

3.10 OTHER VALUES

3.10.1 NOISE

This section describes the noise environment of the Wilfred site, Stony Point site and the Lakeville site. The issues that are addressed include: acoustical terminology, typical noise levels, construction noise levels, Federal noise abatement criteria, and existing noise levels.

ACOUSTICAL BACKGROUND AND TERMINOLOGY

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), it can be heard and hence is called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, or Hertz (Hz).

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure), as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and a logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels in decibels.

Community noise is commonly described in terms of the “ambient” noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}) over a given time period (usually one hour). The L_{eq} is the foundation of the Day-Night Average Level noise descriptor, L_{dn} , and shows very good correlation with community response to noise. **Table 3.10-1** contains definitions of acoustical terminology used in this section. **Table 3.10-2** shows examples of noise sources, which correspond to various sound levels.

TABLE 3.10-1
ACOUSTICAL TERMINOLOGY

Term	Definition
Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound. A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 PM) weighted by a factor of three and nighttime hours (10pm – 7am) weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.

SOURCE: Bollard and Brennan, 2002.

The Day-night Average Level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 PM to 7:00 AM) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. L_{dn} -based noise standards are commonly used to assess noise effects associated with traffic, railroad and aircraft noise sources.

TABLE 3.10-2
TYPICAL A-WEIGHTED SOUND LEVELS OF COMMON NOISE SOURCES

Loudness Ratio	Decibels (dBA)	Description
128	130	Threshold of pain
64	120	Jet aircraft take-off at 100 feet
32	110	Riveting machine at operators position
16	100	Shot-gun at 200 feet
8	90	Bulldozer at 50 feet
4	80	Diesel locomotive at 300 feet
2	70	Commercial jet aircraft interior during flight
1	60	Normal conversation speech at 5-10 feet
1/2	50	Open office background level
1/4	40	Background level within a residence
1/8	30	soft whisper at 2 feet
1/16	20	Interior of recording studio

SOURCE: Bollard and Brennan, 2002.

REGULATORY ENVIRONMENT

Construction Noise Levels

Noise due to construction activities may be considered to be significant if:

- The construction activity is long-term;
- Use of heavy equipment and noisy activities occurs at night;
- Pile driving or surface blasting is planned; and
- Industry-standard noise abatement measures are not implemented for noise-producing equipment.

Operation Noise Levels

As described below, noise due to operational activities may be considered significant if:

- Project-generated traffic on off-site roadways increases ambient noise levels from 1.5 dB Ldn to 5.0 dB Ldn, depending on the existing ambient noise levels (see **Table 3.10-3**) and/or causes ambient noise levels to increase to 65 dB Ldn or above.
- Potentially continuous on-site activities (such as HVAC operation or well pump operation) result in a median hourly noise level at sensitive receptors of 45 dBA or above.
- Short-term on-site noise events (such as a passing vehicle) resulting in a one-time or maximum noise level at sensitive receptors of 60 dBA or above.

Some guidance as to the significance of changes in ambient noise levels is provided by the 1992 findings of the Federal Interagency Committee on Noise (FICON), which assessed the annoyance effects of changes in ambient noise levels resulting from aircraft operations. The FICON

recommendations are based upon studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. Annoyance is a summary measure of the general adverse reaction of people to noise that generates speech interference, sleep disturbance, or interference with the desire for a tranquil environment.

The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of L_{dn} . The changes in noise exposure that are shown in **Table 3.10-3** are expected to result in equal changes in annoyance at sensitive land uses. Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are used in this analysis for traffic noise described in terms of L_{dn} . For non-transportation noise sources affecting noise-sensitive land uses, an increase in ambient noise levels of 5 dBA is considered to be potentially significant (BBA, 2004).

TABLE 3.10-3
MEASURES OF SUBSTANTIAL INCREASE FOR TRANSPORTATION NOISE EXPOSURE

Ambient Noise Level Without Project (L_{dn})	Significant Impact Assumed to Occur if the Project Increases Ambient Noise Levels By:
<60 dBA	+ 5 dBA or more
60-65 dBA	+3 dBA or more
>65 dBA	+1.5 dBA or more

SOURCE: BBA, 2004.

