volumes do not include traffic due to major evening event at Wells Fargo Center. Major event traffic would have no impact on AM commute volumes and minimal impact on PM commute volumes.

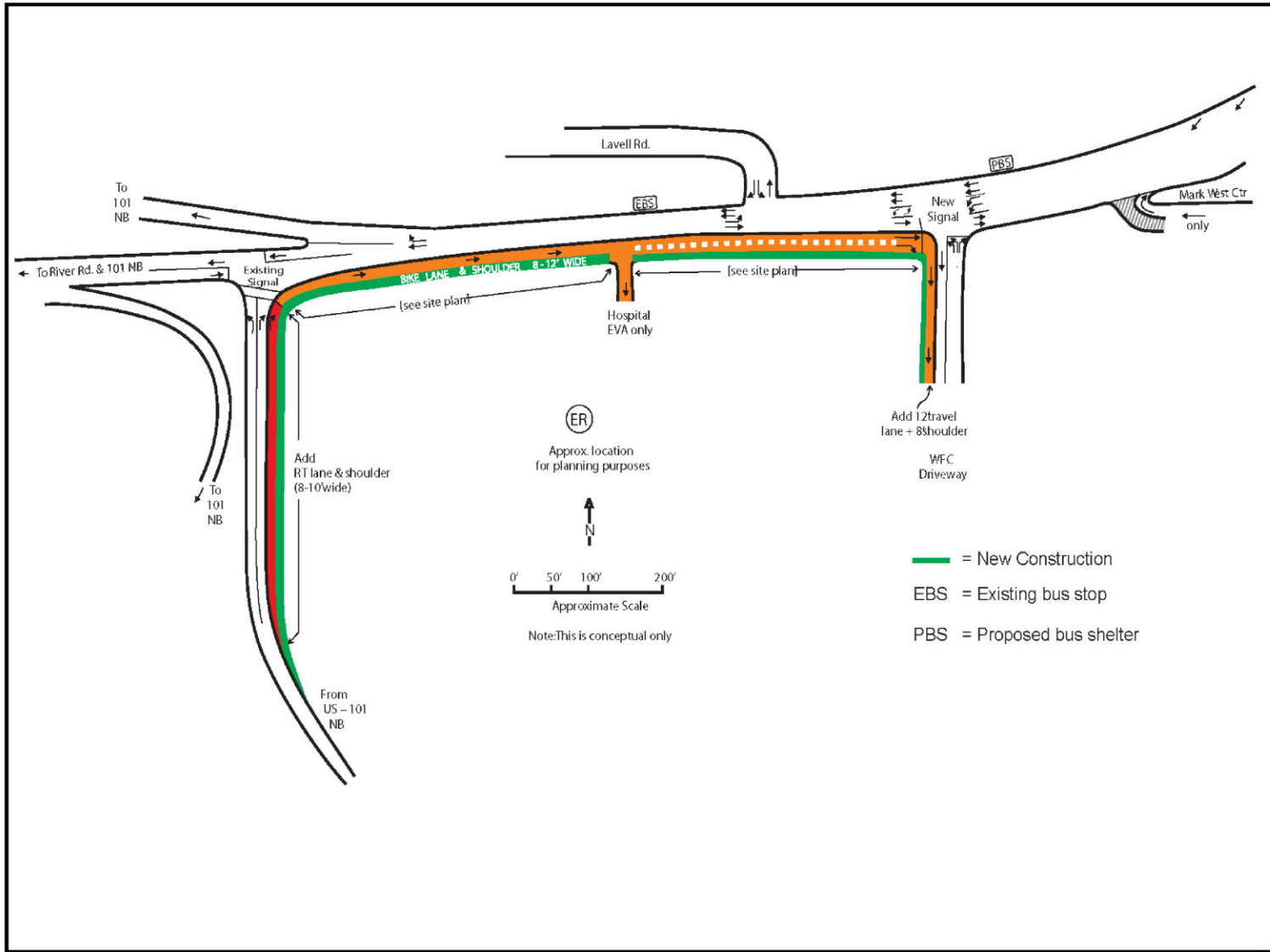
LEGEND

- Traffic lanes
- Stop sign control
- All Way Stop
- Signalized Intersection

AM(PM) Peak Hour Volume Not to Scale

Map source: Dowling Associate, Inc.

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Map source: Dowling Associate, Inc.



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Figure 3.15-14
Proposed Interim Improvements (no modification to US 101 overcrossing)

- It would result in inadequate parking capacity.
- It would conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks).

According to the County's Traffic Study Guidelines, the project would have a significant impact if:

- A *signalized or all way stop intersection* with Base Case (without project) volumes is operating at LOS A, B, C or D and deteriorates to LOS E operation (or worse) with the addition of project traffic.
- A *stop sign-controlled turn movement or approach* at an unsignalized side street stop sign controlled intersection is operating with Base Case volumes at LOS A, B, C or D and deteriorates to LOS E or F with the addition of project traffic. This criteria applies to all controlled intersections, except for driveways and minor side street approaches with fewer than 30 vehicle trips per hour per approach or exclusive left turn movement.
- The Base Case (without project) LOS for a signalized intersection is already at LOS E or F (or for a stop sign controlled movement at an unsignalized intersection) and there is an increase in delay of 5 seconds or more due to the addition of project traffic.
- Base Case (without project) traffic volume levels at an *unsignalized intersection* are increased above Peak Hour Warrant #3 criteria levels with the addition of project traffic – or – Base Case (without project) signalization is already warranted, and there is any increase in traffic due to the project.
- Base Case 95th percentile vehicle queuing is extended beyond available storage in turn lanes or on an intersection approach due to the addition of project traffic – or – if Base Case 95th percentile vehicle queuing already exceeds available storage, any additional queuing is due to the addition of project traffic.
- A County roadway with Base Case (without project) volumes is operating at LOS A, B or C and deteriorates to LOS D operation (or worse) with the addition of project traffic. For a County roadway with Base Case volumes already operating at an unacceptable level of service, roadway speeds are decreased by the following levels due to the addition of project traffic:
 - LOS D 2 miles per hour or more
 - LOS E 1 mile per hour or more

According to Caltrans guidance, the project would have a significant impact if:

- Base Case US 101 freeway operation is LOS A, B or C and deteriorates to LOS D operation or worse with the addition of project traffic. If Base Case operation is already LOS D or poorer, any addition of project traffic and a change in the volume/capacity (v/c) ratio of .01 or greater.
- In addition, for purposes of this impact analysis, the project would have a significant impact if:

- Project construction traffic would produce significant safety or operational impacts.
- Transit facilities to serve the site would be inadequate.

Impacts and Mitigation

Impact TR-1: Year 2014 Intersection Level of Service Project traffic would adversely affect the level of service at several intersections in 2014

Significance: Potentially significant

Discussion:

The following intersections would experience unacceptable levels of service in the Base Case year even without the project. By adding additional traffic to these intersections, the project would contribute to these significant level of service impacts (see **Table 3.15-8** for a complete list of intersections).

River Road/Fulton Road (signal)

PM PEAK HOUR

Base Case unacceptable LOS F operation would have delay increased by more than 5 seconds (5.9 seconds).

River Road/Barnes Road (Barnes Road stop sign controlled approach)

AM PEAK HOUR

Right turn Base Case unacceptable LOS F delay would be increased by 5 seconds or more (from 97.2 up to 127 seconds); left turn Base Case unacceptable LOS F delay would be increased by 5 seconds or more (from 568 up to 715 seconds).

PM PEAK HOUR

Left turn Base Case unacceptable LOS F delay would be increased by 5 seconds or more (from 793 up to 1,168 seconds).

Mark West Springs Road/Lavell Road (Lavell Road stop sign controlled approach)

AM PEAK HOUR

Right turn Base Case unacceptable LOS E operation would be degraded to an unacceptable LOS F and delay increased by 5 seconds or more (from 43 up to 51.3 seconds).

PM PEAK HOUR

Right turn Base Case acceptable LOS D operation would be degraded to an unacceptable LOS E.

Mitigation Measure TR-1: Intersection Improvements Prior to occupancy, the project applicant shall:

A. Construct/implement the following:

- Mark West Springs Road/Lavell Road

- Prohibit left turns from Lavell Road to eastbound Mark West Springs Road. (Alternative access is available to the neighborhood served by Lavell Road (i.e. to Old Redwood Highway) in order to allow access to eastbound Mark West Springs Road.)

B. Enter into an agreement with the County to provide a fair share contribution to the following improvements (see **Figure 3.15-15**), when and if these improvements are programmed and funded for construction:

River Road/Fulton Road

- One additional through lane on the north and southbound Fulton Road intersection approaches.

River Road/Barnes Road

- Signalize the intersection and interconnect with operation of the planned signal at the River Road/US 101 Southbound Ramps intersection.
- Separate right and left turn lanes on the Barnes Road intersection approach.

Significance After Mitigation: Significant and unavoidable at all three intersections.

There are no feasible measures to eliminate unacceptable operation of the Mark West Springs Road/Lavell Road intersection (Lavell Road approach stop sign controlled right turn movement). However, prohibition of the left turn movement from Lavell Road identified in TR-1A would provide partial mitigation to improve operations and safety at this intersection.

Improvements at River Road/Fulton Road and River Road/Barnes Road identified in TR-1B are currently infeasible due to lack of sufficient right-of-way and the need to remove or relocate existing structures. In addition, these improvements are not programmed by the County for construction or funded. No additional feasible mitigation measures to improve operations at these intersections have been identified.

Should improvements ultimately be made at the River Road/Fulton Road and River Road/Barnes Road intersections, the applicant would be required to provide a fair share contribution towards these measures, and the impact would be reduced to less than significant, as follows:

At **River Road/Fulton Road**, the resultant base case + project operation would be:

AM Peak Hour	LOS C-34.9 seconds vehicle delay
PM Peak Hour	LOS D-40.2 seconds vehicle delay

At **River Road/Barnes Road**, the resultant base case + project operation would be:

AM Peak Hour	LOS D-47.8 seconds vehicle delay
• PM Peak Hour	LOS D-40.7 seconds vehicle delay

Impact TR-2: Year 2014 Signalization Needs The unsignalized River Road/Barnes Road intersection would experience a significant impact in 2014 based upon peak hour signal warrant evaluation

Significance: Potentially significant

Discussion:

The following unsignalized intersection would meet signal warrants in the Base Case year even without the project. By adding additional traffic to this intersection, the project would contribute to a significant impact based upon peak hour signal warrant evaluation.

River Road/Barnes Road (Base Case AM & PM peak hour volumes would already meet Signal Warrant #3 criteria levels).

AM & PM PEAK HOURS

Base Case volumes already exceeding signal warrant criteria levels would be increased. Any increase in traffic would be considered a significant impact.

Mitigation Measure TR-2: Intersection Signalization Prior to occupancy, the project applicant shall enter into an agreement with the County to provide a fair share contribution to the following improvements when and if they are programmed and funded for construction:

- Signalize the **River Road/Barnes Road** intersection and interconnect with operation of the planned signal at the River Road/U.S.101 Southbound Ramps intersection.

Significance After Mitigation: Significant and unavoidable.

Signalization of this intersection is currently infeasible due to lack of sufficient right-of-way and the required relocation of existing PG&E towers. In addition, this improvement is not programmed by the County for construction or funded. No additional feasible mitigation measures to improve operations at this intersection have been identified.

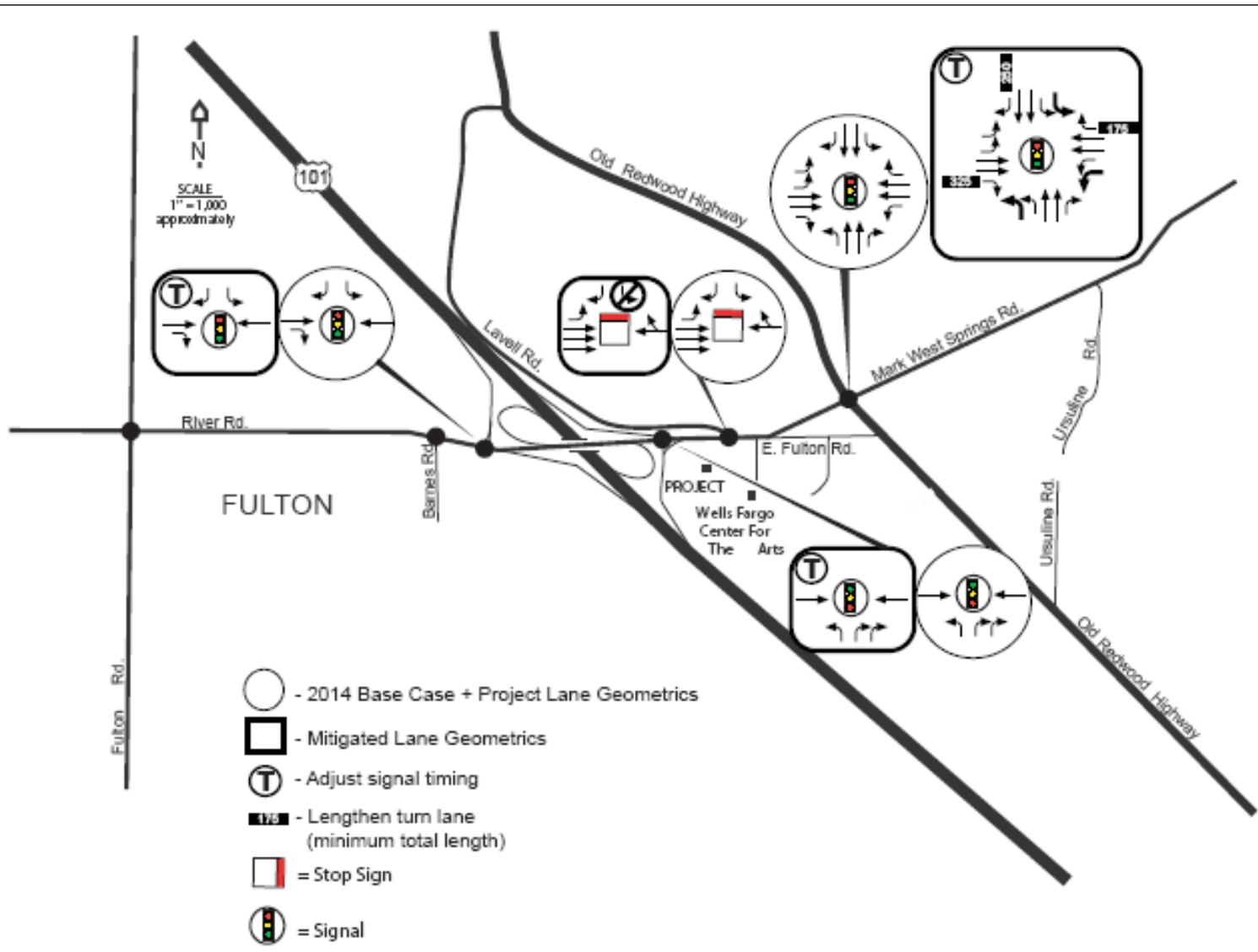
Should this improvement ultimately be made and the signal interconnected with operation of the planned signal at the River Road/U.S.101 Southbound Ramps intersection, the applicant would be required to provide a fair share contribution, and the impact would be reduced to less than significant, with the following resultant base case + project signalized operation:

AM Peak Hour	LOS D-47.8 seconds vehicle delay
PM Peak Hour	LOS D-40.7 seconds vehicle delay

Impact TR-3: Year 2014 95th Percentile Vehicle Queuing Numerous intersections would experience significant impacts to 95th percentile queuing due to the addition of project traffic

Significance: Potentially significant

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Map source: Dowling Associate, Inc.



Sutter/LBMF Joint Master Plan

Figure 3.15-15 Year 2014 Base Case + Project Phase II Mitigated Lane Geometries and Intersection Control

Discussion:

The following intersections would experience unacceptable 95th percentile queuing in the Base Case year even without the project. By adding additional traffic to these intersections, the project would contribute to these significant queuing impacts (see **Tables 3.15-9** and **3.15-19**). Any increase in queuing with unacceptable Base Case operations would be considered a significant impact.

River Road/Fulton Road (signal)*AM PEAK HOUR*

River Road westbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 209 up to 227 feet with 150 feet of storage).

Fulton Road southbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 304 up to 308 feet with 75 feet of storage).

Fulton Road northbound approach through movement: Base Case 95th percentile queue already exceeding available storage would be increased (from 905 up to 922 feet with 265 feet of storage).

Fulton Road northbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 148 up to 186 feet with 100 feet of available storage).

Fulton Road northbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 269 up to 273 feet with 100 feet of storage).

PM PEAK HOUR

River Road westbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 415 up to 494 feet with 150 feet of storage).

Fulton Road northbound approach through movement: Base Case 95th percentile queue already exceeding available storage would be increased (from 1,221 up to 1,274 feet with 265 feet of storage).

Fulton Road northbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 176 up to 205 feet with 100 feet of storage).

River Road/US 101 Southbound Ramps (signal)*AM PEAK HOUR*

River Road westbound approach through traffic: Base Case 95th percentile queue would be extended past the entrance to the southbound freeway loop on-ramp (from 376 up to 403 feet with 400 feet of storage).

**Table 3.15-19. 95th Percentile Queuing
Year 2014 Base Case + Project Phase II Volumes**

2014 With Project			Northbound			Southbound			Eastbound			Westbound		
Node	Intersection		L	T	R	L	T	R	L	T	R	L	T	R
4	River Road/ US 101 SB	AM	--	--	--	456	--	211	--	641	--	--	403	--
		PM	--	--	--	388	--	234	--	364	--	--	676	--
		Avail	--	--	--	975	--	150	--	475	--	--	400	--
9	Mark West Springs Rd./ Old Redwood Highway	AM	398	251	274	525	527	504	255	433	565	419	437	293
		PM	305	302	234	427	353	361	249	334	263	196	401	219
		Avail	200	1,000	50	975*	700	100	300	500	360	225	1,400	50
10	Mark West Springs Rd./ US 101 NB	AM	344	--		--	--	--	--	442	--	--	357	--
		PM	544	--		--	--	--	--	196	--	--	442	--
		Avail	415	--526		--	--	--	--	1,250	--	--	860	--
45	River Rd./ Fulton Road	AM	273	923	186	308	800	114	197	796	34	227	385	48
		PM	137	1,270	205	190	1,305	89	268	1,102	390	494	503	47
		Avail	100	265	100	75	2,735	1,000	620*	1,320	--	150	1,000	--
46	River Rd./ Barnes Rd.	AM	225	-		--	--	-	-	--	--	24	--	--
		PM	200	-		--	--	-	--	--	--	13	--	--
		Avail	>1000	--354	--	--	--	--	--	--	--	75	--	--
50	Mark West Springs Rd./ Lavell Rd.	AM	--	--104	--	51	--	96	21	--	--	--	--	--
		PM	--	--	--	149	--	84	98	--	--	--	--	--
		Avail	--	--	--	60	--	--	110	--	--	--	--	--
51	Mark West Springs Rd./ WFC Main Entry	AM	181	-	79	--	--	--	--	488	283	170	339	--
		PM	279	--	97	--	--	--	--	466	151	126	488	--
		Avail	575	--	>1000	--	--	--	--	860	--	200	700	--
53	E. Fulton Rd./ Old Redwood Hwy.	AM	-	--	--	--	--	--	-	5	-	--	--	--
		PM	-	--	--	--	--	--	-	5	-	--	--	--
		Avail	80	325	--	--	--	--	--	626	--	--	--	--
56	East Fulton Rd./ WFC East Drive	AM	NA	-	-	--	--	--	--	--	--	-	-	--
		PM	NA	-	-	--	--	--	--	--	--	-	-	--
		Avail	900	--	--	--	--	--	--	--	--	--	200	--

Bolded results = significant impact

Note: Queue lengths are in feet per lane, and assume improvements documented in traffic report (such as lane additions).

* Left-turn storage extends into two-way left-turn lane provided for mid-block private driveways

Source: Dowling Associates

River Road eastbound approach through traffic: Base Case 95th percentile queue would be extended past the Barnes Road intersection (from 565 up to 641 feet with 475 feet of storage).

PM PEAK HOUR

River Road westbound approach through traffic: Base Case 95th percentile queue already exceeding available storage would be increased (from 586 up to 676 feet with 400 feet of storage).

Mark West Springs Road/Old Redwood Highway (signal)

AM PEAK HOUR

Old Redwood Highway northbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 338 up to 398 feet with 200 feet of available storage).

Old Redwood Highway southbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 445 up to 504 feet with 100 feet of available storage).

Mark West Springs Road westbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 399 up to 419 feet with 225 feet of available storage).

Mark West Springs Road westbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 287 up to 293 feet with 50 feet of available storage).

Mark West Springs Road eastbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 527 up to 565 feet with 360 feet of available storage).

PM PEAK HOUR

Old Redwood Highway northbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 279 up to 305 feet with 200 feet of available storage).

Old Redwood Highway northbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 233 up to 234 feet with 50 feet of available storage).

Old Redwood Highway southbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 337 up to 361 feet with 100 feet of available storage).

Mark West Springs Road westbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 218 up to 219 feet with 50 feet of available storage).

Mark West Springs Road/Lavell Road (Lavell Road stop sign controlled approach)*PM PEAK HOUR*

Lavell Road southbound approach left turn: The 95th percentile Base Case queue already exceeding available storage would be increased (from 111 up to 149 feet with 60 feet of available storage).

Mark West Springs Road/Project Main Entry & Mark West Springs Road/US 101 Northbound Off-Ramp – Maximum Inbound Flow to Major Evening Events at Wells Fargo Center (with Main Entry Road signed for 4 inbound lanes and 1 outbound lane)

Proposed improvements would preclude backups of northbound off-ramp traffic to the US 101 freeway mainline. Backups on the Mark West Springs Road eastbound approach to the northbound off-ramp intersection would potentially extend partway across the freeway overpass.

Mitigation Measure TR-3: Intersection Improvements for 95th Percentile Vehicle Queuing

Prior to occupancy, the project applicant shall:

A. Construct/implement the following (see **Figure 3.15-15**):

River Road/US 101 Southbound Ramps

- Change signal timing.

Mark West Springs Road/Old Redwood Highway

- Add second left turn lanes on the Old Redwood Highway north and southbound approaches. The length of the left turn lanes shall be limited to that distance which can be feasibly constructed within the existing right of way. If it is determined after field investigation that the left turn lanes cannot be feasibly constructed within exiting right of way, the impact would be significant and unavoidable.
- Add a second left turn lane on the Mark West Springs Road westbound approach.
- Adjust signal timing.
- Provide additional length to the following turn lanes:

Old Redwood Highway Southbound Right Turn Lane:
Lengthen from 100 feet to at least 250 feet.

Mark West Springs Road Westbound Right Turn Lane:
Lengthen from 50 feet to at least 175 feet.

Mark West Springs Road/Lavell Road

- Prohibit left turns from the southbound Lavell Road approach (see Mitigation Measure TR-1).
- **B.** Enter into an agreement with the County to provide a fair share contribution to the following improvements when and

if they are programmed and funded for construction:

River Road/Fulton Road

- Provide one additional through lane on the north and southbound Fulton Road intersection approaches (same as Mitigation Measure TR-1). North and southbound right turns will be made from the new through lanes. In conjunction with this measure, provide second departure lanes on the north and southbound intersection legs, which will then merge to single travel lanes north and south of the intersection.
- Provide a second left turn lane on the westbound River Road approach.

- Provide additional length to the following turn lane:

Fulton Road Southbound Left Turn Lane: Lengthen from 75 feet up to at least 175 feet.

Mark West Springs Road/Old Redwood Highway

Old Redwood Highway Northbound Right Turn Lane:
Lengthen from 50 feet up to at least 175 feet.

Significance After Mitigation: Significant and unavoidable at the River Road/Fulton Road and Mark West Springs Road/Old Redwood Highway intersections. Implementation of the improvements identified in TR-3A would result in acceptable levels of service and queuing at the following intersections, reducing impacts to less than significant:

River Road/US 101 Southbound Ramps

Resultant Base Case + Project Level of Service:

AM Peak Hour LOS B-10.4 seconds control delay

PM Peak Hour LOS B-15.5 seconds control delay

Resultant Base Case + Project 95th Percentile Queues:

AM Peak Hour

River Road Westbound Through Lane 259 feet with 400 feet of storage

River Road Eastbound Through Lane 382 feet with 475 feet of storage

PM Peak Hour

River Road Westbound Through Lane 390 feet with 400 feet of storage

Mark West Springs Road/Old Redwood Highway

Resultant Base Case + Project Level of Service:

AM Peak Hour LOS C-21.5 seconds control delay

PM Peak Hour LOS C-20.4 seconds control delay

Resultant Base Case + Project 95th Percentile Queues:

AM Peak Hour

Old Redwood Highway Northbound Left Turn 154 feet with 200 feet of storage
Mark West Springs Road Westbound Left Turn 155 feet with 225 feet of storage

PM Peak Hour

Old Redwood Highway Northbound Left Turn 128 feet with 200 feet of storage

Implementation of the improvements identified in TR-3B for River Road/Fulton Road is currently infeasible due to lack of right-of-way and required removal of existing structures. In addition, there is insufficient right-of-way to lengthen the Old Redwood Highway Northbound Right Turn Lane at Mark West Springs Road from 50 feet to 175 feet. Furthermore, these improvements are not programmed by the County for construction or funded. No additional feasible mitigation measures to improve operations at these intersections have been identified.

Should these improvements ultimately be made at the River Road/Fulton Road intersection and the Old Redwood Highway northbound right turn lane at Mark West Springs Road lengthened, the applicant would be required to provide a fair share contribution towards these measures, and the impacts would be reduced to less than significant (with the exception of the Fulton Road northbound through movement), as follows:

River Road/Fulton Road:

Resultant Base Case + Project Operation:

AM Peak Hour LOS D-37.6 seconds vehicle delay

PM Peak Hour LOS C-33.1 seconds vehicle delay

Resultant Base Case + Project 95th Percentile Queues:

AM Peak Hour

River Road Westbound Left Turn	50 feet with at least 150 feet of storage/lane
Fulton Road Northbound Right Turn	Right turn becomes movement from through lane

PM Peak Hour

River Road Westbound Left Turn	145 feet with at least 150 feet of storage/lane
Fulton Road Northbound Left Turn	86 feet with at least 100 feet of storage/lane
Fulton Road Northbound Right Turn	Right turn becomes movement from through lane
Fulton Road Southbound Right Turn	Right turn becomes movement from through lane

(Fulton Road northbound through movement can't be reduced to 265 feet (the distance between the intersection and an at grade railroad crossing). Mitigated queue lengths would be 419 feet/lane during the AM peak hour and 677 feet/lane during the PM peak hour.)

There are no feasible measures to eliminate unacceptable operation of the Mark West Springs Road/Lavell Road intersection (Lavell Road approach stop sign controlled left turn movement). However, prohibition of the left turn movement from Lavell Road identified in TR-1A would improve operations and safety at this intersection.

Impact TR-4: Year 2014 Arterial Operation No arterial segments would experience significant impacts.

Significance: Less than significant

Discussion:

No arterial segments would experience significant impacts due to project traffic (see **Table 3.15-10**).

Mitigation: No mitigation required

Impact TR-5: Year 2014 Freeway Operation Two freeway segments would experience significant impacts in 2014 due to project traffic

Significance: Potentially significant

Discussion:

The following freeway segments would experience unacceptable levels of service in the Base Case year even without the project. By adding additional traffic to these freeway segments, the project would contribute marginally to this significant impact (see **Tables 3.15-11** and **3.15-20**). It should be noted that these findings are extremely conservative in the assumption that all Sutter traffic is newly added to the US 101 freeway. In reality, employees, patients and visitors now using the US 101 freeway to access the existing Sutter campus will continue to use the freeway to access the new hospital.

US 101 Freeway North of River Road-Mark West Springs Road Interchange

AM PEAK HOUR

Southbound: V/C ratio would be increased by .01 (from .74 to .75) with unacceptable Base Case LOS D operation.

US 101 Freeway South of River Road-Mark West Springs Road Interchange

AM PEAK HOUR

Northbound: V/C ratio would be increased by .02 (from .71 to .73) with unacceptable Base Case LOS D operation.

Southbound: V/C ratio would be increased by .01 (from .86 to .87) with unacceptable Base Case LOS D operation.

PM PEAK HOUR

Northbound: V/C ratio would be increased by .01 (from .72 to .73) with unacceptable Base Case LOS D operation.

Southbound: V/C ratio would be increased by .03 (from .81 to .84) with unacceptable Base Case LOS D operation.

Mitigation: There are no feasible mitigation measures to reduce this impact

Significance After Mitigation: Significant and unavoidable

Table 3.15-20. Year 2014 Base Case + Project Phase II Freeway Level of Service – Mixed Flow Lanes, With Freeway Widening Now Under Construction

Location	Direction	Volume (mixed flow lanes)	Capacity	V/c ratio	LOS
Between River Road ramps and Airport/Fulton Rd. ramps	NB	3,283 AM	4,700	.70	C
		3,254 PM		.69	C
	SB	3,519 AM	4,700	.75	D
		3,875 PM		.82	D
Between Mendocino/Hopper ramps and River Road ramps	NB	3,440 AM	4,700	.73	D
		3,429 PM		.73	D
	SB	4,092 AM	4,700	.87	D
		3,957 PM		.84	D

Note:

This table does not include HOV volumes, HOV lanes are expected to operate at LOS C or better. Volumes include project traffic from Phase II medical center (MOB and hospitals).

Source: Dowling Associates

Impact TR-6: Year 2035 Intersection Level of Service Several intersections would experience level of service impacts due to the addition of project traffic.

Significance: Potentially significant

Discussion:

This evaluation assumes improvements in place as specified in the County General Plan by 2020, but no additional mitigations as required by the project as part of the year 2014 Phase II impact analysis.

The following intersections would experience significant level of service impacts due to the addition of project traffic (see **Table 3.15-21**).

Mark West Springs Road/Lavell Road (Lavell Road stop sign controlled approach)

AM PEAK HOUR

Lavell Road right turn: Base Case unacceptable LOS F delay would be increased by 5 seconds or more (from 76.8 to 88.8 seconds).

Mark West Springs Road/Old Redwood Highway (signal)

AM PEAK HOUR

Base Case unacceptable LOS E delay would be increased by 5 seconds or more (from 74.2 to 80.0 seconds).

River Road/Barnes Road (Barnes Road stop sign controlled approach)

AM PEAK HOUR

Barnes Road left turn: Base Case unacceptable LOS F delay would be increased by 5 seconds or more (from 80.5 to 93.1 seconds).

Table 3.15-21. Year 2035 Base Case + Project Phase III Traffic – Intersection Level of Service

Average Weekday (includes approved projects per *Sonoma County General Plan 2020*, and WFC traffic but no special WFC events; improvements same as in Table 3.15-18)

Intersection	AM Peak Hr.	PM Peak Hr.
River Road/Fulton Road (Signal)	E (58.2)	D (54.8)
River Road/Barnes Road* Right turn Left turn	C (16.4) F (93.1)	C (16.6) F (>100)
US 101 Southbound Off-ramp/ River Road (Signal)	B (12.6)	B (16.1)
US 101 Northbound Off-ramp/ Mark West Springs Road (Signal)	B (16.7)	B (17.4)
Mark West Springs Road/ Lavell Road* Right turn Left turn	F (88.8) F (>100)	D (29.8) F (>100)
Mark West Springs/ WFC Main Entry (Signal)	A (6.3)	B (11.4)
Old Redwood Hwy/ Mark West Springs Road (Signal)	E (80.0)	E (69.2)
E. Fulton Road/Old Redwood Highway*	F (>100)	F (>100)

Bold results = Project traffic produces a significant impact.

Method: 2000 Highway Capacity Manual. Average control delay, in seconds, is shown in parentheses, rounded to nearest tenth second. “F>100” indicates that the calculated delay exceeded 100 seconds and cannot be reliably estimated. Small number in parentheses is the TRAFFIX network node number.

* Unsignalized intersection; level of service is shown for the STOP controlled movement.

PM PEAK HOUR

Barnes Road left turn: Base Case unacceptable LOS F delay would be increased by 5 seconds or more (from 1,119 to 1,364 seconds).

East Fulton Road/Old Redwood Highway (East Fulton Road stop sign controlled approach)

PM PEAK HOUR

East Fulton Road approach: Base Case unacceptable LOS F delay would be increased by 5 seconds or more (from 281 to 336 seconds).

Mitigation Measure

Prior to occupancy, the project applicant shall:

TR-6: Various Road and Signalization

A. Construct/implement the following (see **Figure 3.15-16**):

Improvements

Mark West Springs Road/Lavell Road

- Prohibit left turns from Lavell Road to eastbound Mark West Springs Road. (This measure has been recommended

for mitigation of 2014 impacts [see TR-1].)

Mark West Springs Road/Old Redwood Highway

- Provide second left turn lanes on the Old Redwood Highway north and southbound approaches as well as the Mark West Springs Road westbound approach.
- Provide overlap right turn phasing on all intersection approaches.

East Fulton Road/Old Redwood Highway

- Provide a second lane on the eastbound E. Fulton Road approach.

B. Enter into an agreement with the County to provide a fair share contribution to the following improvements when and if they are programmed and funded for construction:

River Road/Barnes Road

- Signalize the intersection and interconnect with operation of the planned signal at the River Road/US 101 Southbound Ramps intersection. (This measure has been recommended for 2014 impacts [see TR-2].)
- Provide separate right and left turn lanes on the Barnes Road intersection approach.

Significance After Mitigation: Impacts would remain significant and unavoidable at some intersections.

There are no feasible measures to eliminate unacceptable operation of the **Mark West Springs Road/Lavell Road** intersection (Lavell Road approach stop sign controlled right turn movement). However, prohibition of the left turn movement from Lavell Road identified in TR-1A would provide partial mitigation to improve operations and safety at this intersection.

Implementation of the improvements identified in TR-3A would result in acceptable levels of service at the following intersections, reducing impacts to less than significant:

Mark West Springs Road/Old Redwood Highway

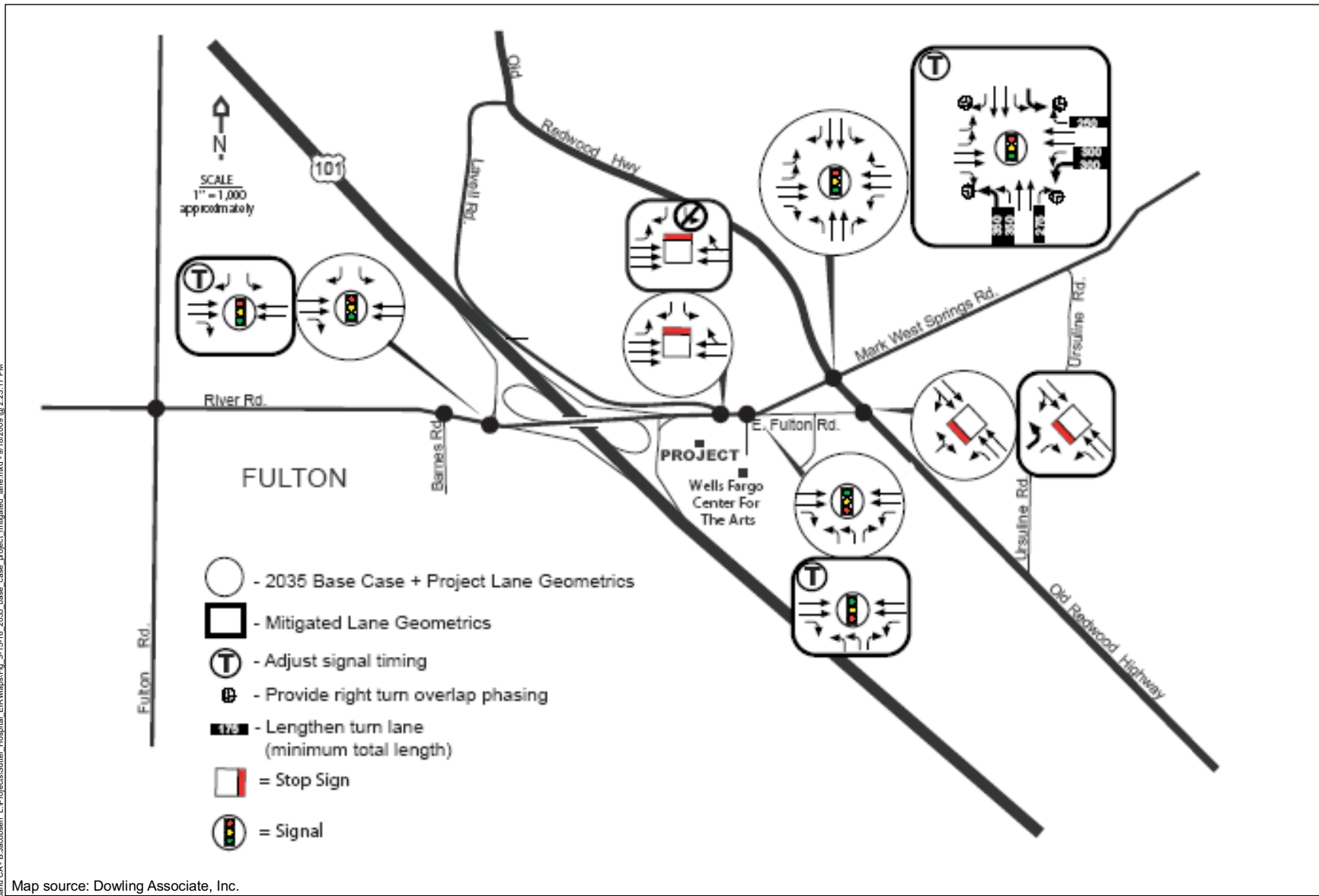
Resultant Operation:

<i>AM Peak Hour</i>	LOS D-44.7 seconds vehicle delay
<i>PM Peak Hour</i>	LOS D-36.9 seconds vehicle delay

However, if it is found that measures at the Mark West Springs Road/Old Redwood Highway intersection are infeasible due to the inability to acquire needed right-of-way, then related impacts would remain significant and unavoidable.

Implementation of the improvements identified in TR-3B for **River Road/Barnes Road** is currently infeasible due to lack of right-of-way and required removal of existing structures. In

URS Corp., Oakland CA - B. Jacobsen, L:\Projects\Sutter Hospital EIRMaps\Fig. 3-15-18_2035_base_case_project_mitigated_lane.mxd - 9/18/2009 @ 2:23:17 PM



Sutter/LBMF Joint Master Plan

Figure 3.15-16 Year 2035 Base Case + Project Phase III Mitigated Lane Geometries and Intersection Control

addition, these improvements are not programmed by the County for construction or funded. No additional feasible mitigation measures to improve operations at these intersections have been identified. This would be a significant and unavoidable impact.

Should these improvements ultimately be made at the River Road/Barnes Road intersection, the applicant would be required to provide a fair share contribution towards these measures, and the impact would be reduced to less than significant, as follows:

Resultant Base Case + Project Signalized Operation:

AM Peak Hour LOS B-11.2 seconds vehicle delay

PM Peak Hour LOS C-24.9 seconds vehicle delay

Implementation of a second lane on the eastbound E. Fulton Road approach to the **E. Fulton Road/Old Redwood Highway** intersection would reduce the delay at this intersection, but not to less than significant, as shown below. This would be a significant and unavoidable impact:

Resultant Operation of Stop Sign Controlled Approach

AM Peak Hour LOS F-173 seconds vehicle delay

PM Peak Hour LOS F-121 seconds vehicle delay

Impact TR-7: Year 2035 Signalization Needs The unsignalized River Road/Barnes Road intersection would experience a significant impact based upon peak hour signal warrant evaluation

Significance: Potentially significant

Discussion:

The following unsignalized intersection would meet signal warrants in both 2014 and 2035 even without the project. By adding additional traffic to this intersection, the project would contribute to a significant impact based upon peak hour signal warrant evaluation:

River Road/Barnes Road (Base Case AM and PM peak hour volumes would already meet Signal Warrant #3 criteria levels).

AM & PM PEAK HOURS

Base Case volumes already exceeding signal warrant criteria levels would be increased. Any increase in traffic would be considered a significant impact.

Mitigation Measure

River Road/Barnes Road

TR-7: Intersection Improvements at River Road/Barnes Road

- Signalize the intersection and interconnect with operation of the planned signal at the River Road/US 101 Southbound Ramps intersection.

Significance After Mitigation: Significant and unavoidable.

Signalization of this intersection is currently infeasible due to lack of sufficient right-of-way and the required relocation of existing PG&E towers. In addition, this improvement is not programmed by the County for construction or funded. No additional feasible mitigation measures to improve operations at this intersection have been identified.

Should this improvement ultimately be made and the signal interconnected with operation of the

planned signal at the River Road/U.S.101 Southbound Ramps intersection, the applicant would be required to provide a fair share contribution, and the impact would be reduced to less than significant, with the following resultant base case + project operation:

River Road/Barnes Road

Resultant Base Case + Project Operation:

AM Peak Hour LOS B-11.2 seconds vehicle delay

PM Peak Hour LOS C-24.9 seconds vehicle delay

Impact TR-8: Year 2035 95th Percentile Vehicle Queuing Numerous intersections would experience significant impacts to 95th percentile queuing due to the addition of project traffic.

Significance: Potentially significant

Discussion:

The following intersections would experience unacceptable 95th percentile queuing in the Base Case year 2035 even without the project. By adding additional traffic to these intersections, the project would contribute to these significant queuing impacts (see **Tables 3.15-13** and **3.15-22**). Any increase in queuing with unacceptable Base Case operation would be considered a significant impact.

River Road/Fulton Road (signal)

AM PEAK HOUR

Fulton Road northbound approach through movement and through/right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 1,000 up to 1,060 feet with 265 feet of storage).

Fulton Road southbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 439 up to 450 feet with 75 feet of storage).

River Road westbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 706 up to 746 feet with 150 feet of storage).

PM PEAK HOUR

Fulton Road northbound approach through and through/right turn movement: Base Case 95th percentile queue already exceeding available storage would be increased (from 1,144 up to 1,237 feet with 265 feet of storage).

Fulton Road northbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 261 up to 266 feet with 120 feet of storage).

River Road westbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 630 up to 731 feet with 150 feet of storage).

**Table 3.15-22. 95th Percentile Queuing
Year 2035 Base Case + Project Phase III Volumes**

2035 With Project		Northbound			Southbound			Eastbound			Westbound			
Node	Intersection	L	T	R	L	T	R	L	T	R	L	T	R	
4	River Road/ US 101 SB	AM	--	--	--	--	--	--	229	--	--	380	--	
		PM	--	--	--	--	--	--	251	--	--	389	--	
		Avail	--	--	--	--	--	--	475	--	--	400	--	
9	Mark West Springs Rd./ Old Redwood Highway	AM	908	317	138 ²⁹²	542	1,438 ¹⁴¹	682	394	423	825	893	1,169	367
		PM	667	1,202	354 ²⁹⁷	1,041	557 ³⁰¹	625	481	1,039	339	475	825	433
		Avail	200	1,000	50 ⁹⁷⁵	975*	700 ⁵⁰	100	300	500	360	225	1,400	50
10	Mark West Springs Rd./ US 101 NB	AM	295	--	--	--	--	--	328	--	--	640	--	
		PM	433	--	--	--	--	--	491	--	--	716	--	
		Avail	415	-- ⁴²⁷	--	--	--	--	1,250	--	--	860	--	
45	River Rd./ Fulton Road	AM	234	1,060	1,060	450	563	563	97	781	781	746	225	225
		PM	266	1,237 ⁴⁶³	1,237	273	634	634	109	737	737	731	343	343
		Avail	100	265 ⁹⁰⁰	265	75	2,735	1,000	620*	1,320	--	150	1,000	--
46	River Rd./ Barnes Rd.	AM	52	52	46	--	--	--	--	--	--	29	--	--
		PM	337	337	73	6	--	--	0	--	--	56	--	--
		Avail	>1000	--	--	--	--	--	--	--	--	75	--	--
50	Mark West Springs Rd./ Lavell Rd.	AM	--	--	--	97	--	148	42	--	--	--	--	--
		PM	--	--	--	90	--	75	41	--	--	--	--	--
		Avail	--	--	--	60	--	--	110	--	--	--	--	--
51	Mark West Springs Rd./ WFC Main Entry	AM	138	--	89	--	--	--	427	131	122	751	--	
		PM	327	--	--	--	--	--	898	68	110	393	--	
		Avail	575	--	>1000	--	--	--	860	--	200	700	--	
53	E. Fulton Rd./ Old Redwood Hwy.	AM	0	-- ¹⁵⁴	--	--	--	8	--	--	--	--	--	
		PM	0	--	--	--	--	5	--	--	--	--	--	
		Avail	80	--	--	--	--	--	--	--	--	--	--	
56	East Fulton Rd./ WFC East Drive	AM	NA	--	--	--	--	--	--	--	--	--	--	
		PM	NA	--	--	--	--	--	--	--	--	--	--	
		Avail	900	--	--	--	--	--	--	--	--	200	--	

Bolded results = significant impact

Note: Queue lengths are in feet per lane, and assume improvements documented in traffic report (such as lane additions).

* Left-turn storage extends into two-way left-turn lane provided for mid-block private driveways

Source: Dowling Associates

Fulton Road southbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 271 up to 273 feet with 75 feet of storage).

River Road/US 101 Southbound Ramps (signal)

PM PEAK HOUR

Southbound off-ramp approach right turn: Base Case queue already exceeding available storage would be increased (from 291 up to 301 feet with 150 feet of storage).

Mark West Springs Road/Old Redwood Highway (signal)

AM PEAK HOUR

Mark West Springs Road eastbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 383 up to 394 feet with 300 feet of available storage).

Mark West Springs eastbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 782 up to 825 feet with 360 feet of available storage).

Old Redwood Highway northbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 742 up to 908 feet with 200 feet of available storage).

Old Redwood Highway northbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 132 up to 138 feet with 50 feet of available storage).

Mark West Springs Road westbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 868 up to 893 feet with 225 feet of available storage).

Mark West Springs Road westbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 364 up to 367 feet with 50 feet of available storage).