Even if an increase in background noise is not significant, a potentially significant impact may result if the resulting ambient background noise levels associated with a project nonetheless exceed normally acceptable limits. The basic test of significance is whether the resulting noise levels would be expected to annoy a reasonable person of normal sensitiveness (BBA, 2004).

Federal recommendations for acceptable noise levels at residential receivers are generally in the range of 55 dB L_{dn} to 65 dB L_{dn} , based upon the recommendations by the USEPA, the U.S. Department of Housing and Urban Development (HUD), and other Federal agencies. These criteria are typically applied to noise from transportation noise sources, but may be used to assess the compatibility of other noise sources relative to residential land uses, provided that consideration is given to potential disturbances due to impulsive sound, tonal content (whistles, music, etc.), and the prevalence of nighttime activities (BBA, 2004).

For noise sources other than off-site traffic, especially those that may occur over short periods of the day or night, it is common to apply noise criteria based upon hourly noise levels, making a distinction between noise levels produced during daytime and nighttime hours. Acceptable average hourly noise levels in residential areas are usually considered to be in the range of 50 to 55 dBA during daytime hours and 45 to 50 dBA during nighttime hours. For example, the Noise Element of the Sonoma County General Plan establishes a median hourly noise level (L_{50}) standard of 45 dBA for nighttime hours (10 p.m. to 7 a.m.).

For comparison, measured ambient noise levels at the Rohnert Park site were typically in the range of 50 to 55 dBA during daytime hours, and 40 to 50 dBA during nighttime hours. At the Lakeville Road site, the ambient noise measurement site was adjacent to the roadway, so it is difficult to estimate ambient noise levels at the nearest residences. However, the generally rural nature of the area, with a background of Highway 37 traffic noise, suggests that ambient noise levels would be in the same range as those found at the Rohnert Park site.

Although local standards do not apply to developments on trust land, a nighttime noise level of 45 dBA has been applied to this analysis as the criterion for acceptable noise exposures, to be consistent with the noise measurement data and usual standards.

Certain noise sources associated with the development alternatives would operate over periods of time of an hour or more, such as the wastewater treatment plant pumps and HVAC units. For these sources, it is appropriate to consider their potential impacts in terms of acceptable hourly median noise levels, measured against the 45 dBA standard at sensitive receptors.

For short-term noise events, such as passing vehicles, a reasonable test of potential noise impact would be whether the maximum noise level during the event could interfere with speech. Assuming that a noise level of 60 dBA would correspond to the threshold of potential speech interference, the relative effects of different noise sources can be described by predicting the distances at which a sound level of 60 dBA would be experienced.

DESCRIPTION OF THE AFFECTED ENVIRONMENT

The Wilfred site, Stony Point site, and the Lakeville site are all located in rural settings. Urban land uses are encroaching upon both the Wilfred site and the Stony Point site and a mobile home park and a business park are currently located adjacent to the southern boundary of these two sites. Scattered rural residential development is also present to the north and northeast of both sites (see **Figure 3.8-9** and **Figure 3.10-1**). Development near the Lakeville site is limited to rural residential to the east and north. The Infineon Raceway (formerly Sears Point Raceway) is located over the hills to the east of the Lakeville site.

The noise environment on all three sites is defined primarily by traffic on nearby roadways. Other present noise sources in the vicinity of each site includes occasional aircraft over-flights, use of farm equipment, and electric water pumps. To describe the ambient noise environment, continuous noise level measurements were taken for all three sites. One continuous noise level measurement was taken for the Wilfred site and the Stony Point site because of their close proximity to each other and the relatively uniform traffic volumes along the length of Wilfred Avenue. At the Wilfred site and Stony Point site, ambient noise was measured about 425 feet south of Wilfred Avenue and about 1,000 feet east of Stony Point Road (**Figure 3.10-1**). At the

Lakeville site, the ambient noise was measured about 50 feet from the centerline of Lakeville Highway (**Figure 3.10-2**).

Table 3.10-4 lists the measured Day-Night Levels (L_{dn}) at each site over the period from October 14 through October 20, 2004. At the Lakeville site, only three full days of data were obtained due to a meter malfunction caused by high winds and heavy rains that began on Sunday, October 17, 2004. Noise measurement equipment consisted of Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters, which were equipped with B&K Type 4176 ½" microphones. The measurement equipment was calibrated immediately before use, and met the specifications of the American National Standards Institute (ANSI) for Type 1 sound measurement systems. More detailed information regarding the noise measurements can be found in the Environmental Noise Analysis report prepared by BBA (**Appendix R**).

The data within **Table 3.10-4** indicates that there were average ambient noise levels from 50 to 60 dB L_{dn} on the Wilfred site and the Stone Point site, and from 70 to 73 dB L_{dn} on the Lakeville site. These levels are consistent with levels expected for semi-rural areas affected by local traffic noise, with the noise levels measured on the Lakeville site being the most elevated, showing the influence of the Lakeville Highway.

The traffic noise measurements were used to calibrate the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) for traffic on the nearest roadways. In addition, the ambient noise measurement data were used to derive the average day-night traffic noise distribution factor for traffic noise modeling in terms of L_{dn} . The FHWA model is the analytical method currently favored for traffic noise prediction by most governmental agencies and is applied to both federal and state roadway projects by the California Department of Transportation (Caltrans). The model is based upon the CALVENO

TABLE 3.10-4
MEASURED AMBIENT NOISE LEVELS

Date	Day of Week	L_{dn} , dB	
		Wilfred and Stony Point Sites	Lakeville Site
October 14, 2004	Thursday	54.9	72.8
October 15, 2004	Friday	54.4	72.8
October 16, 2004	Saturday	51.6	70.4
October 17, 2004	Sunday	51.5	--
October 18, 2004	Monday	52.5	--
October 19, 2004	Tuesday	60.3	--
October 20, 2004	Wednesday	49.9	--
Average:		55.0	72.1

SOURCE: BBA, 2004.

Figure 3.10-1 Ambient Noise Measurement Location – Wilfred Site and Stony Point Site

Figure 3.10-2 Ambient Noise Measurement Location – Lakeville Site

noise emission factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

The FHWA model was developed to predict hourly L_{eq} values for traffic conditions, and is considered to be accurate within 1.5 dB. To predict L_{dn} values, it is necessary to determine the day/night distribution of traffic and to adjust the traffic volume input data to yield an equivalent hourly traffic volume. Short-term traffic noise level measurements were conducted on October 13, 2004. The purpose of the noise measurements was to determine the accuracy of the FHWA model in predicting traffic noise.

The noise measurements were conducted in terms of the L_{eq} , and the measured values were later compared to the values predicted by the FHWA model using the observed traffic volumes, speed, and distance to the microphones. **Table 3.10-5** compares the measured and modeled noise levels for the observed traffic conditions.

As shown in **Table 3.10-5**, the FHWA model under-predicted the measured average noise levels for traffic on Rohnert Park Expressway, Stony Point Road, and Lakeville Highway by approximately 2 to 4 dB. This was likely due to accelerating vehicles and vehicles traveling over the speed limit. The FHWA model over-predicted traffic noise levels for Wilfred Avenue, perhaps due to actual vehicle speeds being lower than 40 mph on the existing narrow roadway.

TABLE 3.10-5
NOISE MEASUREMENT SUMMARY AND FHWA MODEL CALIBRATION

Roadway	Alts	Vehicles per Hour			Posted Speed (mph)	Distance (feet) ^a	Measured L_{eq} , dB	Modeled L_{eq} , dB ^b
		Autos	Medium Trucks	Heavy Trucks				
Rohnert Park Expressway	A-E	624	12	16	35	35	70.2	66.3
Stony Point Road	A-E	496	40	16	50	45	70.8	68.1
Wilfred Avenue	A-E	100	0	0	40	30	58.4	60.2
Lakeville Highway	F	1044	28	68	55	35	76.1	74.2

NOTE: ^a Distance is measured from the roadway centerline.

^b Acoustically “soft” site assumed.

SOURCE: BBA, 2004.