Old Redwood Highway southbound approach through movement: Base Case 95th percentile queue already exceeding available storage would be increased (from 1,389 up to 1,438 feet with 975 feet of available storage).

Old Redwood Highway southbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 629 up to 682 feet with 100 feet of available storage).

PM PEAK HOUR

Old Redwood Highway northbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 577 up to 667 feet with 200 feet of available storage).

Old Redwood Highway northbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 340 up to 354 feet with 50 feet of available storage).

Old Redwood Highway northbound approach through movement: Base Case 95th percentile queue already exceeding available storage would be increased (from 1,126 up to 1,202 feet with 1,000 feet of storage).

Old Redwood Highway southbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 1,039 up to 1,041 feet with 975 feet of available storage).

Old Redwood Highway southbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 594 up to 625 feet with 100 feet of available storage).

Mark West Springs eastbound approach through movement: Base Case 95th percentile queue already exceeding available storage would be increased (from 1,031 up to 1,039 feet with 700 feet of available storage).

Mark West Springs eastbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 453 up to 481 feet with 300 feet of available storage).

Mark West Springs eastbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 268 up to 339 feet with 50 feet of available storage).

Mark West Springs westbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 474 up to 475 feet with 225 feet of available storage).

Mark West Springs westbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 429 up to 433 feet with 50 feet of available storage).

Mark West Springs Road/Project Main Entry (signal)

PM PEAK HOUR

Mark West Springs eastbound approach through movement: Base Case 95th percentile queue would be increased from 672 up to 898 feet with 860 feet of available storage.

Mark West Springs Road/Lavell Road (Lavell Road stop sign controlled approach)

AM PEAK HOUR

Lavell Road southbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 74 up to 97 feet with 60 feet of available storage).

PM PEAK HOUR

Lavell Road southbound approach left turn: Base Case 95th percentile queue would be extended beyond available storage (from 63 up to 90 feet with 60 feet of available storage).

Mark West Springs Road/Project Main Entry & Mark West Springs Road/US 101 Northbound Off-Ramp – Maximum Inbound Flow to Major Evening Events at Wells Fargo Center (With Main Entry Road signed for 4 Inbound Lanes and 1 Outbound Lane)

Proposed improvements should preclude backups of northbound off-ramp traffic to the US 101 freeway mainline. Backups on the Mark West Springs Road eastbound approach to the northbound off-ramp intersection would potentially extend partway across the freeway overpass (if widened to 4 lanes).

Mitigation Measure TR-8: Intersection Improvements for 95th Percentile Vehicle Queuing

Prior to occupancy, the project applicant shall:

A. Construct/implement the following (see **Figure 3.15-16**):

River Road/US 101 Southbound Ramps

- Change signal timing.

Mark West Springs Road/Old Redwood Highway

- Add dual left turn lanes to the north, south and westbound intersection approaches.
- Adjust signal timing.
- Provide overlap right turn phasing on all intersection approaches.
- Provide additional length to the following turn lanes:

Old Redwood Highway Northbound Left Turn Lanes:
Lengthen from 200 feet to at least 350 feet.

Old Redwood Highway Northbound Right Turn Lane:
Lengthen from 50 feet to at least 275 feet.

Mark West Springs Road Westbound Left Turn Lane:
Lengthen from 225 feet to at least 300 feet.

- Mark West Springs Road Westbound Right Turn Lane:
Lengthen from 50 feet to at least 250 feet.

Mark West Springs Road/Project Main Entry

- Adjust signal timing.

Mark West Springs Road Eastbound Through Movement: 768 feet/lane with 860 feet of storage

Mark West Springs Road/Lavell Road

- Prohibit left turns from the Lavell Road stop sign controlled

approach. Alternative access is available to the neighborhood served by Lavell Road (i.e. to Old Redwood Highway) in order to allow access to eastbound Mark West Springs Road.

B. Enter into an agreement with the County to provide a fair share contribution to the following improvements when and if they are programmed and funded for construction:

River Road/Fulton Road

- Provide second left turn lanes on the westbound River Road approach and on the southbound Fulton Road approach.
- Adjust signal timing.
- Provide additional lengths to the following turn lanes:

River Road Westbound Dual Left Turn Lanes: Lengthen from 150 feet up to at least 375 feet.

Fulton Road Southbound Dual Left Turn Lanes: Lengthen from 75 feet up to at least 175 feet.

Significance After Mitigation: All impacts would remain significant and unavoidable at River Road/Fulton Road, while some impacts would remain significant and unavoidable at Mark West Springs Road/Old Redwood Highway.

Implementation of the improvements identified in TR-8A would result in acceptable levels of service and queuing at the following intersections, reducing impacts to less than significant:

River Road/US 101 Southbound Ramps

Resultant Base Case + Project Level of Service:

AM Peak Hour LOS B-12.6 seconds control delay

PM Peak Hour LOS A-9.6 seconds control delay

Resultant Base Case + Project 95th Percentile Queues:

PM Peak Hour

US Southbound Off-Ramp Right Turn Lane: 146 feet with 150 feet of storage

Mark West Springs Road/Old Redwood Highway

Resultant Base Case + Project 95th Percentile Queues:

PM Peak Hour

Old Redwood Highway Northbound Through Movement: 761 feet with at least 1,000 feet of storage

Old Redwood Highway Southbound Left Turn: 477 feet per lane with at least 975 feet of storage

- The following queue impacts at Mark West Springs Road/Old Redwood Highway would remain significant and unavoidable:

Old Redwood Highway southbound through movement can't be reduced to 975 feet in the AM peak hour. Mitigated queue length would be 1,075 feet/lane during the AM peak hour.

Mark West Springs Road eastbound through movement can't be reduced to 700 feet in the PM peak hour. Mitigated queue length would be 714 during the PM peak hour.

Mark West Springs Road Eastbound Right Turn Lane: Right-of-way not available to lengthen from 360 up to at least 425 feet.

Mark West Springs Road Eastbound Left Turn Lane: Right-of-way not available to lengthen from 300 feet up to at least 400 feet.

Old Redwood Highway Southbound Right Turn Lane: Right-of-way not available to lengthen from 100 feet up to at least 450 feet.

Implementation of the improvements identified in TR-8B for River Road/Fulton Road is currently infeasible due to lack of right-of-way and required removal of existing structures. Furthermore, these improvements are not programmed by the County for construction or funded. No additional feasible mitigation measures to improve operations at these intersections have been identified.

River Road/Fulton Road

Should improvements ultimately be made at the River Road/Fulton Road intersection, the applicant would be required to provide a fair share contribution towards these measures, and the impacts would be mitigated to less than significant (with the exception of Fulton Road northbound through movement), as follows:

River Road/Fulton Road

Resultant Base Case + Project Operation:

AM Peak Hour LOS D-35.9 seconds vehicle delay

PM Peak Hour LOS D-50.6 seconds vehicle delay

Resultant Base Case + Project 95th Percentile Queues:

PM Peak Hour

Fulton Road Northbound Left Turn: 119 feet with at least 120 feet of storage lane

Fulton Road northbound through movement can't be reduced to 265 feet (the distance between the intersection and an at grade railroad crossing). Mitigated queue lengths would be 683 feet/lane during the AM peak hour and 820 feet/lane during the PM peak hour.

Impact TR-9: Year 2035 Arterial Operation No arterial segments would experience significant impacts.

Significance: Less than significant

Discussion:

No arterial segments would experience significant impacts due to project traffic (see **Table 3.15-14**).

Mitigation: No mitigation required

Impact TR-10: Year 2035 Freeway Operation Two freeway segments would experience significant impacts in 2035 due to project traffic

Significance: Potentially significant

Discussion:

The following freeway segments would experience unacceptable levels of service in the Base Case year even without the project. By adding additional traffic to these freeway segments, the project would contribute marginally to this significant impact due to project traffic (see **Tables 3.15-15** and **3.15-23**). It should be noted that these findings are extremely conservative in the assumption that all south traffic is newly added to the US 101 freeway. In reality, employees, patients and visitors now using the US 101 freeway to access the existing Sutter campus will continue to use the freeway to access the new hospital.

US 101 Freeway North of River Road-Mark West Springs Road Interchange

AM PEAK HOUR

Southbound: V/C ratio would be increased by .01 (from .85 to .86) with unacceptable Base Case LOS D operation.

PM PEAK HOUR

Northbound: V/C ratio would be increased by .01 (from .83 to .84) with unacceptable Base Case LOS D operation.

Southbound: V/C ratio would be increased by .01 (from .99 to 1.00) with unacceptable Base Case LOS E operation.

Table 3.15-23. Year 2035 Base Case + Project Phase III Traffic Freeway Level of Service – Mixed Flow Lanes, With Widening Now Under Construction

Location	Direction	Volume (mixed flow lanes)	Capacity	V/c ratio	LOS
Between River Road ramps and Airport/Fulton Rd. ramps	NB	3,857 AM	4,700	.82	D
		3,954 PM		.84	D
	SB	4,042 AM	4,700	.86	D
		4,688 PM		1.00	E
Between Mendocino/Hopper ramps and River Road ramps	NB	4,127 AM	4,700	.88	D
		4,089 PM		.87	D
	SB	4,538 AM	4,700	.97	E
		4,505 PM		.96	E

Note:

This table does not include HOV volumes, HOV lanes are expected to operate at LOS C or better. Values represent Parsons’ 2030 volumes increased by 7.56% growth, which is ABAG’s forecast of job growth in Sonoma County between 2030 and 2035. All table values are rounded to the nearest digit, e.g., the v/c ratio for the PM peak hour between River and Fulton Roads is actually .997 but is shown as 1.00 in the table above. Because the v/c is <1.00, the LOS as shown as E. Source: Dowling Associates

US 101 Freeway South of River Road-Mark West Springs Road Interchange*AM PEAK HOUR*

Northbound: V/C ratio would be increased by .03 (from .85 to .88) with unacceptable Base Case LOS D operation.

Southbound: V/C ratio would be increased by .01 (from .96 to .97) with unacceptable Base Case LOS E operation.

PM PEAK HOUR

Northbound: V/C ratio would be increased by .01 (from .86 to .87) with unacceptable Base Case LOS D operation.

Southbound: V/C ratio would be increased by .03 (from .93 to .96) with unacceptable Base Case LOS E operation.

Mitigation: There are no feasible mitigation measures to reduce this impact.

Significance After Mitigation: Significant and unavoidable

Impact TR-11: Parking Impacts The proposed Sutter project could result in an inadequate supply of parking for the proposed uses. However, the shared use parking plan between Sutter and Wells Fargo Center would provide overflow parking areas immediately adjacent to the project site.

Significance: Less than significant

Discussion:**Introduction**

“Code parking requirements” reflect the requirements set forth in the current Sonoma County Zoning Code, Article 86, as found at www.sonoma-county.org/prmd/docs/zoning. This code allows reduced parking when it can be demonstrated that the proposed on-site supply is reasonable compared to projected demand. Projects have been allowed to submit shared parking information in support of a reduced number of spaces. “Parking demand” refers to the average number of vehicle spaces actually occupied on a typical weekday. “Coverage” refers to the additional spaces required to reduce time-consuming “hunting” for parking spaces, and to allow for weekly and seasonal variations. The term “parking requirement” is used to refer to the sum of parking demand plus the coverage, in other words, it is about 1.1 to 1.18 times the parking demand. Higher ratios provide more convenience at the expense of higher parking development (and maintenance) costs. Industry practice indicates that even during the peak hour of parking demand, no more than 85 to 90 percent of all parking spaces should be occupied; when exceeded, patrons will find parking inconvenient and will have to spend considerable amounts of their time looking for a space.

For the Sutter project analysis, a parking requirement of 1.1 times the demand has been utilized. For special events at the WFC, it has been assumed that the spaces supplied should equal maximum demand as attendees will be directed to efficiently fill all available parking.

Code Requirements

County code requires 4 spaces per thousand square feet (KSF) for hospitals, and 5 spaces/KSF for medical office building (MOB) uses. The code requirements for the medical facilities are shown in **Table 3.15-24**.

Table 3.15-24. Sutter Medical Center Parking Code Requirement, By Phase

Uses/Phase	Size	Code	Spaces Required
Phase II			
Medical Office Bldg.	80 KSF	5/KSF	400
Hospitals	226 KSF	4/KSF	<u>904</u>
Total Phase II			1,304
Phase III			
Medical Office Bldg.	80 KSF	5/KSF	400
Hospitals	262 KSF	4/KSF	<u>1,048</u>
Total Phase III			1,448

Source: Dowling Associates

Parking Spaces to be Provided and Relation to Code Requirements

Phase II of the proposed project will provide 943 on-site spaces, while 899 on-site spaces will be provided after completion of Phase III. Phase III development will require removal of 44 parking spaces created as part of Phase II.

Based upon proposed and code-required parking, the Sutter project would be providing 361 fewer spaces than required by code for Phase II, and 559 fewer spaces than required by code for Phase III.

Project Hospital/Medical Office Shared Parking Evaluation

A shared use parking plan has been agreed to between the Sutter project and the Wells Fargo Center. The Sutter project and WFC would each attempt to meet their own parking needs. However, for peak parking demand periods (particularly when there are major events at the Wells Fargo Center), there would be available parking at the adjacent facility.

Specific analysis has been conducted to determine Sutter's typical daily parking demand. The parking analysis made the following assumptions:

- The peak occupancy (demand) for the hospital would be 0.83 spaces per employee, per the Institute of Transportation Engineers' (ITE's) *Parking Generation 3rd Edition* publication, occurring around 3:00 PM (at the nursing shift change). This is based on ITE's land use code 610. As used in this ITE publication, "employees" mean full- or part-time workers on all shifts on a weekday (hospitals operate three shifts daily). Please also note that the parking rate per employee includes the parking demand of employees, patients, visitors and deliveries.
- The peak parking demand for the medical office would be 3.49 spaces per ksf, per ITE's fitted curve equation, and would occur around 11:00 AM, based on ITE land use code 720.

A worst case parking demand for the Sutter project would assume that both major uses (hospitals and medical office) would have peak parking demands at the same time (which historical parking data does not support). As shown in **Table 3.15-25**, with this assumption there would be a peak parking demand with Phase II for approximately 684 spaces between 1:00-3:00 PM. With coverage (reserve) of 10%, the parking requirement would be 760 spaces, but 943 spaces would be provided. In Phase III, the peak parking demand would be 751 spaces, with a reserve requirement of 835 total spaces, but 899 parking spaces would be provided.

Therefore, using a worst case parking demand scenario based upon the actual number of projected employees for the Sutter project, sufficient on-site parking will be provided. This eliminates the need for use of any parking spaces at the adjacent Wells Fargo Center, most of which would nevertheless potentially be available during weekdays from 8:00 AM to 5:00 PM.

Table 3.15-25. Sutter Medical Center Parking, Peak Parking Demand, By Phase (spaces actually occupied at the peak demand hour—assumes no coverage/reserve)

Uses/Phase	Size	ITE Rate (Parking Generation)	Spaces Demanded
Phase II			
Medical Office Bldg.	80 KSF	3.49 /KSF	280
Hospitals	486 emp.	0.83 /employee	<u>404</u>
Total Phase II			684
Phase III (Total)			
Medical Office Bldg.	80 KSF	3.49 /KSF	280
Hospitals	567 emp.	0.83 /employee	<u>471</u>
Total Phase III			751

Note:

Fractional values are rounded upwards; e.g., 80 ksf x 3.49 = 279.2, which is rounded to 280 spaces in the table above. Spaces demand is actual number of spaces occupied. Employee counts are totals, over all shifts.

Source: Dowling Associates

Wells Fargo Center Parking

WFC's parking requirements are more complicated, because of the possible combination of different events that may occur on a given day. When demand can fluctuate significantly depending on circumstances, the concept of a "design day" is often used.

For the Wells Fargo Center, evaluation has assumed one large and two medium size events occur on a weekday evening, with starting times between 7:00 and 8:00 PM:

- a sold-out event at the Person theater (1,668 attendees)
- Carston Cabaret, 225 persons
- Fireside Room, 150 attendees banquet/multi-purpose

This totals, rounding up slightly, to 2,050 people. At an average vehicle occupancy of 2.0- 2.2, these events together result in a WFC-generated parking demand of between 932 and 1,025 spaces for event patrons. Add to these 30 spaces for WFC non-event needs (e.g., staff) for a total

WFC demand of 962 to 1,055 spaces between 8:00 and 9:00 PM (with an average demand of 1,009 spaces).

While the WFC average demand would exceed their supply by 106 spaces during the middle of the evening, the Phase III Sutter project would only have a demand of about 230 spaces at this time, leaving 713 available spaces. **Figure 3.15-17** shows the parking demand for Phase II with both the Sutter project and a major WFC event as per the “design day” described above. The (blue) dashed line indicates Sutter’s demand, and the difference between it and the solid burgundy line is the projected WFC demand. Sutter’s Phase II demand is essentially the dashed line; the difference between it and the solid line represents Phase III demand. At 6:00 AM, there are fewer than 200 cars parked, mainly for the night shift workers and hospital patients. The parking accumulation quickly rises until about 10:00-11:00 AM, as workers and patients arrive on the site. Demand is relatively constant until approximately 3:00 PM, when there is a small upward “bump” because of the nursing shift change, then demand begins to fall until about 5:00-6:00 PM, when would pick up as a result of WFC events. The peak demand, as shown in **Figure 3.15-17**, would occur between about 8:00-9:00 PM. The difference between the dashed solid and dashed lines show most of this is due to WFC, although a few hundred spaces are still needed by the medical center during these hours. **Figure 3.15-18** also shows the Phase III parking demand.

Based upon input from Marc Hagenlocher, Director of Operations for the Wells Fargo Center for the Arts, overflow parking for most major events at the WFC is accommodated on site. Main theater events, by themselves, do not typically cause the need for overflow parking. Overflow parking does tend to occur with very large outdoor events or when there is a combination of events going on at the same time. A summary of overflow demand is as follows:

1-50 car overflow	=	± 50 times/year
51-100 car overflow	=	± 10 times/year
101+ car overflow	=	± 2-3 times/year

For extremely large memorial services, satellite parking lots and shuttle service have been used. It is unlikely given the combined available spaces in both the Sutter and WFC facilities that an evening event would exceed the parking capacity of the combined lots. Individually, it is likely that the Sutter project may not require use of WFC parking. However, WFC may require use of some Sutter project parking during a major activity or combination of activities. The shared parking agreement and management plan is required to accommodate these potential overflow situations.

Mitigation: No mitigation required.

Impact TR-12: Increased pedestrian activity to and from the proposed medical center could present safety concerns for pedestrians
Pedestrian Impacts

Significance: Potentially significant

Discussion:

The proposed project would provide sidewalks at the following locations as part of Phase II development (see **Figure 2-4**).

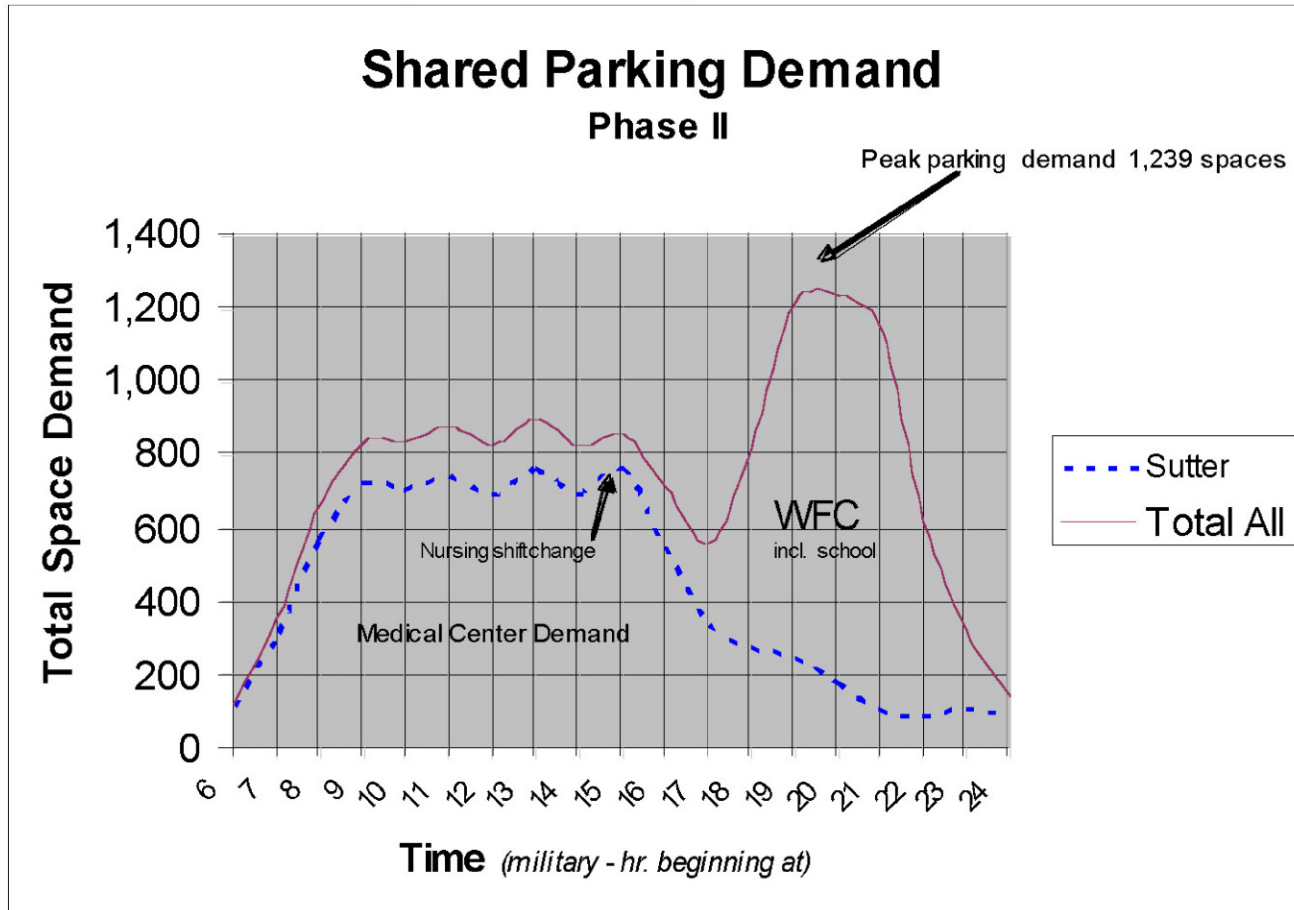
- Along the south side of Mark West Springs Road along the entire project frontage (from the US 101 Northbound Off-Ramp signalized intersection to the existing sidewalk along the frontage of the commercial center on the southwest corner of the Mark West Springs Road/Old Redwood Highway intersection).
- Along the east side of the Main Entry Drive extending southerly from Mark West Springs Road to the WFC north parking area; and along the west side of the southern half of the Main Entry Drive.
- Around each building or group of buildings.
- Along the west side of the secondary access driveway connection to East Fulton Road, which would then separate from the driveway 390 feet south of Mark West Springs Road and continue along the border of the WFC to the WFC north parking lot.

Pedestrian walkways would also be provided extending southerly through the site from Mark West Springs Road to the main entry of the hospital and to the east side of the medical office building. The westerly walkway would extend through the middle of three parking aisles separating the hospital from Mark West Springs Road. The easterly walkway to the medical office building would extend across the end of two parking aisles. In addition, pedestrian crosswalks would be provided on the south and east legs of the newly signalized Mark West Springs Road/Main Entrance intersection. A short sidewalk would be provided on the north side of Mark West Springs Road extending east of the intersection to a new bus stop. Finally, a sidewalk would be provide along the south side of East Fulton Road extending to Old Redwood Highway and then south for about 135 feet along the west side of Old Redwood Highway.

Overall, the proposed pedestrian circulation system appears acceptable with the exception of the following three concerns.

- The pedestrian walkway connecting Mark West Springs Road with the hospital entrance will cross the middle of three parking aisles, not the usual location for a pedestrian crossing. The lack of clear identification to motorists of the pedestrian crossing as well as measures to physically slow auto traffic would create significant safety concerns for pedestrians.
- The lack of a sidewalk along the west side of the Main Entry Road between Mark West Springs Road and the middle of the site could result in some pedestrians walking in the entry road or within parking aisles unless clear direction is provided regarding alternative pedestrian access routes.
- The lack of a continuous sidewalk along the east side of Old Redwood Highway from Mark West Springs Road north to the existing shopping center would result in project pedestrians accessing the center walking on the shoulder of the road. This would be a significant safety concern as well as an accessibility concern.

Figure 15. Shared Parking Demand for Phase II



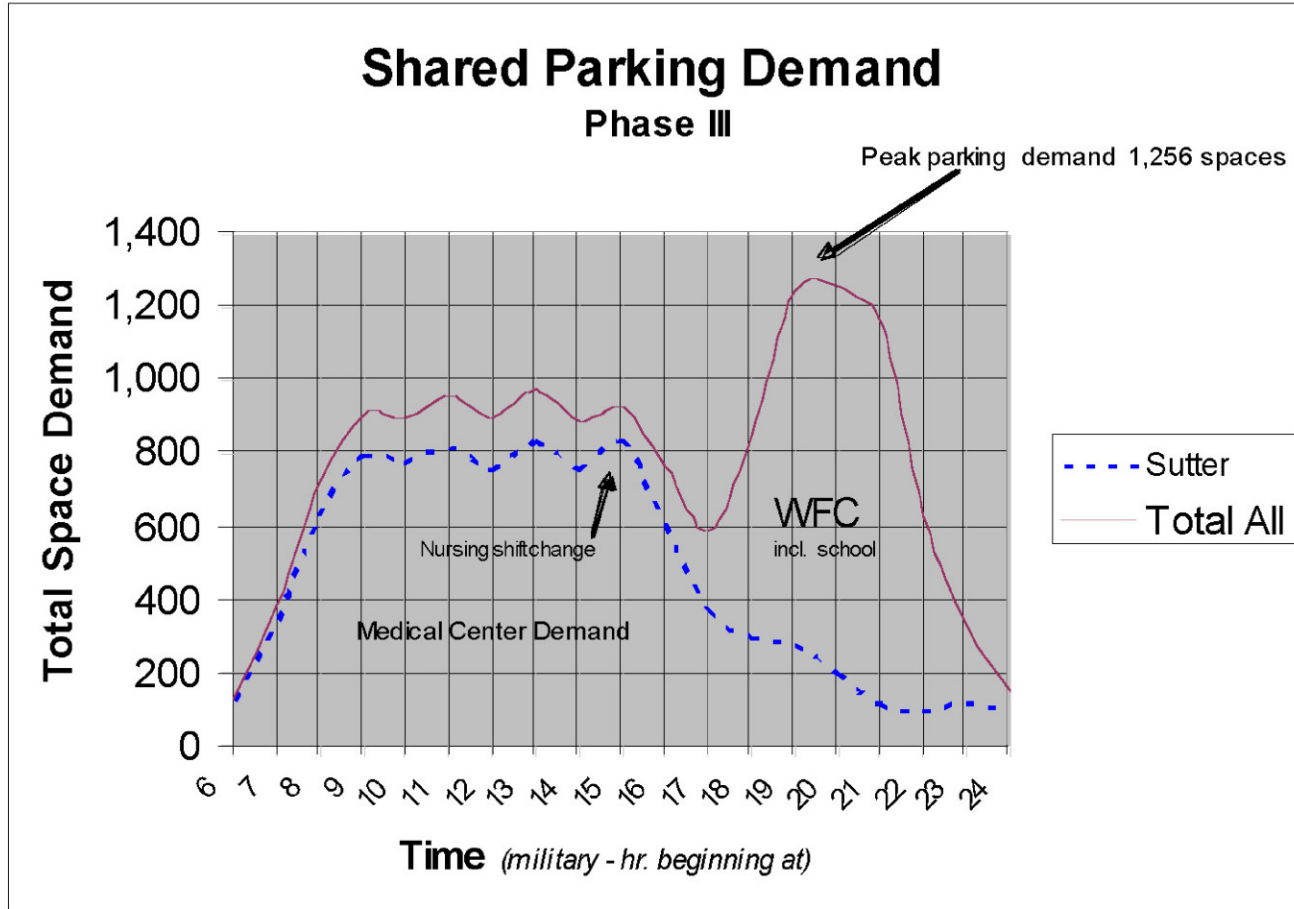
Map source: Dowling Associate, Inc.



Sutter/LBMF Joint Master Plan

Figure 3.15-17
Shared Parking Demand for Phase II

Figure 16. Shared Parking Demand Phase III



Map source: Dowling Associate, Inc.



Sutter/LBMF Joint Master Plan

Figure 3.15-18
Shared Parking Demand for Phase III

**Mitigation Measure
TR-12:****Traffic Calming
Measures and Sidewalk
along West Side of Main
Entry Drive +
Continuous Pathway
Along Old Redwood
Highway**

- Prior to occupancy, the applicant shall provide the following measures:
- Provide traffic calming measures, such as speed tables or landscaped chokers within the parking aisles north of the hospital main entry to significantly reduce vehicle speeds at the pedestrian walkway. Highlight the walkway with signing and different pavement surface.
- Provide a sidewalk along the entire length of the west side of the project main entry driveway.
- Prior to occupancy, the applicant shall obtain the necessary right of way and construct a sidewalk/pedestrian pathway on the east side of Old Redwood Highway, north of Mark West Springs Road, on the western edge of Assessors parcels 058-071-015, 016, and 017. If the applicant is unable to obtain the necessary right of way, then the applicant shall provide adequate funding to the County to obtain it.

Significance After Mitigation: Less than significant

**Impact TR-13: Bicycle
Impacts**

The site layout is adequate to accommodate bicycle riders.

Significance:

Less than significant

Discussion:

The proposed project would be providing County-required bike racks and lockers. A Class II bicycle lane would also be provided in the eastbound direction along the project's Mark West Springs Road frontage. Internal to the site, bike riders would be using access roads and parking aisles.

Mitigation:

- No mitigation required.

**Impact TR-14: Transit
Impacts**

Potential inadequacy of public transit availability to the project site.

Significance:

Less than significant

Discussion:

Three Sonoma County transit routes now serve the project area along either Mark West Springs Road or Old Redwood Highway. Bus stops and shelters would be provided on both sides of Mark West Springs Road at the signalized main access intersection. Sidewalks would be provided from the intersection to all project buildings. The travel time from the Santa Rosa

downtown transit center to the site or from the site back to downtown would be approximately 13 minutes using Route 60, which compares to 13-27 minutes (to/returning) using City Bus Route 1 to the existing Chanate hospital. This is for “in vehicle” time only (i.e. riding on the bus). Sutter’s existing Chanate campus is currently served by a single bus route (City Bus Route 1) that travels on Mendocino Avenue, but makes a one-way loop up Parker Hill Road and out Fountaingrove Parkway, which creates a significant amount of “out of direction” travel for riders, taking approximately 27 minutes from the hospital to reach the downtown transit center. Buses to the Chanate facility run every 30 minutes until about 8:00 PM. Many Route 1 buses continue as Route 19 to Roseland after a five-minute pause at the transit center; others require a transfer at the 2nd Street transit center. Route 60 provides weekday service (16-17 runs each direction between $\pm 6:00$ AM and $\pm 9:00$ AM). On weekends, there are 8 runs each direction between $\pm 8:00$ AM and 9:00 PM. Route 62 provides weekday service only from downtown Santa Rosa to the project area (7 runs each direction), between $\pm 7:30$ AM and $\pm 5:30$ PM.

Mitigation: No mitigation required

**Impact TR-15:
Construction Traffic
Impacts** Truck traffic associated with project construction could cause significant traffic safety impacts as trucks attempt to turn from the site to Mark West Springs Road. In addition, construction worker traffic could cause significant traffic safety impacts (during peak outbound flow periods) as workers attempt to turn from the site to Mark West Springs Road.

Significance: Potentially significant

Discussion:

PHASE I

The proposed project would initially require importation of 100,000 cubic yards of fill to the site. This would result in the following level of truck activity.

- $\pm 8,695$ total truck loads
- 180 trucks/day (180 inbound & 180 outbound)
- 11 hours of operation (7:00 AM-6:00 PM)
- 16-17 trucks/hour (1 every 3-4 minutes in & out)
- 5 days of the week (Monday-Friday)
- Total Days = ± 50 (10 weeks)

There may also be the need in 2013/2014 to export about 30,000 cubic yards of fill from the site, 2,700 total truck loads. Currently, it is unknown where fill would be obtained. There are possible quarry locations north, south, east and west of the Sutter project. All trucks would enter and exit the site via the WFC main entry driveway. Exiting trucks, if bound for the freeway or to the west, would have a difficult time making left turns to Mark West Springs Road. No signalization is being proposed at this intersection to facilitate truck turns. This would potentially disrupt truck scheduling. In addition, trucks making left turns from the site could potentially disrupt traffic flow along Mark West Springs Road, as some truck drivers may select less than adequate gaps

for left turns if they are experiencing extended delays. If trucks were restricted to right turn exit movements only, they would then be required to travel on Old Redwood Highway and other surface streets (to the north or south) to access the next available interchange along the US 101 freeway. This would result in trucks every 3 to 4 minutes from 7:00 AM to 6:00 PM over 50 days traveling along local surface streets that have adjacent schools. This would be a potentially significant impact.

PHASES II AND III

For evaluation purposes, it is assumed that all construction worker and material delivery access will be via the WFC main driveway and that the majority of this traffic will be accessing the project area via the US 101 freeway. Initially, the Mark West Springs Road/WFC main driveway intersection will not be signalized, but roadway widening and signalization of this intersection will be occurring during the course of the Phase II construction process. Until signalized, the stop sign controlled Mark West Springs Road/WFC main driveway intersection will produce extended delay for construction worker drivers (and WFC drivers) attempting to make left turns from the project site to westbound Mark West Springs Road (particularly during the evening commute at the end of the workday). This would be a potentially significant impact as workers would potentially attempt to enter the flow of westbound Mark West Springs Road traffic with less than acceptable gaps in traffic flow.

Mitigation Measure TR-15: Develop Traffic Management Plan and Provide all Roadway Widening along Mark West Springs Road and a Signalized Mark West Springs Road/WFC Main Entry Intersection Before Occupancy of Phase II

- Phase I Fill Importation
Prior to grading permit issuance, the applicant shall develop and obtain County approval of a construction traffic management plan. Assuming all fill truck access at the project site is to/from the west, flag people shall be employed to control truck access at the Mark West Springs Road/WFC main driveway intersection (for outbound left turns). During peak traffic periods, outbound truck movements shall only be allowed every 8 to 10 minutes so as to minimize disruption to the traffic flow along Mark West Springs Road. Use of the flag people will eliminate the need for outbound trucks to turn right from the site and travel through the community on Old Redwood Highway as well as other roads.
- Phase II
Prior to occupancy of Phase II, the applicant shall provide all roadway widening along the US 101 northbound off-ramp, Mark West Springs Road and a signalized Mark West Springs Road/WFC main entry intersection. Also, the applicant shall provide a flag person to control egress from the project site at all times during Phase II construction when more than 20 vehicles per hour (non trucks) are expected to be exiting the site or when more than 2 trucks per hour would be expected to be exiting the site.

Significance After Mitigation: Less than significant

Year 2014 Off-Site Impacts with Phase III Development

The following analysis was conducted to determine the off-site circulation impacts due to Phase III Sutter project development by 2014. Intersection level of service, queuing and signal warrant impacts have been determined as have arterial corridor and freeway mainline impacts. Measures have been developed, if feasible, to mitigate all impacts to a less-than-significant level. Year 2014 Base Case + Phase III AM and PM peak hour volumes are presented in **Figure 3.15-19**. Overall, there would be no additional significant traffic impacts with the addition of Phase III development by 2014 compared to development of Phase II only by 2014.

Impact TR-16: Year 2014 Intersection Level of Service Project traffic would adversely affect the level of service at several intersections. These would be the same intersections and for the same movements as with project Phase II traffic.

Significance: Potentially significant

Discussion:

The following intersections would experience unacceptable levels of service in the Base Case year even without the project. By adding additional traffic to these intersections, the project would contribute to these significant level of service impacts (see **Table 3.15-26** for a complete list of intersections).

River Road/Fulton Road (signal)

PM PEAK HOUR

Base Case unacceptable LOS F operation would have delay increased by more than 5 seconds (6.2 seconds).

River Road/Barnes Road (Barnes Road stop sign controlled approach)

AM PEAK HOUR

Right turn Base Case unacceptable LOS F delay would be increased by 5 seconds or more (from 97.2 up to 129 seconds); left turn Base Case unacceptable LOS F delay would be increased by 5 seconds or more (from 568 up to 727 seconds).

PM PEAK HOUR

Left turn Base Case unacceptable LOS F delay would be increased by 5 seconds or more (from 793 up to 1,195 seconds).

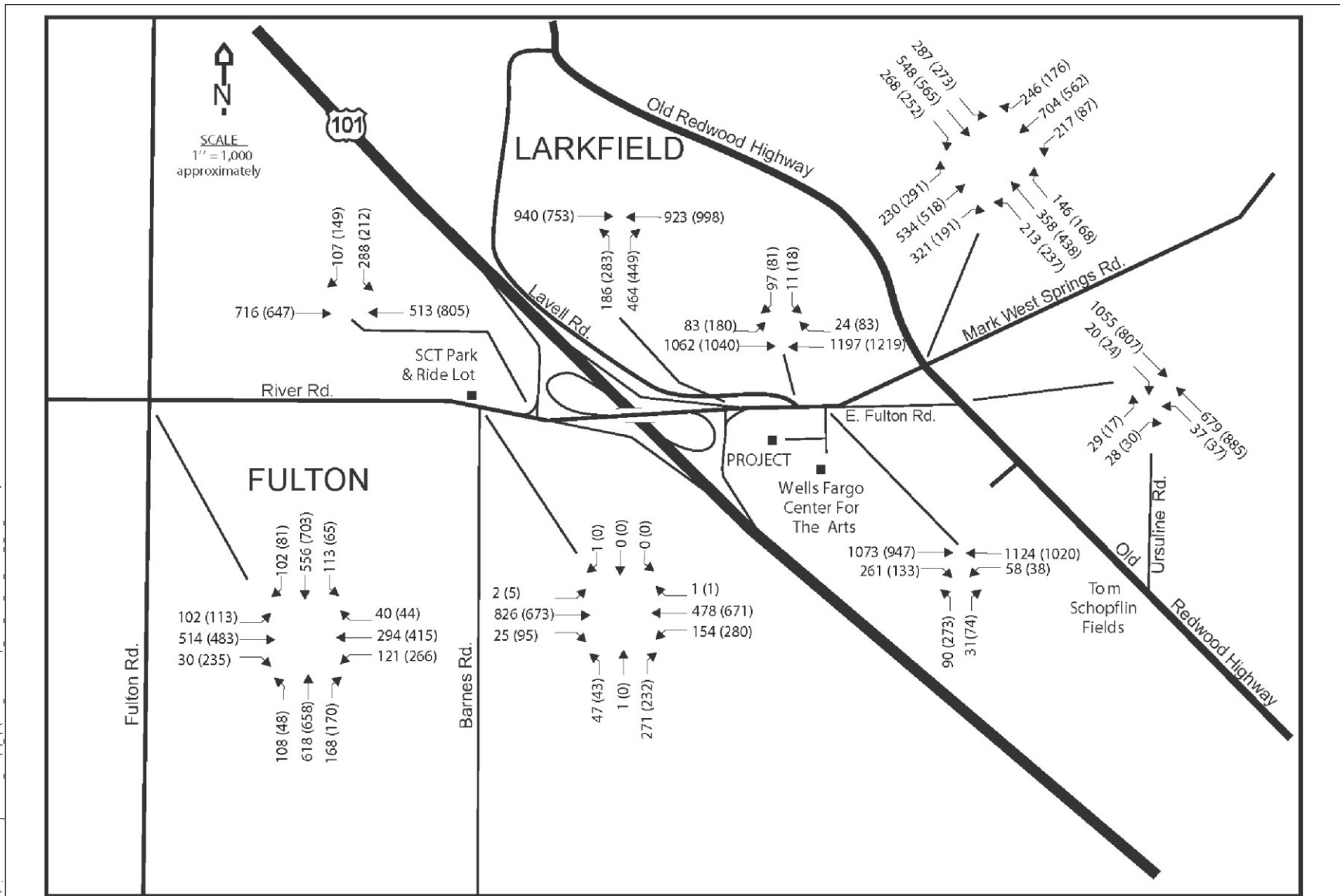
Mark West Springs Road/Lavell Road (Lavell Road stop sign controlled approach)

AM PEAK HOUR

Right turn Base Case unacceptable LOS E operation would be degraded to an unacceptable LOS F and delay increased by 5 seconds or more (from 43 up to 52.3 seconds).

PM PEAK HOUR

Right turn Base Case acceptable LOS D operation would be degraded to an unacceptable LOS F.



Map source: Dowling Associate, Inc.



Sutter/LBMF Joint Master Plan

Figure 3.15-19
2014 Base Case + project Phase III AM and PM Peak Hour Volumes

Table 3.15-26. Year 2014 Base Case and Base Case + Project Phase III Intersection Levels of Service

Intersection	2014 Base Case		2014 Base Case + Project Phase III	
	AM Peak	PM Peak	AM Peak	PM Peak
River Road/Fulton Road (Signal)	D (40.4)	E (57.8)	D (41.0)	E (64.2)
River Road/Barnes Road (Signal) right turn (RT) left turn (LT)	F (97.2) F (>100)	D (26.4) F (>100)	F (129) F (>100)	D (28.8) F (>100)
US 101 Southbound Off-ramp/ River Road (Signal)	B (15.0)	B (13.1)	B (16.2)	B (13.9)
US 101 Northbound Off-ramp/ Mark West Springs Road—assumes dual NB right turn with project (Signal)	B (18.1)	C (20.3)	B (15.5)**	B (18.3)**
Mark West Springs Road/ Lavell Road RT LT	E (43.0) F (>100)	D (28.1) F (>100)	F (52.3) F (>100)	E (50.4) F (>100)
Mark West Springs/ WFC Main Entry*	F (>100)	F (>100)	B (11.3)**	B (17.9)**
Old Redwood Hwy/ Mark West Springs Road (Signal)	D (36.1)	C (30.2)	D (28.0)	C (30.7)
E. Fulton Road/Old Redwood Highway	D (25.9)	C (17.8)	D (27.0)	C (19.0)

Bold results = Project traffic produces a significant impact.

Method: *2000 Highway Capacity Manual* using TRAFFIX 7.9. Average control delay, in seconds, is shown in parentheses, rounded to nearest tenth second. "F>100" indicates that the calculated delay exceeded 100 seconds.

* Assumes signalization of existing two-way STOP controlled intersection with project.

** Delay is reduced in future by assumed additional lanes at this intersection in this scenario

Source: Dowling Associates/Crane Transportation Group

Mitigation Measure TR-16: Intersection Improvements Prior to occupancy the project applicant shall:
Implement Mitigation Measure TR-1 (i.e. the same measures as with Phase II development).

Significance After Mitigation: Significant and unavoidable at all three intersections.

There are no feasible measures to eliminate unacceptable operation of the Mark West Springs Road/Lavell Road intersection (Lavell Road approach stop sign controlled right turn movement). However, prohibition of the left turn movement from Lavell Road identified in TR-1A would provide partial mitigation to improve operations and safety at this intersection.

Improvements at River Road/Fulton Road and River Road/Barnes Road identified in TR-1B are currently infeasible due to lack of sufficient right-of-way and the need to remove or relocate existing structures. In addition, these improvements are not programmed by the County for construction or funded. No additional feasible mitigation measures to improve operations at

these intersections have been identified.

Should improvements ultimately be made at the River Road/Fulton Road and River Road/Barnes Road intersections, the applicant would be required to provide a fair share contribution towards these measures, and the impact would be reduced to less than significant, with the following resultant base case + project operation:

River Road/Fulton Road

AM Peak Hour LOS C-35.0 seconds vehicle delay
PM Peak Hour LOS D-40.4 seconds vehicle delay

River Road/Barnes Road

AM Peak Hour LOS D-47.8 seconds vehicle delay
PM Peak Hour LOS -D-41.0 seconds vehicle delay

Impact TR-17: Year 2014 Signalization Needs The unsignalized River Road/Barnes Road intersection would experience a significant impact in 2014 based upon peak hour signal warrant evaluation

Significance: Potentially significant

Discussion:

The following unsignalized intersection would meet signal warrants in the Base Case year even without the project. By adding additional traffic to this intersection, the project would contribute to a significant impact based upon peak hour signal warrant evaluation.

River Road/Barnes Road (Base Case AM & PM peak hour volumes would already meet Signal Warrant #3 criteria levels).

AM & PM PEAK HOURS

Base Case volumes already exceeding signal warrant criteria levels would be increased. Any increase in traffic would be considered a significant impact.

Mitigation Measure TR-17: Intersection Signalization Prior to occupancy, the project applicant shall enter into an agreement with the County to provide a fair share contribution to the following improvements when and if they are programmed and funded for construction:

Implement Mitigation Measure TR-2 for River Road/Barnes Road

Significance After Mitigation: Significant and unavoidable.

Signalization of this intersection is currently infeasible due to lack of sufficient right-of-way and the required relocation of existing PG&E towers. In addition, this improvement is not programmed by the County for construction or funded. No additional feasible mitigation measures to improve operations at this intersection have been identified.

Should this improvement ultimately be made and the signal interconnected with operation of the planned signal at the River Road/U.S.101 Southbound Ramps intersection, the applicant would be required to provide a fair share contribution, and the impact would be reduced to less than significant, with the following resultant base case + project operation:

<i>AM Peak Hour</i>	LOS D-47.8 seconds vehicle delay
<i>PM Peak Hour</i>	LOS D-41.0 seconds vehicle delay

Impact TR-18: Year 2014 95th Percentile Vehicle Queuing Numerous intersections would experience significant impacts to 95th percentile queuing due to the addition of project traffic

Significance: Potentially significant

Discussion:

The following intersections would experience unacceptable 95th percentile queuing in the Base Case year even without the project. By adding additional traffic to these intersections, the project would contribute to these significant queuing impacts (see **Table 3.15-27**). Any increase in queuing with unacceptable Base Case operations would be considered a significant impact.

River Road/Fulton Road (signal)

AM PEAK HOUR

River Road westbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 209 up to 229 feet with 150 feet of storage).

Fulton Road southbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 304 up to 308 feet with 75 feet of storage).

Fulton Road northbound approach through movement: Base Case 95th percentile queue already exceeding available storage would be increased (from 905 up to 924 feet with 265 feet of storage).

**Table 3.15-27. 95th Percentile Queuing
Year 2014 Base Case + Project Phase III Volumes**

2014 With Project Phase III			Northbound			Southbound			Eastbound			Westbound		
Node	Intersection		L	T	R	L	T	R	L	T	R	L	T	R
4	River Road/ US 101 SB	AM	--	--	--	461	--	211	--	648	--	--	405	--
		PM	--	--	--	390	--	234	--	366	--	--	681	--
		Avail	--	--	--	975	--	150	--	475	--	--	400	--
9	Mark West Springs Rd./ Old Redwood Highway	AM	403	251	274	524	527	508	257	434	570	421	439	293
		PM	306	302	234	427	354	362	250	334	267	195	401	219
		Avail	200	1,000	50	975*	700	100	300	500	360	225	1,400	50
10	Mark West Springs Rd./ US 101 NB	AM	343	--	537	--	--	--	--	469	--	--	377	--
		PM	546	--	563	--	--	--	--	194	--	--	499	--
		Avail	415	--	900	--	--	--	--	1,250	--	--	860	--
45	River Rd./ Fulton Road	AM	273	924	188	308	801	114	197	798	34	229	385	48
		PM	137	1,276	208	190	1,308	89	268	1,105	391	499	504	47
		Avail	100	265	100	75	2,735	1,000	620*	1,320	--	150	1,000	--
46	River Rd./ Barnes Rd.	AM	213	-	357	--	--	-	-	--	--	24	--	--
		PM	200	-	105	--	--	-	--	--	--	13	--	--
		Avail	>1000	--	--	--	--	--	--	--	--	75	--	--
50	Mark West Springs Rd./ Lavell Rd.	AM	--	--	--	52	--	98	21	--	--	--	--	--
		PM	--	--	--	150	--	86	100	--	--	--	--	--
		Avail	--	--	--	60	--	--	110	--	--	--	--	--
51	Mark West Springs Rd./ WFC Main Entry	AM	192	-	83	--	--	--	--	504	315	180	348	--
		PM	291	--	100	--	--	--	--	475	162	130	498	--
		Avail	575	--	>1000	--	--	--	--	860	--	200	700	--

Note: Queue lengths are in feet per lane, and assume improvements documented in traffic report (such as lane additions).

* Left-turn storage extends into two-way left-turn lane provided for mid-block private driveways

Source: Dowling Associates

Fulton Road northbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 148 up to 188 feet with 100 feet of available storage).

Fulton Road northbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 269 up to 273 feet with 100 feet of available storage).

PM PEAK HOUR

River Road westbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 415 up to 499 feet with 150 feet of storage).

Fulton Road northbound approach through movement: Base Case 95th percentile queue already exceeding available storage would be increased (from 1,221 up to 1,276 feet with 265 feet of storage)..

Fulton Road northbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 176 up to 208 feet with 100 feet of storage).

River Road/US 101 Southbound Ramps (signal)

AM PEAK HOUR

River Road westbound approach through traffic: Base Case 95th percentile queue would be extended past the entrance to the southbound freeway loop on-ramp (from 376 up to 405 feet with 400 feet of storage).

River Road eastbound approach through traffic: Base Case 95th percentile queue would be extended past the Barnes Road intersection (from 565 up to 648 feet with 475 feet of storage).

PM PEAK HOUR

River Road westbound approach through traffic: Base Case 95th percentile queue already exceeding available storage would be increased (from 586 up to 681 feet with 400 feet of storage).

Mark West Springs Road/Old Redwood Highway (signal)

AM PEAK HOUR

Old Redwood Highway northbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 338 up to 403 feet with 200 feet of available storage).

Old Redwood Highway southbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 445 up to 508 feet with 100 feet of available storage).

Mark West Springs Road westbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 399 up to 421 feet with 225 feet of available storage).

Mark West Springs Road westbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 287 up to 293 feet with 50 feet of available storage).

Mark West Springs Road eastbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 527 up to 570 feet with 360 feet of available storage).

PM PEAK HOUR

Old Redwood Highway northbound approach left turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 279 up to 306 feet with 200 feet of available storage).

Old Redwood Highway northbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 233 up to 234 feet with 50 feet of available storage).

Old Redwood Highway southbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 337 up to 362 feet with 100 feet of available storage).

Mark West Springs Road westbound approach right turn: Base Case 95th percentile queue already exceeding available storage would be increased (from 218 up to 219 feet with 50 feet of available storage).

Mark West Springs Road/Lavell Road (Lavell Road stop sign controlled approach)

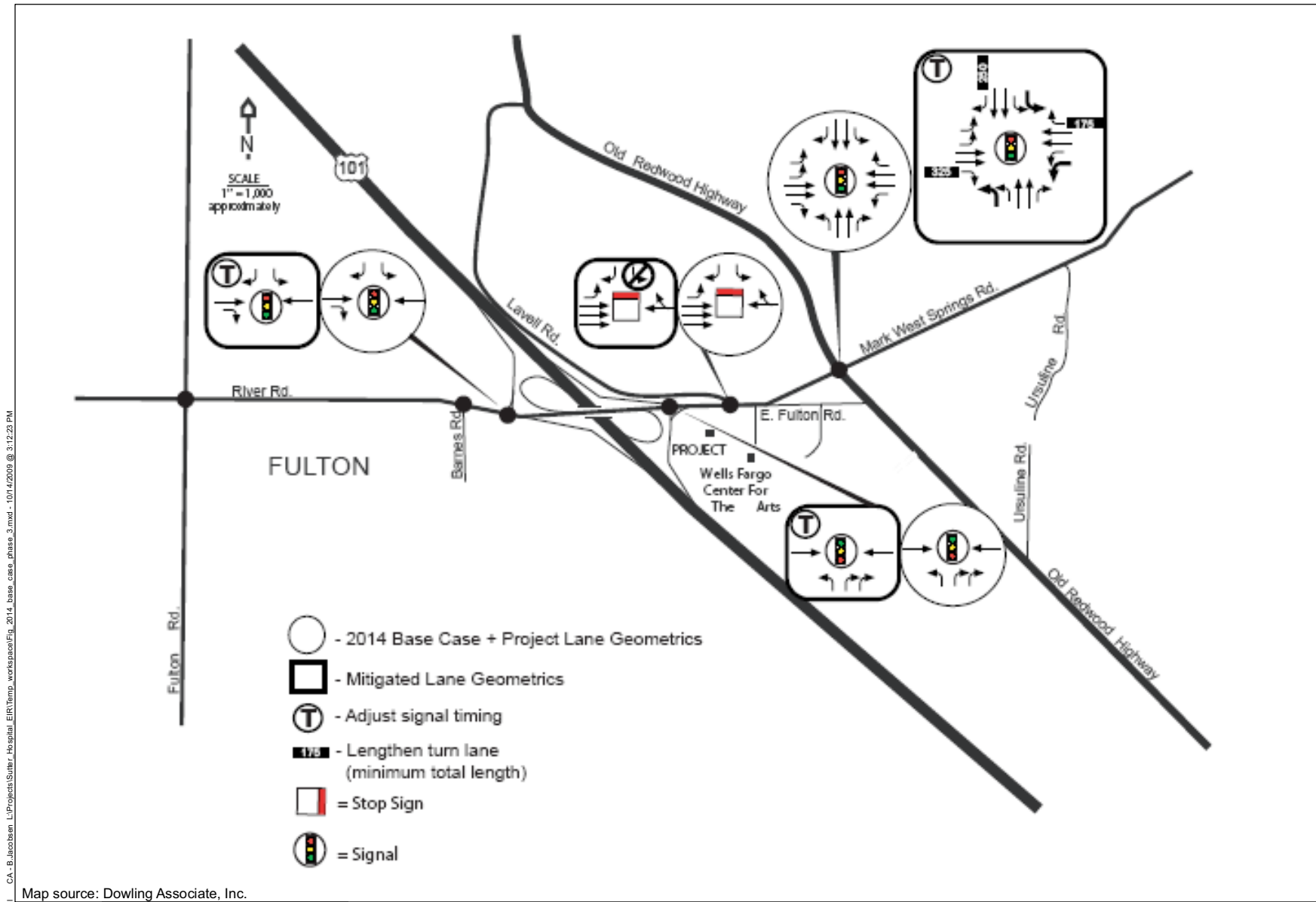
PM PEAK HOUR

Lavell Road southbound approach left turn: The 95th percentile Base Case queue already exceeding available storage would be increased (from 111 up to 150 feet with 60 feet of available storage). Any increase in queuing with unacceptable Base Case operation would be considered a significant impact.

Mark West Springs Road//Project Main Entry & Mark West Springs Road/US 101 Northbound Off-Ramp – Maximum Inbound Flow to Major Evening Events at Wells Fargo Center (with Main Entry Road signed for 4 inbound lanes and 1 outbound lane)

Proposed improvements would preclude backups of northbound off-ramp traffic to the US 101 freeway mainline. Backups on the Mark West Springs Road eastbound approach to the northbound off-ramp intersection would potentially extend partway across the freeway overpass.

Mitigation Measure TR-18: Intersection Improvements for 95th Percentile Vehicle Queuing Prior to occupancy, the project applicant shall:
Implement Mitigation Measure TR-3 (see **Figure 3.15-20**).



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	Sutter/LBMF Joint Master Plan	Figure 3.15.20 Year 2014 Base Case + Project Phase III Mitigated Lane Geometrics and Intersection Control
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Significance After Mitigation: All impacts remain significant and unavoidable at the River Road/Fulton Road intersection, while some remain significant and unavoidable at the Mark West Springs Road/Old Redwood Highway intersection. Impacts at the River Road/U.S.101 Southbound Ramps intersection would be less than significant. Implementation of the improvements identified in TR-3A would result in acceptable levels of service and queuing at the following intersections, reducing impacts to less than significant:

River Road/US 101 Southbound Ramps

Resultant Base Case + Project Level of Service:

AM Peak Hour LOS B-10.5 seconds control delay

PM Peak Hour LOS B-15.7 seconds control delay

Resultant Base Case + Project 95th Percentile Queues:

AM Peak Hour

River Road Westbound Through Lane: 261 feet with 400 feet of storage

River Road Eastbound Through Lane: 385 feet with 475 feet of storage

PM Peak Hour

River Road Westbound Through Lane: 393 feet with 400 feet of storage

Mark West Springs Road/Old Redwood Highway

Resultant Base Case + Project Level of Service:

AM Peak Hour LOS C-21.5 seconds control delay

PM Peak Hour LOS C-20.4 seconds control delay

Resultant Base Case + Project 95th Percentile Queues:

AM Peak Hour

Old Redwood Highway Northbound Left Turn: 155 feet with 200 feet of storage

Mark West Springs Road Westbound Left Turn: 155 feet with 225 feet of storage

PM Peak Hour

Old Redwood Highway Northbound Left Turn: 129 feet with 200 feet of storage

Implementation of the improvements identified in TR-3B for River Road/Fulton Road is currently infeasible due to lack of right-of-way and required removal of existing structures. In addition, there is insufficient right-of-way to lengthen the Old Redwood Highway Northbound Right Turn Lane at Mark West Springs Road from 50 feet to 175 feet. Furthermore, these improvements are not programmed by the County for construction or funded. No additional feasible mitigation measures to improve operations at these intersections have been identified.

Should these improvements ultimately be made at the River Road/Fulton Road intersection and the Old Redwood Highway northbound right turn lane at Mark West Springs Road lengthened, the applicant would be required to provide a fair share contribution towards these measures, and the impacts would be reduced to less than significant (with the exception of the Fulton Road northbound through movement), as follows:

River Road/Fulton Road:

Resultant Base Case + Project Operation:

AM Peak Hour LOS D-37.8 seconds vehicle delay

PM Peak Hour LOS C-33.2 seconds vehicle delay

Resultant Base Case + Project 95th Percentile Queues that are Mitigated:

AM Peak Hour

River Road Westbound Left Turn: 51 feet with at least 150 feet of storage/lane

Fulton Road Northbound Right Turn: Right turn becomes movement from through lane

PM Peak Hour

River Road Westbound Left Turn: 146 feet with at least 150 feet of storage/lane

Fulton Road Northbound Left Turn: 86 feet with at least 100 feet of storage/lane

Fulton Road Northbound Right Turn: Right turn becomes movement from through lane

Fulton Road Southbound Right Turn: Right turn becomes movement from through lane

(Fulton Road northbound through movement cannot be reduced to 265 feet [the distance between the intersection and an at grade railroad crossing]. Mitigated queue lengths would be 421 feet/lane during the AM peak hour and 680 feet/lane during the PM peak hour.)

There are no feasible measures to eliminate unacceptable queuing operation of the Mark West Springs Road/Lavell Road intersection (Lavell Road approach stop sign controlled left turn movement. However, prohibition of the left turn movement from Lavell Road identified in TR-3A would improve operations and safety at this intersection.

Impact TR-19: Year 2014 Arterial Operation No arterial segments would experience significant impacts.

Significance: Less than significant

Discussion:

No arterial segments would experience significant impacts due to project traffic (see **Table 3.15-28**).

Mitigation: No mitigation required

Impact TR-20: Year 2014 Freeway Operation Two freeway segments would experience significant impacts in 2014 due to project traffic

Significance: Potentially significant

Discussion:

The following freeway segments would experience unacceptable levels of service in the Base Case year even without the project. By adding additional traffic to these freeway segments, the project would contribute marginally to this significant impact due to project traffic (see **Table 3.15-29**). It should be noted that these findings are extremely conservative in the assumption that all Sutter traffic is newly added to the US 101 freeway. In reality, employees, patients and visitors now using the US 101 freeway to access the existing Sutter campus will continue to use the freeway to access the new hospital.

US 101 Freeway North of River Road-Mark West Springs Road Interchange

AM PEAK HOUR

Southbound: V/C ratio would be increased by .01 (from .74 to .75) with unacceptable Base Case LOS D operation.

US 101 Freeway South of River Road-Mark West Springs Road Interchange

AM PEAK HOUR

Northbound: V/C ratio would be increased by .02 (from .71 to .73) with unacceptable Base Case LOS D operation.

Southbound: V/C ratio would be increased by .01 (from .86 to .87) with unacceptable Base Case LOS D operation.

PM PEAK HOUR

Northbound: V/C ratio would be increased by .01 (from .72 to .73) with unacceptable Base Case LOS D operation.

Southbound: V/C ratio would be increased by .03 (from .81 to .84) with unacceptable Base Case LOS D operation.

Mitigation Measure TR-20: Year 2014 Freeway Operation There are no feasible mitigation measures to reduce this impact

Significance After Mitigation: Significant and unavoidable

Table 3.15-28. Year 2014 Base Case and Base Case + Project Phase III Arterial LOS Analysis Results With Interim Mitigations for “With Project” Conditions

Level of service – rounded speed in mph

Arterial Route and Direction	No Project		With Project Phase III	
	AM	PM	AM	PM
River Rd.-Mark West Springs Rd. EB	C-22.9	C-24.0	C-22.1	D-19.5
River Rd.-Mark West Springs Rd. WB	C-23.8	C-23.9	C-24.5	C-23.0
Mendocino-ORH NB	B- 32.1	B- 32.5	B-32.2	B-32.4
Mendocino-ORH SB	C- 22.8	C- 25.4	C-22.6	C-25.2

Source: Dowling Associates/Crane Transportation Group

Table 3.15-29. Year 2014 Base Case + Project Phase III Freeway Level of Service – Mixed Flow Lanes, With Freeway Widening Now Under Construction

Location	Direction	Volume (mixed flow lanes)	Capacity	V/c ratio	LOS
Between River Road ramps and Airport/Fulton Rd. ramps	NB	3,284 AM	4,700	.70	C
		3,256 PM		.69	C
	SB	3,522 AM	4,700	.75	D
		3,876 PM		.82	D
Between Mendocino/Hopper ramps and River Road ramps	NB	3,448 AM	4,700	.73	D
		3,432 PM		.73	D
	SB	4,096 AM	4,700	.87	D
		3,965 PM		.84	D

Note:

this table does not include HOV volumes, HOV lanes are expected to operate at LOS C or better. Volumes include project traffic from Phase II medical center (MOB and hospitals).

Source: Dowling Associates

Impact TR-21: Cumulative Traffic and Transportation Impacts Implementation of the proposed project could result in a considerable contribution to significant cumulative traffic and transportation impacts.

Significance: Potentially significant

Discussion:

The analyses of base case plus project in the near-term (2014) and long-term (2035) horizon years are by their nature cumulative analyses. In addition to the analysis of base case plus project in the two horizon years, the impacts associated with full project buildout are included in impact discussions for Impacts TR-16 through TR-20.

Mitigation Measure TR-21: Implement Mitigation Measures TR-6 through TR-8 and TR-16 through TR-18. Implement Mitigation Measures TR-1 through TR-3, TR-6 through TR-8, and TR-16 through TR-18.

Significance After Mitigation Some impacts will remain significant and unavoidable. See impact discussions for Impacts TR-1 through TR-3, TR-6 through TR-10, and Impacts TR-16 through TR-20.

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:

Energy conservation implies a wise and efficient use of energy with several methods available to obtain this goal such as: decreasing overall per capita energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy resources. In accordance with Appendix F, Energy Conservation, of the CEQA Guidelines, potentially significant energy implications of a project should be considered in an EIR. Impacts may include:

- Project life cycle energy consumption
- Effects of the project on local and regional energy supplies
- Effects of the project on peak and base period energy demand
- The degree to which the project complies with existing energy standards
- Effects of the project on energy resources
- The project's transportation energy use requirements and its overall use of efficient transportation alternatives

4.1 ENVIRONMENTAL SETTING

This section discusses the current state of energy use in California and Sonoma County.

4.1.1 Energy Use

Pacific Gas & Electric (PG&E) is the local provider of both natural gas and electricity to the project site. The project site currently has 12 kilovolt (kV) overhead electrical lines as well as a 3-inch natural gas line. 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 imports both natural gas and electricity from the western states and Canada (CEC 2009a).

Total energy use statewide was estimated to be 8,420.4 trillion British thermal units (BTU) in 2006. BTU describes not only electrical energy but other energy uses such as heating with natural gas and transportation with petroleum products. The majority of this energy consumption is in the form of petroleum products, which account for 47 percent of total statewide energy use. Motor vehicles consume 57 percent of all petroleum. Only a small amount of both the petroleum and natural gas used in the state is produced locally, necessitating California to be a significant importer of fuels. **Table 4-1** shows where California obtains its petroleum and natural gas.

Table 4-1. Sources of Fuel

Location	Petroleum	Natural Gas
In State	38.1%	12.9%
Foreign	48.5%	NA
Alaska	13.4%	NA
Southwest	NA	40.8%
Canada	NA	22.1%
Rocky Mountains	NA	24.2%
Total	100%	100%

Source: CEC 2009a

Electricity used in the state comes from a number of sources. Natural gas power plants are the largest source of electricity in California; however, renewable energy sources make up a significant portion of the state's energy portfolio. Based on a 2009 report compiled by the CEC, California uses approximately 285,070 Gigawatt hours of electricity. **Table 4-2** shows the breakdown of electricity production by type.

Table 4-2. Electricity Production by Type

Natural Gas	46.5%
Coal	15.5%
Hydroelectric	13.1%
Nuclear	14.9%
Geothermal	5.1%
Biomass	2.2%
Solar/Wind	2.7%
Total	100.0%

Source: CEC 2009a

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 but would be higher for hospitals since they are in continuous use.

The electrical grid within California is a complex grid that combines the local generation with power produced as far away as Canada. In 2001 the energy demand at the peak was higher than that available and rolling blackouts were instituted throughout the state. Since that time new local power sources have come on line and improvements to the statewide energy grid have been

constructed to prevent future blackouts. The demand for energy varies by sector. Of the end use sectors, transportation was the largest user of energy, accounting for 40 percent of all energy use. The remaining end use sectors, industrial, commercial and residential, all used a similar amount of electricity (23, 19, and 18 percent, respectively). Demand for electricity and natural gas in Sonoma County also varies by end users. **Table 4-3** shows the total amount demanded by each sector in the county.

Table 4-3. Sonoma County Electricity and Natural Gas Consumption 2007

User	Electricity	Natural Gas
Residential Users	1,264 Million kWh	37.27 Million Therms
Non-Residential Users	1,583 Million kWh	76.15 Million Therms
Total	2,847 Million kWh	113.42 Million Therms

Source: CEC 2009b

4.2 REGULATORY SETTING

This section describes the applicable regulatory environment within both California and Sonoma County. The project is either required or advised to comply with the following regulatory standards and programs.

California Environmental Quality Act

Appendix F of the CEQA Guidelines describes the energy conservation information and analyses that should be included in an EIR. Energy conservation is defined in terms of decreased reliance on natural gas and oil, decreased per capita energy consumption and increased reliance on renewable energy sources. An EIR should include a discussion of potentially significant energy impacts of the proposed project, with emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

California Energy Commission (CEC)

The CEC implements a number of programs that are designed to increase the efficiency of statewide energy utilization. With regard to electricity, the CEC has been actively funding local electricity efficiency-improvement and demand-side management programs for many years. Recent efforts have included funding to support the installation of more energy-efficient lighting in public buildings and schools as well as implementation of energy-efficiency standards for new buildings. These programs are expected to continue to reduce the rate of demand growth. As technology improves and equipment becomes more energy efficient, Sutter may be able to use Commission funds to update their buildings to incorporate the most energy efficient equipment, further decreasing their energy demand.

California Energy Action Plan

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.¹

California Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24 Building Standards)

The energy efficiency standards section of Title 24 of the California Code of Regulations Building Standards was created in response to a legislative mandate to reduce energy consumption. The Title 24 standards are intended to reduce energy bills, increase reliability of the energy delivery system and to help improve the economic conditions of the state as a whole. By creating more energy efficient buildings, fewer power generation facilities have to be constructed and as a result consumers receive savings, the energy grid can be updated to be more reliable and the economy as a whole sees the benefits of energy conservation. The CEC adopted the 2005 Standards on November 5, 2003, and the Building Standards Commission adopted them on July 21, 2004.

Leadership in Energy and Environmental Design (LEED)

LEED is an internationally recognized green building certification system, developed by the [U.S. Green Building Council \(USGBC\)](#), providing third-party verification that a building or community was designed and built using strategies aimed at improving performance across multiple energy efficiency metrics (<http://www.usgbc.org/Default.aspx>).

The metrics where LEED prioritizes its focus are: site location, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, innovation in design, and regional priority. Points are awarded to buildings that meet certain criteria in each category. Out of a 110 total possible points, 40 points merits certification, 50 points merits silver certification, 60 points merits gold certification, and 80 points merits platinum certification. (U.S. Green Building Council, 2009).

Sonoma County General Plan 2020

Within the General Plan, the county set several goals, objectives and policies related to energy conservation and efficiency. The following objectives and policies are the most relevant to the project:

¹ California Energy Commission's website. http://www.energy.ca.gov/energy_action_plan/index.html, 2008.

- **Goal OSCR-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.
- **Objective OSRC-14.2:** Encourage County residents and businesses to increase energy conservation and improve energy efficiency.
- **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 LEED standards for new development.

4.3 IMPACT ANALYSIS

This section describes the energy required to construct the project as well as the energy needs of the project when fully operational. For purposes of a worst case analysis, it is assumed that the project involves construction of a 162,000-square-foot Sutter Medical Center (i.e., assuming full buildout through Phase III), a 100,000-square-foot Physicians Medical Center, an 80,000-square-foot Medical Office Building, and an 11,500-square-foot Central Utility Plant.

4.3.1 Thresholds of Significance

For purposes of this analysis the project would have a significant impact regarding energy use if:

- The project would result in wasteful, inefficient and unnecessary usage of energy as identified by CEQA Section 21100(b)(3) and CEQA Guidelines Section 15126(a)(1); or
- The project would require a substantial increase in demand or transmission services which would require the construction of new or expanded energy production and supply facilities.

4.3.2 Impacts and Mitigation

4.3.2.1 Construction Energy Use

Most of the energy used during construction would be in the form of gasoline and diesel powered construction and transportation equipment, including trucks, bulldozers, cranes, and possibly pile drivers. Other equipment includes construction lighting, field services (trailers), and electrically driven equipment such as pumps and other tools. Secondary energy users, which produce the construction material required to build the project, also represent a portion of the construction energy demand.

Two alternative methods of building foundation preparation are being considered for the proposed project; soil surcharging and pile driving. Soil surcharging would require importation

of 100,000 cubic yards of fill to the site requiring approximately 9,000 total truck loads (round trips). There may also be the need in 2013/2014 to export about 30,000 cubic yards of fill from the site, 2,700 total truck loads (round trips). Even using the pile driving method, construction of the project would still require approximately 6,700 truck loads (round trips) of soil to be imported to the site for site grading. In addition, this method of construction would require energy consumption associated with driving approximately 700 piles approximately 45 feet below ground surface.

Construction of the proposed project would use electricity and gas as a short-term consequence (up to 48 months) of construction of the project. Construction of the proposed project would be similar in the consumption level of electricity and gas to any project of this size. Energy consumption associated with construction activities is not anticipated to result in local energy demand exceeding the capacity of PG&E and gasoline/diesel fuel suppliers.

Construction activities are not anticipated to result in an inefficient use of energy, as construction contractors would purchase their own gasoline and diesel fuel from local suppliers and would conserve the use of their supplies to minimize costs to the project. In addition, mitigation measures stipulated in Section 3.4, Air Quality, to reduce construction-related emissions, such as minimizing idling time, using local sources for fill material, maintaining properly tuned and serviced equipment would also help minimize construction-related energy use.

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.

For the above reasons and because of the temporary nature of construction activities, this effect would be a less than significant impact.

4.3.2.2 Operational Energy Use

Based on worst case estimates from the applicant's mechanical engineers (Sutter Energy Conservation Report, March 2009), the three facilities that will be power consumers will use a combined 6,520,577 kilowatt hours per year (kWh/yr) at full buildout.

Although operation of the proposed project would result in the consumption of large quantities of energy (typical for a project of this type and size), several aspects of the project would help manage the amount and efficiency of energy consumption and would ensure that energy consumption is not inefficient, wasteful, or unnecessary, or place a significant demand on regional energy supplies. Consistent with Title 24 building standards, a number of energy reduction and efficiency measures are being incorporated into the project to reduce energy consumption. In addition, all facilities are proposed to be LEED certified and as a result would use many of the best energy reduction and efficiency measures available. See Section 4.4.2 below for a discussion of measures proposed to be incorporated into the project.

With compliance with Title 24 building standards and the incorporation of LEED-certified energy reduction and conservation methods into facility design increases in energy demand associated with the new medical facilities would not represent a wasteful use of energy. The new hospital building and Physicians Medical Center will replace the existing, less energy-efficient medical facilities on Chanate Road. While the buildings on Chanate will likely be occupied by other uses, the new uses are unlikely to involve 24-hour-a-day operations like the existing hospital use, and therefore would likely consume less energy. .

The project would meet all the relevant General Plan energy conservation policies (Section 4.2.2) and would help Sonoma County meet its desired energy conservation goals and objectives.

4.3.2.3 Operational Impact on Energy Supplies

In 2008 PG&E customers purchased 74,783 million kWh/yr of which 51,100 million kWh/yr needed to be purchased by PG&E from other utilities to meet demand (PG&E 2008). The new project represents an increase in the demand for electricity in Sonoma County. Sonoma County uses 2,847 million kWh/yr. The project is expected to require 6,521 thousand kWh/yr, or approximately 0.23 percent of all the electricity used in Sonoma County. This small increase would not represent a significant increase in the electricity usage within Sonoma County and it is within PG&E capabilities to provide it without additional infrastructure. PG&E has indicated it has adequate electricity to serve the proposed project. Therefore the project would not require the construction of additional electrical generation capacity.

Impacts to natural gas would be similar to that of electricity. The proposed project's natural gas usage is estimated to be approximately 109,337 therms per year. Natural gas usage in Sonoma County is approximately 113,400,000 therms per year. Therefore, the proposed project would use approximately 0.096 percent of the current Sonoma County natural gas use. This small increase in natural gas use by the proposed project will not represent a significant increase in the natural gas usage within the county.

4.3.2.4 Operational Impact on Peak and Base Demand for Electricity

Typically peak demand occurs when a large number of users concurrently demand such a large amount of electricity that it puts a strain on the electrical grid. The most common time for this to occur is during weekday afternoon hours during the summer when air conditioning units at both offices and homes are running.

The proposed project would increase the peak demand on the electrical grid by demanding more power at the same time as other users. However, compliance with Title 24 building standards, as well as the measures proposed by Sutter, including the LEED certification, would make the energy use by the hospital at peak periods an efficient use of energy. Further, the electrical generation and supply industry at the whole has responded to the energy issues encountered in 2000-2001 and has brought online many new generation facilities as well as developed a better delivery system. With these significant improvements the industry is more prepared now for peak demand increases than they were in 2000 and 2001.

4.3.2.5 Operational Transportation Energy Use

The new location is adjacent to US 101 and is a more easily accessible site for both transit and individuals than the current Chanate Road site. The current hospital on Chanate Road is located in a residential neighborhood several miles off the freeway. There are numerous stop lights and stop signs between the freeway exit and the hospital.

The proposed project site is near a freeway exit which will provide easier access for ambulances and other traffic approaching from US 101. The proposed project would construct an additional exit lane to be used by emergency vehicles only. The proposed project site would provide better access from fast-growing areas north of Santa Rosa. In addition, transit service to existing service areas would be maintained or improved. A review of the bus schedule for the Roseland area, a low income neighborhood of Santa Rosa, shows that a trip to the Sutter Chanate campus takes approximately 45 minutes. From the same location, a bus trip to Old Redwood Highway/Mark West Springs Road near the proposed project site takes approximately 34 minutes (Sonoma County Department of Health Services 2009). It is likely that transit lines and stops will be adjusted to improve service to the proposed project site if more bus riders want to go there.

One of the objectives of the proposed project is to locate on the same site facilities that link inpatient, outpatient, and physician office visits (see Section 2.1, Project Objectives). In terms of energy consumption related to vehicle use, the co-location of the medical services in the proposed project would focus the destination of vehicle trips and benefit fuel consumption. The proposed mix of medical services would encourage multipurpose trips and reduce fuel consumption by reducing the number of trips some people might otherwise make between different medical facilities.

Also, as discussed in Section 4.4.2 below, the Traffic Demand Management (TDM) plan proposed for the project includes numerous measures to reduce vehicle use and increase efficiencies by having fewer cars on the road.

Therefore, project operation would not result in a wasteful or inefficient use of transportation energy.

4.4 PROPOSED METHODS TO REDUCE ENERGY USE

Mandatory compliance with both state and county building and energy standards are required for the project before operations can begin. The energy reduction measures recommended and suggested in this EIR will help decrease energy use during both project construction and operation. Two of the energy reduction methods discussed below are mitigation measures to reduce air pollution impacts. The remaining energy reduction methods have been proposed by the project applicant as possible methods to be used to obtain LEED certification.

4.4.1 Air Quality Mitigation Measures Identified in this EIR

The following mitigation measures have already been discussed in the air quality Section 4.4. While these mitigation measures shall be implemented in order to minimize air quality impacts they also will assist in preventing inefficient energy usage and promote conservation of energy

resources. The following mitigation measures reduce both air quality impacts as well as reduce energy inefficiencies:

- **Mitigation AIR-1: Reduce Length of Haul Truck Trips, Restrict Idling**
 - a) Preference for material to be imported to the site should be given to sources closest to the project site;
 - b) Enforce state idling restrictions that apply to large trucks and construction equipment by posting clearly visible signs at the haul truck entrances that clearly state the restrictions (no idling for greater than 5 minutes at any location)
- **Mitigation AIR-2b: Include Measures to Reduce Criteria Pollutant Exhaust From Construction Equipment**
 - a) Properly tune and maintain equipment for low emissions.
- **Mitigation AIR-7: Develop project with the project design features and emissions reduction measures**

The project shall be developed with the project design features and emissions reduction measures set forth in Appendix C-6:

- a) Incorporate energy conservation measures, including Leadership in Energy and Environmental Design (LEED) or equivalent standards in the design and construction of the new campus. Such measures to be incorporated to the extent feasible include passive energy conservation designs, green roof designs, low flow and waterless fixtures, and low impact development practices. Participate in PG&E's Energy by Design program or the equivalent to optimize solar to the extent feasible (see **Section 4.4.2** for more details).
- b) Include measures to reduce vehicle trips and encourage transit, such as coordinating with Sonoma County Transit, providing bus stops adjacent to the hospital, providing priority parking for vanpools and carpools, and recharge stations or similar facilities for electric vehicles or other alternate fuel vehicles. Where feasible, use low emission of alternate fuel vehicles in the campus service fleet (see **Section 4.4.2** for more details).
- c) Provide sidewalks/pedestrian paths to encourage walking; provide bicycle parking, and develop off peak hour work shifts to the maximum extent feasible
- d) Reduce water usage and associated energy demands by maximizing use of on-site water (rainwater or grey water) where appropriate, utilizing high performance fixtures and equipment, and drip irrigation and high efficiency irrigation control on any new landscaping. (The project's wastewater offset program will also reduce water usage).
- e) Monitor the efforts of CARB and other state agencies charged with reducing the state's contribution to global climate change and implement any applicable strategies adopted through promulgated regulations.

4.4.2 Energy Reduction Methods

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. The energy reduction methods proposed by the project applicant are:

Daylighting of All Buildings 100,000 Square Feet 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 percent and 70 percent 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 Square Feet 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 All Buildings 100,000 Square Feet or Greater

Waste heat shall be captured in order to preheat water for uses requiring heated water, where feasible.

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 Square Feet 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.

Savings by Design

The project will participate in PG&E's Savings by Design program, which offers rebates and lower rates to building owners who purchase and design their buildings to be energy efficient. This cost savings will make it more economical for energy efficiency measures to be incorporated into the project.

Alternative Transportation Methods

The Traffic Demand Management (TDM) (Sutter Energy Conservation Report, March 2009) proposed for the project includes on-site bike and shower facilities, telecommuting, flexible schedules, off- and on-site paths and sidewalks, bikeways, priority for vanpools, carpools, recharge stations for electric vehicles (and possibly natural gas) and convenient public transit (including an upgraded bus stop adjacent to the site). All of these measures will help to reduce vehicle use and increase efficiencies by having fewer cars on the road.

4.5 CUMULATIVE IMPACTS

The EIR for the Sonoma County General Plan 2020 determined that energy use from development in the County would represent a significant cumulative increase in the demand for energy. Sonoma County uses 8,175 million kWh annually while the proposed project is expected to require 6,521 thousand kWh a year or roughly 0.23% of all the electricity used in Sonoma County. Similarly the proposed project would only require 0.096% of the current natural gas used within Sonoma County. These small increases would add incrementally to energy usage but would not represent a significant increase in the energy usage within Sonoma County, as the new hospital would replace an old, less efficient facility located at a greater distance from US 101. Further, the project's compliance with Title 24 building standards and incorporation of additional energy saving techniques during construction and operation would help ensure the project does not make a cumulatively considerable contribution to an increased energy demand.

Sections 15126 and 15130 of the CEQA Guidelines require that all aspects of a project be considered when evaluating its impact on the environment, including planning, acquisition, development and operation. As part of this analysis, the EIR must identify the following components:

- Growth-inducing impacts of the proposed project;
- Significant irreversible environmental effects that would be involved in the proposed project should it be implemented;
- Significant environmental effects that cannot be avoided if the proposed project is implemented.

This section also provides an analysis of the project’s potential to result in secondary environmental impacts related to an economic effect on other area hospitals, which is included in **Appendix O** n the Technical Appendices, Vol. 2 of this document.

Cumulative impacts are analyzed within each impact discussion in the environmental impacts section (Section 3.0). Cumulative impacts from greenhouse gas emissions are discussed in Section 3.4 Air Quality.

5.1 GROWTH INDUCEMENT

CEQA requires that an EIR discuss ways in which a proposed project could foster population growth or the construction of additional housing, either directly or indirectly, in the vicinity of the project and how that growth would then affect the surrounding environment (CEQA Guidelines 15126.2(d)). Growth can be induced in a number of ways, by eliminating obstacles to growth, or by stimulating economic activity within the region.

The project will replace Sutter’s existing medical facility on Chanate Road. In doing so, the project essentially relocates existing direct and support medical services, with limited potential for creating new jobs. Medical support businesses, as well as retail, and other goods and services that support the employees may also relocate to the project vicinity. These would have the potential to induce some growth through the jobs they create; however, any such growth would be limited by the Sonoma County General Plan 2020 and zoning, and thus would be consistent with General Plan growth predictions.

The proposed project includes two new wells owned and operated by Sutter Medical Center to serve the project only. These improvements would not serve the surrounding area beyond the boundaries of the project site, and therefore, not remove an obstacle to providing water and wastewater service to future development. The impact of the project on Growth Inducement would be less than significant.

5.2 IRREVERSIBLE IMPACTS

5.2.1 Significant Irreversible Changes to the Environment

CEQA requires that significant irreversible environmental changes caused by a plan must be addressed in an EIR. Specifically, the EIR must consider whether “uses of non-renewable

resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or non-use thereafter unlikely.” Nonrenewable resources, in this discussion, refer to the physical features of the natural environment, such as land, air, and waterways.

Construction and implementation of the proposed project would commit the proposed project site to the uses detailed in the project description, thereby limiting the range of other uses that could be implemented on that site in the foreseeable future.

Various natural resources, in the form of construction materials and energy resources, would be used in the construction of the project, but their use is not expected to result in significant long-term shortfalls in the availability of these resources. No new generation facilities would be required. Energy consumed by the project is not likely to contribute to intermittent statewide energy shortfalls.

The project is not expected to result in any activities likely to result in accidents that could lead to irreversible environmental damage.

5.2.2 Significant and Unavoidable Impacts

This section identifies project impacts that could not be eliminated or reduced to a less-than-significant level by mitigation measures that are part of the proposed project. The following significant and unavoidable impacts are described in detail in Chapter 3.0 Environmental Impacts Analysis:

- Temporary increase in criteria pollutants (NO_x and PM₁₀) from haul trucks bringing fill to the project site, resulting in exceedances of daily emissions thresholds (AIR-1 and cumulative)
- Long-term increase in criteria pollutant (NO_x) from annual testing of hospital emergency generator one day of the year, resulting in exceedance of daily emissions threshold (AIR-5 and cumulative)
- Increase in greenhouse gas emissions, contributing to the global inventory of greenhouse gas emissions and climate change (AIR-7)
- Temporary increase in noise levels at nearby sensitive receptors from construction (both with or without pile driving) (NOI-1a, NOI-1b)
- Exposure of sensitive off-site receptors to intermittent noise from helicopter operations (NOI-5)
- Cumulative noise impacts from project operations when added to other existing noise in the project vicinity (NOI-8)
- Worsening of unacceptable levels of service at some intersections in the vicinity of the project due to the addition of project traffic, both in the near-term (2014) and long-term (2035) (TR-1, TR-6, TR-16)
- Unsignalized River Road/Barnes Road intersection would experience a significant impact in 2014 and 2035 based upon peak hour signal warrant evaluation (TR-2, TR-7, TR-17)

- Worsening of significant 95th percentile queuing impacts at some intersections in the vicinity of the project due to the addition of project traffic, both in the near-term (2014) and long-term (2035) (TR-3, TR-8, TR-18)
- Increase in volume/capacity ratio on some segments of US 101 operating at unacceptable levels of service (TR-5, TR-10, TR-20)

5.3 POTENTIAL SECONDARY ENVIRONMENTAL EFFECTS

As set forth in the Project Description of this EIR, in addition to Sutter's 70-bed hospital, the proposed project includes a 29-bed potential expansion of the hospital and a 28-bed PMC. The Sonoma County Department of Health Services conducted a preliminary evaluation of Sutter's business plan and concluded that: "Sutter's planned construction of the PMC and the possible 29 bed expansion of the 70 bed hospital would likely provide adequate capacity to accommodate Sutter's current market share of patients during the term of the Health Care Access Agreement Absent construction of the PMC and expansion of the Sutter hospital to 99 beds, some patients who have gone to Sutter will likely need to seek care from other area hospitals." (Sonoma County Department of Health Services, *Preliminary Analysis of Sutter's 2008 Revised Business Plan*, at p. 30.) Comments have been raised suggesting that the Sutter project, including the potential redistribution of patients, may have an adverse economic effect on other Sonoma County hospitals.

Even if the PMC and the hospital expansion are not built and the 70-bed hospital lacked future capacity to handle its share of patients such that patients must be redirected to other hospitals, it is unclear that there would be an adverse economic impact on the other hospitals. To the extent these patients are insured and the hospital has capacity to receive them, the effect on the other hospital(s) would likely be beneficial rather than adverse. If the patients were uninsured or underinsured and the economic impact on the other hospital(s) were negative, it remains unclear that there would be a significant secondary environmental impact as a result. Presumably, with the redistribution of patients (whether insured or not) there would be a corresponding shift in traffic from Sutter to one of the five other hospitals in the County, but the extent to which a particular hospital would be affected is uncertain.

CEQA addresses physical changes in the environment, and economic and social effects are not, in themselves, significant effects on the environment (CEQA Guidelines, §§ 15064(e), 15131, 15382; *Friends of Davis v. City of Davis* (2000) 83 Cal.App.4th 1004, 1019). Social and economic effects need only be considered to the extent they are relevant to an adverse physical change in the environment or likely to result in such an adverse physical change. (CEQA Guidelines, § 15064(e); *Friends of Davis, supra*, at p. 1020.) An indirect physical change may be considered only if it is reasonably likely to occur; a change which is speculative or unlikely to occur is not reasonably foreseeable (CEQA Guidelines, § 15064(d)(3); *Friends of Davis, supra*, at p. 1020.).

According to the County's *Preliminary Analysis of Sutter's 2008 Revised Business Plan*, the construction of the full hospital complex would provide adequate capacity to accommodate Sutter's current market share of patients. A potential redistribution of some patients among the five hospitals in the County could occur if Sutter proceeds with only the 70-bed hospital

component of the proposed project; however, any such redistribution would not result in an actual and reasonably foreseeable adverse physical change in the environment.

Sutter prepared an analysis of this issue, which is included in this EIR as Appendix O. In that analysis, Sutter concludes that any potential diversion of patients to other hospitals will be minimal, and that the payer mix of patients (the mix between insured and uninsured patients) is not expected to differ substantially from the current payer mix at other Sonoma County hospitals. Based on the Sutter analysis and the County's *Preliminary Analysis*, there is no reasonably foreseeable adverse physical change in the environment as a result of a potential redistribution of patients among the five hospitals in the County. Thus, no significant secondary environmental impacts resulting from the economic effect of the proposed new hospital on other hospitals are expected to occur.

CEQA requires an EIR to describe and evaluate a range of reasonable alternatives to the proposed project or alternatives to the location of the proposed project. The purpose of the alternatives analysis is to explore ways that the objectives of the proposed project could be attained while reducing or avoiding significant environmental impacts of the project as proposed. This process is intended to foster informed decision-making and public participation in the environmental process.

6.1 PROJECT OBJECTIVES

Alternatives considered in the EIR should feasibly attain most of the basic project objectives. Objectives of the proposed project have been discussed prior in Section 2.1, and are repeated here for ease of reference.

1. To provide a new Sutter Medical Center of Santa Rosa (“Sutter Medical Center”) hospital and Medical Campus in Sonoma County that promotes new, accessible and innovative health care models and that complies with the requirements of the Hospital Facilities Seismic Safety Act (including Senate Bill 1953 and Senate Bill 1661, and the statutory requirements for submission of building plans to the Office of Statewide Health Planning and Development by January 1, 2009 and commencement of construction by January 1, 2011). This level of health care will be made available to Sonoma County residents by incorporating advanced technologies available for diagnosis and treatment in a new, modern hospital through an integrated Medical Campus that supports the continuous delivery of high quality, cost effective healthcare services.
2. To develop the Medical Campus in a manner that realizes the benefits to health care delivery that can be achieved through the location, on the same site, of facilities that link inpatient, outpatient and physician office visits and connect those services using the most modern and efficient layout for an operationally efficient and cohesive campus that supports an integrated model of health care delivery, promotes functional relationships among departments, services and programs, and provides functional circulation within the inpatient and outpatient spaces, placement of seating areas, outdoor terraces, and other patient and visitor amenities.
3. To promote the interaction of the Medical Campus and the Wells Fargo Center for the Arts in a synergistic manner that incorporates the fine arts as part of the healing process at the Medical Campus. The provision of an integrated Medical Campus and the interaction between that Medical Campus and the Wells Fargo Center are fundamental to attracting physicians and other medical professionals, as well as attracting patients to the Medical Campus.
4. To ensure that the Sutter Medical Center is constructed in a manner that honors the Health Care Access Agreement with Sonoma County, while achieving a level of development intensity that will allow the Medical Campus to be developed in a cost-effective manner.
5. To provide a Medical Campus that is easily accessed by persons living within the primary service area of the Sutter Medical Center.