3.10.2 HAZARDOUS MATERIALS

STONY POINT AND WILFRED SITES

Existing Conditions

Phase I Environmental Site Assessments (ESA's) were conducted for the Wilfred and Stony Point sites (**Appendix S**). The purpose of the assessment was to identify environmental conditions and hazardous materials involvement that may pose a material risk to human health or to the environment, or in any way affect the use of the Stony Point and Wilfred sites. The Phase I ESAs were performed in conformance with the scope and limitations of American Society for Testing and Materials (ASTM) Standard Practice E1527-00, which specifies the appropriate inquiry requirements for the innocent landowner defense under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

While conducting the Phase I ESAs, visual inspections for underground storage tanks, vent pipes, hazardous materials dumps, soil stockpiles, and other obvious signs of hazardous materials involvement were performed. In addition, historical aerial photographs were examined and interpreted in order to provide indications of the presence of aboveground storage tanks, industrial buildings, gas station canopies or pump islands, and other indications of bulk hazardous materials storage within the study areas. The Phase I ESAs also contain regulatory agency database reports that identify sites and listings where hazardous materials are generated, used, stored, or sites where remedial activities are ongoing that could affect the planned uses of the site. The following paragraphs describe the findings of each Phase I ESA. An updated database report (EDR, 2005) was reviewed by AES in October 2005. Sites and listing that were identified in the database report are incorporated in the following described Phase I ESAs.

360-Acre Stony Point Site

A Phase I ESA was conducted for the 360-acre Stony Point site (**Appendix S**) in November 2003. The Phase I ESA concluded that the possibility exists that chemical fertilizers or other agricultural chemicals may be present in the soil; however such conditions are considered *de minimus*, which, according to the ASTM standard “generally would not pose a significant risk to public health or the environment.”

The Phase I ESA (**Appendix S**) revealed no evidence of recognized environmental conditions (REC's) with the exception of Assessor's Parcel Number (APN) 045-072-006. This parcel is located in the northeastern portion of the site. Historical aerial photographs revealed numerous items scattered throughout this 11-acre parcel. A title report revealed that APN 045-072-006 was the previous location of a junkyard. The Phase I ESA recommended further investigations on the 11-acre parcel and, as a result, a Phase II ESA (Geocon, 2004; **Appendix S**) was performed to determine if the junkyard impacted surface and/or subsurface conditions.

Soil samples were collected and analyzed as part of the Phase II. The samples were analyzed for the following:

- Title 22 Metals using United States Environmental Protection Agency (USEPA) Test Method 6010B/7471.
- Total petroleum hydrocarbons such as gasoline (TPHg), diesel (TPHd), and motor oil (TPHmo), by USEPA Test Method 8015B Modified.
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl-tertiary-butyl ether (MTBE) by USEPA Test Method 8020A.
- Soluble lead by USEPA Test Method 6010B.

TPHg, BTEX, and MTBE were not present above the laboratory detection limits. TPHd was detected in each soil sample at levels below regulatory action levels. The environmental screening level (ESL) for TPHd is 100 milligrams per kilogram (mg/kg). ESL's are baseline-action levels for determining whether or not a site requires further investigations and or cleanup. The San Francisco Bay Area Regional Water Quality Control Board (RWQCB) sets the regulatory ESLs. The analytical results for diesel show concentrations ranging from 1.1 to 4.0 mg/kg. TPHmo was also detected at concentrations ranging from 1.6 to 9.7 mg/kg. The analytical results for TPHd are below the ESLs. There are no established ESLs for TPHmo. Based on the results of the soil sampling, the Phase I ESA recommended no further assessments (**Appendix S**).

An Addendum to the Huffman Broadway Group's original Phase I ESA was concluded in December 2003 (Huffman-Broadway, 2003c; **Appendix S**). The addendum studied eight additional parcels on and adjacent to the Stony Point site, including APN 045-072-001, which is a three-acre parcel located on the northeastern corner of the site. Other parcels adjacent to the northeast and southeast boundaries of the site were studied as well (**Appendix S**). The Phase I ESA Addendum revealed no RECs in connection with the parcels and recommended no further assessments or investigations with respect to hazardous materials (Huffman-Broadway, 2003c, **Appendix S**).