6. To the extent consistent with the fundamental objective of providing integrated delivery of high quality health care services, to construct a Medical Campus that meets the Sutter Health Facility Planning and Development Building Design Policy for Sustainability with respect to site selection, water efficiency and conservation, energy efficiency, material and resource efficiency and environmental air quality. The proposed Medical Campus will strive to meet these policies by employing “green” and sustainable design and construction practices to achieve goals including maximizing green space, employing energy efficient hospital design, stressing water conservation and implementing a construction waste management and recycling plan for all construction components. Sutter will seek to partner with public and private service providers such as PG&E to achieve these sustainability goals.
7. To provide a Medical Campus linked to the LBMF in a manner that provides a simple, clear and elegant set of buildings linked by meditative paths, bioswales, outdoor gardens, courtyards and open space that promotes a sense of well-being and healing through a dignified and forward-thinking building plan that will be an inviting and positive healing environment for patients, families, visitors, staff and all that come in contact with the Medical Campus.
8. To allow for uninterrupted operation of medical services currently provided at Sutter’s Chanate campus and maintain continuity of care.
9. To develop the Medical Campus at a location close to US 101 so as to provide direct access for ambulances from the highway to the emergency entrance, to provide good visibility from the highway to facilitate emergency, physician, patient and visitor access, and to minimize noise and safety impacts of helicopter access by allowing helicopters to approach the hospital over the highway.
10. To provide a Medical Campus in Sonoma County on property owned by or available to Sutter, which includes:
 - A. Sutter Medical Center that complies with the Hospital Facilities Seismic Safety Act and the existing Health Care Access Agreement between Sutter and the County of Sonoma, providing inpatient services including obstetrics, a Level III neonatal intensive care unit, intensive care, emergency services, medical/surgical and diagnostic services, supporting ancillary services, and a full range of women’s reproductive health services.
 - B. A Central Utilities Plant to service the Medical Campus that meets the requirements of the Hospital Facilities Seismic Safety Act.
 - C. A Physicians Medical Center that will comply with the Hospital Facilities Seismic Safety Act and provide 24 hour inpatient care, including medical, nursing, surgical, intensive care, anesthesia, laboratory, radiology, and pharmacy services.
 - D. A visually unobtrusive helistop that meets the functional needs of the Medical Center, with controlled access to ensure public safety during helicopter landing and take-off, which complies with all applicable regulatory and life safety requirements for helistops and helicopter travel, including, but not limited to, Federal Aviation

- Administration and Caltrans Division of Aeronautics requirements for flight path obstruction clearance, and which minimizes noise impacts to sensitive receptors.
- E. A Medical Office Building that can accommodate physicians affiliated with Sutter Medical Foundation North Bay, as well as independent physicians, and provide supplemental hospital services to support the Sutter Medical Center and Physicians Medical Center.
11. To further the LBMF's nonprofit mission to enrich, educate, and entertain the community through the arts through accessible and outstanding presentation of fine arts and entertainment performances, contemporary art exhibitions, family and education programs and facility-based services.
12. To revise LBMF's existing Use Permit to allow for certain single-day community events on the East Lawn and certain outdoor sales events on the South Lawn in compliance with the County's General Plan sound limits and County and State permit requirements.

6.2 RANGE OF ALTERNATIVES CONSIDERED

The range of alternatives studied in the EIR must be broad enough to permit a reasoned choice by decision-makers when considering the merits of the project. The analysis should focus on alternatives that are potentially feasible—i.e., that may be accomplished successfully within a reasonable period of time, taking into account economic, environmental, social and technological factors. Among the factors that may be taken into account in considering feasibility are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire or control the site. (See CEQA Guidelines, § 15126.6(f)(1).)

Furthermore, the alternatives analyzed for a project should focus on reducing or avoiding significant environmental impacts associated with the project as proposed. Implementation of the proposed project would result in potentially significant environmental impacts including introduction of a new source of nighttime light, impacts to air quality, loss of wetlands and native trees, potential effects from expansive soils, effects on groundwater supplies, noise impacts from construction and operation, need for additional wastewater treatment capacity and new water supply. Most potentially significant impacts of the project can be reduced to less-than-significant levels through incorporation of mitigation measures. However, the project would have residual significant and unavoidable impacts on (1) air quality associated with construction truck traffic, (2) noise from helicopter operations and (3) traffic and circulation. Accordingly, an alternative's potential to avoid or reduce these significant project impacts was considered in narrowing the list of alternatives to be analyzed in this Draft EIR.

6.2.1 Screening Criteria

This section describes the criteria that were used in determining whether or not a project alternative or alternate location should be studied in this Draft EIR. Criteria were based upon factors set forth in CEQA and in the CEQA guidelines.

CEQA Guidance

CEQA requires that an EIR compare the effects of a “reasonable range of alternative” to the effects of the project. The alternatives selected for comparison should be those that would attain most of the basic objectives of the project and avoid or substantially lessen one or more significant effects of the project (CEQA Guidelines § 15126.6). The range of alternatives to be compared is governed by a “rule of reason” which requires the EIR to set forth only those alternatives necessary to permit an informed and reasoned choice by the decision-making body and informed public participation (CEQA Guideline § 15126.6(f)). CEQA generally defines “feasible” to mean an alternative that is capable of being accomplished in a successful manner within a reasonable period of time, while also taking into account economic, environmental, social, technological, and legal factors. Based upon the CEQA statutory and Guideline provisions governing the reasonable range of alternatives to be evaluated in an EIR, the following factors could be considered by the County in evaluating the potential alternative and determining which alternatives should be evaluated in the EIR:

- The extent to which the alternative would accomplish most of the basic objectives of the proposed project
- The extent to which the alternative would avoid or lessen any of the identified potentially significant environmental effects of the proposed project
- The feasibility of the alternative, taking into account site suitability, availability of infrastructure, property control (ownership), and consistency with applicable plans and regulatory limitations
- The extent to which an alternative contributes to a “reasonable range” of alternatives necessary to permit a reasoned choice
- The requirement of the CEQA Guidelines to consider a “No Project” alternative and to identify an environmental superior alternative in addition to the no-project alternative (CEQA Guidelines § 15126.6(e))

6.2.2 Sutter’s Initial Screening

In 1999 Sutter developed a Master Plan to evaluate the potential construction of a 174-bed replacement hospital for the current Sutter Medical Center of Santa Rosa. This Master Plan considered only the development of a replacement hospital and did not evaluate development of a physician-owned hospital or Medical Office Building. Nevertheless, the following list of site characteristics considered for the 1999 Master Plan are also generally applicable to the currently proposed project and were used to help narrow the range of sites for the project. The Master Plan concluded that desirable qualities for a new site would include:

1. The new site should be located close to US 101 and be near a freeway exit both to assist patients in locating the hospital complex and to facilitate the transportation of patients by emergency vehicles.
2. In addition to good freeway access, the site should have access from streets on at least two sides. This would allow for the separation of service and emergency vehicles from patient, visitor, and staff traffic.

3. Based on the Master Plan study the site should have a minimum of 18 acres to accommodate what was then described as a full program (174 beds and 360,000 SF), allow for expansion, and avoid the initial need for parking structures. If a Medical Office building were desired on the Medical Center site additional land would be required to accommodate the building and its parking.
4. The site should have a “regular shape.” An elongated, narrow shape cannot be as efficiently developed even if it has the required area.
5. Site with extreme topography should be avoided. However, it is not necessary that the site be flat.

In addition to considering the preferred site characteristics listed in its Master Plan, Sutter reviewed data concerning the location of Acute Discharges from the current Sutter Medical Center of Santa Rosa to assist it in determining whether potential new sites were well-located to serve SMCSR’s patients (see **Figures 6-1 and 6-2**). The maps show the distribution of patients treated at Sutter’s existing hospital, with each dot on the maps representing ten patients (based on patient discharge records).

6.2.3 County’s Alternatives Selection Process

At the County’s request, the project applicant documented its extensive screening analysis of 30 alternatives to the proposed project which evaluated 21 alternative sites and 9 alternative configurations (*Initial Screening Analysis of Potential Alternatives to the Proposed Sutter Medical Center of Santa Rosa/Luther Burbank Memorial Foundation Project* [Sutter 2009]) (Appendix N-1). The County carefully reviewed the alternatives included in Sutter’s screening analysis in light of the CEQA Guidelines criteria and the selection criteria identified by Sutter. During this review, County staff identified three additional factors which ultimately affected the County’s choice of alternatives to be analyzed in this Draft EIR:

The project should avoid introducing high rise buildings in areas where they would be out of character. (This is related to the minimum size of property needed to construct the project.)

- Alternative hospital sites should be located so as to reduce or ideally avoid helicopter overflights of residential areas. (This relates to helicopter noise.)
- An alternative hospital site should be considered in a more urbanized location, easily accessible by public transportation, such as southwest Santa Rosa. (This reflects a number of comments at County workshops on the Sutter hospital project, that the hospital should be located closer to the perceived location of a substantial portion of Sutter’s client base, ideally in southwest Santa Rosa.)

Alternatives Considered

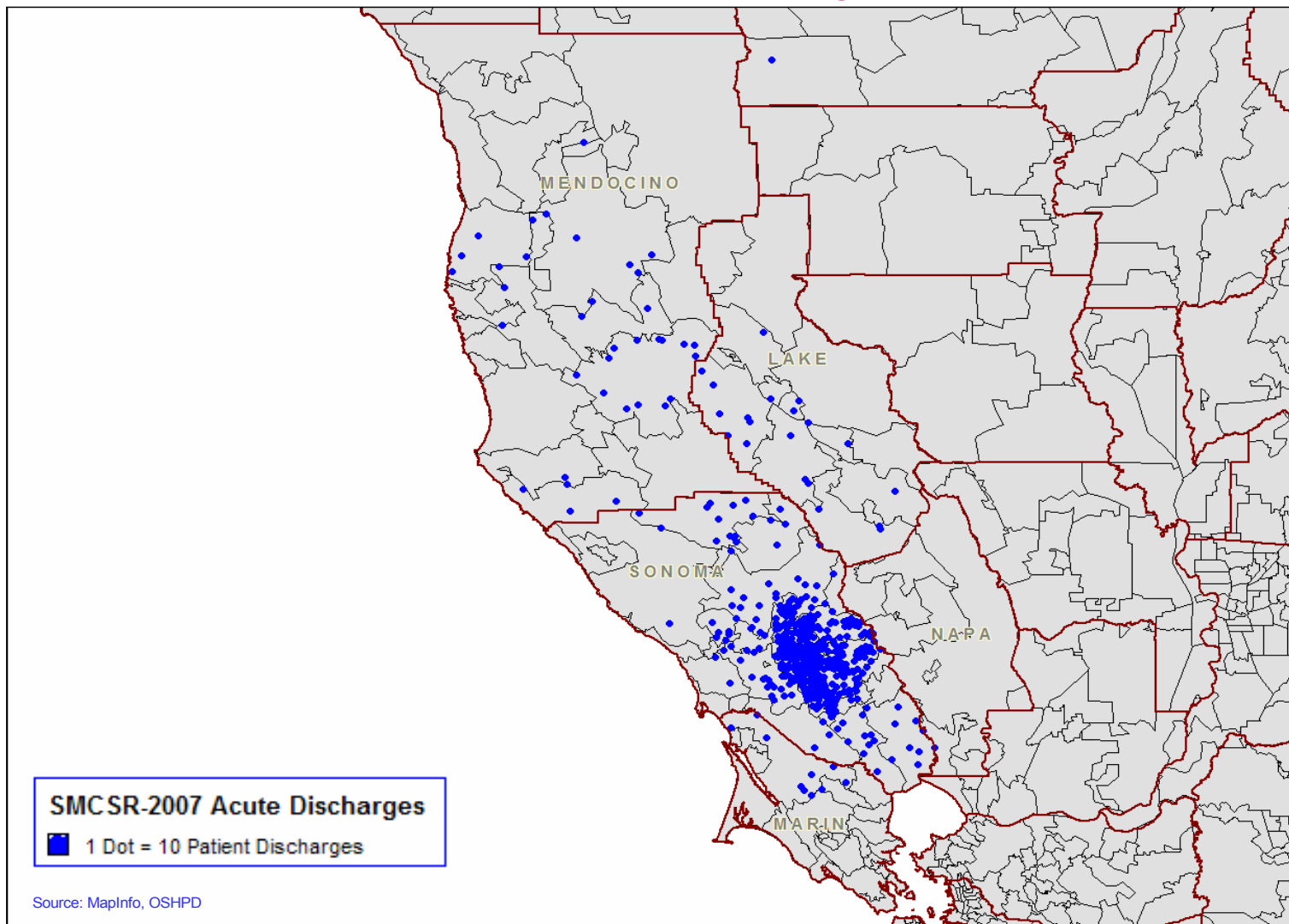
The following list identifies all 30 alternatives and alternate sites considered in preparing this EIR (see **Figure 6-3**). These alternatives are listed in the order and with the same letter designation as presented in Sutter Medical Center’s *Initial Screening Analysis of Potential Alternatives to the Proposed Sutter Medical Center of Santa Rosa/Luther Burbank Memorial*

Foundation Project (Sutter (Appendix N-1). Two additional alternative sites added by the County are listed as Alternatives BB and CC.

- A. Noise Reduction (No Helistop) Alternative: Under this alternative the project would be constructed as proposed at 50 Mark West Springs Road but without the helistop. Patients requiring transport by helicopter would arrive at the Sonoma County Airport and be transported by ambulance to the medical campus.
- B. Emission Reduction Alternative/No Soil Surcharge Under this alternative the project would be constructed as proposed, except that the project would be constructed using driven piles, instead of surcharging the property. (This alternative construction method was included in the project analysis in this document and therefore is no longer discussed within this section.)
- C. 70-Bed Hospital Only Alternative: Under this alternative the proposed 70-bed hospital, central utility plant, and helistop would be constructed but not an accompanying PMC or MOB.
- D. Overall Reduced Project Alternative: Under this alternative the intensity of the major components of the proposed project would be reduced by a third. Thus, this alternative would include a Sutter Medical Center of 47 beds, a PMC of 19 beds, an MOB of 53,600 square feet, and a helistop.
- E. Reconfigured Alternative: This alternative would consist of a reconfiguration of the proposed components of the project on the project site in order to avoid significant environmental impacts, or to reduce impacts through the relocation of project components on the project site.
- F. Chanate Alternative: Under this alternative, the 1956 and 1972-era structures at the Sutter Medical Center of Santa Rosa on Chanate Road would be seismically retrofitted to meet Structural Performance Category (SPC) 2 and Non-structural Performance Category (NPC) 3. The 1991-era and later acute care buildings would receive non-structural retrofitting. The site's 2002 and 2004-era buildings would continue to be used for patient care and would not be retrofitted. The 1936-era building would be used for non-acute care and office purposes and would not be retrofitted.
- G. No Project Alternative: Under this alternative no new medical facilities would be developed. The existing Sutter Medical Center of Santa Rosa at 3325 Chanate Road would be required to be closed in compliance with SB 1953 and SB 1661. Wells Fargo's use permit would not be
- H. Decentralized Alternative (A and B): Under this alternative the 28-bed PMC and a 50,000 sq/ft MOB would be constructed at 50 Mark West Springs Road (the proposed project site). Sutter's 70-bed hospital, a 50,000 sq/ft MOB, a helistop, and a central utility plant would be constructed at an alternate site (either the Todd/Moorland site referenced above or the Ring property site at 1700 Hampton Way within the city limits of Santa Rosa).
- I. Airport Business Center Alternate Site: The project would be constructed on a 24.3 acre site in the unincorporated area of Sonoma County, but within a designated urban services area commonly known as the Airport Specific Plan area of the County.

SMCSR -2007 Acute Discharges

Confidential Draft

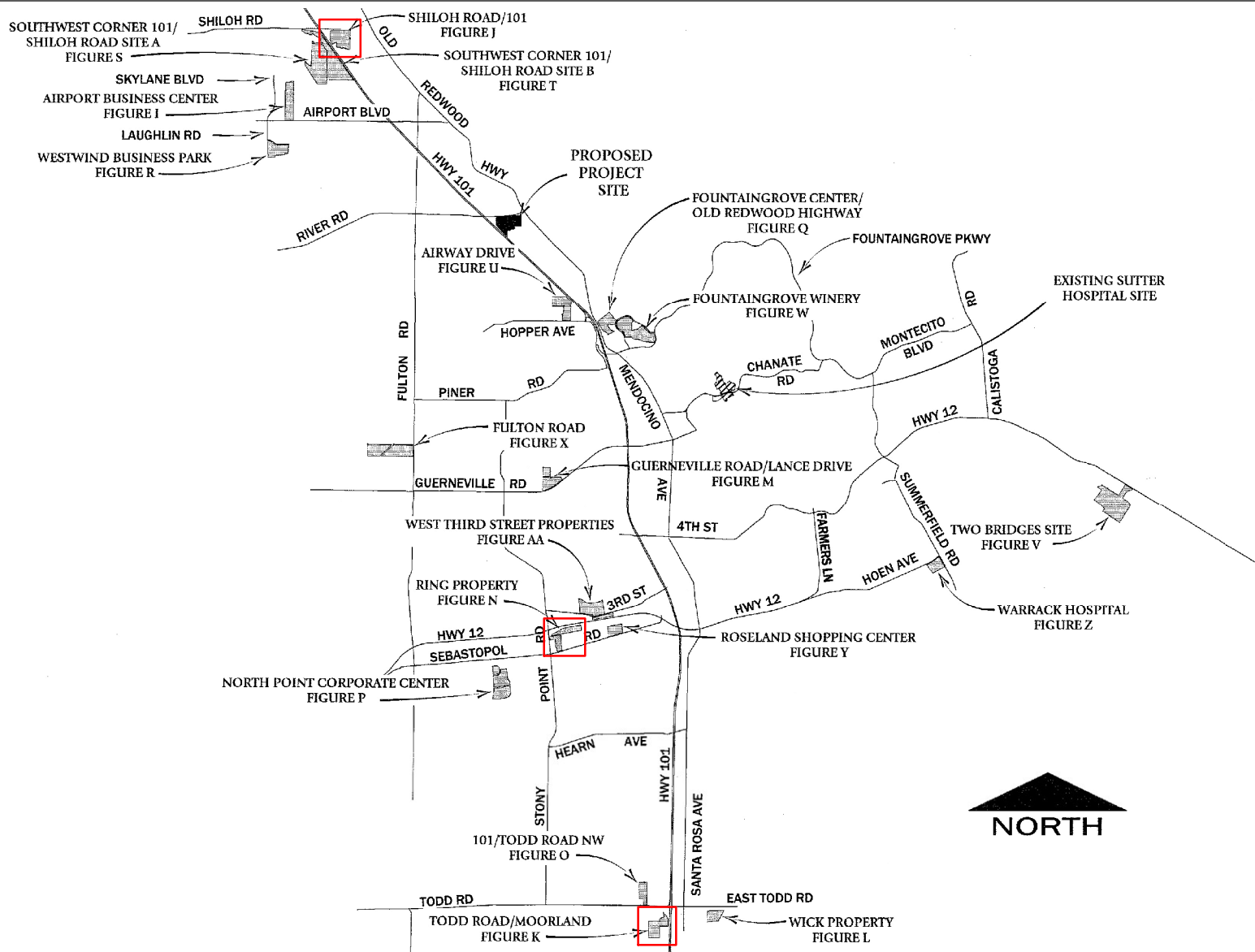


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Figure 6-1
Acute Discharges

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Sutter/LBMF Joint Master Plan

Figure 6-3
Key Map

Shiloh Road/101 Alternate Site: The project would be constructed on a 27-acre site located just east of US 101 and south of Shiloh Road. This site is in the Town of Windsor and is part of the Shiloh Corridor Vision Plan.

- J. Todd Road/Moorland Ave Alternate Site: The project would be constructed on a 19.9-acre site located west of US 101 and south of Todd Road. The site is under County jurisdiction, but within the Urban Growth Boundary of the City of Santa Rosa.
- K. Wick Property Alternate Site (Santa Rosa/Todd): The project would be constructed on an 11.6± acre site located south of Todd Road east of Santa Rosa Avenue. The site is in unincorporated Sonoma County, outside the City of Santa Rosa's city limits but within the City's Urban Growth Boundary.
- L. Guerneville Road/Lance Drive Alternate Site: The project would be constructed on an 18.5 acre site located at 601 & 1696 Lance Drive comprised of two lots and is an island of unincorporated County territory surrounded by the City of Santa Rosa.
- M. Ring Property Alternate Site: The project would be constructed on an 18.5 acre site located at 1700 Hampton Way, Santa Rosa.
- N. 101/Todd Road NW Alternate Site: The project would be constructed on an 11.1 acre site located at 237 Todd Road in unincorporated Sonoma County but within the City of Santa Rosa's Urban Growth Boundary.
- O. North Point Corporate Center Alternative Site: The project would be constructed on a 19.96 acre site located at Challenger Way, Mercury Way and Apollo Way, Santa Rosa.
- P. Fountaingrove Executive Center/Old Redwood Highway Alternate Site: The project would be constructed on a 15.59 acre site located at 700 Old Redwood Highway/3569 Round Barn Circle, Santa Rosa.
- Q. Westwind Business Park Alternate Site: The project would be constructed on a 19.2 acre site located at 3355 Westwind Boulevard in an unincorporated area of Sonoma County, but within a designated Urban Services area.
- R. Southwest Corner 101 Shiloh (West) Alternate Site: The project would be constructed on a 33 acre site located at Pruitt Ave and Caletti Avenue within the limits of the Town of Windsor.
- S. Southwest Corner 101 Shiloh (East) Alternate Site: The project would be constructed on a 45.4 acre site located at Pruitt Ave and Caletti Avenue within the limits of the Town of Windsor.
- T. Airway Drive Alternate Site: The project would be constructed on a 22.9 acre site located at 3833, 3737, 3745, and 3731 Airway Drives, and 1021 Hopper Avenue, Santa Rosa.
- U. Two Bridges Property Alternate Site: The project would be constructed on a 66.8 acre site located at 300, 303, 400, 410 and 425 Elnoka Lane, Santa Rosa.
- V. Fountaingrove Winery Alternate Site: The project would be constructed on a 36.1 acre site located at Round Barn Road, Santa Rosa.

- W. Fulton Road Alternate Site: The project would be constructed on a 37.9 acre site located at 1615 Fulton Road, Santa Rosa.
- X. Roseland Shopping Center Alternate Site: The project would be constructed on a 10.83 acre site located at 561, 565, 665 and 673 Sebastopol Road, Santa Rosa.
- Y. Warrack Hospital Alternate Site: The project would be constructed on a 11.2 acre site located at 2449 Summerfield Road, Santa Rosa.
- Z. West Third Street Properties Alternate Site: The project would be constructed on a 27.5 acre site located at 691 and 414 West Third Street, Santa Rosa.
- AA. Sonoma County Center Alternate Site (added by County): The project would be constructed on a 80 acre site located at between US101 on the west and Mendocino Ave on the east, and between Administration Drive on the south and Russell Ave on the north in the City of Santa Rosa.
- BB. Air Center Site (added by County): The project would be constructed on a 31 acre site located at the north of the west end of Northpoint Parkway in the southwest area of the City of Santa Rosa.

6.3 ALTERNATIVES BROUGHT FORWARD FOR FURTHER STUDY IN THE EIR

Of the 30 alternatives considered, eight alternatives, including three alternate sites, were selected for further analysis. Below is a list of the eight alternatives. Discussions of these alternatives are found in Section 6.5 and **Table 6-1**.

- G. No Project Alternative (Alternative G in Appendix N-1)
- J. Shiloh Road Alternate Site (Alternative J in Appendix N-1)
- K. Todd Road/Moorland Avenue Alternate Site (Alternative K in Appendix N-1)
- H. Decentralized Alternatives
 - a. Decentralized Alternative A, Mark West Springs Road and Todd Road/Moorland Avenue Sites (Alternative H in Appendix N-1)
 - b. Decentralized Alternative B, Mark West Springs Road and Ring Property Sites (Alternative H in Appendix N-1)
- A. No Helistop Alternative (Alternative A in Appendix N-1)
- C. 70-Bed Hospital Only Alternative (Alternative C in Appendix N-1)
- D. Overall Reduced Project Alternative (Alternative D in Appendix N-1)

During the analysis of these alternatives the footprint of the buildings is used instead of the square footage of the buildings. It is assumed that the square footage of all facilities will be the same unless noted otherwise. However due to the different sizes of the sites, the heights and footprints of the buildings will vary. All values are based on figures provided by HGA Architects and Engineers.

6.4 ALTERNATIVES CONSIDERED BUT REJECTED AS INFEASIBLE

The remaining alternatives identified in Section 6.2 but not carried forward for review were considered but rejected because they did not meet project objectives, did not reduce or avoid project impacts, or were found to be infeasible for technical, environmental, or other reasons. Please refer to **Table 6-2** in Section 6.7 for a discussion of the alternatives not carried forward for review.

6.5 ALTERNATIVES EVALUATED IN DETAIL

This section presents an analysis of eight alternatives to the proposed project: No Project, Shiloh Road/US 101 Project Site, Todd Road/Moorland Avenue Project Site, Decentralized Alternative A (50 Mark West Springs Road and Todd Road/Moorland Avenue Site), Decentralized Alternative B (50 Mark West Springs Road and Ring Property Site), No Helistop Alternative, 70-bed Hospital Only (without Physicians Medical Center or MOB) Alternative, and Overall Reduced Project Alternative. For each alternative, a brief description is presented, followed by a summary impact analysis relative to the proposed project, and an assessment of the degree to which the alternative would meet project objectives. A key map showing the alternate site locations is provided in **Figure 6-4**. A summary comparison of each alternative is provided in **Table 6-1**.

6.5.1 Alternative 1: No Project

6.5.1.1 Description

As required by the CEQA Guidelines, the alternatives analysis includes consideration of a No Project alternative. Under the No Project alternative no new medical facilities would be developed and the existing Sutter Medical Center of Santa Rosa at 3325 Chanate Road would be closed by 2013 in accordance with the Hospital Facilities Seismic Safety Act and SB 1953. These statutes mandate the replacement or seismic retrofit of existing acute care hospital facilities that do not meet current earthquake-resistant standards for hospitals. If this requirement is not met, a non-complying acute care hospital must close.

The Wells Fargo Center's existing use permit (UP 10520) would not be revised to clarify permitted uses; outdoor events held on the South Lawn would continue to obtain individual Cultural Events Permits as necessary; relocation of the maintenance building, playground, and playing fields would not take place; and a permanent sound berm east of the existing buildings would not be constructed.

It is too speculative at this time to predict what would happen to the existing buildings at 3325 Chanate Road other than they would not be occupied by a hospital and would likely require, at a minimum, extensive upgrading prior to any new occupancy. The buildings are old and inefficient, and most site utilities, such as water, sewer, and power, also need major repairs or replacement. Roads and parking are inadequate and deteriorated. (*County Five-Year Capital Project Plan for 2008 to 2013*) Because it is unknown how and when these obstacles would be overcome, the No Project alternative does not address potential impacts associated with the eventual reuse or replacement of the existing buildings at 3325 Chanate Road.

6.5.1.2 Impact Analysis

Aesthetics. There would be no aesthetic impacts under the No Project alternative since no new facilities would be built. With no construction of a new facility aesthetic impacts would be less than the aesthetic impacts associated with the proposed project.

Agricultural Resources. The No Project alternative would not include any development of land and as a result no impacts to agricultural resources would occur. Since no loss of farmland of local importance would occur, impacts would be less when compared to the proposed project.

Air Quality. Since there would be no construction or operation emissions, the No Project alternative would result in no impacts to air quality. The No Project alternative would not conflict with any air quality plans or violate their standards, increase any criteria pollutants or expose any receptors to any pollutants or odors. An increase in transportation-related emissions may occur with the re-direction of patients from the closed Sutter facility to another medical facility. However, the starting point and destination of these re-directed trips and the distances involved are unknown, and therefore a conclusion regarding whether this impact would be significant would be speculative. Impacts would be significantly less when compared to the proposed project because there would be no construction which is the major source of air pollution from the proposed project

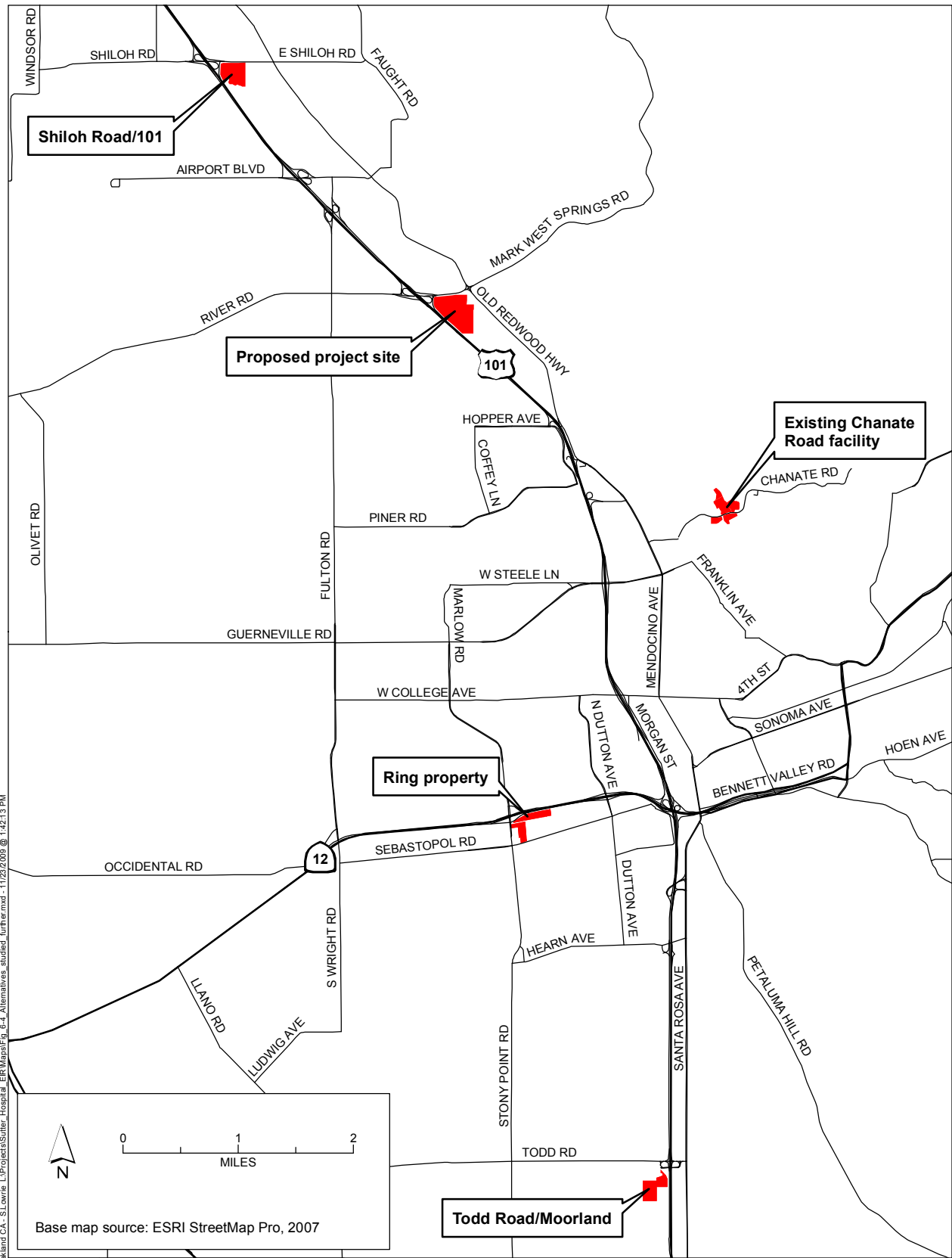
Biological Resources. Under the No Project alternative no new construction would occur and therefore no potential impacts to biological resources would occur. These impacts would be less than the proposed project.

Cultural Resources. Under the No Project alternative, no potential adverse impacts to previously undiscovered historical resources or unique archaeological resources would occur. These impacts would be less than the proposed project.

Geology and Soils. Impacts related to geology, soils, and seismicity under the No Project alternative would not occur. With no new facility being constructed and the closure of the existing hospital facility, there would be no potential risks associated with seismicity. No soil or erosion impacts would occur and as a result there would be no impacts related to geology and soils. These impacts would be less than the proposed project.

Hazards and Hazardous Materials. The No Project alternative would not result in construction, and therefore there would be no potential for encountering hazardous materials or public exposure to hazardous materials. At the same time, since no construction would occur under the No Project alternative, there would be no remediation of any existing hazardous materials on the project site; existing buildings would remain in place until new construction were initiated in connection with some other use of the property. No new helicopter operations would result from this alternative. These impacts would be less than the proposed project.

Hydrology and Water Quality. There would be no hydrology and water quality impacts under the No Project alternative. With no project being constructed, no potential for violation of water quality standards would occur and no alterations to the drainage or run off would occur. The No Project alternative would not require any additional water supply and therefore would avoid any potential impact on groundwater resources. Like the project, this alternative would not locate a structure within a flood plain or expose people to any significant danger from natural disasters. These impacts would be less than the proposed project.



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Figure 6-4
 Alternatives Studied Further

Land Use and Planning. Under the No Project Alternative no new construction would occur and therefore no potential land use and planning impacts would occur. No community would be divided as a result of the current hospital shutting down and no conflicts with any land use plans would occur. The Wells Fargo Center would continue to operate under its existing use permit (UP 10520), with outdoor events held on the South Lawn obtaining individual Cultural Event Permits as necessary; no permanent sound berm to the east of the existing buildings would be constructed. These impacts would be less than the proposed project.

Mineral Resources. Under the No Project alternative no new facility would be constructed. Similar to the project, there would be no potential loss of availability of a mineral resource. These impacts would be similar to the proposed project.

Noise. The No Project alternative would have no construction noise impacts. With the current hospital closing and no replacement facility being constructed under the No Project alternative, residents near the existing and proposed facilities would not be exposed to the periodic increase in ambient noise levels that occur in close proximity to a hospital with a heliport. However, medical helicopter noise would be transferred to other existing hospitals in the region. No increases in either sustained noise or ground vibration levels associated with construction or operation would occur. These impacts would be less than the proposed project.

Population and Housing. This alternative would not have a significant impact on population and housing. With no new construction, the No Project alternative would not induce any population growth, split any neighborhoods, or displace substantial numbers of people, necessitating the construction of replacement housing elsewhere. With the closure of the current hospital facility, some medical personnel may go to other medical facilities in the area or relocate to other areas; however, this would not result in a significant environmental impact associated with the construction of replacement housing.

Public Services. With no new construction, the No Project alternative would not result in substantial adverse physical impacts associated with the need for new or expanded public service facilities, such as fire, police, schools, and parks. With the closure of the current hospital facility, hospital services would be provided at the remaining facilities in the county; however, this is not likely to result in the need for new or expanded facilities, the construction of which would result in significant environmental effects. This would be a less than significant impact.

Recreation. No recreation impacts would result under the No Project alternative. These impacts would be similar to the proposed project.

Transportation and Traffic. For the No Project alternative there would be almost the same number of intersections at the proposed site with unacceptable levels of service and unacceptable queuing operations as for the proposed project. The one exception would be the Mark West Springs Road/WFC Main Entry intersection, which would remain unsignalized without the project and would continue to experience unacceptable delays for turns to Mark West Springs Road. In contrast, the signalized operation and added lanes on Mark West Springs Road to be provided by the project would provide acceptable operation at this location. The closing of the existing Chanate facility would result in the redistribution of patients to other hospitals in the region. Accordingly, traffic impacts of the proposed project would be redistributed throughout the region and could result in greater impacts at already impacted intersections.

Utilities and Service Systems. Impacts to utilities from the No Project alternative would not occur. With no new facility demands on water and wastewater, utilities in the area would be unaffected. The No Project alternative would not result in any new utility construction and as a result would have no impacts associated with construction of new utilities. These impacts would be less than the proposed project.

Energy. This alternative may result in a neutral effect to electrical and natural gas usage depending on whether or not the existing facility is replaced by some other use. However, the energy used to construct the proposed project would not be used under the No Project alternative. Trips that currently are going to this hospital would have to be diverted to another hospital that may be further in distance and result in more vehicle miles being driven with greater associated fuel consumption.

6.5.1.3 Ability to Accomplish Project Objectives

Under this alternative, the Proposed Project would not be constructed, and the existing Sutter Medical Center of Santa Rosa at 3325 Chanate Road would be closed in accordance with the Hospital Facility Seismic Safety Act and SB 1953. The existing Wells Fargo Center use permit would not be revised and events on the south lawn would continue to require individual Cultural Event Permits, as necessary. Accordingly, the “No Project” alternative would not provide any of the services of the Proposed Project, and so would fail to meet all of the Project Objectives.

6.5.1.4 Conclusion

The No Project alternative would avoid the significant environmental effects of the proposed project, but may result in noise and transportation impacts at other locations, and may have an adverse effect on emergency response. The No Project alternative does not meet the project objectives.

6.5.2 Alternative 2: Shiloh Road/US 101 Project Site

This alternative was one of the sites initially considered by the Sitting Advisory Panel convened by Sutter in 2000-2001. This site was included for analysis based on its central location given the Acute Discharges from the current Sutter Medical Center of Santa Rosa (see **Figures 6-1 and 6-2**) and its close proximity to and visibility from US 101. There are fewer noise receptors in proximity to the site, thus reducing a significant and unavoidable project impact.

6.5.2.1 Description

The Shiloh Road Alternative site is at the southeast corner of Shiloh Road at US 101. A map of the site with a conceptual site plan is shown on **Figure 6-5**. The site is within the Town of Windsor limits, and is a part of the Shiloh Corridor Vision Plan. Under this alternative, the proposed project (Sutter Medical Center hospital, Central Utility Plant, Physicians Medical Center, and Medical Office Building) would be constructed on this vacant 27-acre site.

The Shiloh Road Alternative would include the same elements as the proposed project, i.e., the same buildings with the same square footage, building footprints, and building heights, as follows:

- Sutter Medical Center hospital, a two story building with a footprint of approximately 75,000 square feet.
- Central Utility Plant, one story buildings, including tanks, with a footprint of approximately 11,000 square feet.
- Physicians Medical Center, a three story building with a footprint of approximately 50,000 square feet.
- Medical Office Building, a three story building with a footprint of approximately 50,000 square feet.

The buildings would be developed as laid out in **Figure 6-5**, which also shows that the helistop would be located, at grade, near the south edge of the site, and that access to the site would be from Shiloh Road.

When compared to the proposed project this site has many similar attributes such as its proximity to US 101. While the size of the site is half the size of the proposed project site, it would be large enough to accommodate the proposed building footprints and parking lots. Similarly, the helistop would be based on the ground and not located on the top of a building.

6.5.2.2 Impact Analysis

Aesthetics. The Shiloh Road site is east of US 101 and south of Shiloh Road at the US 101/Shiloh Road interchange. It is within the limits of the Town of Windsor at the town's southern edge. The site is currently vacant. Commercial land uses occur just north of the site off of Hembree Lane and on the north side of Shiloh Road. On the west side of US 101 across from the site is an area of industrial land use that is set back about 250 feet from the highway. A substantial area of open, agricultural land lies to the south of the site and occurs on both sides of US 101. The site is flat and has a grassy cover with only a few trees near its western boundary.

The site is visible from US 101 and Shiloh Road. US 101 is not a Scenic Corridor where it is adjacent to the site. There are no designated scenic landscape units near the site. The land immediately south and east of the site is part of a community separator. The sensitivity level of the site would be moderate. The project at this site would appear co-dominant with the surrounding commercial uses on the north side of Shiloh Road and Hembree Lane. It would have a less than significant visual impact. Further, the project at this site would not affect any scenic vistas or substantially degrade the visual quality or character of the site or its surroundings.

When compared to the proposed project the impacts of this alternative would be similar.

Agricultural Resources. Agricultural impacts to the site were examined by referring to the California Agricultural Land Evaluation and Site Assessment Model. It was found that the site does not contain farmland of either unique or statewide importance; however the site does contain farmland of local importance. Construction at this site would not conflict with any planned or zoned agricultural use of the site and the land is not under the Williamson Act.

Currently the site is not being used and has been allowed to lay fallow. Impacts to agricultural land outside the project boundaries would be minimal and construction at this site would not impact their continued use. Impacts to agricultural resources would be less than significant.

When compared to the proposed project the impacts would be similar.

Air Quality. During the construction phase there would be potentially significant air quality impacts that could be reduced to less than significant with mitigation. However, as with the proposed project, once construction is completed, a significant and unavoidable air quality impact from the operation of the project would occur one day per year due to the mandatory 8-hour test of the emergency generator.

As with the proposed project, this alternative would only conflict with the local air quality plans for one day per year during the 8-hour test of the emergency generator. Less than significant impacts are expected to any sensitive receptors in the area in regards to both pollutants and odors.

When compared to the proposed project the impacts would be similar.

Biological Resources. The 27-acre site is mostly open with a few trees along the western boundary. The southern portion of the site is bounded by an ephemeral stream. A search of the California Natural Diversity Database (CNDDDB) indicates the recorded presence of Burke's Goldfields (*Lasthenia burkei*), a federally listed endangered species. This vernal pool species is known only from northeastern Sonoma County and the southern portions of Lake and Mendocino counties. The CNDDDB records suggest that this species may be present on over half the site. Further, the site contains suitable California Tiger Salamander habitat and there is the possible presence of the California Tiger Salamander on the site.

According to Monk and Associates, the site contains 14.3 acres of confirmed wetlands, which comprise nearly fifty percent the acreage of the site. Much of the wetlands may be vernal pool habitat, given the occurrence of Burke's Goldfields reported in the CNDDDB.

Because nearly half of the site is considered wetland habitat and potential for impacts to listed plant species and the CTS, this site would have greater biological impacts than the proposed project site.

Cultural Resources. A records search of all pertinent cultural resource data for each alternative was conducted by the Northwest Information Center (File No. 03-1352) on July 1, 2009. The area that includes the parcel for this alternative was searched as well as a quarter-mile buffer. No historical resources or unique archaeological resources have been previously recorded within a quarter-mile of this alternative. The entire parcel has been previously surveyed by Origer (2004), which did not identify any cultural resources.

When compared to the proposed project, this alternative would have a similar level of impact to unknown cultural resources that may be impacted by construction activities. As with the proposed project, mitigation measures would reduce this impact to less than significant.

Geology and Soils. Geologic conditions, including proximity to faults, at this site are similar to those at the proposed project site. Similar design measures would be required for a hospital facility at this site. The site has potential liquefaction issues which are similar to that of the



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Figure 6-5
Shiloh Road/101 Alternative Site

proposed project. Therefore, impacts related to geology and soils with this alternative would be similar to the proposed project.

Hazards and Hazardous Materials. A database search was conducted by Environmental Data Resources, Inc. (EDR) to identify sites with hazardous materials within 1 mile of the Shiloh Road alternative site. Eight locations, some with multiple sites, were identified within 1 mile. The Shell Oil site appears to have had a spill in the past but the case is listed as closed. The Schellinger Construction site appears to have had a leaking underground tank, but the disposition of this case is unknown. All of the sites on Hembree Lane, as well as six other identified sites greater than ¼ mile from the alternative location are downgradient, meaning that groundwater would flow away from the alternative site.

No formal Phase 1 site assessment was conducted for this site, nor was a site visit conducted to visually identify any potential contamination, but impacts and mitigation related to hazardous materials are expected to be similar to the proposed project site mitigation.

Helicopter operations at the Shiloh road alternative would occur adjacent to US 101 with a very similar layout to that of the proposed project. This alternative site is within two miles of the Charles M. Shultz Airport, but is not within any of the traffic pattern zones for the airport.

Impacts from hazards and hazardous materials are expected to be similar to the proposed project.

Hydrology and Water Quality. According to FEMA Flood Insurance Rate Mapping, 80 – 85% of the Shiloh Road site lies within the 100-year flood plain of Pruitt Creek, which is located along the southern boundary of the parcel. The majority of the site is tributary to a culvert leading into the Shiloh Road interchange right of way surface drainage system. It is subject to the hydraulic restriction of the culvert, and the combined site and highway drainage must travel overland and cross Caletti Avenue prior to entering the natural channel of Pruitt Creek west of the highway.

Currently, flooding regularly occurs within the US 101 Shiloh Road freeway interchange as well as along Shiloh Road west of the freeway, even during moderate storm events. Any development plan submitted to the Town of Windsor for the Shiloh Road site will likely be conditioned to at least not worsen, and likely be required to improve, existing flooding conditions in the area downstream that will be affected by development of this parcel. In addition the displacement of overbank flood plain capacity by any proposed site improvements involving fill within the flood plain will be required to be replaced within the length of the adjacent reach of Pruitt Creek. Such overbank storage replacement requirements are not present at the Mark West Springs site. An approximately 50 foot setback would likely be required along Pruitt Creek.

It is also likely that creek capacity improvements will have to be implemented in conjunction with the development of the site to allow the creek channel to convey the 100 year storm flow with freeboard, as required by Town of Windsor development standards. Creating this capacity would likely take the form of creating a bypass channel parallel to the north side of the creek that would leave the existing creek and its banks intact, except where the bypass channel leaves and re-enters the stream. This bypass channel would likely consume another 75 feet of land including setbacks.

As with the Mark West Springs site, the Shiloh Road site is undeveloped agricultural land (less than 50% impervious). Post-construction Best Management Practices applied to this site would

be very similar to those proposed for the Mark West Springs site. The site plan would include vegetated bio-swales and structural filter units for runoff from roofs and pavements, and the stormwater detention facilities would also contribute. However, because this site is smaller in area, and without the advantage of an adjacent property (as is true at the Mark West Springs site) on the downstream side to share the space necessary for detention facilities, it may be necessary to detain stormwater runoff in underground reservoirs, rather than in open-air basins, to allow adequate space for parking lots. Although effective for siltation removal, underground reservoirs do not have the advantage of plant life to contribute to bio-remediation of the detained runoff, and typically will need mechanical (pumping) assistance to discharge runoff back into the creek channel. Regular maintenance would also be necessary to remove silt from the reservoir wet well and to service the pumping equipment.

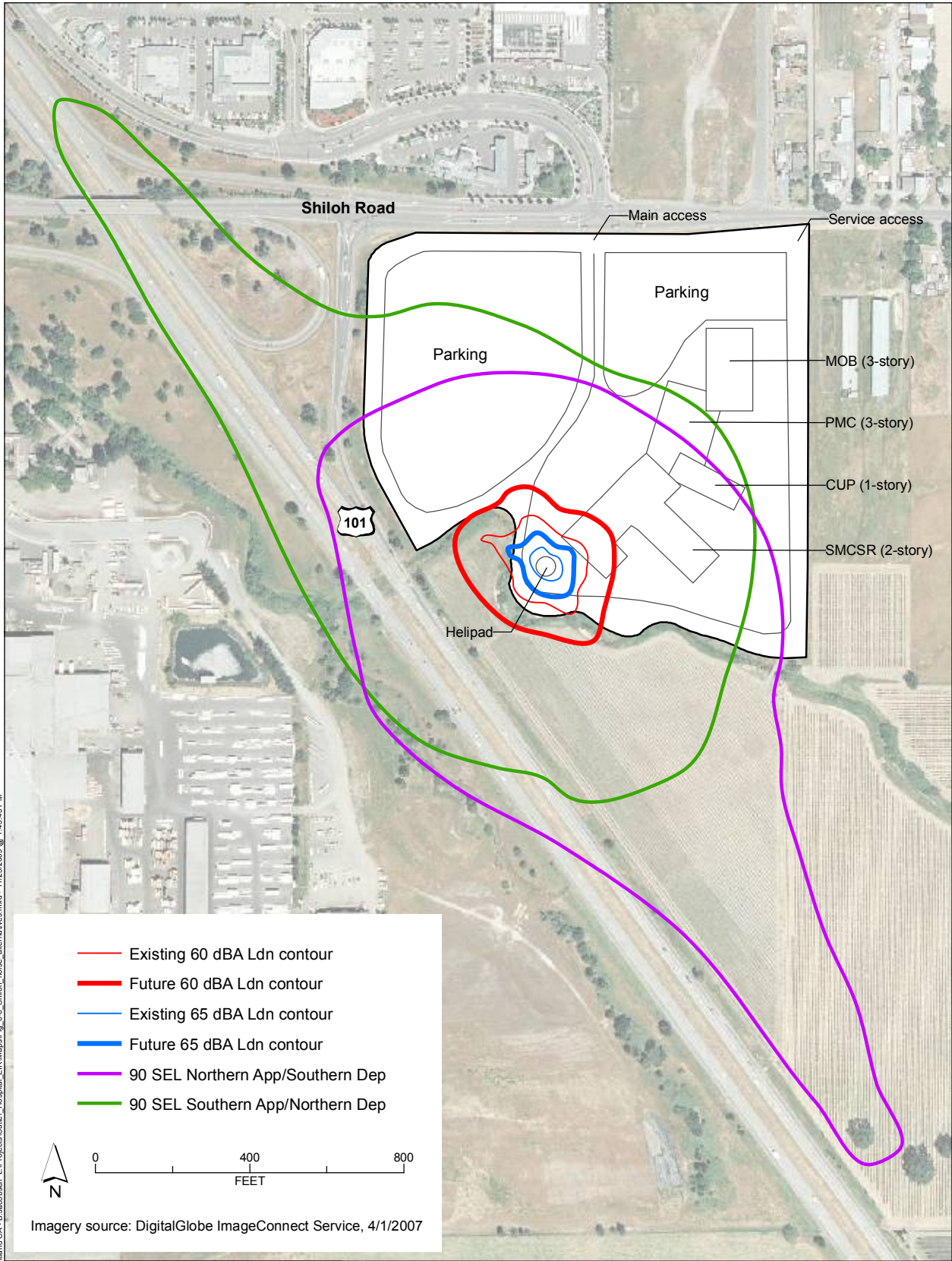
The project on this site would obtain water from the City of Windsor, which obtains water primarily from the Sonoma County Water Agency. This alternative would have fewer impacts than the proposed project on groundwater supplies.

Land Use and Planning. Construction of the project at this alternative site would conflict with Windsor planning and land use policies regulating land on sites zoned for Recreation (REC) and with a land use designation of Parks (P). Construction of the project on the Shiloh Road/101 Alternative site is not an allowable use under the Windsor zoning ordinance. A portion of land on the project site is on land with a General Plan designation of Parks (P). The purpose of this designation is to protect open space resources. Construction of the project on the Shiloh Road/101 Alternative site would conflict with this policy. The Zoning Map and/or the Zoning Code would likely have to be amended to permit the project to be constructed on the site. An amendment to the Windsor General Plan may also be required. While, most land use impacts would be similar to the proposed project, the development of this alternative would conflict with the General Plan's intent to protect open space, resulting in a greater impact than the proposed project.

Mineral Resources. According to the California Department of Mines and Geology publication SR 146 the alternative site is not within a mineral resource zone. Therefore there would be no impacts to mineral resources of the state or the loss of a site for mineral recovery. This impact would be similar to the proposed project.

Noise. Under this alternative the helistop would be located at grade near the south edge of the site and adjacent to the emergency room of the Sutter Medical Center hospital. The flight paths from the helistop would move toward the northwest and then fly south following along US 101. The nearby land uses to the site are freeway and industrial to the southwest and commercial to the north, with no nearby residential land uses along the expected flight routes. Keeping the approach/departure path of the helicopter along US 101 will minimize noise impacts. There are no nearby noise sensitive land uses. The noise contours created by the flight path are reflected in the **Figure 6-6**. Due to the lack of noise receptors in proximity to this site noise impacts would be less than the proposed project.

Population and Housing. This alternative would have less than significant impacts on population and housing. This alternative would not induce substantial population growth, split any neighborhoods, or displace any people. These impacts would be similar to the proposed project.



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Figure 6-6 Shiloh Road/101 Alternative Site with Predicted Noise Contours from Helicopter Take Off and Landing

Public Services. As with the proposed project impacts to police, fire and other public services would be minimal and would be considered less than significant. These impacts would be similar to the proposed project.

Recreation. This alternative would not increase the use or demand of recreational facilities and therefore there would be a less than significant impact. These impacts would be similar to the proposed project.

Transportation and Traffic. The north side of the site is bounded by Shiloh Road, a major collector road at the southern Town limits. There is an older style interchange for Shiloh Road on Highway 101, with a two lane overcrossing of the freeway. The northbound off-ramp, which would provide the primary access for a hospital use on this site, was widened and improved with the development of the adjacent north Wal-Mart/Home Depot shopping center complex. The adopted Shiloh Village Vision Plan calls for Shiloh Road right of way to be expanded by 13 feet on each side, to allow for the street to be configured with a center median/left turn lane, a single travel lane in each direction, parallel in-street parking, and a flanking bike lane. It is possible that this configuration would need to be changed to accommodate emergency vehicle access to the site, associated with the northbound off-ramp, similar to what is being provided at the Mark West Springs site.

This alternative currently experiences moderate volumes through its interchange with US 101 and at the Hembree Lane intersection. The northbound ramps and Hembree Lane intersections are signalized and both are operating at observed acceptable levels of service. However, at the unsignalized southbound ramps intersection, left turn movements from the stop sign controlled southbound off-ramp operate with unacceptable delay during both peak hours. The southbound ramps intersection is programmed for signalization by Caltrans.

Development of this alternative with the existing roadway system would require the following improvements at the Shiloh/Hembree/project access intersection: provision of a left turn lane on the westbound intersection approach, and potentially a right turn lane on the eastbound intersection approach (extending from the US 101 northbound off-ramp intersection). The extent of improvement required to the US 101 freeway interchange would be dependent upon the extent of other local area development as well as that due to the hospital. Hospital traffic during the PM peak hour would contribute to the ultimate need for a second westbound lane on the Shiloh Road overpass of the freeway. In addition, should there be a delay in construction of a signal at the Shiloh Road/US 101 southbound ramps intersection, hospital traffic would increase the need for this improvement.

The US 101 freeway between Windsor and Santa Rosa is currently being widened from four to six lanes, and should be able to accommodate the extra traffic due to the hospital at an acceptable level.

The Town of Windsor General Plan assumes Shiloh Road will be widened to a four-lane roadway between Old Redwood Highway and its interchange with US 101 when needed to accommodate local development, but before Town of Windsor General Plan Buildout. Likewise, the Shiloh Road two-lane overpass of US 101 is also assumed to be widened to four lanes before Town of Windsor General Plan Buildout when required to accommodate local development.

This site has been assumed to be developed as a shopping center in the Town of Windsor Traffic Impact Fee Update study (April 2008). Expected trip generation from the Sutter Hospital would be similar to that of the shopping center during the AM peak hour, and only about 35 percent that of the shopping center during the PM peak hour.

General Plan Buildout peak hour operating conditions projected at Shiloh Road intersections (with the shopping center in operation) are:

Shiloh Road/US101 Northbound Ramps	LOS C (AM)/LOS B (PM)
Shiloh Road/U.S.101 Southbound Ramps	LOS E (AM)/LOS D (PM)
Shiloh Road/Hembree Lane/Shopping Center Main Entrance	LOS C (AM)/LOC C (PM)

LOS D is considered the minimum acceptable operation in the Town of Windsor.

With the Sutter Hospital project in place of the shopping center, operation would potentially improve slightly at the southbound ramps intersection, remain about the same at the northbound ramps and improve slightly at the Hembree Lane intersection. The site is accessible by Sonoma County Transit at Old Redwood Highway, located 1,000 feet from the site. It has no sidewalk access. When compared to the proposed project these impacts will be less.

Utilities and Service Systems. The Shiloh Road site is within the Town limits. Development of the site for gateway commercial uses has been anticipated in sewer system planning. Based upon the Town of Windsor Master Sewer Plan, the trunk sewers serving this site should have capacity to serve development under this alternative. They are part of the Conde Trunk Line and a 15 inch line is located within Shiloh Road. The Shiloh Center commercial project, located directly to the north, will likely use less sewer capacity than originally projected given that it was developed at a lower level of intensity that anticipated under the Town's Master Sewer Plan. As well, based upon the Master Sewer Plan, the Shiloh site was projected to generate 37,000 gallons of sewage per day. Assuming that the currently proposed full program is constructed at this site, sewage flow is expected to be less than 27,000 gallons per day, which is less than the original allocation to this site. Because sewer system capacity is largely a function of peak flows, and as peak hospital flows are not expected to directly correspond with currently experienced peak flow times, sewer capacity at this site is expected to be sufficient. The treatment plant currently has sufficient capacity for anticipated growth; however, effluent storage and disposal capacity is currently limited. The Town has recently entered into an agreement with the City of Santa Rosa to construct a connection to the City's Geysers pipeline project, which conveys treated wastewater to the Geysers steam fields for injection into steam wells. This connection, when implemented, is anticipated to resolve the storage and disposal limitations.

Development of this site for gateway commercial uses has also been anticipated in water system planning. The Town is currently in the process of updating its Water System Master Plan document. The Town's system currently has adequate storage to serve this use, although they are pursuing further storage capability increases to address peak demand situations. While water system infrastructure is in place in Shiloh Road along the project frontage, it will need to be looped through the site for domestic and fire protection purposes.

Impacts to water and wastewater treatment capabilities would be less than significant and would not result in the need for new facilities. Impacts related to solid waste disposal would be similar to the proposed project.

Energy. Regardless of location, project buildings would be LEED designed, using the most current technology to reduce energy usage throughout the buildings. The current electrical infrastructure is capable of handling the increased load as a result of this alternative. Impacts regarding energy use would be similar for this alternative as the proposed project.

6.5.2.3 Ability to Accomplish Project Objectives

Sutter does not own the Shiloh Road alternate site, and thus could not plan and develop a hospital on the site in time to meet the deadlines in the Hospital Facility Seismic Safety Act, and thus this alternative fails to meet Project Objectives 4 and 8.

Also, development of this Alternative would not locate the new SMCSR adjacent to the Wells Fargo Center for the Arts, thus would fail to meet Project Objectives 3, 7, 11 and 12, which call for the interaction of the Medical Center with the Wells Fargo Center for the Arts, the furtherance of the Center's non-profit mission, and the revision of the Center's Use Permit for community events.

6.5.2.4 Conclusion

This alternative would have greater impacts to biological resources and land use and planning, but fewer hydrology and water quality, noise, and transportation impacts compared to the proposed project. This alternative would meet several of the Project Objectives, but would not meet Objectives 3, 4, 7, 8, 11, and 12.

6.5.3 Alternative 3: Todd Road/Moorland Avenue Project Site

This alternative was one of the sites initially considered by the Siting Advisory Panel convened by Sutter in 2000-2001. This site was included for analysis because it is located within the Urban Growth Boundary of the City of Santa Rosa, has close proximity to and visibility from US 101, and there are fewer noise receptors in proximity to the site.

6.5.3.1 Description

The Todd Road/Moorland Avenue Alternative is located at 3801, 3809 & 3901 Moorland Avenue. A map of the site with a conceptual site plan is shown on **Figure 6-7**. The site is under County jurisdiction, but within the Urban Growth Boundary of the City of Santa Rosa. Under this alternative, the proposed project (Sutter Medical Center hospital, Central Utility Plant, Physicians Medical Center, and Medical Office Building) would be constructed on this mostly vacant 19.9-acre site. The site has a modified "L" configuration.

The Todd Road/Moorland Avenue Alternative would include the same elements as the proposed project with the same buildings square footage, building footprints, and building heights. Listed below are those dimensions:

- Sutter Medical Center hospital, a two story building with a footprint of approximately 75,000 square feet.
- Central Utility Plant, a one story building, including tanks with a footprint of approximately 11,000 square feet.
- Physicians Medical Center, a three story building with a footprint of approximately 50,000 square feet.
- Medical Office Building, a three story building with a footprint of approximately 50,000 square feet.
- Medical Office Building, a three story building of approximately 80,000 square feet.
- Structured Parking, a three story structure with a building footprint of approximately 38,000 square feet, as well as surface parking, for a total of 973 parking spaces.

The buildings would be developed as laid out in **Figure 6-7**, which also shows that the helistop would be located on top of the Structured Parking, and that access to the site would be from Moorland Avenue.

The size of the site is less than half the size of the proposed project site, and would require construction of a parking garage, as well as the use of surface parking. The helistop would be located on top of the parking garage unlike the proposed project with a helistop on the ground. The heights of the buildings would be similar at both sites with the number of stories for all four structures (Sutter hospital, PMC, MOB and CUP) being the same.

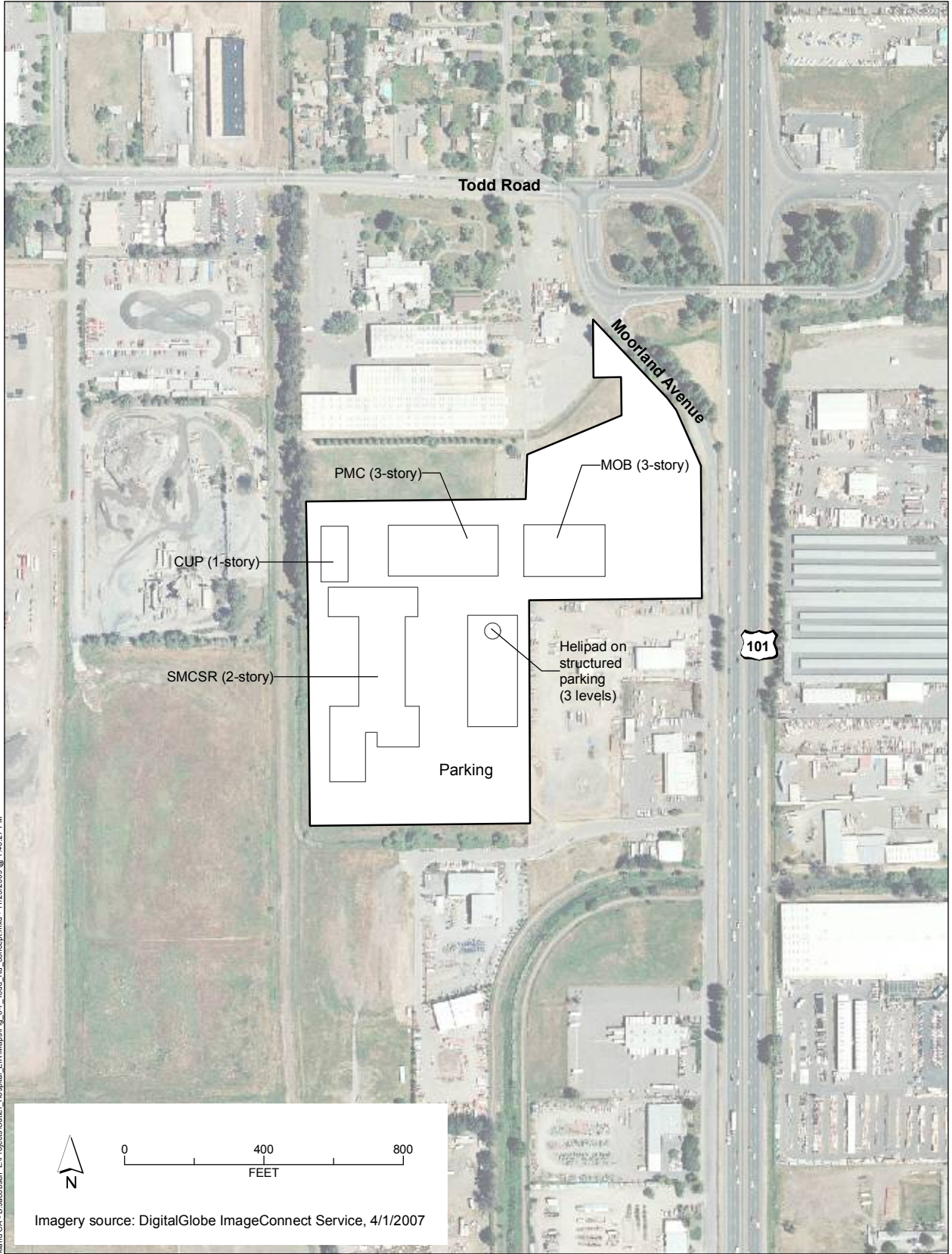
6.5.3.2 Impact Analysis

Aesthetics. The Todd Road/Moorland Avenue site is adjacent to the west side of US 101 immediately south of Todd Road. The site is currently vacant and surrounded mostly by industrial land uses but also some vacant land to the southwest. It has a grassy cover with no trees on the interior portion and only a few trees along part of its eastern boundary at S. Moorland Avenue. Industrial land uses occur on the east side of US 101 directly across the highway from the site. The site is visible from US 101 and from S. Moorland Avenue. There are no nearby residential or retail/commercial developments.

The land use designation of the site is industrial. Similar to the proposed project, US 101 adjacent to the site is identified in the Sonoma County General Plan as a Scenic Corridor. However, the project would not affect any scenic vistas or substantially degrade the visual quality or character of the site or its surroundings. There are no designated scenic landscape units or community separators in the vicinity of the site. The sensitivity level of the site would be low. The project at this site would appear co-dominant with the surrounding industrial uses. According to the County's visual assessment guidelines, it would have a less-than-significant visual impact.

When compared to the proposed project the aesthetic impacts of this alternative would be less.

Agricultural Resources. Agricultural impacts to the site were examined by referring to the California Agricultural Land Evaluation and Site Assessment Model. The site does not contain farmland of either unique or statewide importance; however the site does contain farmland of



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Figure 6-7
Todd Road/Moorland Avenue Alternative Site

local importance. Construction at this site would not conflict with any planned or zoned agricultural use of the site and the land is not under the Williamson Act. Currently the site is not being used and has been allowed to lay fallow. Impacts to agricultural resources would be less than significant.

When compared to the proposed project the impacts would be similar.

Air Quality. During the construction phase there would be potentially significant air quality impacts that could be reduced to less than significant with mitigation. Once construction is completed, only one day per year of significant air quality impacts from the operation of the project would occur due to the mandatory test of the emergency generator.

As with the proposed project, this alternative would only conflict with the local air quality plans for one day per year during the 8-hour test of the emergency generator. Less than significant impacts are expected to any sensitive receptors in the area in regards to both pollutants and odors.

When compared to the proposed project the impacts would be similar.

Biological Resources. This mostly vacant 19.9-acre site has a grassy cover with no trees on the interior portion and only a few trees along part of its eastern boundary at S. Moorland Avenue and along the northern boundary. These trees appear to be ornamental. A drainage ditch runs along the western and southern boundaries. Trees line this drainage ditch along the northwestern boundary with a few trees along the drainage on the southern boundary of the site.

The site contains an identified breeding pool for California Tiger Salamander. This alternative accordingly has greater impacts on CTS than the proposed project.

Wetlands at the site were not formally delineated. Wetlands are not apparent on aerial photos of the site, but this does not necessarily preclude their presence.

The project site is designated as Valley Oak Habitat pursuant to the VOH overlay zoning, but does not appear to contain any significant valley oaks or valley oak habitat. The project impacts on trees would be reduced compared to those of the proposed project.

Compared to the proposed project, this alternative would have greater impacts to CTS but fewer impacts on trees.

Cultural Resources. A records search of all pertinent cultural resource data for each alternative was conducted by the Northwest Information Center (File No. 03-1352) on July 1, 2009. The area that includes the parcel for this alternative was searched as well as a quarter-mile buffer. One resource, P-49-2834, was recorded about 500-feet to the west of the Todd Road/Moorland alternative parcel. This resource is a segment of the Northwest Pacific Railroad, which was found to be eligible for the National Register by Origer (2006). No other historical resources or unique archaeological resources have been previously recorded within a quarter-mile of this alternative, nor has any survey been conducted on this parcel. This alternative would have the same potential impacts to undiscovered archaeological sites as the proposed project.

Given the proximity to a potential historic resource, this alternative may have greater impacts to cultural resources than the proposed project.

Geology and Soils. Geologic conditions, including proximity to faults, at this site are similar to those at the proposed project site. Similar design measures would be required for a hospital facility at this site. Therefore, impacts related to geology and soils with this alternative would be similar to the proposed project.

Hazards and Hazardous Materials. A database search was conducted by Environmental Data Resources, Inc. (EDR) to identify sites with hazardous materials within 1 mile of the Todd Road/Moorland Avenue Alternative. Six locations, some with multiple sites, were identified within ¼ mile of the alternative site. Beyond this, there are a relatively large number of sites listed in various databases within the region. Sites within ¼ mile of this alternative site include 6 instances of leaking underground storage tanks. Sites to the north of this alternative site are generally upgradient (meaning groundwater could flow toward the alternative location and possibly contaminate soils and groundwater at the site). Sites mapped to the south of the alternative site are at a lower elevation and groundwater would tend to flow away from the alternative site.

No formal Phase 1 site assessment was conducted for this site, nor was a site visit conducted to visually identify any potential contamination. Potential for impacts at this site may be somewhat greater than at the proposed project location, due to the larger number of reported sites in the vicinity. Mitigation measures related to hazardous materials are expected to be similar to mitigation for the proposed project site.

Helicopter operations at the Todd Road/ Moorland Avenue alternative would occur adjacent to US 101 with a very similar layout to that of the proposed project except that the helistop would be located on the third floor rooftop of the Structured Parking which does not pose any greater hazard than that of a ground based helipad. Hazards associated with helicopter overflights would be similar to the proposed project, i.e., less than significant. This alternative site is not within the influence area of the Charles M. Shultz Airport or within 2 miles of any private airport.

Risks associated with helicopter operations would be similar to the proposed project. Impacts associated with exposure of people to hazardous materials could be greater than the proposed project given the number of nearby contaminated sites.

Hydrology and Water Quality. Post-construction Best Management Practices applied to this site would be very similar to those proposed for the Mark West Springs Road site. The site plan would include vegetated bio-swales and structural filter units for runoff from roofs and pavements, and the storm-water detention facilities could also contribute to the treatment train. For storm-water quality control purposes, the post-construction 2-year peak runoff from the site must be limited to pre-construction values, similar to the criteria that is to be applied to the Mark West Springs Road site, and would be addressed by employing detention basins to control peak runoff. However, because this site is smaller in area than the Mark West Springs Road site it may be necessary to detain storm-water runoff in underground reservoirs, rather than in open-air basins, to allow adequate space for parking lots. Although effective for siltation removal, underground reservoirs do not have the advantage of plant life to contribute to bio-remediation of the detained runoff, and typically will need mechanical (pumping) assistance to discharge runoff back into the creek channel. Regular maintenance would also be necessary to remove silt from the reservoir wet well and to service the pumping equipment.

Due to the size and configuration of this alternative site and given the recent adoption of new Municipal Separate Storm Sewer System (MS-4) permitting requirements, it is unclear whether there would be adequate area on the site to implement the Best Management Practices now required under MS-4. This would result in the need for development of off-site off-setting mitigation. Accordingly, this alternative would potentially have greater impacts on water quality than the proposed project or would require the acquisition and development of other parcels of land.

The project on this site would obtain water from the City of Santa Rosa, which obtains water from the Sonoma County Water Agency. Accordingly, this alternative would reduce the proposed project's impact on groundwater supplies and have fewer overall impacts.

Land Use and Planning. The Todd Road/Moorland Avenue Alternative site is surrounded primarily by industrial and agricultural land uses and the construction of the project at the site would not divide an establish community. The site is zoned M1 SR VOH (limited urban industrial) and M3 VOH (limited rural industrial) and designated under the General Plan as Rural Residential. These zoning designations do not permit hospital uses. VOH Combining District Overlay zoning mandates the mitigation of valley oak trees and valley oak woodlands removed as a result of new development through replacement and retention, although the site does not appear to contain any valley oak or valley oak habitat. No known conservation plans apply to the project site.

Construction of the project at the site would not be permitted under existing M1 and M3 zoning designations regulating the site and would therefore conflict with existing land use policy and regulations. The Sonoma County Zoning Map and/or the Sonoma County Zoning Code would likely have to be amended to permit the project to be constructed on the site. An amendment to the Sonoma County General Plan may also be required. The General Plan and zoning designations do not appear to have been adopted for the purpose of avoiding or mitigating an environmental impact, and therefore their amendment would not be considered a significant land use impact under CEQA.

However, as discussed below with regard to Utilities and Service systems, LAFCO's policies prohibit non-contiguous annexations, and the City's Utility Certificate policy prohibits extending city services to parcels unless they can be annexed to the City, or unless there is a documented health issue with a failed septic system. Similarly, the City's Utility Certificate policy prohibits extending city water services to parcels unless they can be annexed to the City, or there is a documented health issue with a contaminated water supply. Therefore, providing service to this site would require a special exception to the City's Utility Certificate policy, which would have to be approved by the City Council, and would require the approval by LAFCO of an Outside Service Area Agreement with no near term possibility of annexation.

Accordingly, the land use impacts of this alternative would be greater than the proposed project.

Mineral Resources. According to the California Department of Mines and Geology publication SR 146 the alternative site is not within a mineral resource zone. Therefore there would be no impacts to mineral resources of the state or the loss of a site for mineral recovery. This impact would be similar to the proposed project.

Noise. Under this alternative the helistop would be located on the roof of the three-story parking garage with access to the Sutter Medical Center hospital's emergency room via elevator from the roof and then across the parking lot. The flight paths from the helistop would be toward the north and southeast and then both paths would follow US 101. The nearby land uses to the site are freeway to the east, rail line to the west, industrial in all directions and some residential across Todd Road to the north. There are plans by the Northwest Pacific Railroad to resume freight rail service along the rail line which would subject the site to an additional noise source. Helicopter operations would be potentially audible to some of the residential areas to the north, but freeway noise would be dominant. Keeping the approach/departure path of the helicopter along US 101 will minimize noise impacts. The noise contours created by the flight path are reflected in the **Figure 6-8**. Noise impacts would be less due to helicopter take-off and landing from the third floor of the Structured Parking building, rather than from the ground. As well, there are fewer sensitive receptors in the area. Noise impacts with this alternative would be less than the proposed project, but would likely remain significant and unavoidable.

Population and Housing. Like the proposed project, this alternative would have a less than significant impact on population and housing. This alternative would not induce substantial population growth, split any neighborhoods, or displace any people. These impacts would be similar to the proposed project.

Public Services. As with the proposed project impacts to police, fire and other public services would be minimal and would be considered less than significant. These impacts would be similar to the proposed project.

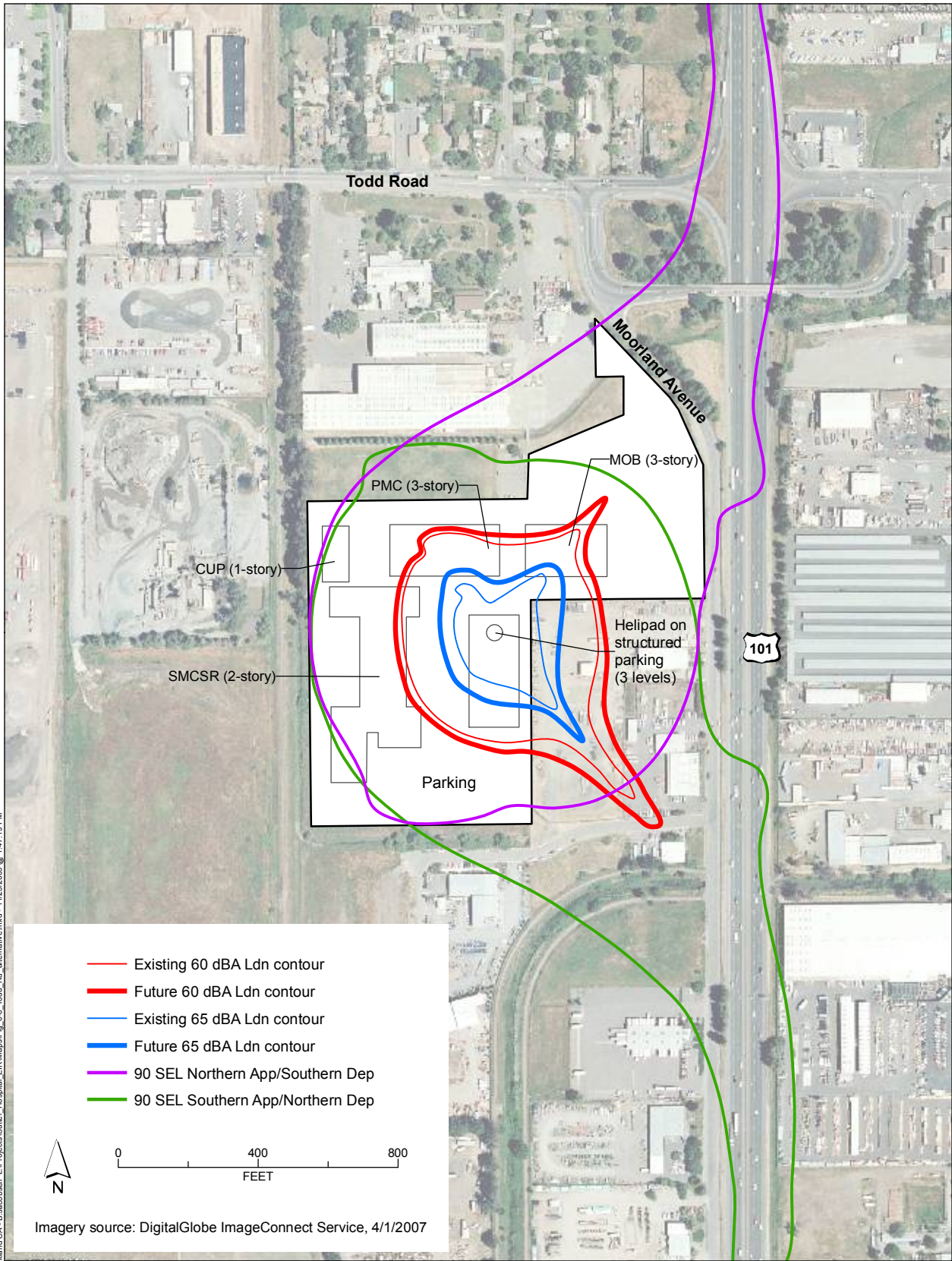
Recreation. This alternative would not increase the use or demand of recreational facilities and therefore there would be a less than significant impact. These impacts would be similar to the proposed project.

Transportation and Traffic. The Todd Road interchange with the US 101 freeway currently experiences moderate observed volumes during PM peak traffic conditions. The three signalized intersections within the interchange were observed to operate at acceptable levels of service, with only infrequent occurrences of vehicle queuing extending from one signal to an adjacent intersection. The large number of light industrial uses accessed via Todd Road west of US 101 also result in a higher than average number of mid-size trucks in the vehicle mix.

There are no studies with current traffic volumes in the project area. Also, there are no near or long term improvements planned for the Todd Road interchange.¹ The rail line crossing Todd Road just west of the interchange will become active with freight rail service planned for 2010 and passenger rail service scheduled by 2014/2015.

The six-lane US 101 freeway near the Todd Road interchange currently operates at acceptable levels of service during the AM and PM peak hours. However, the Santa Rosa General Plan update shows that by 2035, operation in the non-high occupancy vehicle (HOV) lanes is

¹ Personal communication from Dave Wallace, Sonoma County Department of Transportation & Public Works [date?].



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Figure 6-8 Todd Road/Moorland Ave Alternative Site with Predicted Noise Contours from Helicopter Take Off and Landing

projected to be level of service F in both the north and southbound directions during both the AM and PM peak hours. HOV lane operation is projected to be level of service C in both directions during both times periods.

Development of the project with the existing roadway system would potentially result in significant vehicle queuing during both peak hours on some of the approaches to the three signalized intersections within the Todd Road interchange. At a minimum, signal timing adjustments would potentially be required to preclude the possibility of vehicle backups on the north and southbound off-ramps to the freeway mainline. Select additional approach and departure lanes would also potentially be required at one or more intersections in order to assure acceptable level of service and to minimize vehicle queues backing from one signal through an adjacent intersection. This possibly would include widening the Todd Road overpass of the freeway to provide two lanes in the westbound direction. Moorland Avenue would require reconstruction from the Todd Road interchange along the project frontage. Although existing project volumes could be accommodated acceptably along a two-lane Moorland Avenue, exclusive right turn lanes would also be recommended on the southbound Moorland Avenue approaches to each project driveway.

Eventually this alternative will have three or four intersections possibly receiving significant impacts as well as eventual highway impacts. At some point in time interchange reconstruction will be required to alleviate traffic congestion. Currently the site is served by Sonoma County Transit at Todd Road at Moorland Avenue.

Similar to the proposed project, this alternative would require alterations to the surrounding roadways to reduce traffic impacts. When compared to the proposed project, traffic related impacts are expected to be similar to that of the proposed project.

Utilities and Service Systems. The site is within the City of Santa Rosa's urban boundary, but is not adjacent to the current City limits, which are just south of Bellevue Avenue along Dutton Avenue, nearly one mile north of the Todd Road/Moorland site. LAFCO's policies prohibit non-contiguous annexations, and the City's Utility Certificate policy prohibits extending city services to parcels unless they can be annexed to the City, or unless there is a documented health issue with a failed septic system. Therefore, providing service to this site would require a special exception to the City's Utility Certificate policy, which would have to be approved by the City Council, and would require the approval by LAFCO of an Outside Service Area Agreement with no near term possibility of annexation.

The City has a relatively new sewer trunk line located in Todd Road, just to the north of the site. There are currently no sewer collection systems in Mooreland Avenue south of Todd Road. It is not certain if the trunk line would be sufficiently deep to allow for a gravity sewer main to be extended south in Mooreland Avenue to the site and through the site to serve the proposed buildings without construction of an onsite sewage lift station. However, a gravity extension in Mooreland Avenue to the project frontage appears feasible. There is capacity in the wastewater system now for the project, but over time Santa Rosa will need to implement increases in capacity and/or storage. The property to the immediate north of the subject site is within the Southpark Sanitation District.

As noted above, LAFCO's policies prohibit non-contiguous annexations, and the City's Utility Certificate policy prohibits extending city services to parcels unless they can be annexed to the

City, or there is a documented health issue with a contaminated water supply. Therefore, providing water service to this site would require a special exception to the City's Utility Certificate policy, which would have to be approved by the City Council, and would require the approval by LAFCO of an Outside Service Area Agreement with no near term possibility of annexation.

That said, unlike with sewer service, several properties adjoining the Todd/Road Moorland site do currently receive water service from the City of Santa Rosa water system, though for fire protection services only. There is a 14 inch diameter City water line in Mooreland Avenue south of Todd Road that extends along and beyond the project frontage. It is likely that this line could provide adequate flow to serve the domestic and fire protection needs of the development, but it would be essentially a dead-end line, with very limited possibility of looping to provide two sources of water in the event of an emergency. Any such connection would require an easement from the adjoining north property owner, and a possible reconfiguration of their onsite fire protection system. It is also likely that the available water pressure in this location is less than 60 psi static, which would likely require a booster pump for fire and domestic uses.

Accordingly, the Utility and Service System impacts of this Alternative will be greater than the proposed project.

Energy. Regardless of location, the project buildings would be LEED designed, using the most current technology to reduce energy usage throughout the buildings. The current electrical infrastructure is capable of handling the increased load as a result of this alternative. Impacts regarding energy use would be similar for this alternative as the proposed project.

6.5.3.3 Ability to Accomplish Project Objectives

Sutter does not own the Todd Road/Moorland Avenue alternate site, and thus could not plan and develop a hospital on the site in time to meet the deadlines in the Hospital Facility Seismic Safety Act, and thus this alternative fails to meet Project Objectives 4 and 8.

Given the less than optimal configuration of the site (due to its awkward modified "L" configuration), implementation of this alternative would impede Sutter's ability to ensure that the Medical Campus is efficiently designed and of sufficient connectivity to meet significant components of Project Objective 2. Specifically, Sutter would not be able to use the most modern and efficient layout for an operationally efficient and cohesive campus that promotes functional relationships among departments, services and programs, and provide functional circulation within the inpatient and outpatient spaces, placement of seating areas, outdoor terraces, and other patient and visitor amenities.

The constrained nature of the site could also impair Sutter's ability to meet Project Objective 7 by precluding Sutter from developing the Medical Campus in a manner that "provides a simple, clear and elegant set of buildings linked by meditative paths, bioswales, outdoor gardens, courtyards and open space that promotes a sense of well-being and healing through a dignified and forward-thinking building plan that will be an inviting and positive healing environment for patients, families, visitors, staff and all that come in contact with the Medical Campus."

Finally, development of this Alternative would not locate the new SMCSR adjacent to the Wells Fargo Center for the Arts, and thus would fail to meet Project Objectives 3, 11 and 12, which

focus on the interaction of the Medical Center with the Wells Fargo Center for the Arts, the furtherance of the Center's non-profit mission, and the revision of the Center's Use Permit for community events.

6.5.3.4 Conclusion

This alternative would have fewer impacts to aesthetics, hydrology and noise, but greater impacts to cultural resources, hazards and hazardous materials, land use and planning and utilities when compared to the proposed project. It would not fully meet Project Objectives 2, 3, 4, 7, 8, 11, and 12.

6.5.4 Alternative 4A: Decentralized Alternative (50 Mark West Springs Road and Todd Road/Moorland Avenue Site)

As noted earlier, a number of comments at County workshops expressed interest in a more urbanized location for the project, ideally in southwest Santa Rosa. Given the few urban sites large enough to accommodate the entire project, the County developed two versions of a "decentralized" alternative which would place the proposed 70-bed Sutter hospital and a smaller (50,000 square foot) medical office building at one of the more urban sites identified in Sutter's screening analysis (sites considered too small for all components of the proposed project), and the 28-bed PMC and a 50,000 square foot medical office building at Sutter's proposed project site. The two sites chosen for these decentralized alternatives are the Todd Road/Moorland Ave property (Alternative 4A, analyzed below) and the Ring Property at Highway 12 and Stony Point Road (Alternative 4B, discussed in Section 6.5.5).

6.5.4.1 Description

This alternative involves the project being split between two sites. Under this alternative the Physicians Medical Center with a building footprint of 75,000 sq/ft and two stories, a medical office building (MOB) with a building footprint of 25,000 sq/ft and two stories, a helistop and a central utility plant would be constructed at 50 Mark West Springs Road (the proposed project site). The 2 story 70-bed Sutter hospital with a footprint of 75,000 sq/ft, a two story MOB with a footprint of 25,000 sq/ft, a helistop and a central utility plant would be constructed at an alternate site (Todd Road/Moorland Avenue site). The Todd Road/Moorland Avenue site is located at 3801, 3809 & 3901 Moorland Avenue, the same site considered in Alternative 3. The site is under County jurisdiction, but within the Urban Growth Boundary of the City of Santa Rosa. The site is mostly vacant and is 19.9 acres in size.

As with the proposed project, this alternative would have parking lots as opposed to parking garages. Helistops would be located on the ground at both sites. The heights of the buildings for three building (hospital, PMC, and central utility plant) would be the same, while the MOB is split between both sites for the alternative and is one story shorter than that of the proposed project.

This alternative will require 411 surface parking spaces at the Mark West Springs Road site and 664 surface parking spaces at the Todd Road/Moorland Avenue Site.

The buildings would be developed as laid out in **Figure 6-9** and **Figure 6-10**.

6.5.4.2 Impact Analysis

Aesthetics. The visual characteristics of the Mark West Springs Road site are described in Section 3.2. Development of the Physicians Medical Center, Medical Office Building, and Central Utility Plant as described above would be consistent with the visual character of the Wells Fargo Center for the Arts. The sensitivity level of the site is moderate. The visual dominance of project features would be co-dominant or less with existing development on the site and in surrounding areas. This combination results in less than significant visual impacts. Further, project development on this site would not affect any scenic vistas or substantially degrade the visual quality or character of the site or its surroundings.

The visual characteristics of the Todd Road/Moorland Avenue site are described above in Section 6.5.3.2. The sensitivity level of this site would be low. The project would appear co-dominant with the surrounding industrial uses. Further, the project would not affect any scenic vistas or substantially degrade the visual quality or character of the site or its surroundings. Development of the Sutter Medical Center hospital, Medical Office Building, and Central Utility Plant as described above on the Todd Road/Moorland Avenue site would have a less than significant visual impact.

When compared to the proposed project the aesthetic impacts at each site would be less; however, it should also be noted that this alternative would result in development at two sites, rather than one. Accordingly, overall, the aesthetic impacts of this alternative are considered similar to the proposed project.

Agricultural Resources. Agricultural impacts to the sites were examined earlier in the analysis of the project analysis (Section 3.3 for the Mark West Springs Road site) and the alternatives analysis (Section 6.5.3.2 for the Todd Road/Moorland Avenue site). Both sites contain some farmland of local importance, but no farmland of unique or statewide importance. As discussed earlier impacts to agricultural resources would be less than significant at both sites.

Because this alternative would impact agricultural lands at two sites, rather than one, making it less likely that agriculture would occur on either site, the agricultural impacts of this alternative would be greater than under the proposed project.

Air Quality. During the construction phase at each site there would be potentially significant air quality impacts that could be reduced to less than significant with mitigation. Once construction is completed, only one day per year of significant air quality impacts from the operation of the project would occur due to the mandatory 8-hour test of the emergency generator. However, this impact would occur at both sites.

As with the proposed project, this alternative would only conflict with the local air quality plans for one day per year during the 8-hour test of the emergency generator. Less than significant impacts are expected to any sensitive receptors in the area in regards to both pollutants and odors.

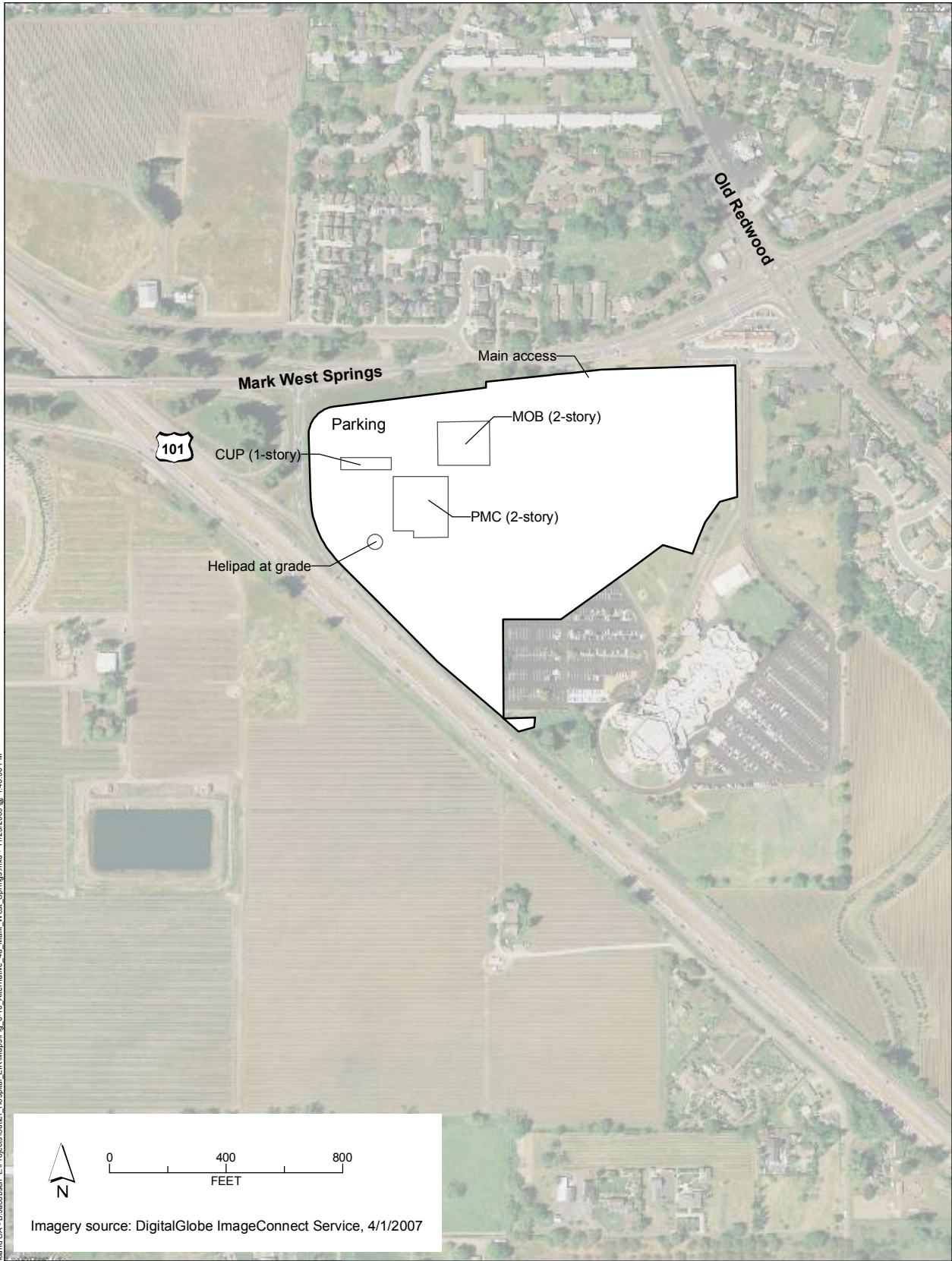


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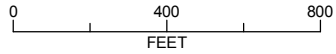


Sutter/LBMF Joint Master Plan

Figure 6-9
Alternative 4a - Todd Road



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 Imagery source: DigitalGlobe ImageConnect Service, 4/1/2007



Figure 6-10
Alternative 4a - Mark West Springs

Construction of two facilities at different locations under this alternative would reduce the efficiencies Sutter would have otherwise achieved through the integrated design of the proposed project, including efficiencies related to the reduction in air quality emissions. For instance, two back-up generators would be required. Further, some Sutter Medical Center users may need to travel between the Mark West Springs site and the Todd Road/Moorland Avenue site in order to obtain the services that are offered at the other site. This would generate new air quality impacts related to traffic that would not be present under the proposed project. Accordingly, when compared to the proposed project the impacts of this alternative would be greater.

Biological Resources. Biological resources at the proposed project site at 50 Mark West Springs Road are described in Section 3.5. Biological resources at the Todd Road/Moorland Avenue site are described above in Section 6.5.3.2. This alternative may result in removing fewer native trees at the proposed project site; however there could potentially be impacts to CTS at the Todd Road/Moorland Avenue site. Avoidance and minimization measures for this alternative would make the impacts similar to the proposed project.

Cultural Resources. Cultural impacts to the sites were examined earlier in the analysis of the proposed project site (Section 3.6) and for Alternative 3 (Todd Road/Moorland Avenue site) (Section 6.5.3.2). No significant cultural resources were identified at the Mark West Springs Road site. A cultural resource was recorded about 500-feet to the west of the Todd Road/Moorland alternative parcel. This resource is a segment of the Northwest Pacific Railroad, which was found to be eligible for the National Register by Origer & Associates (2006). At both sites there is the potential to disturb unknown archaeological sites.

Given the proximity to a potential historic resource, this alternative may have greater impacts to cultural resources than the proposed project.

Geology and Soils. Geologic conditions, including proximity to faults, with this alternative are discussed for the Mark West Springs Road site in Section 3.7 and the Todd Road/Moorland Avenue site for Alternative 3 in Section 6.5.3.2. Similar design measures would be required for a hospital facility at these sites. Therefore, impacts related to geology and soils with this alternative would be similar to the proposed project.

Hazards and Hazardous Materials. Hazards and hazardous materials for these sites were described in Section 3.8 for the Mark West Springs Road site and in Section 6.5.3.2 for the Todd Road/Moorland Avenue site. This alternative would place buildings at both locations, but construction would be somewhat less at each given location so would have less land disturbance, but an overall similar amount of construction when compared to the proposed project. Potential for impacts at the Todd Road/Moorland Avenue site may be somewhat greater than at the proposed project location, due to the larger number of reported contaminated sites in the vicinity.

Helicopter operations at both the Todd Road and Mark West Springs Road sites would occur adjacent to US 101 and would be divided between the two helipads. Compared to the proposed project, hazards associated with helicopter overflights, while less than significant, would be present at two sites.

This alternative site is not within the influence area of the Charles M. Shultz Airport nor is it within 2 miles of any private airport. Impacts from hazardous materials and helicopter operations would be similar to the proposed project as helicopter flights. When compared to the proposed

project impacts would be slightly greater due to the large number of contaminated sites near the Todd Road/Moorland Avenue site.

Hydrology and Water Quality. The hydrology and water quality impacts at both sites were previously discussed in Section 3.9 (Mark West Springs Road site) and Section 6.5.3.2 (Todd Road/Moorland Avenue site) respectively. Constructing and operating a smaller portion of the project at each site would have slightly less hydrology and water quality impacts due to the smaller project footprint resulting in less impacts to groundwater recharge and water quality effects from runoff.

Neither the Mark West Springs Road site nor the Todd Road/Moorland site is located within a designated FEMA 100-year flood plain; however mitigation measures to prevent flooding at the Todd Road/Moorland Avenue site may still be required as the site is adjacent to flood control channels and has a high water table. Construction of the project on the two sites is expected to have less than significant impacts on water quality and groundwater supplies. Construction of the alternative would alter the local drainage patterns on both sites, but would not significantly impact the storm water drainage systems offsite.

Due to the size and configuration of this alternative site and given the recent adoption of new Municipal Separate Storm Sewer System (MS-4) permitting requirements, it is unclear whether there would be adequate area on the site to implement the Best Management Practices now required under MS-4. This would result in the need for development of off-site off-setting mitigation. Accordingly, this alternative would potential have greater impacts on water quality than the proposed project or would require the acquisition and development of other parcels of land.

This alternative would reduce the proposed project's impact on groundwater by constructing part of the project on a site served by City of Santa Rosa water. Other hydrology and water quality impacts would be reduced at the Mark West Springs Road site compared to the proposed project, but would also occur at the Todd Road/Moorland Avenue site. These impacts could be mitigated to less than significant, as described in Sections 3.9 and 6.5.3.2.

Land Use and Planning. Land use impacts associated with project development at the Mark West Springs Road site are discussed in Section 3.10 and for the Todd Road/Moorland Avenue site in Section 6.5.3.2.

Specifically as discussed below with regard to Utilities and Service systems, LAFCO's policies prohibit non-contiguous annexations, and the City's Utility Certificate policy prohibits extending city services to parcels, unless they can be annexed to the City, or unless there is a documented health issue with a failed septic system. Similarly, and the City's Utility Certificate policy prohibits extending city water services to parcels unless they can be annexed to the City, or there is a documented health issue with a contaminated water supply. Therefore, providing service to this site would require a special exception to the City's Utility Certificate policy, which would have to be approved by the City Council, and would require the approval by LAFCO of an Outside Service Area Agreement with no near term possibility of annexation.

Accordingly, the land use impacts of this alternative would be greater than the proposed project.

Mineral Resources. Impacts associated with mineral resources at the Mark West Springs Road site are discussed in Section 3.7 and for the Todd Road/Moorland Avenue site in Section 6.5.3.2. Impacts to mineral resources under this alternative would be similar to the proposed project.

Noise. Noise impacts associated with project operations at the Mark West Springs Road site are discussed in Section 3.11. Noise impacts associated with project operations at the Todd Road/Moorland Avenue site are discussed in Section 6.5.3.2. Under this alternative two helistops would be located at grade on the project sites. Both flight paths from the helistops would follow US 101. The nearby land uses to the Todd Road/Moorland Avenue site are freeway to the east, rail line to the west, industrial in all directions and some residential across Todd Road to the north. The Mark West Springs Road site has a freeway to the west and residential to the north and east. The noise impacts to residences would be similar to those that would be experienced under the proposed project; however impacts would be split between two locations instead of one with each site having less frequency of helicopter flights when compared to the proposed project.

The noise contours created by the flight path for the Todd/ Road/Moorland site are reflected in **Figure 6-11**, while the noise contours for the Mark West Springs Road site were previously shown in **Figure 3.11-4**. Overall noise impacts when compared to the proposed project impacts would be less due to flights being split between two sites and fewer number of residential units area around the Todd Road/Moorland site.

Population and Housing. As with the proposed project, this alternative would have a less than significant impact on population and housing. This alternative would not induce substantial population growth, split any neighborhoods, or displace any people. These impacts would be similar to the proposed project.

Public Services. As with the proposed project impacts to police, fire and other public services would be minimal and would be considered less than significant. These impacts would be similar to the proposed project.

Recreation. This alternative would not increase the use or demand of recreational facilities and therefore there would be a less than significant impact. These impacts would be similar to the proposed project.

Transportation and Traffic. Traffic impacts at the Mark West Springs site were previously analyzed in Section 3.15 for the proposed project. This alternative would generate less traffic at the Mark West Springs Road site compared to the proposed project, due to the elimination of the Sutter hospital and reduced MOB onsite. Traffic generation at the Mark West Springs Road site during peak hours would be as follows:

AM Peak Hour 44%± of the proposed project

PM Peak Hour 48%± of the proposed project

Based upon County significance criteria, this reduction in trip generation would not change any 2014 or 2035 signalization needs impacts or many, if any, of the 95th percentile queuing impacts. The fair share percent contribution towards these mitigations would, however, be reduced.

The reduced trip generation would potentially eliminate the project's 2014 significant level of service impact at the River Road/Fulton Road intersection as well as the project's 2035

significant level of service impact at the Mark West Springs Road/Old Redwood Highway intersection. Significant level of service impacts would remain at other intersections identified as being impacted by the proposed project, but the project's fair share contribution would be reduced.

Some Sutter Medical Center users may need to travel between the Mark West Springs site and the Todd Road/Moorland Avenue site in order to obtain the services that are offered at the other site. There would also likely be increased ambulance trips as a result of patients being sent from the Sutter Medical Center at Todd Road/Moorland Avenue to the Physicians Medical Center at Mark West Springs Road. Accordingly, this alternative would generate new traffic impacts not present under the proposed project.

The transportation and traffic impacts of this Alternative are potentially greater than under the proposed project.

Utilities and Service Systems. Utilities and service systems impacts associated with project development at the Mark West Springs Road site are addressed for the proposed project in Section 3.16. Utilities impacts for the Todd Road/Moorland Avenue alternative site are addressed under in Section 6.5.3.2.

Impacts related to utilities from this alternative would be somewhat less at the Mark West Springs Road site than under the proposed project since less water would be needed and less wastewater would be generated at the Mark West Springs Road site, resulting in a reduced impact to the Airport-Larkfield-Wikiup Sanitation Zone.

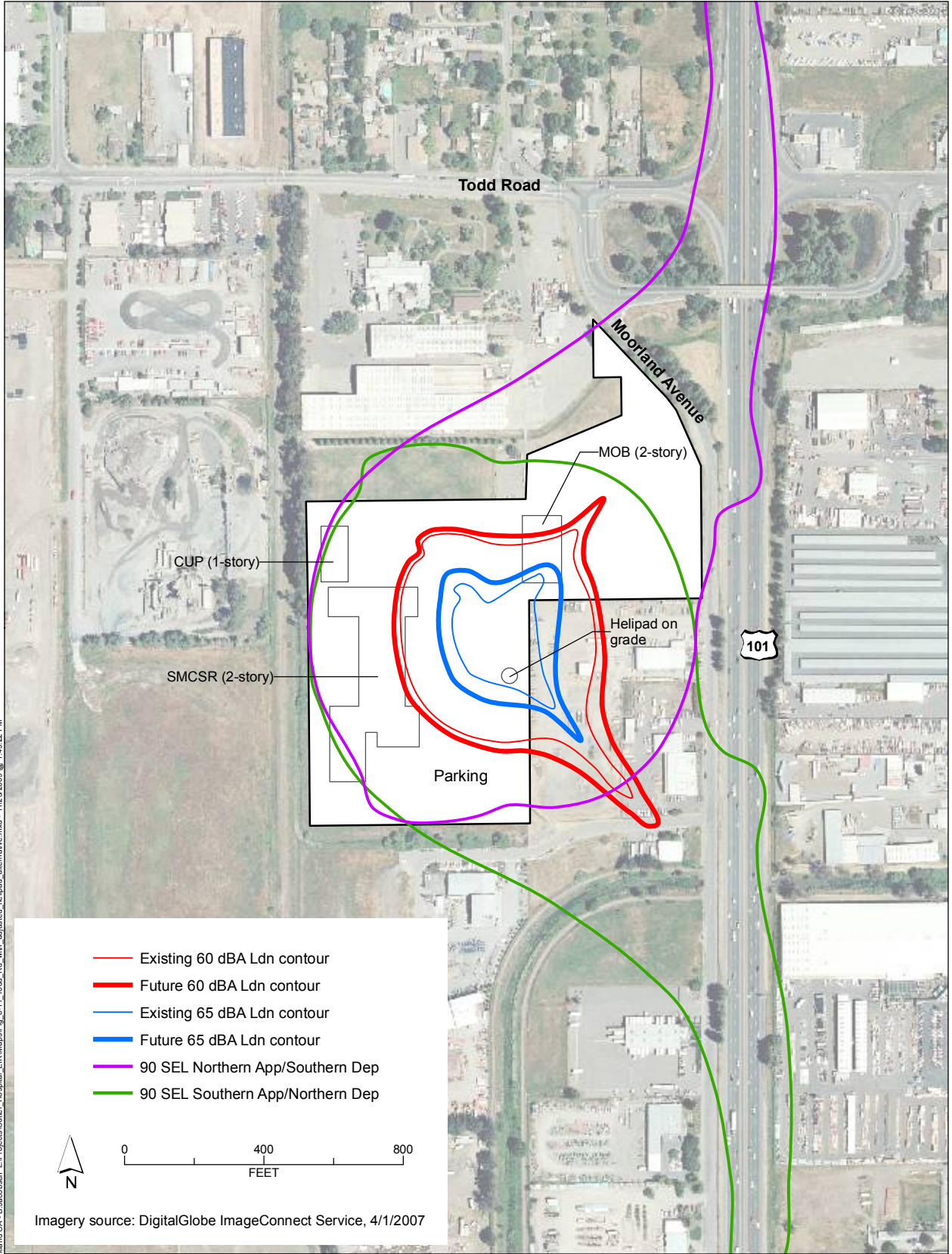
With respect to the Todd Road/Moorland Avenue site, the Utility and Service System impacts of this alternative would be greater than the proposed project.

Energy. The project buildings would be LEED designed, using the most current technology to reduce energy usage throughout the buildings. The current electrical infrastructure is capable of handling the increased load as a result of this alternative. However, the construction of two facilities at different locations under this alternative will reduce the efficiencies Sutter would have otherwise achieved through the integrated design of the proposed project, including efficiencies related to energy usage. Accordingly, the energy impacts of this alternative are greater than under the proposed project.

6.5.4.3 Ability to Accomplish Project Objectives

Sutter does not own the Todd Road/Moorland Avenue site, which under this alternative would be proposed for the hospital, and thus could not plan and develop a hospital on the site in time to meet the deadlines in the Hospital Facility Seismic Safety Act, and thus this alternative fails to meet Project Objectives 4 and 8.

Even with the elimination of the PMC and the reduced size of the MOB on the Todd Road/Moorland Avenue Site, the less than optimal configuration of this site (due to its awkward modified "L" configuration) could impede Sutter's ability to ensure that the site is efficiently designed and of sufficient connectivity to meet significant components of Project Objective 2, as described under Alternative 3. Moreover, the benefits to health care delivery identified in Project Objective 2 of locating on the same site all facilities that link inpatient, outpatient, and physician



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Figure 6-11 Todd Road/Moorland Avenue Alternative Site with Adjusted Helipad and Predicted Noise Contours from Helicopter Take Off and Landing

office visits and connect those services through an efficient layout would not be achieved by this alternative.

Similarly, the construction of two facilities at different locations will prevent Sutter from meeting Project Objective 7, which calls for the development of the Medical Campus, linked to the Wells Fargo Center for the Arts, in a manner that “provides a simple, clear and elegant set of buildings linked by meditative paths, bioswales, outdoor gardens, courtyards and open space that promotes a sense of well-being and healing through a dignified and forward-thinking building plan that will be an inviting and positive healing environment for patients, families, visitors, staff and all that come in contact with the Medical Campus.”

The construction of two facilities at different locations under this Alternative will reduce the efficiencies Sutter would have otherwise achieved through the integrated design of the Proposed Project. As such, this Alternative would also impair Sutter’s ability to meet Project Objective 6, which calls for the construction of facilities that meets the *Sutter Health Facility Planning and Development Building Design Policy for Sustainability* with respect to site selection, water efficiency and conservation, energy efficiency, material and resource efficiency and environmental air quality. Specifically, by duplicating some construction and operations at the two sites, this Alternative will reduce Sutter’s ability to employ “green” and sustainable design and construction practices to achieve goals including maximizing green space, employing energy efficient hospital design, and stressing water conservation.

6.5.4.4 Conclusion

This alternative would have greater impacts to agricultural resources, air quality resources, cultural resources, hazards and hazardous materials, hydrology, land use and planning, traffic, utilities, and energy; while impacts would be less for noise when compared with the proposed project. This alternative would not fully meet Project Objectives 2, 4, 6, 7, and 8.

6.5.5 Alternative 4B: Decentralized Alternative (50 Mark West Springs Road and Ring Site at 1700 Hampton Way)

As noted earlier, the two “decentralized” alternatives (4A and 4B), were included in response to requests for analysis of a more urbanized location for the project, ideally in southwest Santa Rosa. Given the few urban sites large enough to accommodate the entire project, the decentralized alternatives would place the proposed 70-bed Sutter hospital and a smaller medical office building at a more urban site (sites considered too small for all components of the proposed project), and the 28-bed PMC and a 50,000 square foot medical office building at Sutter’s proposed project site. Alternative 4B is the second of these alternate sites, known as the Ring Property at Highway 12 and Stony Point Road.

6.5.5.1 Description

Under this alternative, the project would be split between two sites. The 28-bed PMC, a 50,000 sq/ft medical office building (MOB), a helistop and a central utility plant would be constructed at 50 Mark West Springs Road (the proposed project site). The 70-bed Sutter hospital, a 50,000 sq/ft MOB, a helistop and a central utility plant would be constructed at an alternate site (Ring).

The Ring site is located at 1700 Hampton Way in Santa Rosa. The site is approximately 18.5 acres in size and is located south of and adjacent to Highway 12 and Stony Point Road.

As with the proposed project, this alternative would have parking lots as opposed to parking garages. This alternative will require 411 surface parking spaces at the Mark West Springs Road site and 664 surface parking spaces at the Ring Road Site.

Helistops would be located on the ground at the Mark West Springs site and on top of a building at the Ring site due to site constraints. The heights of the PMC and central utility plants will be the same as the proposed project, while the MOB is split between both sites for the alternative and is one story shorter than the single MOB for the proposed project. The 70-bed hospital is proposed to be one story higher for this alternative than for the proposed project's two story hospital because of the configuration of the site and limited space available on the site, and the need to provide sufficient space for on-site parking, setbacks and emergency access.

The buildings would be developed as laid out in **Figures 6-12** and **6-13**.

6.5.5.2 Impact Analysis

Aesthetics. The visual characteristics of the Mark West Springs Road site are described in Section 3.2. Development of the Physicians Medical Center, Medical Office Building, and Central Utility Plant as described above would be consistent with the visual character of the Wells Fargo Center for the Arts. The sensitivity level of the site is moderate. The visual dominance of project features would be co-dominant or less with existing development on the site and in surrounding areas. This combination results in less than significant visual impacts. Further, project development on this site would not affect any scenic vistas or substantially degrade the visual quality or character of the site or its surroundings.

The Ring Property is adjacent to the south side of State Route (SR) 12 immediately east of Stony Point Road. It is within the limits of the City of Santa Rosa. The site is essentially vacant. It is bordered on the north by SR 12, the west by the highway on ramp, the south by a paved bike path and industrial land uses, and the east by industrial uses. It has a grassy cover with no trees. Residential land uses occur on the north side of State Route 12 directly across the highway from the site. The site is visible from the highway and from Stony Point Road where it crosses over the highway. Existing commercial and industrial uses block views of the site from Stony Point Road south of S R 12 and from Sebastopol Road.

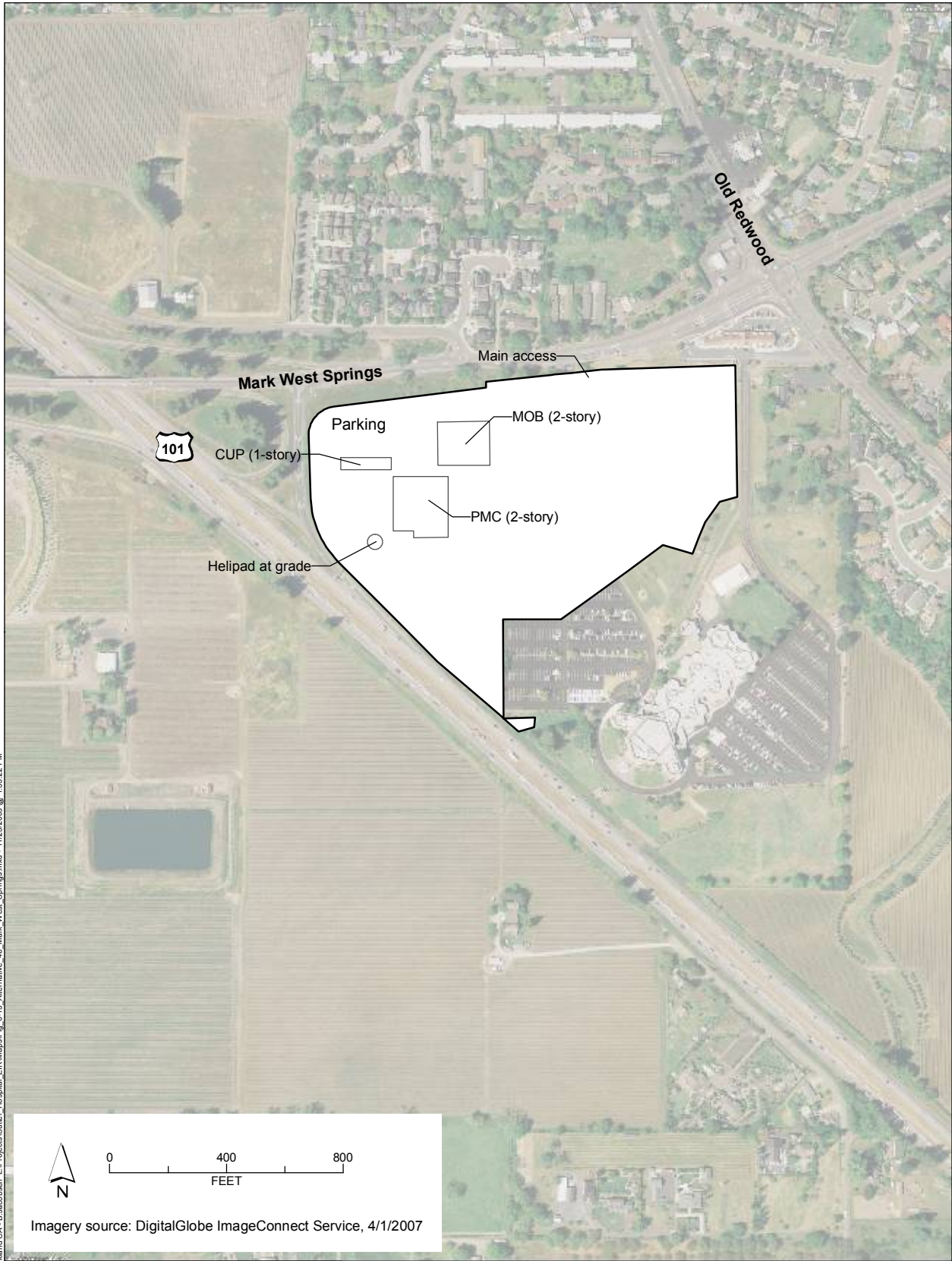
The land use designation of the Ring Property is urban residential. It is part of the Sebastopol Road Urban Vision Plan. There are no designated scenic corridors, scenic landscape units, or community separators in the vicinity of the site. The sensitivity level of the site would be low. Project elements would appear co-dominant with the surrounding industrial and commercial uses. Development of the facilities described above at the Ring site would have a less-than-significant visual impact. Further, the development would not affect any scenic vistas or substantially degrade the visual quality or character of the site or its surroundings.



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Figure 6-12
Alternative 4b - Ring Property



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Figure 6-13
Alternative 4a - Mark West Springs

When compared to the proposed project the aesthetic impacts at each site would be less; however, it should also be noted that this alternative would result in development at two sites, rather than one. Accordingly, overall, the aesthetic impacts of this alternative are considered to be similar to the proposed project.

Agricultural Resources. Agricultural impacts associated with the Mark West Springs Road site were analyzed for the proposed project in Section 3.3. The Mark West Springs Road site contains some farmland of local importance, but no farmland of unique or statewide importance. Agricultural resources impacts at this site would be less than significant.

Agricultural impacts to the Ring Property were examined by referring to the California Agricultural Land Evaluation and Site Assessment Model. It was found that the site does not contain farmland of either unique or statewide importance; however the site does contain some farmland of local importance. Construction at this site would not conflict with any planned or zoned agricultural use of the site and the land is not under the Williamson Act. Currently the site is not being used and has been allowed to lay fallow. Impacts to agricultural resources would be less than significant.

Because this alternative would impact agricultural lands at two sites, rather than one, making it less likely any remaining land at either site would be used for agricultural purposes, the agricultural impacts of this alternative would be greater than under the proposed project.

Air Quality. During the construction phase there would be potentially significant air quality impacts, however once construction is completed only one day of significant air quality impacts from the operation of the project would occur due to the mandatory test of the emergency generator.

As with the proposed project, this alternative would only conflict with the local air quality plans for one day during projects operation. Increases in criteria pollutants would result mainly from the construction process and these impacts would be potentially significant. Less than significant impacts are expected to any sensitive receptors in the area in regards to both pollutants and odors.

The construction of two facilities at different locations under this alternative will reduce the efficiencies Sutter would have otherwise achieved through the integrated design of the proposed project, including efficiencies related to the reduction in air quality emissions. For instance, two back-up generators would be required. Further, some Sutter Medical Center users may need to travel between the Mark West Springs site and the Ring Road site in order to obtain the services that are offered at the other site. This would generate new air quality impacts related to traffic that are not present under the proposed project. Accordingly, when compared to the proposed project the impacts of this alternative would be greater than under the proposed project.

Biological Resources. Biological resources at the Mark West Springs Road site are described in Section 3.5. The 18.5-acre Ring Property is bordered on the north by State Route 12, the west by the highway on ramp, and the south and east by industrial uses. It has a grassy cover with few trees. Based on review of aerial photos, this somewhat isolated parcel does not appear to have high habitat value for sensitive species because of surrounding land uses and the site appears disturbed. A CNDDDB search revealed that the northeast corner of the property is shown as part of an area on either side of Santa Rosa Creek with the potential for occurrence of Sonoma white

sedge (*Carex albida*), a federally listed endangered species. This species is endemic to Sonoma County, where it is known only from a single remaining occurrence at Pitkin Marsh, a wetland between Forestville and Sebastopol. It is unlikely that the Ring Property contains suitable habitat for this species.

Wetlands at the site were not formally delineated. Wetlands are not apparent on aerial photos of the site, but this does not necessarily preclude their presence.

Although this alternative involves disturbance at two sites, it may result in somewhat fewer biological impacts than the proposed project depending on the specific layout of buildings and other facilities. For example, this alternative may result in removing fewer native trees at the proposed project site. Also, the Ring Property apparently lacks wetlands and contains fewer trees than the proposed project site. Consequently, when compared with the proposed project, this alternative may have fewer impacts to biological resources.

Cultural Resources. Cultural impacts to the Mark West Springs Road site are discussed in Section 3.6. A records search of all pertinent cultural resource data for the Ring Property was conducted by the Northwest Information Center (File No. 03-1352) on July 1, 2009. The area that includes the parcel for this alternative was searched as well as a quarter-mile buffer. One cultural resource has been identified within this alternative project area, P-49-1514, and three others within a quarter-mile. P-1514 was characterized as the historic remains of a mill station. The current site condition is unknown. The additional resources identified are comprised of three historic homes and one prehistoric site, P-860. A number of surveys have been conducted in the area. At both sites there is the potential to disturb unknown archaeological sites.

Given the historic nature of the neighborhood and a recorded prehistoric site within a quarter-mile, this alternative may cause greater impacts to cultural resources than the proposed project.

Geology and Soils. Geologic conditions, including proximity to faults, with this alternative are discussed for the Mark West Springs Road site in Section 3.7. Geologic conditions, including proximity to faults, with the Ring Property are similar to those at the proposed project site. Similar design measures would be required for a hospital facility at these sites as would be required at the proposed project site. Therefore, impacts related to geology and soils with this alternative would be similar to the proposed project.

Hazards and Hazardous Materials. Hazards and hazardous materials are described in Section 3.8 for the Mark West Springs Road site. A database search was conducted by Environmental Data Resources, Inc. (EDR) to identify sites with hazardous materials within 1 mile of the Ring Property at 1700 Hampton Way. There were no reported releases or other hazardous materials reports for the property itself. Eleven locations, most with multiple sites, were identified within ¼ mile of the property. Beyond this, there are a relatively large number of sites listed in various databases within one mile. Two sites within ¼ mile of the property are listed in the Comprehensive Response, Compensation, and Liability Information System (CERCLIS). Sites on the CERCLIS list are either proposed for listing on the National Priorities List (NPL) or are in the screening and assessment phase for possible inclusion on the NPL list (part of the Superfund cleanup process). These sites are located 1733 Sebastopol and 1885 Sebastopol Road.

Other sites within ¼ mile of the property include 10 instances of leaking underground storage tanks, 5 of which are within 1/8 mile of the property. Some of the ten listings may be multiple

listings of the same site. It was not discernable from the database search whether some or all of these sites have already been remediated.

No formal Phase 1 site assessment was conducted for this site, nor was a site visit conducted to visually identify any potential contamination. Potential for impacts at this site may be greater than the proposed project site, due to the larger number of reported sites in the immediate vicinity of the Ring Property, and the fact that there are two CERCLIS listed sites within ¼ mile of the property. Mitigation measures related to hazardous materials are expected to be similar to mitigation for the proposed project site.

Helicopter operations at both the Ring Property and Mark West Springs Road site would occur adjacent to highways (Highway 12/US 101). Hazards associated with helicopter overflights would be similar to the proposed project, i.e., less than significant. Neither location is within the influence area of the Charles M. Shultz Airport. The Santa Rosa Air Center is approximately 1.2 miles to the southeast of this location.

When compared to the proposed project impacts would be greater due to the presence of a large number of contaminated sites near the Ring Property site.

Hydrology and Water Quality. Hydrology and water quality impacts associated with construction and operation at the Mark West Springs Road site are discussed in Section 3.9. Constructing and operating a portion of the project at the Mark West Springs Road site would have slightly less hydrology and water quality impacts due to the smaller project footprint resulting in less impacts to groundwater recharge and water quality effects from runoff.

Like the Mark West Springs Road site, the Ring Property site is not located within a FEMA designated 100-year flood plain and as a result less than significant impacts are expected from flooding. The project is expected to have less than significant impacts to water quality and groundwater supplies at the Ring Property site. Construction of the project would alter the local drainage patterns of both sites, but would not significantly impact the storm water drainage systems offsite.

Due to the size and configuration of this alternative site and given the recent adoption of new Municipal Separate Storm Sewer System (MS-4) permitting requirements, it is unclear whether there would adequate area on the site to implement the Best Management Practices now required under MS-4. This would result in the need for development of off-site off-setting mitigation. Accordingly, this alternative would potential have greater impacts on water quality than the proposed project or would require the acquisition and development of other parcels of land.

This alternative would have less impact than the proposed project on groundwater supplies by constructing part of the project on a site served by City of Santa Rosa water. Other hydrology and water quality impacts would be reduced at the Mark West Springs Road site compared to the proposed project, but would also occur at the Ring Property site.

Land Use and Planning. Land use impacts associated with project development at the Mark West Springs Road site are discussed in Section 3.10. A hospital and MOB are not permitted uses on the portion of the Ring site that is zoned R-3 (Multifamily Residential) and would therefore conflict with existing land use policy and regulations. The Santa Rosa Zoning Map and/or the Zoning Code would likely have to be amended to permit the project to be constructed on the site. An amendment to the Santa Rosa General Plan may also be required; which plans for

the Ring Property site to be area for residential revitalization. Construction at the Ring site would also conflict with the Sebastopol Road Urban Vision Plan which only allows for pre approved construction. This use is not planned for in the Vision Plan. Construction of the project would not be in conformance with the Urban Vision Plan.

Land use impacts under this alternative would be greater than the proposed project due to less conformity at the Ring Property site with designated land uses.

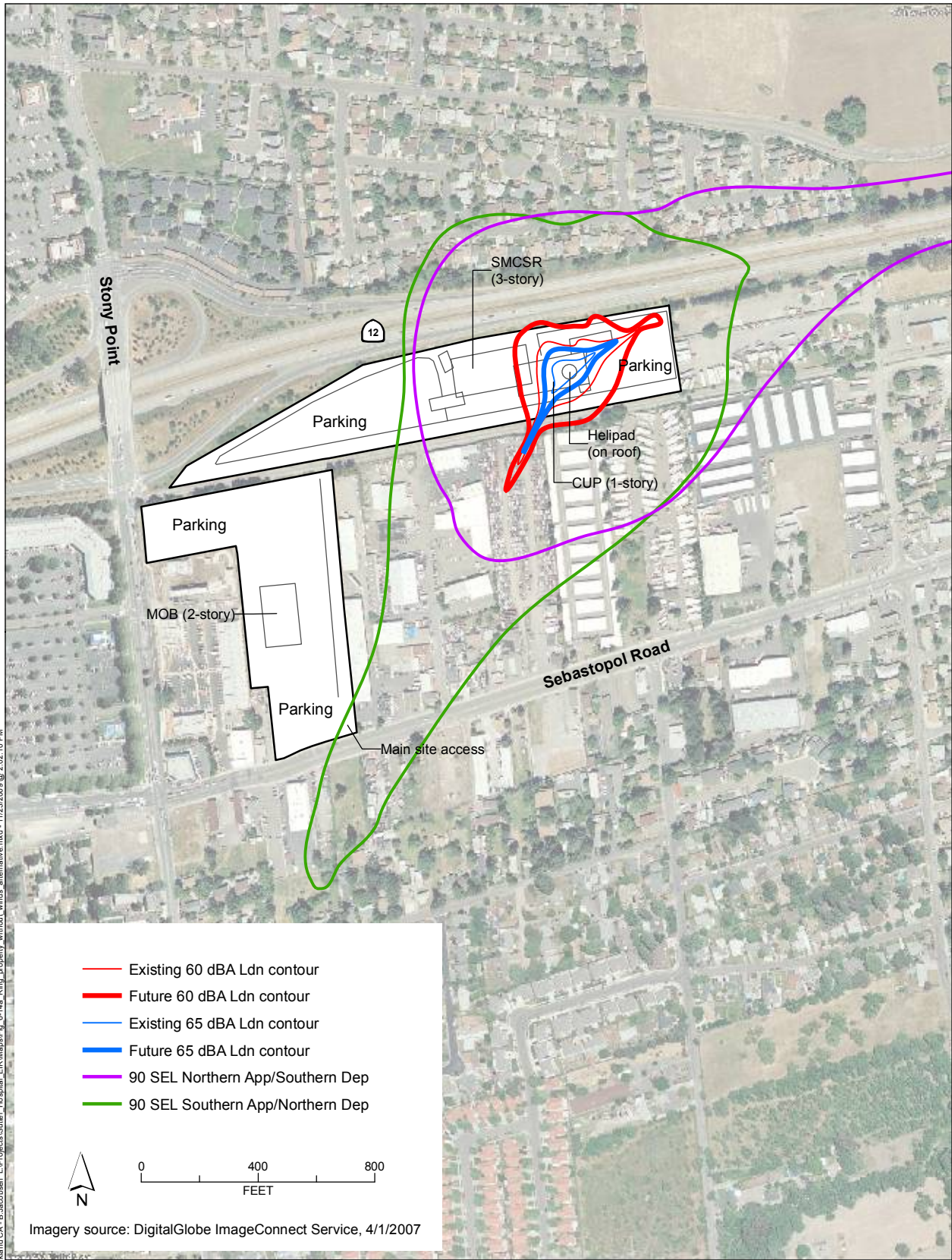
Mineral Resources. Impacts associated with mineral resources at the Mark West Springs Road site are discussed in Section 3.7. According to the California Department of Mines and Geology publication SR 146 the Ring Property site and Mark West Springs Road site are not within a mineral resource zone. Therefore there would be no impacts to mineral resources of the state or the loss of a site for mineral recovery. Impacts to mineral resources under this alternative would be the same as for the proposed project.

Noise. Under this alternative, the helistop would be located on the roof of the three-story Sutter hospital at the Ring site, with access to the emergency room via elevator from the roof. The primary flight path from the helistop would be north to SR 12, with a secondary path to the south over an auto-wrecking yard. The nearby land uses to the site are highway and residential to the north, a mobile home park adjacent on the southeast, and a mixture of commercial and industrial uses (mini-storage and auto-wrecking) in other directions. Helicopter operations would potentially overfly residential areas to the north and the mobile home park to the southeast, though the noise impacts will be somewhat masked by highway noise. Noise impacts associated with helicopter operations would be split between two locations instead of one with each site having less frequency of helicopter flights when compared to the proposed project. While taking off and landing from the top of a three story building results in less noise than doing so from the ground, the noise impacts to area residences are still expected to be greater than those that would be experienced under the proposed project, due to a greater number of receptors. The noise contours created by the flight paths are reflected in **Figures 6-14a** and **6-14b**.

Population and Housing. As with the proposed project, this alternative would have a less than significant impact on population and housing. This alternative would not induce substantial population growth, split any neighborhoods, or displace any people. These impacts would be similar to the proposed project.

Public Services. As with the proposed project impacts to police, fire and other public services would be minimal and would be considered less than significant. These impacts would be similar to the proposed project.

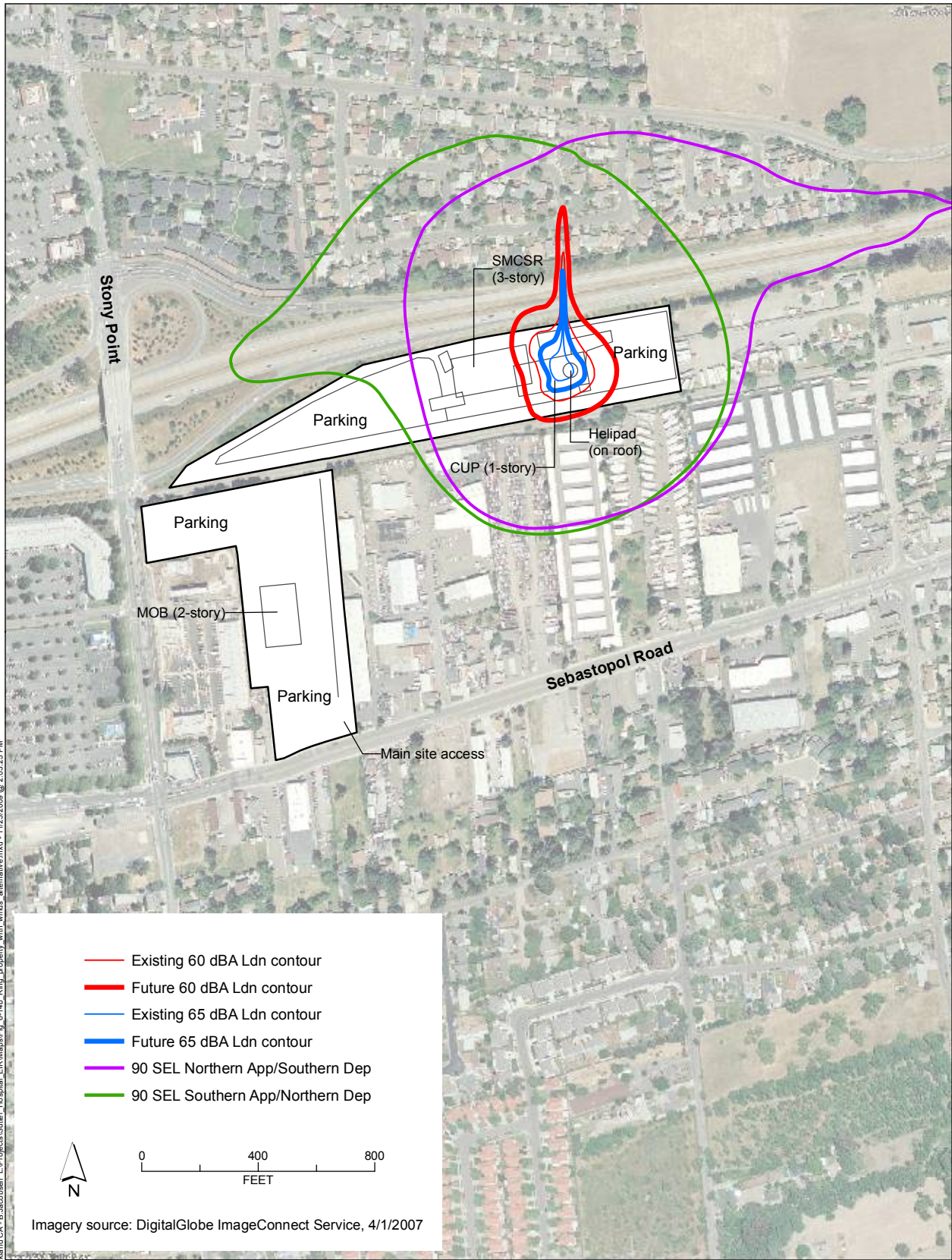
Recreation. This alternative would not increase the use or demand of recreational facilities and therefore there would be a less than significant impact. These impacts would be similar to the proposed project.



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Figure 6-14a Ring Property Alternative Site Without Strong Winds with Predicted Noise Contours from Helicopter Take Off and Landing



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Sutter/LBMF Joint Master Plan

Figure 6-14b Ring Property Alternative Site with Strong Winds with Predicted Noise Contours from Helicopter Take Off and Landing

Transportation and Traffic. Traffic impacts at the Mark West Springs site were previously analyzed in Section 3.15 for the proposed project. Like Alternative 4A, this alternative would generate less traffic at the Mark West Springs Road site compared to the proposed project. See the analysis of transportation and traffic impacts of Alternative 4A in Section 6.5.4.2 above for this discussion.

Access to the Ring Property site is currently provided by several different streets, depending upon the individual parcel in question. The two main parcels, parallel to and south of Highway 12, take access from the north end of Hampton Way, off Sebastopol Road. This is a narrow, poorly maintained local street serving existing light industrial uses that directly front the roadway. Its use as the main or even secondary access for the hospital complex would be unsatisfactory from a functionality and visibility standpoint, given that the other existing uses take direct access from the roadway. Two of the other parcels that make up the site directly abut Sebastopol Road and currently have direct driveway access. The final parcel fronts Stony Point Road immediately south of the Highway 12 eastbound on ramp from Stony Point Road. This parcel is located approximately mid-way between the existing signalized intersections at the entrance to two existing commercial centers, and the eastbound off/on ramps to Highway 12.

The proximity of these two existing signals would make signaling of a new intersection at this parcel impractical. From a location standpoint, this would be the ideal location for an emergency vehicle entrance to the hospital. However, traffic congestion in this area, and the awkward configuration of such an access to the existing Stony Point/off-on ramp intersection would likely present operational challenges, and prevent its use as a main entrance to the hospital. It is more likely that development at this site would take its primary access from Sebastopol Road, ideally along the east property line of APN 125-071-014, as this location would be approximately equidistant between the existing signal at Sebastopol/Stony Point Road, and the currently proposed signal at Sebastopol Road/Burbank Avenue. Signal proximity may still be an issue at this location, and, at a minimum, any new signal at the Sutter entrance would have to be interconnected with the signals to the east and west. This location would not be a suitable main entrance to the hospital complex, as it is not visible from the freeway, and the site is surrounded by existing commercial development, making it difficult for patients to locate the hospital complex.

Both Stony Point Road and Sebastopol Roads are major arterial roadways, with two travel lanes in each direction, and turn lanes. Stony Point Road has sections of raised center median. The site is located at the southeast corner of the interchange between Highway 12 and Stony Point Road. The interchange is fully improved, with the Stony Point overcrossing being two travel lanes in each direction, plus turn lanes. All off/on ramps are fully signalized. This is an area of heavy traffic congestion during both the morning and evening commute periods, with traffic at the Stony Point Road/Sebastopol Rd intersection experiencing the heaviest congestion. A plan to expand Stony Point Road south of Sebastopol Road from two lanes to four lanes was recently delayed by the City Council for a major redesign.

The site is accessible by Santa Rosa Transit at Stony Point Road at Highway 12, and by Sonoma County Transit at Sebastopol Road at Hampton Way.

Some Sutter Medical Center users may need to travel between the Mark West Springs site and the Ring Road site in order to obtain the services that are offered at the other site. There would

also likely be increased ambulance trips as a result of patients being sent from the Sutter Medical Center to the PMC. Accordingly, this alternative would generate new traffic impacts not present under the proposed project.

The transportation and traffic impacts of this Alternative would be potentially greater than under the proposed project.

Utilities and Service Systems. Utilities and service systems impacts associated with project development at the Mark West Springs Road site are discussed in Section 3.16. Impacts related to utilities at the Mark West Springs Road site from this alternative would be somewhat less than under the proposed project since less water would be needed and less wastewater would be generated at the site, resulting in a somewhat reduced impact to the Airport-Larkfield-Wikiup Sanitation Zone.

The Ring Property site is within the City limits of Santa Rosa and is eligible for service upon payment of the applicable fees. There is a 6 inch sewer main stubbed to within 50 feet of the property on Hampton Way, a 12 inch sewer line in Sebastopol Road, and a 6 inch sewer line in Stony Point Road. The 6 inch line in Hampton Way may be able to provide limited service to minor uses on the hospital site, but is smaller than the currently permitted minimum main size of 8 inch. Given that this 6 inch line serves the existing uses on Hampton Way, capacity available to serve any portion of the development would be limited. Similarly, the 6 inch main in Stony Point Road could likely provide minor service to a portion of the site, but would not be capable of serving the entire development. Therefore, it is likely that a new sewer line would need to be constructed from Sebastopol Road, in the new site access road, to serve the majority of the hospital development. There are no other constraints to providing sewer service to the site.

The site is currently within the City limits of Santa Rosa, and is eligible for water service upon payment of the applicable fees. The site is well served by water at the present time, with a 12" public water main looping along the perimeter of the site from east to west, then south to Sebastopol Road. Static pressure in the area is approximately 67 psi. It may be desirable to increase the reliability of the system by constructing a secondary loop connection from the site out to Stony Point Road. At the present time, there are no restrictions on new connections to the City's water system, and the City has more supply available from their own wells and from their contract with Sonoma County Water Agency, than current demands. However, the State Water Resources Control Board has mandated a 25% reduction in use for all users supplied by Sonoma County Water Agency for the summer of 2009 due to the lack of normal rainfall during the 2008/2009 season. Ongoing water supply shortages to the Sonoma County Water Agency system resulting from extended drought conditions could lead to future restrictions on connections to new users.

Overall, impacts to utilities would be similar as the proposed project.

Energy. The project buildings would be LEED designed, using the most current technology to reduce energy usage throughout the buildings. The current electrical infrastructure is capable of handling the increased load as a result of this alternative. However, the construction of two facilities at different locations under this alternative will reduce the efficiencies Sutter would have otherwise achieved through the integrated design of the proposed project, including efficiencies related to energy usage. Accordingly, the energy impacts of this alternative would be greater than under the proposed project.

6.5.5.3 Ability to Accomplish Project Objectives

Sutter does not own the Ring Property, which under this alternative would be proposed for the hospital, and thus could not plan and develop a hospital on the site in time to meet the deadlines in the Hospital Facility Seismic Safety Act, and thus this alternative fails to meet Project Objectives 4 and 8.

Construction of the Sutter hospital at the Ring Property would not achieve Project Objective 9, which calls for the location of the Medical Campus close to US 101 to provide direct access for ambulances from US 101 and good visibility from the highway for hospital users and emergency providers, and to minimize helicopter noise and safety impacts.

The less than optimal configuration of this site (two parcels, one long and narrow, and the second in an awkward “L” configuration) could impede Sutter’s ability to ensure that the site is efficiently designed and of sufficient connectivity to meet significant components of Project Objective 2. Moreover, the benefits to health care delivery identified in Project Objective 2 from locating on the same site all facilities that link inpatient, outpatient, and physician office visits and connect those services through an efficient layout would not be achieved by this alternative.

Similarly, the construction of two facilities at different locations will prevent Sutter for meeting Project Objective 7, which calls for the development of the Medical Campus, linked to the Wells Fargo Center for the Arts, in a manner that “provides a simple, clear and elegant set of buildings linked by meditative paths, bioswales, outdoor gardens, courtyards and open space that promotes a sense of well-being and healing through a dignified and forward-thinking building plan that will be an inviting and positive healing environment for patients, families, visitors, staff and all that come in contact with the Medical Campus.”

Finally, the construction of two facilities at different locations under this Alternative will reduce the efficiencies Sutter would have otherwise achieved through the integrated design of the Proposed Project. As such, this Alternative would also impair Sutter’s ability to meet Project Objective 6, which calls for the construction of facilities that meets the *Sutter Health Facility Planning and Development Building Design Policy for Sustainability* with respect to site selection, water efficiency and conservation, energy efficiency, material and resource efficiency and environmental air quality. Specifically, by duplicating some construction and operations at the two sites, this Alternative will reduce Sutter’s ability to employ “green” and sustainable design and construction practices to achieve goals including maximizing green space, employing energy efficient hospital design, and stressing water conservation.

6.5.5.4 Conclusion

This alternative would have greater impacts to agricultural resources, air quality resources, cultural resources, hazards and hazardous materials, land use and planning, noise, traffic, utilities and energy compared with the proposed project. Impacts would be less for biology and hydrology. The project would not meet Project Objectives 2, 4, 6, 7, 8, and 9.

6.5.6 Alternative 5: No Helistop Alternative

This alternative is included for analysis because it would reduce two of the significant and unavoidable impacts: helistop operational noise impacts (annoyance and sleep disturbance) on adjacent land uses, and helistop operational noise impacts on the project site.

6.5.6.1 Description

Under this alternative the project would be constructed as proposed at 50 Mark West Springs Road but without the helistop; all other attributes of the project would be the same. Patients requiring transport by helicopter would arrive at the Sonoma County Airport and be transported by ambulance to the medical campus, and will also be transported from the medical campus to the airport.

6.5.6.2 Impact Analysis

Aesthetics. Impacts to aesthetics were previously discussed in Section 3.2 for the for the Mark West Springs Road site. Since the helistop would not be constructed under this alternative, including its associated lighting, when compared to the proposed project the aesthetic impacts of this alternative would be slightly less.

Agricultural Resources. Impacts to agricultural resources were previously discussed in Section 3.3 for the for the Mark West Springs Road site. Impacts to agricultural resources would be similar to the proposed project.

Air Quality. Impacts to air quality were previously discussed in Section 3.4 for the for the Mark West Springs Road site. There would be a slight increase in vehicular emissions due to a slight increase in traffic (up to 20 round trips per month) between the Sonoma County Airport and hospital site due to transport of helicopter patients. There would be no other significant difference in air emissions with this alternative versus the proposed project, as helicopter flights would still occur within the air basin, but at different locations. Therefore impacts would be similar when compared to the proposed project.

Biological Resources. Impacts to biology were previously discussed in Section 3.5 for the for the Mark West Springs Road site. The biological impact of this alternative would be similar to the proposed project. The proposed project site would be disturbed during construction with or without the helistop, and this feature is a small portion of the site.

Cultural Resources. Impacts to cultural resources were previously discussed in Section 3.6 for the for the Mark West Springs Road site. Impacts to cultural resources would be similar to the proposed project.

Geology and Soils. Impacts to geology and soils were previously discussed in Section 3.7 for the Mark West Springs Road site. Impacts to geology and soil would be similar to the proposed project.

Hazards and Hazardous Materials. Impacts to hazards and hazardous materials were described in Section 3.8 for the Mark West Springs Road site. This alternative would remove potential but less than significant hazards at the site related to helicopter operations by having the helicopter

land at the nearby airport. Otherwise hazards and hazardous materials would be as described for the proposed project and are similar.

Hydrology and Water Quality. Impacts to hydrology and water quality were previously discussed in Section 3.9 for the Mark West Springs Road site. Impacts to hydrology and water quality would be similar to the proposed project.

Land Use and Planning. Impacts to land use and planning were previously discussed in Section 3.10 for the Mark West Springs Road site. Land use and planning impacts would be similar to the proposed project.

Mineral Resources. Impacts to mineral resources were previously discussed in Section 3.7 for the Mark West Springs Road site. Impacts to mineral resources would be similar to the proposed project.

Noise. Impacts to noise were previously discussed in Section 3.11 for the Mark West Springs Road site. The significant and unavoidable noise impacts to off-site and on-site receptors from helicopter operations would not occur with this alternative. Compared with the proposed project this alternative would have much less noise impacts.

Population and Housing. Impacts to population and housing were previously discussed in Section 3.12 for the Mark West Springs Road site. This alternative would have no impact on population and housing. This alternative would not induce any population growth, split any neighborhoods, or displace any people. These impacts would be similar to the proposed project.

Public Services. Impacts to Public Services were previously discussed in Section 3.13 for the Mark West Springs Road site. As with the proposed project impacts to the police, fire and other public services would be minimal and would be considered less than significant. With no helistop at the hospital, emergency services would not be as comprehensive as those provided by the proposed project. These impacts would be slightly greater than the proposed project.

Recreation. Impacts to recreation were previously discussed in Section 3.14 for the Mark West Springs Road site. This alternative would not increase the use or demand of recreational facilities and therefore there would be a less than significant impact. These impacts would be similar to the proposed project.

Transportation and Traffic. Impacts to transportation and traffic were previously discussed in Section 3.15 for the Mark West Springs Road site. There would be a slight increase in traffic (up to 20 round trips per month) between the Sonoma County Airport and hospital site due to transport of helicopter patients. There would be no other significant difference in traffic to/from the project site with this alternative versus the proposed project. Therefore impacts would be similar when compared to the proposed project.

Utilities. Impacts to utilities were previously discussed in Section 3.16 for the Mark West Springs Road site. Impacts to utilities would be similar to the proposed project.

Energy. Impacts to energy were previously discussed in Section 4.0 for the Mark West Springs Road site. The energy usage for both the construction and operation of this alternative would be similar to the proposed project. When compared to the proposed project the energy use would be similar.

6.5.6.3 Ability to Accomplish Project Objectives

Elimination of the helistop from the proposed project would result in delay in treatment of patients who would otherwise be brought directly to the Sutter hospital or PMC via helicopter. Patients would be diverted to Sonoma County Airport before they could be transported, via ambulance, to the Medical Center. The trip from the Sonoma County Airport to the project site is 4 miles, and depending upon traffic, can take as little as 7 minutes, or as much as 20 minutes. This could result in negative impacts to patient outcomes and would undermine Sutter's goal to provide high quality care. As such, this Alternative would not meet Project Objective 1, as the removal of a helistop from the Project would preclude Sutter from providing a level of health care that supports the continuous delivery of high quality, cost effective healthcare services.

Further, this Alternative would not meet Project Objective 8, which calls for uninterrupted operation of medical services currently provided at Sutter's Chanate campus – a medical campus which is currently served by a helistop. This Alternative also would not meet Project Objectives 9 and 10, both of which call for the development of the Medical Campus in a manner that will provide for safe helicopter access to a visually unobtrusive helistop.

6.5.6.4 Conclusion

This alternative would have fewer impacts to aesthetics and noise due to no helicopter operations occurring at the site; however, there would be a negative impact to public services when compared with the proposed project due to the lack of direct helicopter access to the hospitals. This alternative would not fully meet Project Objectives 1, 8, 9, and 10.

6.5.7 Alternative 6: 70-bed Hospital Only Alternative

This alternative was selected for analysis since a reduced project alternative often reduces impacts associated with a larger project.

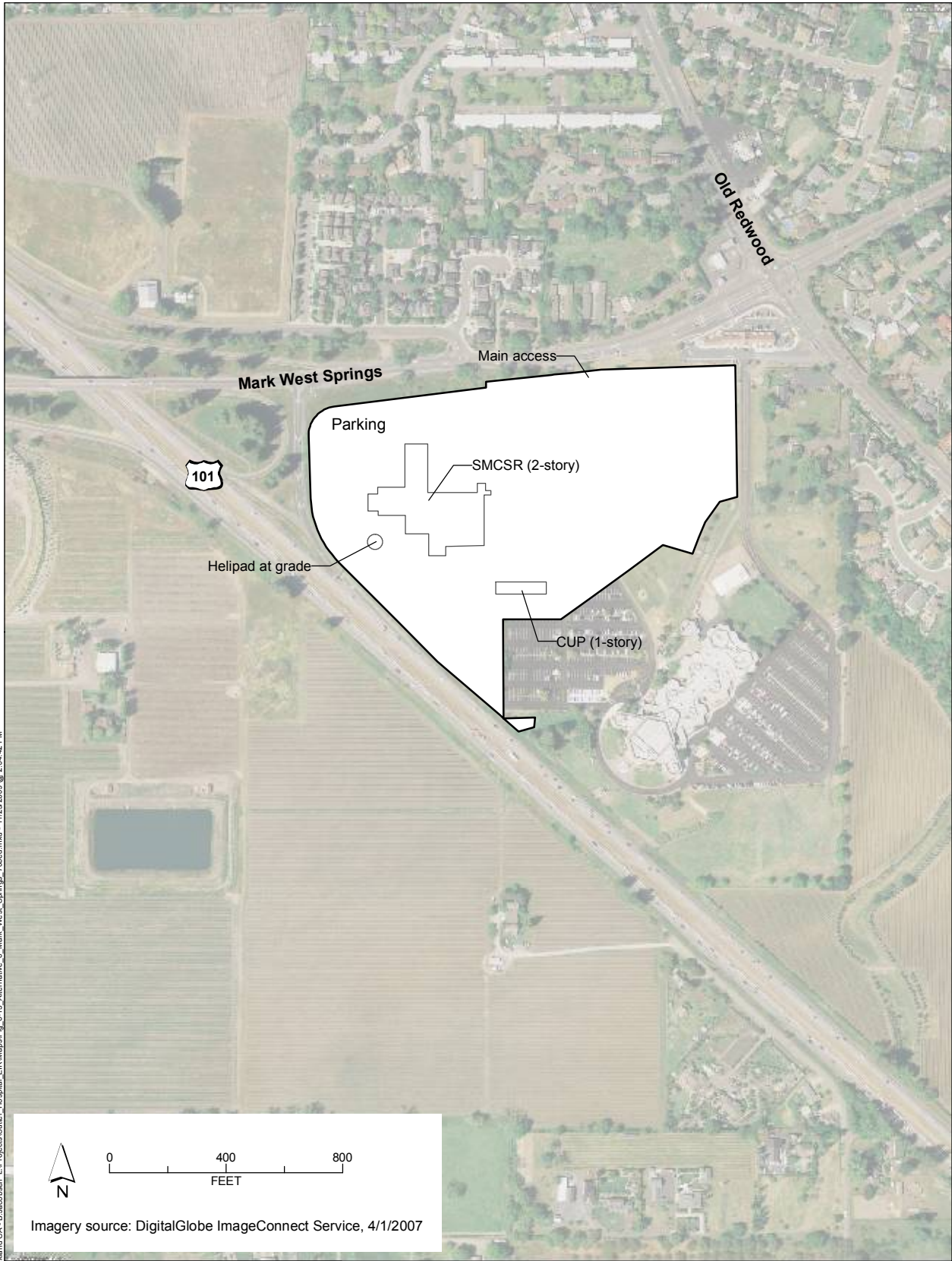
6.5.7.1 Description

Under this alternative the proposed 70-bed hospital, central utility plant, and helistop would be constructed at the Mark West Springs Road site but not an accompanying Physicians Medical Center or MOB; parking on site would be similar to that of the proposed project.

The buildings would be developed as shown on **Figure 6-15**, which also shows that the helistop would be located at grade at the same location proposed for the project, and that access to the site would be off of Mark West Springs Road. For this analysis it is assumed that the extra land not utilized in the construction of the facility will lay fallow and not be converted into landscaping.

6.5.7.2 Impact Analysis

Aesthetics. The visual characteristics of the Mark West Springs Road site are described in Section 3.2. Development of the Sutter Medical Center hospital and Central Utility Plant as described above would be consistent with the visual character of the Wells Fargo Center for the Arts. The sensitivity level of the site is moderate. The visual dominance of project features would be co-dominant or less with existing development on the site and in surrounding areas.



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Figure 6-15
Alternative 6 - Mark West Springs 70-Bed Hospital Only

This combination results in less than significant visual impacts. Further, project development on this site would not affect any scenic vistas or substantially degrade the visual quality or character of the site or its surroundings.

When compared to the proposed project the aesthetic impacts of this alternative would be less.

Agricultural Resources. Agricultural resources were described in Section 3.3 for the Mark West Springs Road site. Although less land will be developed under this alternative, the remaining land onsite may not be of sufficient size to make agricultural production likely. Accordingly, impacts to agricultural resources would be generally similar to the proposed project.

Air Quality. Air quality impacts were described in Section 3.4 for the Mark West Springs Road site. Construction activities associated with this alternative, including truck trips required to surcharge the site, would be less than the proposed project. Operational air quality impacts would be less than the proposed project. Overall, air quality impacts would be less with this alternative compared to the proposed project.

Biological Resources. Biological resources were described in Section 3.5 for the Mark West Springs Road site. The biological impact of this alternative would be slightly less than the proposed project. The project site would not be disturbed as much during construction without the Physicians Medical Center or MOB, leading to fewer biological impacts.

Cultural Resources. Cultural resources were described in Section 3.6 for the Mark West Springs Road site. Impacts to cultural resources would be slightly less when compared to the proposed project. With fewer buildings being constructed there is a smaller probability of discovering an unknown cultural resource.

Geology and Soils. Geology and soils were described in Section 3.7 for the Mark West Springs Road site. Impacts to geology and soils would be slightly less when compared to the proposed project. With fewer buildings, less soil will be disturbed leading to fewer impacts.

Hazards and Hazardous Materials. Hazards and Hazardous materials were described in Section 3.8 for the Mark West Springs Road site. Hazards and hazardous materials impacts would be slightly less than described for the proposed project due to the reduced amount of hazardous materials handling associated with the hospital only when compared to the proposed project.

Hydrology and Water Quality. Hydrology and water quality impacts were described in Section 3.9 for the Mark West Springs Road site. Impacts to hydrology and water quality would be less than that of the proposed project due to less water use and fewer construction impacts that could potentially affect water quality.

Land Use and Planning. Land use and planning impacts were described in Section 3.10 for the Mark West Springs Road site. Since the medical office building would not be constructed under this alternative, it is likely that one would be constructed somewhere else in the project vicinity to fill that need. Land use and planning impacts would be similar to the proposed project.

Mineral Resources. Mineral resources were described in Section 3.7 for the Mark West Springs Road site. Impacts to mineral resources would be the same as the proposed project, i.e., less than significant.

Noise. Noise impacts were described in Section 3.11 for the Mark West Springs Road site. This alternative includes having helicopter operations occurring on site which is the source of significant impacts on sensitive receptors in the area. Noise impacts from traffic and construction would be slightly less than but similar to that of the proposed project. Noise impacts would be similar to the proposed project because helicopter operations would still occur on site. The removal of the Physicians Medical Center would likely result in a reduction in the number of helicopter flights, although the noise impact would still remain significant and unavoidable.

Population and Housing. Population and housing impacts were described in Section 3.12 for the Mark West Springs Road site. This alternative would have a less than significant impact on population and housing. This alternative would not induce substantial population growth, split any neighborhoods, or displace any people. These impacts would be similar to the proposed project.

Public Services. Public services impacts were described in Section 3.13 for the Mark West Springs Road site. As with the proposed project impacts to police, fire and other public services would be minimal and would be considered less than significant.

Recreation. Recreation impacts were described in Section 3.14 for the Mark West Springs Road site. This alternative would not increase the use or demand of recreational facilities and therefore there would be a less than significant impact. These impacts would be similar to the proposed project.

Transportation and Traffic. Transportation and traffic impacts were described in Section 3.15 for the Mark West Springs Road site. This alternative would generate significantly less traffic when compared to the proposed project.

AM Peak Hour 40%± of the proposed project

PM Peak Hour 30%± of the proposed project

Based upon County significance criteria, this reduction in trip generation would not change any 2014 or 2035 signalization needs impacts, or 95th percentile queuing impacts. The fair share percent contribution towards these mitigations would, however, be reduced.

The reduced trip generation would potentially eliminate the project's 2014 significant level of service impacts at the River Road/Fulton Road and Mark West Springs Road/Lavell Road intersections. In 2035, the reduced trip generation would potentially eliminate the project's significant level of service impact at the Mark West Springs Road/Old Redwood Highway intersection and possibly at the Mark West Springs Road/Lavell Road intersection. Significant level of service impacts would remain at other intersections identified as being impacted by the proposed project, but the project's fair share contribution would be reduced. Compared to the proposed project impacts from this alternative would be less.

Utilities and Service Systems. Utilities and service system impacts were described in Section 3.16 for the Mark West Springs Road site. Impacts to utilities would be less than the proposed project since water demand and wastewater generation would be less.

Energy. Impacts to energy were previously discussed in Section 4.0 for the Mark West Springs Avenue site. The energy usage for both the construction and operation of this alternative would be less than that of the proposed project.

6.5.7.3 Ability to Accomplish Project Objectives

Development of this alternative would not meet Project Objective 2, as it would preclude the development of the Medical Campus in a manner that realizes the benefits to health care delivery that can be achieved through the location, on the same site, of facilities that link inpatient, outpatient and physician office visits and connect those services using the most modern and efficient layout.

This alternative would also not meet Project Objective 8, which calls for uninterrupted operation of medical services currently provided at Sutter's Chanate campus, which could not be provided without the inclusion of the PMC.

Development of this alternative would not meet Project Objective 10 because it would not include the PMC or MOB.

6.5.7.4 Conclusion

This alternative would have fewer impacts to aesthetics, air quality, biology, cultural resources, geology and soils, hazards and hazardous materials, hydrology, transportation, utilities and energy. However, this alternative would not fully meet Project Objectives 2, 8, and 10.

6.5.8 Alternative 7: Overall Reduced Project Alternative

This alternative was selected for analysis since a reduced project alternative often reduces impacts associated with a larger project.

6.5.8.1 Description

This alternative would include an overall the reduction in the proposed project of 33 percent with a Sutter Medical Center of 46 beds, a Physicians Medical Center of 19 beds, a Medical Office Building of 27,000 square feet, a central utility plant, and a helistop.

Sutter Medical Center Hospital: The Sutter Medical Center hospital would have a building footprint of approximately 59,200 square feet, two stories, with a maximum height of 42 feet, including roof screens.

Physicians Medical Center: The PMC would have a building footprint of approximately 37,750 square feet, two stories, with a maximum height of 42 feet, including roof screens.

Medical Office Building: The MOB would have a building footprint of approximately 27,000 square feet, two stories, with a maximum height of 42 feet, including roof screens.

Central Utility Plant: The CUP buildings would have a building footprint of approximately 7,600 square feet, one story, with a maximum height of 24 feet.

From an operational standpoint this alternative could be configured in one of two manners which could include across the board reductions or elimination of specific services.

The buildings would be developed as laid out in **Figure 6-16**, which also shows that the helistop would be located at grade in the southwest corner of the site, and that access to the site would be from Mark West Road. This Alternative would require 654 parking spaces. For this analysis it is

assumed that the extra land not utilized in the construction of the facility will lay fallow and not be converted into landscaping.

6.5.8.2 Environmental Analysis

Aesthetics. The visual characteristics of the Mark West Springs Road site are described in Section 3.2. Development of smaller facilities including the Sutter Medical Center hospital, Physicians Medical Center, and Medical Office Building as described above would be consistent with the visual character of the Wells Fargo Center for the Arts. The sensitivity level of the site is moderate. The visual dominance of project features would be co-dominant or less with existing development on the site and in surrounding areas. This combination results in less than significant visual impacts. Further, project development on this site would not affect any scenic vistas or substantially degrade the visual quality or character of the site or its surroundings.

When compared to the proposed project the aesthetic impacts of this alternative would be less.

Agricultural Resources. Agricultural resources were described in Section 3.3 for the Mark West Springs Road site. Although less land will be developed under this alternative, the remaining land onsite may not be of sufficient size to make agricultural production likely. Accordingly, impacts to agricultural resources would be similar to the proposed project.

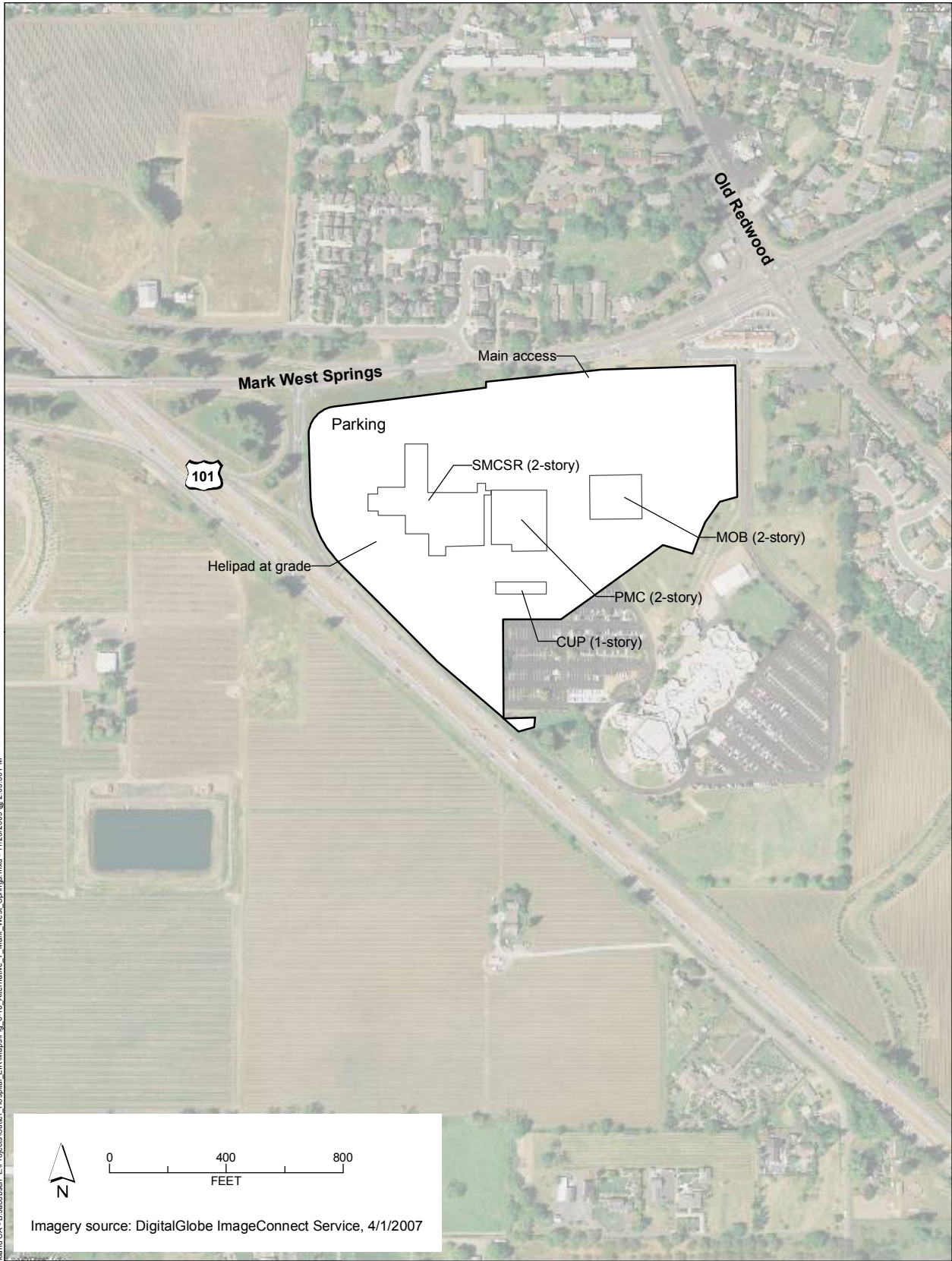
Air Quality. Air quality impacts were described in Section 3.4 for the Mark West Springs Road site. Construction activities associated with this alternative, including truck trips required to surcharge the site, would be less than the proposed project. Operational air quality impacts would be similar to the proposed project, although somewhat reduced. Overall, air quality impacts would be less with this alternative compared to the proposed project.

Biological Resources. Biological resources were described in Section 3.5 for the Mark West Springs Road site. The biological impact of this alternative would be slightly less when compared to the proposed project. The proposed project site would disturb less area during construction due to smaller building footprints.

Cultural Resources. Cultural resources were described in Section 3.6 for the Mark West Springs Road site. Impacts to cultural resources would be slightly less than the proposed project. With smaller building footprints the possibility of unearthing a new cultural resource are less.

Geology and Soils. Geology and soils were described in Section 3.7 for the Mark West Springs Road site. Impacts to geology and soil would be slightly less when compared to the proposed project. With smaller building footprints less soil will be disturbed leading to fewer impacts.

Hazards and Hazardous Materials. Hazards and Hazardous materials were described in Section 3.8 for the Mark West Avenue site. Hazards and hazardous materials impacts would be less than the proposed project due to the reduced amount of hazardous materials handling associated with a reduced project when compared to the proposed project.



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Sutter/LBMF Joint Master Plan

Figure 6-16
 Alternative 7 - Mark West Springs Overall Reduced Project

Hydrology and Water Quality. Hydrology and water quality impacts were described in Section 3.9 for the Mark West Springs Road site. Impacts to hydrology and water quality would be less than that of the proposed project due to less water use and fewer construction impacts that could potentially affect water quality.

Land Use and Planning. Land use and planning impacts were described in Section 3.10 for the Mark West Springs Road site. Land use and planning impacts would be similar to the proposed project.

Mineral Resources. Mineral resources were described in Section 3.7 for the Mark West Springs Road site. Impacts to mineral resources would be the same as the proposed project.

Noise. Noise impacts were described in Section 3.11 for the Mark West Springs Road site. Since this alternative includes a helistop, noise impacts would be similar to the proposed project. The frequency of helicopter trips to a smaller hospital will be reduced to some extent in comparison to the proposed project, so the frequency of noise impacts will also be reduced to some extent, but would still result in a significant noise impact of helicopter operations. Impacts would be similar when compared to the proposed project.

Population and Housing. Population and housing impacts were described in Section 3.12 for the Mark West Springs Road site. This alternative would have a less than significant impact on population and housing. This alternative would not induce substantial population growth, split any neighborhoods, or displace any people. These impacts would be similar to the proposed project.

Public Services. Public services impacts were described in Section 3.13 for the Mark West Springs Road site. As with the proposed project impacts to the police, fire and other public services would be minimal and would be considered less than significant. These impacts would be similar to the proposed project.

Recreation. Recreation impacts were described in Section 3.14 for the Mark West Springs Road site. This alternative would not increase the use or demand of recreational facilities and therefore there would be a less than significant impact. These impacts would be similar to the proposed project.

Transportation and Traffic. Transportation and traffic impacts were described in Section 3.15 for the Mark West Springs Road site. This alternative would generate about 65 to 70 percent of the traffic of the proposed project.

Based upon County significance criteria, this reduction in trip generation would not change any 2014 or 2035 signalization needs impacts or many, if any, 95th percentile queuing impacts. The fair share percent contribution towards these mitigations would, however, be reduced.

The reduced trip generation would potentially eliminate the project's 2014 significant level of service impact at the River Road/Fulton Road intersection as well as the project's 2035 significant level of service impact at the Mark West Springs Road/Old Redwood Highway intersection. Significant level of service impacts would remain at other intersections identified as being impacted by the proposed project, but the project's fair share contribution would be reduced. When compared to the proposed project this alternative would have fewer impacts.

Utilities and Service Systems. Utilities and service system impacts were described in Section 3.16 for the Mark West Springs Road site. Impacts to utilities would be slightly less than the proposed project since water demand and wastewater generation would be less.

Energy. The energy usage for both the construction and operation of this alternative would be slightly less when compared to the proposed project. There would be a slight decrease in energy use from constructing a reduced size facility as well as operating it. Overall, energy use would be less when compared to the proposed project.

6.5.8.3 Ability to Meet Project Objectives

This alternative would not meet Project Objective 4, as it would preclude Sutter from ensuring that the Sutter Medical Center is constructed in a manner that honors the Health Care Access Agreement with Sonoma County, while achieving a level of development intensity that will allow the Medical Campus to be developed in a cost-effective manner. Development of this alternative would require a reduction that would be achieved either 1) “across-the board,” resulting in a reduction in non-licensed services such as the universal care unit, emergency room beds, cat scans, radiology rooms, nuclear medicine, operating rooms, and special procedures or 2) by eliminating specific services such as all medical surgical beds, or all labor, delivery, recovery, post partum beds.

For similar reasons, this alternative would not meet Project Objective 10, which calls for the provision of a Medical Center which provides inpatient services including obstetrics, a Level III neonatal intensive care unit, intensive care, emergency services, medical/surgical and diagnostic services, supporting ancillary services, and a full range of women’s reproductive health services. This alternative also would not meet Project Objective 8, which calls for uninterrupted operation of medical services currently provided at Sutter’s Chanate campus, which could not be provided under this alternative.

6.5.8.4 Conclusion

This alternative would have fewer impacts to aesthetics, air quality, biology, cultural resources, geology and soil, hazards and hazardous materials, hydrology, transportation, utilities and energy. However, it would not fully meet Project Objectives 4 and 10.

6.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

An EIR is required to identify the environmentally superior alternative—that is, the alternative having the potential for the fewest significant environmental impacts—from among the range of reasonable alternatives that are evaluated.

The environmentally superior alternative appears to be Alternative 1: No Project. It would have the fewest environmental impacts but would not meet any of the project objectives.

The CEQA Guidelines require that if the No Project alternative is the environmentally superior alternative, another alternative must also be identified as the environmentally superior alternative. Of the build alternatives, Alternative 5: No Helistop would be the environmentally superior alternative since it eliminates a significant and unavoidable noise impact. While other

alternatives, such as the Reduced Project alternative, would reduce or avoid potentially significant impacts of the proposed project, all of these project impacts can also be reduced to a less than significant level with mitigation. The No Helistop Alternative is the only alternative that reduces a significant and unavoidable project impact to a less than significant level. Therefore, Alternative 5 is considered the environmentally superior alternative.

6.7 ALTERNATIVES NOT STUDIED FURTHER

The following is a list of the alternatives and alternate sites that were originally considered, but were not chosen for further analysis.

- E. Reconfigured Alternative
- F. Chanate Alternative
- I. Airport Business Center Alternate Site
- L. Wick Property Alternate Site (Santa Rosa/Todd)
- M. Guerneville Road/Lance Drive Alternate Site
- N. Ring Property Alternate Site
- O. 101/Todd Road NW Alternate Site
- P. North Point Corporate Center Alternative Site
- Q. Fountaingrove Executive Center/Old Redwood Highway Alternate Site
- R. Westwind Business Park Alternate Site
- S. Southwest Corner 101 Shiloh (West) Alternate Site
- T. Southwest Corner 101 Shiloh (East) Alternate Site
- U. Airway Drive Alternate Site
- V. Two Bridges Property Alternate Site
- W. Fountaingrove Winery Alternate Site
- X. Fulton Road Alternate Site
- Y. Roseland Shopping Center Alternate Site
- Z. Warrack Hospital Alternate Site
- AA. West Third Street Properties Alternate Site
- BB. Sonoma County Center Alternate Site
- CC. Air Center Site

Table 6-2 provides a summary description of each alternative and reason why it was dismissed from further consideration.

Table 6-1. Assessment of Project Alternatives Compared to the Proposed Project

Environmental Factor	No Project Alternative	Shiloh Road Alternative	Todd Road/Moorland Avenue Alternative	Decentralized Alternative A	Decentralized Alternative B	No Helistop Alternative	70-Bed Hospital Alternative	Overall Reduced Project Alternative
Aesthetics	+ With no construction of a new facility aesthetic impacts would be less than the aesthetic impacts associated with the proposed project	0 Similar aesthetic impacts when compared to the proposed project	+ When compared to the proposed project the aesthetic impacts of this alternative are less due the presence of industrial uses in the area	0 When compared to the proposed project the aesthetic impacts of this alternative are similar due to development occurring at two sites	0 When compared to the proposed project the aesthetic impacts of this alternative are similar due to development occurring at two sites	+ When compared to the proposed project the impacts of this alternative would be slightly less due to no lighting associated with the helistop	+ When compared to the proposed project the aesthetic impacts of this alternative are less because of the smaller amount of development proposed	+ When compared to the proposed project the aesthetic impacts of this alternative are less because of the smaller amount of development proposed
Agricultural	+ Since no loss of farmland of local importance would occur, impacts would be less compared with the proposed project.	0 Similar loss of agricultural land of local importance when compared to proposed project	0 Similar loss of agricultural land of local importance when compared to proposed project	- Because agricultural land is impacted at two sites instead of one impacts are greater when compared to the proposed project	- Because agricultural land is impacted at two sites instead of one impacts are greater when compared to the proposed project	0 Similar loss of agricultural land of local importance when compared to proposed project	0 Similar loss of agricultural land of local importance when compared to proposed project	0 Similar loss of agricultural land of local importance when compared to proposed project

Table 6-1. Assessment of Project Alternatives Compared to the Proposed Project

Environmental Factor	No Project Alternative	Shiloh Road Alternative	Todd Road/Moorland Avenue Alternative	Decentralized Alternative A	Decentralized Alternative B	No Helistop Alternative	70-Bed Hospital Alternative	Overall Reduced Project Alternative
Air Quality	++ Impacts would be significantly less because there would be no construction or operation of the emergency generators which would be the major sources of air pollution with the proposed project	0 Similar impacts would result from both construction and operation of the facility when compared to the proposed project	0 Similar impacts would result from both construction and operation of the facility when compared to the proposed project	- Reduced efficiencies due to the project being constructed at two separate sites would increase the need to travel between the sites and increase air emissions	- Reduced efficiencies due to the project being constructed at two separate sites would increase the need to travel between the sites and increase air emissions	0 There would be a slight increase in vehicular emissions due to a slight increase in traffic (up to 24 round trips per month) between the Sonoma County Airport and hospital site due to transport of helicopter patients. There would be no other significant difference in air emissions with this alternative versus the proposed project. Therefore impacts would be similar when compared to the proposed project	+ Construction activities associated with this alternative, including truck trips required to surcharge the site, would be less than the proposed project. Operational air quality impacts would be slightly less than the proposed project. Overall, air quality impacts would be less with this alternative compared to the proposed project.	+ Construction activities associated with this alternative, including truck trips required to surcharge the site, would be less than the proposed project. Operational air quality impacts would be slightly less than the proposed project. Overall, air quality impacts would be less with this alternative compared to the proposed project.

Table 6-1. Assessment of Project Alternatives Compared to the Proposed Project

Environmental Factor	No Project Alternative	Shiloh Road Alternative	Todd Road/Moorland Avenue Alternative	Decentralized Alternative A	Decentralized Alternative B	No Helistop Alternative	70-Bed Hospital Alternative	Overall Reduced Project Alternative
Biological	++ Under the No Project Alternative no new construction would occur and therefore no potential impacts to biological resources would occur. These impacts would be less than the proposed project	-- The site contains 13 acres of confirmed wetlands, which comprise nearly fifty percent the acreage of the site. Much of the wetlands may be vernal pool habitat, given the occurrence of Burke’s Goldfields reported in the CNDDDB. These impacts would be greater than the proposed project	0 Compared with the proposed project site, the Todd Road alternative may result in similar biological impacts than the proposed project. Although the site appears to lack wetlands and contains fewer trees, California tiger salamander may be present.	0 This alternative may result in similar biological impacts to the proposed project. This alternative may result in removing fewer native trees at the proposed project site however could have impacts to CTS at the Todd Road/Moorland Avenue site.	+ This alternative may result in somewhat fewer biological impacts than the proposed project depending on the specific layout of buildings and other facilities. For example, this alternative seems to lack wetlands and have fewer trees compared with the proposed project site.	0 The biological impact of this alternative would be similar to the proposed project. The proposed project site would be disturbed during construction with or without the helistop, and this feature is a small portion of the site.	+ The biological impact of this alternative would be less than the proposed project. Less of the proposed project site would be disturbed during construction without the Physicians Medical Center and MOB leading to slightly fewer impacts.	+ The biological impact of this alternative would be less than the proposed project. Less of the proposed project site would be disturbed during construction with the reduced project leading to slightly fewer impacts.

Table 6-1. Assessment of Project Alternatives Compared to the Proposed Project

Environmental Factor	No Project Alternative	Shiloh Road Alternative	Todd Road/Moorland Avenue Alternative	Decentralized Alternative A	Decentralized Alternative B	No Helistop Alternative	70-Bed Hospital Alternative	Overall Reduced Project Alternative
Cultural	+ With no construction, this alternative would have no potential to impact significant unknown cultural resources that may be impacted by the proposed project	0 This alternative would have a similar level of impact to unknown cultural resources that may be impacted by construction activities when compared to the Proposed project	- Given the proximity to a potential historic resource, this alternative may have greater impacts to cultural resources than the proposed project	- Given the proximity to a potential historic resource, this alternative may have greater impacts to cultural resources than the proposed project.	- Given the historic nature of the neighborhood and a recorded prehistoric site within a quarter-mile, this alternative would likely cause greater impacts to cultural resources than the proposed project.	0 Implementation of this alternative would be equivalent to the proposed project in terms of potential impacts to cultural resources.	+ This alternative would pose slightly less potential impacts to unknown Cultural Resources as the proposed project because the overall project area of this alternative would be less.	+ This alternative would pose slightly less potential impacts to unknown Cultural Resources as the proposed project because the overall project area of this alternative would be less.

Table 6-1. Assessment of Project Alternatives Compared to the Proposed Project

Environmental Factor	No Project Alternative	Shiloh Road Alternative	Todd Road/Moorland Avenue Alternative	Decentralized Alternative A	Decentralized Alternative B	No Helistop Alternative	70-Bed Hospital Alternative	Overall Reduced Project Alternative
Geology and Soils	+ With no construction impacts would be less than the geology and soils impacts associated with the proposed project	0 Geologic conditions, including proximity to faults, at this site are similar to those at the proposed project site. Similar design measures would be required for a hospital facility at this site. Impacts related to geology and soils with this alternative would be similar to the proposed project.	0 Geologic conditions, including proximity to faults, at this site are similar to those at the proposed project site. Similar design measures would be required for a hospital facility at this site. Impacts related to geology and soils with this alternative would be similar to the proposed project.	0 Geologic conditions, including proximity to faults, with this alternative are similar to those at the proposed project site. Similar design measures would be required for a hospital facility at these sites. Therefore, impacts related to geology and soils with this alternative would be similar to the proposed project.	0 Geologic conditions, including proximity to faults, at this site are similar to those at the proposed project site. Similar design measures would be required for a hospital facility at this site. Impacts related to geology and soils with this alternative would be similar to the proposed project.	0 Impacts related to geology and soils with this alternative would be similar to the proposed project.	+ Impacts related to geology and soils with this alternative would be less than the proposed project. The decreased project size would disturb less soil.	+ Impacts related to geology and soils with this alternative would be less than the proposed project. The decreased project size would disturb less soil.

Table 6-1. Assessment of Project Alternatives Compared to the Proposed Project

Environmental Factor	No Project Alternative	Shiloh Road Alternative	Todd Road/Moorland Avenue Alternative	Decentralized Alternative A	Decentralized Alternative B	No Helistop Alternative	70-Bed Hospital Alternative	Overall Reduced Project Alternative
Hazards and Hazardous Materials	+ Since no construction would occur there would be no potential to encounter hazardous materials. No helicopter operations would occur as a result of the No Project. Impacts would be less than the hazards and hazardous materials impacts associated with the proposed project	0 A database search identified 8 contaminated sites within 1 mile of this alternative site. Helicopter operations would be similar to that proposed project. Impacts related to hazards and hazardous materials would be similar to the proposed project.	- Potential for impacts at this site may be somewhat greater than at the proposed project location, due to the larger number of reported contaminated sites in the vicinity. Helicopter operations would be similar to the proposed project.	- Potential for impacts at the Todd Road site may be somewhat greater than at the proposed project location, due to the larger number of reported contaminated sites in the vicinity. Helicopter operations would be split between two sites, but hazards would be similar.	- Potential for impacts at this site may be greater than the proposed project site, due to the larger number of reported contaminated sites in the immediate vicinity of the Ring Property, and the fact that there are two CERCLIS listed sites within ¼ mile of the property. Helicopter operations would be split between two sites, but hazards would be similar.	0 This alternative would remove potential hazards related to helicopter operations, but otherwise hazards and hazardous materials would be as described for the proposed project. Helicopter operations would still occur; just the landing site would be at the nearby airport.	+ Hazards and hazardous materials impacts would be less when compared to the proposed project due to reduced handling of hazardous materials associated with the hospital only alternative. Helicopter operations would be similar to the proposed project.	+ Hazards and hazardous materials impacts would be less when compared to the proposed project due to reduced handling of hazardous materials associated with the reduced project alternative. Helicopter operations would be similar to the proposed project.

Table 6-1. Assessment of Project Alternatives Compared to the Proposed Project

Environmental Factor	No Project Alternative	Shiloh Road Alternative	Todd Road/Moorland Avenue Alternative	Decentralized Alternative A	Decentralized Alternative B	No Helistop Alternative	70-Bed Hospital Alternative	Overall Reduced Project Alternative
Hydrology and Water Quality	+ This alternative would have no impacts associated with hydrology and water quality. Impacts would be less than the proposed project.	+ The site is located within a 100-year flood plain. BMPs would be included in the site plans so the alternative would be expected to have less than significant impacts to water quality. Water would be obtained from the SCWA instead of an on site well which would decrease impacts on groundwater supplies. Overall impacts are less when compared to the proposed project.	+ The site is located in an area with a high water table. BMPs would be included in the site plans so the alternative would be expected to have less than significant impacts to water quality. Water would be obtained from the SCWA instead of an on site well which would decrease impacts on groundwater supplies. Overall impacts are less when compared to the proposed project.	+ A portion of the site is located in an area with a high water table. BMPs would be included in the site plans so the alternative would be expected to have less than significant impacts to water quality. Water would be obtained from the SCWA instead of an on site well which would decrease impacts on groundwater supplies. Overall impacts are less when compared to the proposed project.	+ Construction of the project would alter the local drainage patterns of the Ring Property site. BMPs would be included in the site plans so the alternative would be expected to have less than significant impacts to water quality. Water would be obtained from the SCWA instead of an on site well which would decrease impacts on groundwater supplies. Overall impacts are less when compared to the proposed project.	0 Impacts to hydrology and water quality would be similar to the proposed project.	+ Impacts to hydrology and water quality would be less than the proposed project due to smaller water demands and less impacts to groundwater supplies.	+ Impacts to hydrology and water quality would be less than the proposed project due to smaller water demands and less impacts to groundwater supplies.

Table 6-1. Assessment of Project Alternatives Compared to the Proposed Project

Environmental Factor	No Project Alternative	Shiloh Road Alternative	Todd Road/Moorland Avenue Alternative	Decentralized Alternative A	Decentralized Alternative B	No Helistop Alternative	70-Bed Hospital Alternative	Overall Reduced Project Alternative
Land Use	+ With no land being developed no changes to any local plans would occur. Land use impacts would be less than with the proposed project.	- Land use at this site is not compatible with land use designation and would require a general plan amendment. Impacts associated with land use would be greater than the proposed project.	- Land use at this site is not compatible with land use designation and would require a general plan amendment. Impacts associated with land use would be greater than the proposed project.	- Land use at this site is not compatible with land use designation and would require a general plan amendment. Impacts associated with land use would be greater than the proposed project.	- Land use at this site is not compatible with land use designation and would require a general plan amendment. Impacts associated with land use would be greater than the proposed project.	0 Land use and planning impacts would be similar to the proposed project.	0 Land use and planning impacts would be similar to the proposed project.	0 Land use and planning impacts would be similar to the proposed project.
Minerals	0 There would be no loss of a mineral resource. This impact would be similar to the proposed project.	0 There would be no loss of a mineral resource. This impact would be similar to the proposed project.	0 There would be no loss of a mineral resource. This impact would be similar to the proposed project.	0 There would be no loss of a mineral resource. This impact would be similar to the proposed project.	0 There would be no loss of a mineral resource. This impact would be the similar to proposed project.	0 There would be no loss of a mineral resource. This impact would be similar to the proposed project.	0 There would be no loss of a mineral resource. This impact would be similar to the proposed project.	0 There would be no loss of a mineral resource. This impact would be similar to the proposed project.

Table 6-1. Assessment of Project Alternatives Compared to the Proposed Project

Environmental Factor	No Project Alternative	Shiloh Road Alternative	Todd Road/Moorland Avenue Alternative	Decentralized Alternative A	Decentralized Alternative B	No Helistop Alternative	70-Bed Hospital Alternative	Overall Reduced Project Alternative
Noise	+ No construction related noise would be produced and a decrease in the noise level in the project area would occur compared with the proposed project. However, medical helicopter noise would be transferred to other existing hospitals in the region.	+ The surrounding area contains fewer sensitive noise receptors. Therefore, noise impacts would be less with this alternative when compared with the proposed project.	+ The surrounding area contains fewer sensitive noise receptors. Therefore, noise impacts would be less with this alternative when compared with the proposed project.	+ The area surrounding the Todd Road/Moorland Avenue site contains fewer sensitive noise receptors. Therefore, noise impacts would be less with this alternative when compared with the proposed project.	- Noise impacts to area residences are expected to be greater than those under the proposed project.	++ The significant and unavoidable noise impacts to off-site receptors would not occur with this alternative. Compared with the proposed project this alternative would have much less noise impacts.	0 Since this alternative includes a helistop noise impacts would be similar as the proposed project.	0 Since this alternative includes a helistop noise impacts would be similar as the proposed project.

Table 6-1. Assessment of Project Alternatives Compared to the Proposed Project

Environmental Factor	No Project Alternative	Shiloh Road Alternative	Todd Road/Moorland Avenue Alternative	Decentralized Alternative A	Decentralized Alternative B	No Helistop Alternative	70-Bed Hospital Alternative	Overall Reduced Project Alternative
Population and Housing	0 The No Project alternative would result in no impacts related to population and housing. This would be similar to the proposed project.	0 This alternative would result in no impacts related to population and housing. This would be similar to the proposed project.	0 This alternative would result in no impacts related to population and housing. This would be similar to the proposed project.	0 This alternative would result in no impacts related to population and housing. This would be similar to the proposed project.	0 This alternative would result in no impacts related to population and housing. This would be similar to the proposed project.	0 This alternative would result in no impacts related to population and housing. This would be similar to the proposed project.	0 This alternative would result in no impacts related to population and housing. This would be similar to the proposed project.	0 This alternative would result in no impacts related to population and housing. This would be similar to the proposed project.
Public Services	0 This alternative would result in the loss of main county hospital. Other hospitals in the county would provide the services currently provided. These impacts would be similar to the proposed project.	0 As with the proposed project, impacts to the police, fire and other public services would be minimal and would be considered less than significant. These impacts would be similar to the proposed project.	0 As with the proposed project, impacts to the police, fire and other public services would be minimal and would be considered less than significant. These impacts would be similar to the proposed project.	0 As with the proposed project impacts to the police, fire and other public services would be minimal and would be considered less than significant. These impacts would be similar to the proposed project.	0 As with the proposed project, impacts to the police, fire and other public services would be minimal and would be considered less than significant. These impacts would be similar to the proposed project.	- With no helistop at the hospital, emergency services would not be as comprehensive as those provided by the proposed project	0 As with the proposed project, impacts to the police, fire and other public services would be minimal and would be considered less than significant. These impacts would be similar to the proposed project.	0 As with the proposed project, impacts to the police, fire and other public services would be minimal and would be considered less than significant. These impacts would be similar to the proposed project.

Table 6-1. Assessment of Project Alternatives Compared to the Proposed Project

Environmental Factor	No Project Alternative	Shiloh Road Alternative	Todd Road/Moorland Avenue Alternative	Decentralized Alternative A	Decentralized Alternative B	No Helistop Alternative	70-Bed Hospital Alternative	Overall Reduced Project Alternative
Recreation	0 The No Project alternative would result in no impacts related to recreation. These impacts would be similar to the proposed project.	0 This alternative would not increase the use or demand of recreational facilities and therefore there would be a less than significant impact. These impacts would be similar to the proposed project.	0 This alternative would not increase the use or demand of recreational facilities and therefore there would be a less than significant impact. These impacts would be similar to the proposed project.	0 This alternative would not increase the use or demand of recreational facilities and therefore there would be a less than significant impact. These impacts would be similar to the proposed project.	0 This alternative would not increase the use or demand of recreational facilities and therefore there would be a less than significant impact. These impacts would be similar to the proposed project.	0 This alternative would not increase the use or demand of recreational facilities and therefore there would be a less than significant impact. These impacts would be similar to the proposed project.	0 This alternative would not increase the use or demand of recreational facilities and therefore there would be a less than significant impact. These impacts would be similar to the proposed project.	0 This alternative would not increase the use or demand of recreational facilities and therefore there would be a less than significant impact. These impacts would be similar to the proposed project.

Table 6-1. Assessment of Project Alternatives Compared to the Proposed Project

Environmental Factor	No Project Alternative	Shiloh Road Alternative	Todd Road/Moorland Avenue Alternative	Decentralized Alternative A	Decentralized Alternative B	No Helistop Alternative	70-Bed Hospital Alternative	Overall Reduced Project Alternative
Transportation and Traffic	- A similar number of intersections would have unacceptable levels of service when comparing the No Project alternative to the Proposed Project. Traffic flow would improve at the Mark West Springs Road/WFC Main Entry intersection with the Proposed Project and as a result impacts would be greater for the No Project alternative.	+ With the Sutter Hospital project in place of the shopping center, operation would potentially improve slightly at the Shiloh Road/US 101 southbound ramps intersection, remain about the same at the Shiloh Road/US 101 northbound ramps and improve slightly at the Hembree Lane intersection. When compared to the proposed project these impacts will be less.	0 This alternative will have three or four intersections possibly receiving significant impacts as well as eventual highway impacts. At some point in time interchange reconstruction will be require to alleviate traffic congestion. When compared to the proposed project traffic related impacts are expected to be similar to that of the proposed project.	- Significant traffic impacts would be occurring at two sites instead of one with this alternative. When compared to the proposed project impacts would be greater.	- Significant traffic impacts would be occurring at two sites instead of one with this alternative. When compared to the proposed project impacts would be greater.	0 Operations and demands would not change. The number of people accessing the project site would be the same and as a result traffic impacts would be similar to the proposed project.	+ Fewer people would access the site due to there being no PMC or MOB on site. Impacts would then be less than the proposed project.	+ Fewer people would access the site due to there being no PMC or MOB on site. Impacts would then be less than the proposed project.

Table 6-1. Assessment of Project Alternatives Compared to the Proposed Project

Environmental Factor	No Project Alternative	Shiloh Road Alternative	Todd Road/Moorland Avenue Alternative	Decentralized Alternative A	Decentralized Alternative B	No Helistop Alternative	70-Bed Hospital Alternative	Overall Reduced Project Alternative
Utilities and Service Systems	+ The No Project alternative would result in no impacts related to utilities. This would be much less than the proposed project.	0 The Town of Windsor provides both sewer and water to the alternative site. As with the proposed project mitigation would be required (preparation and implementation of a recycling plan) to reduce impacts regarding solid waste disposal to less than significant. Impacts related to utilities from this alternative would be similar to the proposed project.	- Providing service to this site would require a special exception to the City's Utility Certificate Policy, which would have to be approved by the City Council, and would require the approval by LAFCO of an Outside Service Area Agreement with no near term possibility of annexation. Infrastructure surrounding the project would need to be expanded. Impacts related to utilities from this alternative would be greater when compared to the proposed project.	- Infrastructure surrounding the project would need to be updated. The impacts related to water supply and wastewater treatment at the Mark West Springs Road site associated with the proposed project would be slightly less under this alternative. Overall impacts related to utilities from this alternative would be greater than the proposed project.	- Both water supply and wastewater services are supplied by the City of Santa Rosa for the Ring Property. The City presently has more supply than current demands. The Mark West Spring Road site would have the same impacts to water and wastewater as the proposed project. Impacts to utilities would be greater than the proposed project.	0 Impacts to utilities would be similar to the proposed project.	+ Impacts to utilities would be slightly less than the proposed project since water demand and wastewater generation would be less.	+ Impacts to utilities would be slightly less than the proposed project since water demand and wastewater generation would be less.

Table 6-1. Assessment of Project Alternatives Compared to the Proposed Project

Environmental Factor	No Project Alternative	Shiloh Road Alternative	Todd Road/Moorland Avenue Alternative	Decentralized Alternative A	Decentralized Alternative B	No Helistop Alternative	70-Bed Hospital Alternative	Overall Reduced Project Alternative
Energy	0 With no construction occurring short term energy impacts would be less when compared to the proposed project. Also no new building would need to be operated. However vehicle miles traveled could increase. This would be similar to the proposed project.	0 The energy required to construct and operate the medical center would be similar to that of the proposed project	0 The energy required to construct and operate the medical center would be similar to that of the proposed project	- The energy required to construct the project would be similar, however energy inefficiency exist with the project being on two separate sites. Impacts would be greater when compared to the proposed project.	- The energy required to construct the project would be similar, however energy inefficiency exist with the project being on two separate sites. Impacts would be greater when compared to the proposed project.	0 The energy required to construct and operate the building would be similar to that of the proposed project	+ Construction of a smaller facility would require less energy to both construct and operate when compared to the proposed project.	+ Construction of a smaller facility would require less energy to both construct and operate when compared to the proposed project.

Table 6-2. Alternatives Considered but Rejected as Infeasible

Site/Alternative	Site/Alternative Description	Reasons why Site/Alternative was not Studied Further
<p>Reconfigured Alternative - 50 Mark West Springs Road - Unincorporated Sonoma County</p>	<p>This alternative is located on the same site as the proposed project. A detailed description of the site was done in Section 2.</p>	<p>There was found to be no environmental benefits from reconfiguring the site plan at the Mark West Springs site. With no possible environmental benefits the alternative was dropped from consideration.</p>
<p>Chanate Alternative - 3325 Chanate Road - City of Santa Rosa</p>	<p>This alternative proposed seismically retrofitting many of the current facilities. Structures which are in non-compliance with building codes would be updated to meet current requirements. This site has an area of 13.8 acres and is on a narrow partially flat lot. Access to the site is good from Chanate Road, but the site is not adjacent to US 101.</p>	<p>In May 2008, Rutherford & Chekene, the engineering and structural geotechnical firm that evaluated and classified the Chanate campus structures for SB 1953 purposes, submitted an update to Sutter concerning the potential retrofit of the Campus to interim seismic standard SPC-2. They informed Sutter that the Chanate site has been confirmed by the California Geological Survey as having a “high potential for fault rupture,” and has been classified by OSHPD to “have potential for fault rupture.” Rutherford & Chekene have advised Sutter that it would not be able to retrofit the Chanate acute care facilities to interim seismic standard SPC-2 unless it 1) it demonstrates to OSHPD that there are no faults under the acute care facility structures or 2) identifies the location of faults under the acute care facility structures and receives approval from OSHPD for to retrofit those facilities to SPC-2. Extensive (10 feet deep or more) trenching around the entirety of the existing acute care facilities would be necessary to evaluate the potential for fault rupture. If faults were identified, Rutherford and Chekene have advised that obtaining OSHPD approval for retrofit would be “difficult.” OSHPD has never approved operation of an acute care facility constructed on a fault.</p>
<p>Airport Business Center Alternate Site - 1631 Airport Boulevard - Unincorporated Sonoma County, but within urban service area</p>	<p>This 24.3-acre alternate site is located outside the city of Santa Rosa in the unincorporated area of Sonoma County. It is in close proximity to the airport and wetlands are believed to be located on the currently vacant site. Access to the site is good, but the flat and narrow site is not adjacent to US 101.</p>	<p>The lot is narrow which is not conducive to a hospital campus configuration. Further, the location is not adjacent to US 101. Wetlands are believed present at the site that could require extra environmental study as well as mitigation leading to the possibility of greater environmental impacts than the proposed project. Location of the proposed project at this site would be incompatible with the Comprehensive Airport Land Use Plan for Sonoma County.</p>

Table 6-2. Alternatives Considered but Rejected as Infeasible

Site/Alternative	Site/Alternative Description	Reasons why Site/Alternative was not Studied Further
<p>Wick Property Alternate Site (Santa Rosa/Todd) - South of Todd Road and east of Santa Rosa Avenue - Unincorporated Sonoma County, but within urban growth boundary</p>	<p>The 11. 6-acre Wick Property Alternate Site is a square flat site located in the unincorporated portion of Sonoma County on the boarder of Santa Rosa. The site is currently vacant. Access to the site is limited with no frontage road and it is not visible from US 101.</p>	<p>The site is too small to meet all the needs of the hospital. Access to the site is very restricted with no major frontage road running adjacent to the site; further, access to US 101 is limited due to the distance. Implementation of this alternative would not meet Sutter’s objective to provide a Medical Campus that is easily accessed by persons living within the primary service area of the Sutter Medical Center and one that is close to and visible from Highway 101.</p>
<p>Guerneville Road/Lance Drive Alternate Site - 1601 & 1696 Lance Drive - Unincorporated Sonoma County, but is on an island surrounded by the City of Santa Rosa</p>	<p>The 18.5-acre Guerneville Road/Lance Drive Alternate Site is located on an island of unincorporated county land surrounded by the City of Santa Rosa. The topography of the site is relatively flat with the lot in the shape of a square. Currently the site contains one residence with limited agricultural use. It is easily accessible from a major road; however it is not within visual distance of US 101.</p>	<p>Development of this site could result in potentially significant biological impacts related to potential wetlands on the site. This alternative would not reduce any identified significant or significant and unavoidable impacts of the Proposed Project. It would not eliminate or lessen the significant and unavoidable air quality impacts associated with the surcharging of the Project site, as that work would still be required on the alternative site. It would also not eliminate or lessen the significant and unavoidable noise impacts associated with the operation of the helistop, as a helistop would still be required. Instead, this alternative would likely result in greater noise impacts due to the need for helicopters arriving and leaving the site to fly directly over residential areas.</p> <p>Implementation of this alternative would also not meet Sutter’s objective to provide a Medical Campus that is easily accessed by persons living within the primary service area of the Sutter Medical Center and one that is close to and visible from Highway 101.</p>

Table 6-2. Alternatives Considered but Rejected as Infeasible

Site/Alternative	Site/Alternative Description	Reasons why Site/Alternative was not Studied Further
<p>Ring Property Alternate Site - 1700 Hampton Way - City of Santa Rosa</p>	<p>This 18.5-acre site is located within the city limits of Santa Rosa and is adjacent to a frontage road with easy access to Highway 12, but not within visual distance of US 101. The site is currently vacant and is comprised of two parcels, one long and narrow, and a second in an awkward “L” shape.</p>	<p>This alternative would not reduce any identified significant or significant and unavoidable impacts of the Proposed Project. It would not eliminate or lessen the significant and unavoidable air quality impacts associated with the surcharging of the Project site, as that work would still be required on the alternative site. It would also not eliminate or lessen the significant and unavoidable noise impacts associated with the operation of the helistop, as a helistop would still be required. Instead, this alternative would likely result in greater noise impacts due to the need for helicopters arriving and leaving the site to fly directly over residential areas. This alternative would likely have similar cumulative traffic impacts to the Proposed Project. Further, because the site is significantly smaller than the 25 acres needed to construct the Proposed Project at the density indicated in Sutter’s Project Proposal, which includes structures ranging in height from 2 to 3 stories that are served by surface parking, development of the Proposed Project on this site would likely require substantially increased building heights and smaller setbacks, and potentially the addition of a parking structure, all of which may result in land use compatibility and aesthetic impacts. Note: use of this site for part of the hospital complex is included as part of the Decentralized Alternative 4B.</p>
<p>101/Todd Road NW Alternate Site - 237 Todd Road - Unincorporated Sonoma County, but within urban growth boundary</p>	<p>This 11.1-acre site is located in the unincorporated portion of Sonoma County. When originally considered the square shaped site was vacant, but in recent years the location was sold and was developed. The site is easily accessible from a frontage road, but is not adjacent to US 101.</p>	<p>This alternate site was dropped from consideration because it is no longer available for construction due to the recent development of the site. Further the site is not adjacent to US 101 and is too small to meet the project objectives.</p>

Table 6-2. Alternatives Considered but Rejected as Infeasible

Site/Alternative	Site/Alternative Description	Reasons why Site/Alternative was not Studied Further
<p>North Point Corporate Center Alternative Site - Challenger Way, Mercury Way and Apollo Way - City of Santa Rosa</p>	<p>This 19.96-acre site is located within the city limits of Santa Rosa. Since it was originally considered the site has been partially developed leaving only 13.7 acres for development split by the recent development. The site is accessible from a frontage road but is not visible from US 101.</p>	<p>This alternate was dropped from consideration due to the recent partial development of the site, significantly decreasing the available land on the site. Further the site is not adjacent to US 101 and even with the original amount of land available was still too small to meet the needs of the project.</p>
<p>Fountaingrove Executive Center/Old Redwood Highway Alternate Site - 3700 Old Redwood Highway/ 3569 Round Barn Circle - City of Santa Rosa</p>	<p>This 15.59-acre site is located within the city limits of Santa Rosa. Since the original consideration of this site a considerable amount of the site has been developed leaving only approximately 1/4 or the original site available for development. The topography of the site is on a steep grade with the lot being square shaped.</p>	<p>This alternate site was dropped from consideration because of the recent development of the site. The site is located close to US 101; however the amount of land available for development is much too small to meet the needs of the facility. The sites topography is also incompatible with the hospitals needs.</p>
<p>Westwind Business Park Alternate Site - 3355 Westwind Boulevard - Unincorporated Sonoma County, but within urban service area</p>	<p>This 19.2-acre site is located in the unincorporated portion of Sonoma County. Since the site was originally considered it has been partially developed leaving a smaller portion of land available for development. The site is located close to an airport along a frontage road, but is not visible from US 101.</p>	<p>This alternate site was dropped from consideration because of the recent development of the site. The site is zoned MP 2 VOH and designated in the General Plan as General Industrial. The General Plan and zoning designations do not permit hospital uses. Airport Land Use Commission (ALUC) approval would also be required as site is within a Turning Pattern Zone (TPZ). Location of the proposed project at this site would be incompatible with the Comprehensive Airport Land Use Plan for Sonoma County.</p>
<p>Southwest Corner 101 Shiloh (West) Alternate Site - Pruitt Ave and Caletti Ave - Town of Windsor</p>	<p>This 33-acre site is located within the Town of Windsor north of Santa Rosa. A portion of the site was recently developed into an industrial use splitting the site. There is poor access to the site from a frontage road, but the site is visible from US 101.</p>	<p>This alternate site was dropped from consideration partly due to the recent development that has taken place onsite. The site is designated Heavy Industrial in the General Plan and zoning ordinances. The zoning and General Plan designations do not permit hospital uses. The site is subject to potential noise from passing Northwestern Pacific Railroad (NWPRR) train traffic, although there is no direct train access to the site.</p>

Table 6-2. Alternatives Considered but Rejected as Infeasible

Site/Alternative	Site/Alternative Description	Reasons why Site/Alternative was not Studied Further
<p>Southwest Corner 101 Shiloh (East) Alternate Site - Pruitt Ave and Caletti Ave - Town of Windsor</p>	<p>This 45.4-acre site is located within the Town of Windsor north of Santa Rosa. The site is currently vacant, but has previously had industrial uses located on some portions of the site. The site is triangular shaped and has access issues with no frontage road, but it is adjacent to US 101.</p>	<p>This alternative would not reduce any identified significant or significant and unavoidable impacts of the Proposed Project. It would not eliminate or lessen the significant and unavoidable air quality impacts associated with the surcharging of the Project site, as that work would still be required on the alternative site. It would also not eliminate or lessen the significant and unavoidable noise impacts associated with the operation of the helistop, as a helistop would still be required. There is also potential for increased noise impacts from the nearby operations of the Northwestern Pacific Railroad (NWPRR).The site is zoned and designated Heavy Industrial and Light Industrial in the General Plan. The zoning and General Plan designations do not permit hospital uses. . While the site is large enough and located adjacent to US 101, access issues exist from the lack of a frontage road. Also the shape of the site is not conducive to a hospital campus.</p>
<p>Airway Drive Alternate Site - 3833, 3737, 3745 & 3731 Airway Drives and 1021 Hopper Ave - City of Santa Rosa</p>	<p>This 22.9-acre site is located within the city of Santa Rosa. Currently Sutter operates in the northern portion of the site with the remaining portion of the site being a self-storage facility along with several residences. The shaped of the site is awkward, but access to the site is good and is visible from US 101.</p>	<p>Development of this site could result in potentially significant biological impacts related to steelhead salmon, wetlands and potentially sensitive plant habitat. It may also result in potential significant and unavoidable impacts to cultural resources which could extend onto the site. This alternative would also not reduce any identified significant or significant and unavoidable impacts of the Proposed Project. It would not eliminate or lessen the significant and unavoidable air quality impacts associated with the surcharging of the Project site, as that work would still be required on the alternative site. It would also not eliminate or lessen the significant and unavoidable noise impacts associated with the operation of the helistop, as a helistop would still be required.</p> <p>The site is L-shaped, which is awkward for development of the medical center; site development would require displacement of at least one residence..</p> <p>Given the awkward configuration of the site, implementation of this alternative could impede Sutter’s ability to ensure that the Medical Campus is efficiently designed and of sufficient connectivity to provide the most modern and efficient layout for the integrated delivery of health services, and to promote functional relationships among departments, services and programs, provide functional circulation within the inpatient and</p>

Table 6-2. Alternatives Considered but Rejected as Infeasible

Site/Alternative	Site/Alternative Description	Reasons why Site/Alternative was not Studied Further
		outpatient spaces, placement of seating areas, outdoor terraces, and other patient and visitor amenities
<p>Two Bridges Property Alternate Site - 300, 303, 400, 410 & 425 Elnoka Lane - City of Santa Rosa</p>	<p>This 66.8-acre site is located within the city of Santa Rosa. Currently 12.8 acres of the site has an active development application ongoing, with the remaining portions of the site having uneven ground unfavorable to development. Access to the site is poor and it is not visible from US 101.</p>	<p>This alternative would not reduce any identified significant or significant and unavoidable impacts of the Proposed Project. It would not eliminate or lessen the significant and unavoidable air quality impacts associated with the surcharging of the Project site, as that work would still be required on the alternative site. It would also not eliminate or lessen the significant and unavoidable noise impacts associated with the operation of the helistop, as a helistop would still be required. Instead, this alternative would likely result in greater noise impacts due to the need for helicopters arriving and leaving the site to fly directly over residential areas. This alternative would likely have similar cumulative traffic impacts to the Proposed Project.</p> <p>Given the limited portions of the site which can be developed due to its steep terrain, the site is significantly smaller than the 25 acres needed to construct the Proposed Project at the density indicated in Sutter’s Project Proposal, which includes structures ranging in height from 2 to 3 stories that are served by surface parking. Accordingly, development of the Proposed Project on this site would likely require substantially increased building heights and smaller setbacks, and potentially the addition of a parking structure, all of which may result in land use compatibility and aesthetic impacts.</p> <p>The site is zoned “PD” and Medium Density Residential and designated in the General Plan as Law and Medium Residential. The Zoning and General Plan designations do not permit hospital uses.</p>

Table 6-2. Alternatives Considered but Rejected as Infeasible

Site/Alternative	Site/Alternative Description	Reasons why Site/Alternative was not Studied Further
<p>Fountaingrove Winery Alternate Site - Round Barn Road - City of Santa Rosa (Part of Fountaingrove Planned Community)</p>	<p>This 36.1-acre site is located within the City of Santa Rosa inside of the Fountaingrove Planned Community. The site is mostly vacant with the exception of the historic Fountaingrove Winery, which splits the site into two. Access to the site is poor and it is not visible from US 101. The topography of the site is not advantageous to a hospital facility</p>	<p>Development on this alternative site could result in impacts to historic resources on or near the site, as well as possibly to the adjacent Cancer Center as a result of the pile driving that would be necessary to construct the proposed project on this site. Pile driving would be necessary in order to develop a seismically compliant foundation compatible with OSHPD requirements, resulting in fewer emissions and a less than significant air quality impact associated with surcharging. This alternative would not eliminate or lessen the significant and unavoidable noise impacts associated with the operation of the helistop, as a helistop would still be required.</p> <p>The historic winery on the site splits the site into two separate developable areas limiting the ability of the site to operate in an efficient manner.</p> <p>Implementation of this alternative would not meet Sutter’s objective to provide a Medical Campus that is easily accessed by persons living within the primary service area of the Sutter Medical Center and one that is close to and visible from Highway 101.</p>
<p>Fulton Road Alternate Site - 1615 Fulton Road - City of Santa Rosa</p>	<p>This 37.9-acre site is within the city limits of Santa Rosa on the western edge of the city boundary. Currently the site is vacant, but a recent planned residential development has been approved on a portion of the site. Access to the site is limited and is not visible from US 101. The site is split in two by a canal limiting the land available for development.</p>	<p>This alternative would not reduce any identified significant or significant and unavoidable impacts of the Proposed Project. It would not eliminate or lessen the significant and unavoidable air quality impacts associated with the surcharging of the Project site, as that work would still be required on the alternative site. It would also not eliminate or lessen the significant and unavoidable noise impacts associated with the operation of the helistop, as a helistop would still be required. This alternative would likely have similar cumulative traffic impacts to the Proposed Project, with potentially additional traffic impacts due to the addition of Project-related traffic to roadways which appear undersized for that volume of traffic.</p> <p>Given the limited portions of the site which can be developed due to its configuration and existing development plans, the developable portion of the site is significantly smaller than the 25 acres needed to construct the Proposed Project at the density indicated in Sutter’s Project Proposal, which includes structures ranging in height from 2 to 3 stories that are served by surface parking. Accordingly, development of the Proposed Project on this site, if even possible, would likely require development of</p>

Table 6-2. Alternatives Considered but Rejected as Infeasible

Site/Alternative	Site/Alternative Description	Reasons why Site/Alternative was not Studied Further
		<p>the Project with substantially increased building heights and smaller setbacks, both of which may result in land use compatibility and aesthetic impacts</p> <p>Further, the site has limited access and is not adjacent to US 101. Due to the recent approved development, undeveloped portions of the site would not be large enough to accommodate the development of the hospital facility. The “front” (22.7± acre) site is designated “Low Density Residential” in the General Plan and is located in the “R-1-6” (Single Family Residential) District. The “rear” 15.2± acres is designated “Very Low Density Residential” in the General Plan and is located in the RR-40 District. Hospitals are not permitted in either the R-1-6 or the RR-40 district. Helicopter service to the site would require overflight of residential and school areas.</p>
<p>Roseland Shopping Center Alternate Site - 561, 565, 665 & 673 Sebastopol Road - Unincorporated Sonoma County, but within an urban service area and Santa Rosa’s sphere of influence</p>	<p>This 10.83-acre site sits on the urban fringe of Santa Rosa in the unincorporated portion of Sonoma County. Currently the site is a shopping center and it has good access from a frontage road. The site is not visible from US 101. The topography of the site being advantageous to the design of a hospital.</p>	<p>This alternative would result in new impacts related to the demolition of the existing shopping center on the site. This alternative would not reduce any identified significant or significant and unavoidable impacts of the Proposed Project. It would not eliminate or lessen the significant and unavoidable air quality impacts associated with the surcharging of the Project site, as that work would still be required on the alternative site. It would also not eliminate or lessen the significant and unavoidable noise impacts associated with the operation of the helistop, as a helistop would still be required. Instead, this alternative would likely result in greater noise impacts due to the need for helicopters arriving and leaving the site to fly directly over residential areas. This alternative may result in greater cumulative traffic impacts than the Proposed Project given that the site is accessible to Highway 12 only via already congested streets.</p> <p>Further, given the limited portions of the site which can be developed due to its configuration and existing development plans, the site is significantly smaller than the 25 acres needed to construct the Proposed Project at the density indicated in Sutter’s Project Proposal, which includes structures ranging in height from 2 to 3 stories that are served by surface parking, development of the Proposed Project on this site would likely require substantially increased building heights and smaller setbacks, and potentially the addition of a parking structure, all</p>

Table 6-2. Alternatives Considered but Rejected as Infeasible

Site/Alternative	Site/Alternative Description	Reasons why Site/Alternative was not Studied Further
		of which may result in land use compatibility and aesthetic impacts..
<p>Warrack Hospital Alternate Site - 2449 Summerfield Road - City of Santa Rosa</p>	<p>This 11.2-acre site is located within the city limits of Santa Rosa. The site is the location of the former Warrack Hospital and is occupied by several medical offices. The site is not visible from US 101 and only indirectly accessible to Highway 12 via congested streets. The topography of the site is flat.</p>	<p>This alternative would not reduce any identified significant or significant and unavoidable impacts of the Proposed Project. It would not eliminate or lessen the significant and unavoidable air quality impacts associated with the surcharging of the Project site, as that work would still be required on the alternative site. It would also not eliminate or lessen the significant and unavoidable noise impacts associated with the operation of the helistop, as a helistop would still be required. Instead, this alternative would likely result in greater noise impacts due to the need for helicopters arriving and leaving the site to fly directly over residential areas. This alternative may result in greater cumulative traffic impacts than the Proposed Project given that it can only accessed via already congested streets. Further, given the limited portions of the site which can be developed due to its configuration and existing development plans, the site is significantly smaller than the 25 acres needed to construct the Proposed Project at the density indicated in Sutter’s Project Proposal, which includes structures ranging in height from 2 to 3 stories that are served by surface parking, development of the Proposed Project on this site would likely require substantially increased building heights and smaller setbacks, and potentially the addition of a parking structure, all of which may result in land use compatibility and aesthetic impacts.</p>
<p>West Third Street Properties Alternate Site - 691 & 414 West Third Street - City of Santa Rosa</p>	<p>This 27.5-acre site is located within the city limits of Santa Rosa. Currently, one portion of the site is vacant land; another portion is residential development, with the last portion of the land is under agricultural use.</p>	<p>This alternative would not reduce any identified significant or significant and unavoidable impacts of the Proposed Project. It would not eliminate or lessen the significant and unavoidable air quality impacts associated with the surcharging of the Project site, as that work would still be required on the alternative site. It would also not eliminate or lessen the significant and unavoidable noise impacts associated with the operation of the</p>

Table 6-2. Alternatives Considered but Rejected as Infeasible

Site/Alternative	Site/Alternative Description	Reasons why Site/Alternative was not Studied Further
		<p>helistop, as a helistop would still be required. Instead, this alternative would likely result in greater noise impacts due to the need for helicopters arriving and leaving the site to fly directly over residential areas. As well, it would likely have similar, if not greater, cumulative traffic impacts to the Proposed Project. Finally, development of this site may result in a significant impact to agricultural resources.</p>
<p>Sonoma County Center Alternate Site - approx. 80-acre County government/state courts complex between US101 on the west and Mendocino Ave on the east, and between Administration Drive on the south and Russell Ave on the north - City of Santa Rosa</p>	<p>This site is located in northern Santa Rosa, adjacent to US 101. Currently the site is occupied by the County of Sonoma and the state courts complex, but long-range planning is under consideration for the County to consolidate its offices and possibly develop new uses onsite. The site has good access and the topography of the site is flat.</p>	<p>The site is currently occupied by County and state court buildings and uses. The time frame for the County of Sonoma to relocate current County offices allowing for construction of a new hospital at this site is unknown and it would most likely take years for the process to begin.</p>
<p>Air Center Site - North of the westernmost portion of Northpoint Parkway - City of Santa Rosa</p>	<p>Under this alternative, the Proposed Project (Sutter Medical Center hospital, Central Utility Plant, Physicians Medical Center, and Medical Office Building) would be constructed on this 31 acre site. The site is comprised of two parcels under common ownership, and is a portion of the old Santa Rosa Air Center site used by the armed forces during World War II. The site can be accessed at its southeast corner from Northpoint Parkway but, as the site is at the “dead end” of Northpoint Parkway, there is no other readily available secondary access point. The site is not visible from Highway 101 and there is no there is no direct access to Northpoint Parkway from Highway 101. To access the site from Highway 101, patients, visitors and staff would have to exit Highway 101 at Hearn Avenue, travel approximately 1.4 miles west to Sebastopol Road, turn north for 0.3 mile, and then turn left onto Northpoint Parkway and travel approximately 1.3 miles to the site. Alternately, they could exit Highway 101 at State Highway 12, take Highway 12 1.6 miles to Stony Point Road and from there travel 1.0 mile to Northpoint Parkway, and then 1.2 miles to the site. Patients, visitors and staff coming from the west would likely take Highway 101 to Highway 12 and exit at Fulton/South Wright Road. From there they would travel 1.1 miles to Corporate Center Parkway, 0.8 miles to Northpoint Parkway, and then 0.3 miles to the site.</p>	<p>Development of this site could result in potentially significant impacts to California Tiger Salamander (CTS) and CTS habitat and to wetlands. This alternative would not reduce any identified significant or significant and unavoidable impacts of the Proposed Project. It would not eliminate or lessen the significant and unavoidable air quality impacts associated with the surcharging of the Project site, as that work would still be required on the alternative site. It would also not eliminate or lessen the significant and unavoidable noise impacts associated with the operation of the helistop, as a helistop would still be required. Instead, this alternative would likely result in greater noise impacts due to the need for helicopters arriving and leaving the site to fly directly over residential areas. While Northpoint Parkway is a four lane (two lanes each way) divided parkway from Corporate Center Parkway east to Stony Point Road, from Stony Point Road south to Hearn Avenue, it is only a two-lane roadway. Further, Hearn Avenue east to Highway 101 is a only a two-lane roadway. Existing traffic congestion becomes increasingly significant as drivers approach Highway 101 and the Hearn Avenue/Highway 101 interchange is an awkward, offset configuration both north and southbound. The two lane overcrossing at Hearn Avenue is currently heavily overtaxed with traffic during peak travel periods and on the weekends, as it is the main interchange for numerous</p>

Table 6-2. Alternatives Considered but Rejected as Infeasible

Site/Alternative	Site/Alternative Description	Reasons why Site/Alternative was not Studied Further
		<p>commercial areas on the east side of the Freeway, as well as for Auto Row on the west side of the freeway. The main alternate route to the site (Highway 101 to Highway 12 to Stony Point to Northpoint Parkway) is also already congested, particularly from West Third Street south to Hearn Avenue. Further, the planned widening of Stony Point Road, south of Sebastopol Road, was recently placed on hold by the Santa Rosa City Council. Accordingly, the cumulative traffic impacts of this alternative are likely similar if not greater than those of the proposed Project.</p>

A public scoping meeting for the Sutter Medical Center of Santa Rosa / Luther Burbank Memorial Foundation Joint Master Plan, Environmental Impact Report Notice of Preparation was held on February 21, 2008, at the WFC. Members of the public provided both oral and written comments which are summarized below. Additionally, letters were received.

The comments are summarized in **Table 7-1**, and written comments are included in **Appendix B**.

Table 7-1. Summary of Issues for Sutter Medical Center of Santa Rosa / Luther Burbank Memorial Foundation Joint Master Plan

Department of Transportation (CALTRANS) comments on Use Permit Application and Initial Study. April 18, 2005. (Timothy C. Sable, Division Branch Chief)

- Provide a plan showing interim improvements to the US 101 northbound off-ramp at Mark West Springs Road. Show and label the State right-of-way line, lane and shoulder widths.
- Describe the timeline and funding for how each of the ultimate transportation improvements will be built including the County's plans for the ultimate improvements on Mark West Springs Road. Suggested that the County and project sponsor contact Mr. Manny Caluya (510) 286-4645 to discuss implementing mitigation for impacts to the US 101 off-ramp at Mark West Springs Road. Mr. Caluya provides design oversight for locally funded highway projects for CALTRANS.
- Traffic operations for the US 101 northbound ramps/Mark West Springs Road intersection are critical because they will affect operation at the US 101 southbound ramps/River Road intersection to the west. However, "available distance" rows are blank in the Queuing analysis shown on Table 3 and Table 29 for this intersection. Please provide this information for our review. Mitigation measures should be proposed if operations at the northbound off-ramps would affect operations at southbound ramps.
- The US 101 southbound off-ramp at River Road currently operates at level of service (LOS) F according to the Department's traffic study completed for the US 101 HOV Lane Widening Project. What mitigation measures are proposed for project impacts to this ramp?
- Page 70 of the traffic study states that the actual predicted volumes for the US 101 northbound off-ramp at River Road are less than 1500 equivalent passenger cars/hour (vph). However, the 2020 Saturday6 Event PM LOS Computation Report shows that the off-ramp volume will exceed 1500 vph. Please reconcile the difference.
- Table 24 and Table 26 use 4700 vph as freeway roadway capacities; in our opinion, this is too high for the analysis. Is there any field data to back this up? Theoretically, if the actual freeway capacities are lower than that used in the report (i.e. 4300 vph or lower), a bottleneck would occur in the southbound direction of the freeway. Since a "large portion of traffic (59%) is expected to use US 101" (pg. 5), and Table 26 shows that traffic significantly increases on the southbound freeway mixed lanes between the Mendocino/Hopper ramps and the River Road ramps with proposed project during 2030 PM peak hour, mitigation measures should be proposed for that bottleneck location.
- The State ROW along US 101 adjacent to the proposed project site has been previously surveyed by the Department and there are no known archaeological sites within the State ROW. If ground disturbing activities take place as part of this project within State ROW and there is an inadvertent find, all construction within 35 feet of the find shall cease until the Department's Cultural Resource Study Office is alerted and a staff archaeologist can evaluate the finds. The Cultural Resource Study office contact person is Brian Ramos. He can be reached at (510) 286-

Table 7-1. Summary of Issues for Sutter Medical Center of Santa Rosa / Luther Burbank Memorial Foundation Joint Master Plan

5613.

- At the bottom of pg. 54 of the traffic study, change the title of Figure 13 to Figure 15.
- As part of the Department's US 101 HOV Lane Widening project, which is currently in the environmental study phase, the Mark West Creek Structure will be widened.
- Any widening of Mark West Springs Road may require dedication of ROW (in fee) to the State, per the Department's design requirements.
- The applicant will need an encroachment permit from the Department to construct the driveway approach onto SR 116 and to complete any other required work or traffic control within State ROW. To apply for an encroachment permit, the applicant must submit a completed encroachment permit application, environmental documentation, and five (5) sets of plans (in metric units) which clearly indicate State ROW to the following address:

Mr. Sean Nozzari, District Office Chief
Office of Permits
California Department of Transportation, District 04
P.O. Box 23660
Oakland, CA 94623-0660

Table 7-1. Summary of Issues for Sutter Medical Center of Santa Rosa / Luther Burbank Memorial Foundation Joint Master Plan

Department of Transportation (CALTRANS) comments on Notice of Preparation. February 29, 2008. (Timothy C. Sable, Division Branch Chief)

The department is primarily concerned with impacts on US 101 and its on- off-ramps in the vicinity of the project site. It is recognized that nearly three years have passed since the original comments of April 18, 2005 were submitted, and that the project scope has changed. However, several of those comments are still relevant and should be addressed. The traffic analysis should include, but not be limited to, the following information:

- The project's traffic impacts in terms of trip generation, distribution, and assessment. The assumptions and methodologies used in compiling these data should be addressed. The traffic analysis should clearly show the percentage of project trips assigned to US 101 and its on- and off-ramps.
- Current (2006) Average Daily Traffic (ADT) and AM/PM peak hour volumes on all significantly affected streets, highway segments and intersections.
- Schematic illustration and level of service (LOS) analysis for the following scenarios:
 - 1) existing,
 - 2) existing plus project,
 - 3) cumulative,
 - 4) cumulative plus project for the roadways and intersections in the project area.
- Calculation of cumulative traffic volumes should consider all traffic-generating developments, both existing and future, that would affect the State highway facilities being evaluated.
- The procedures contained in the 2000 updated Highway Capacity Manual should be used as a guide for the analysis. We also recommend using the Department's "*Guide for the Preparation of Traffic Impact Studies*" and is available at the following website:
<http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf>.
- Mitigation measures should be identified where plan implementation is expected to have a significant impact. Mitigation measures proposed should be fully discussed, including financing, scheduling, implementation responsibilities, and lead agency monitoring.
- Mitigation measures should consider highway and non-highway improvements and services. Special attention should be given to the development of alternate solutions to circulation problems that do not rely on increased highway construction such as: 1) implementing bicycle-pedestrian friendly design solutions, and 2) Planning for transit service improvements and expansion. We do expect to receive a copy of the EIR from the State Clearing house but to expedite the review of the EIR please send two copies in advance directly to:

Ina Gerhard
Office of Transit and Community Planning
Department of Transportation, District 4
P.O. Box 23660
Oakland, CA 94623-0660

Table 7-1. Summary of Issues for Sutter Medical Center of Santa Rosa / Luther Burbank Memorial Foundation Joint Master Plan

Department of Fish and Game comments on Sutter Medical Center of Santa Rosa / Luther Burbank Memorial Foundation Joint Master Plan. February 21, 2008. (Charles Armor, Regional Manager, Bay Delta Region)

- Please provide a complete assessment including, but not limited to type, quantity and locations of habitats, flora and fauna within and adjacent to the project area, including endangered, threatened (that meet CEQA definitions), and locally unique species and sensitive habitats. Include the reasonably foreseeable direct and indirect changes (temporary and permanent) that may occur with implementation of the project.
- Please be advised that a California Endangered Species Act (CESA) Permit must be obtained if the project has the potential to result in the take of species of plants or animals listed under CESA, either during construction or over the life of the project. Issuance of a CESA Permit is subject to CEQA documentation; therefore, the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the project will impact CESA listed species, early consultation is encouraged, as significant modification to the project and mitigation measures may be required in order to obtain a CESA Permit.

Table 7-1. Summary of Issues for Sutter Medical Center of Santa Rosa / Luther Burbank Memorial Foundation Joint Master Plan

Native American Heritage Commission comments on Sutter Medical Center of Santa Rosa / Luther Burbank Memorial Foundation Joint Master Plan. February 11, 2008. (Katy Sanchez, Program Analyst)

The NAHC recommends the following actions:

- Conduct the appropriate regional archaeological Information Center for a records search to determine:
 - 1) if a part or all of the area of the project (APE) has been previously surveyed for cultural resources.
 - 2) if any known cultural resources have already been recorded on or adjacent to the APE.
 - 3) if the probability is low, moderate, or high that cultural resources are located in the APE.
 - 4) if a survey is required to determine whether previously unrecorded cultural resources are present.
- If an archaeological inventory is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - 1) The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure.
 - 2) The final written report should be submitted within three months after work has been completed to the appropriate regional archaeological information center.
- Contact the NAHC for:
 - 1) A Sacred Lands File Check. **USGS 7.5-minute quadrangle name, township, range, and section required.**
 - 2) A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List included in appendix.**
- Lack of surface evidence of archaeological resources does not preclude their subsurface existence.
 - 1) Lead agencies should include their mitigation plan provisions for the identification and evidence of accidentally discovered archaeological sensitivity per CEQA. In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources should monitor all ground-disturbing activities.
 - 2) Lead agencies should include their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
 - 3) Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code (7050.5, CEQA 15064(e)) and Public Resources Code 5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Table 7-1. Summary of Issues for Sutter Medical Center of Santa Rosa / Luther Burbank Memorial Foundation Joint Master Plan

Letter from resident, Paulette Carroll 8575 Eastside Road, Healdsburg. March 5, 2008.

- Concerned about additional growth on the north side of Santa Rosa resulting from the proposed project with respect to increased traffic. Her family owns and farms property on Alba Lane between the new Kaiser buildings on Old Redwood Highway and US 101. There are only three homes on the road who access the road at random times in the day. However, the traffic is heaviest at the commute peak hours starting as early as 3:00 PM.
- Request that the County build a turn lane on “that piece of highway” for drivers entering and exiting Alba Lane and Angela Drive. Left turns are dangerous.

Table 7-1. Summary of Issues for Sutter Medical Center of Santa Rosa / Luther Burbank Memorial Foundation Joint Master Plan

Summary of comments provided at the Public Scoping Meeting of February 21, 2008

Speakers:

1) Phil Sitzman

Complaint: Not in my backyard. Has anyone contacted the helicopter operators...?

Concerned about helicopter overflights noise and hazards. Contact the helicopter and have it land at 5:15 PM on Friday. See if it disturbs the schools. Document doesn't mention a trauma center or cardiac facility. Why do you need a helicopter?

2) Jim Long

He echos some of the previous concerns. Concerned about the well. He owns a vineyard across the way. His well is down 200 feet. Wants to know what the protocol is for a sound wall – operational noise associated with traffic.

3) Jackie Egbert

Really concerned about the traffic. What about people coming down the freeway, coming down Old Redwood Highway?

4) Paul Finn

Property owner to the east of the property other side of Old Redwood Highway. The report doesn't seem to address traffic along Old Redwood Highway during weekday. Hopes traffic won't cause a need for widening (Old Redwood Highway). Also concerned about helicopter flights, construction noise and dust, truck traffic associated with construction.

5) Steve Harrison

Nearby property owner. Concerned with traffic. Kaiser Hospital nearby – why do we need this one? Have other sites been explored? Funding by property owners?

6) Phil Sitzman (again)

Is this going to happen? Is this project a done deal? What about liability for accidents on the freeway from helicopter overflights? Have you looked at other sites?

7) Jim Long (again)

Important for EIR to address southbound 101 traffic exiting River Road and Barnes Road west of site.

8.1 LEAD AGENCY**County of Sonoma, Permit Resource and Management Department**

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