3.86 Acre Center Section – Wilfred Site

For the purposes of the hazardous materials assessment, the Wilfred site is divided into 3 areas, the 66-acre northeast corner, the 181-acre southwest corner (southern portion of the 360-acre Stony Point site) and a 3.86-acre connecting parcel. AES conducted a Phase I ESA for the 3.86-acre corner section of the site in August 2005. The 3.86-acre site is comprised of one undeveloped parcel located off Park Court in a light commercial and industrial area. Some improvements on the site exist for drainage. The site appeared to have been graded recently and had a slight downhill slope from west to east towards a stormwater culvert located on the eastern border. AES did not find any obvious signs of gross contamination on the 3.86-acre site.

Additionally, the database report did not identify the 3.86-acre site as having any hazardous materials involvement. Adjacent sites within 0.50 miles are discussed below.

66-Acre Northeast Section Wilfred Site

AES conducted a Phase I ESA for an area containing the 66-acre northeast section of the site in September 2005. The 66-acre portion of the site consists of six parcels of rural residential, vacant, and undeveloped properties. The 66-acre section has two rural residential dwelling units. The remaining area is open pasture. One of the residential dwellings appeared vacant during the site visit. The Phase I ESA noted the possibility of asbestos containing materials (ACMs) being present within the building; specifically roofing materials, floor tiles, and acoustic ceilings. The Phase I recommended an assessment for ACMs prior to demolition of the structures. There were no indications of hazardous material use, release or storage on the 66-acre northeast section of the Wilfred site. The database report identified two sites within 0.50 miles of the Wilfred site that have ongoing remedial investigations and are open environmental cases. Both sites have leaking underground storage tanks (LUST) and are under the regulatory oversight of the Regional Water Quality Control Board (RWQCB). The adjacent LUST sites are discussed further below.

Former Naval Auxiliary Air Station Outlying Field Cotati California

The Naval Auxiliary Air Station Outlying Field Cotati California (NAAS) was located adjacent to but totally outside of the southeastern border of the Wilfred and Stony Point sites (**Figure 3.10-3**). The NAAS was operational from 1943 to 1945 when the Navy ceased operation due to several runway failures. The NAAS had two runways, one with an east and west alignment, and the other aligned northwest to southeast. The NAAS occupied a total of 216.95 acres and was used primarily for touch and go exercises for Alameda and Santa Rosa Air Stations. The presence of several facilities buildings including a fire and crash truck building for emergency vehicles, an oil storage shed and pump house, and a control tower have been confirmed on historical aerial photographs. An aircraft machine gun firing range, also known as an Airplane Target Range was located at the western end of the east-west runway (**Figure 3.10-3**). There is no documentation that the firing range was ever used during the two and a half years that the U.S. Navy occupied the property. In addition to the facilities buildings and firing range, two 25,000-gallon gasoline underground storage tanks (USTs) and fueling station were present on the NAAS (**Appendix T**).

Federal Evaluation of the NAAS

In 1986, Congress established the Defense Environmental Restoration Program (DERP) at 10 United States Code (USC) 2701 *et seq.* This program directed the Secretary of Defense to carry out a program of environmental restoration at facilities under the jurisdiction of the Secretary. The Department of Defense (DoD) role in the DERP is to insure that policy and management of the overall program are consistent with the provisions of the DERP statute; and where appropriate, CERCLA, Superfund Amendments and Reauthorization Act (SARA) and the National Oil and Hazardous Substance Pollution Contingency Plan (NCP). Execution of the

Insert figure 3.10-3

program has been delegated by DoD to the U.S. Army Corps of Engineers (USACE) for all Formerly Used Defense Sites (FUDS).

In an Inventory Project Report (INPR) the NAAS site (designated No. J09CA7470) was determined to be formerly used by the DoD and eligible for the DERP as a FUDS. A Records Research Report was prepared on the NAAS on behalf of the USACE in support of the DERP for FUDS (**Appendix T**).

The following outlines the method of evaluating a FUDS property: 1) INPR (property eligibility document), 2) preliminary assessment (PA), 3) site inspection (SI), 4) remedial investigation/feasibility study (RI/FS), 5) decision document, 6) remedial design/remedial action (RD/RA), and 7) long-term operation/long-term monitoring (LTO/LTM). At any point within this process, a time-critical removal action can be initiated, if warranted, or a determination that no DoD action is indicated (NDAI) can be made. If a site is determined to be NDAI, a project closeout document is generated.

In 1999, an INPR was developed (**Appendix T**). The USACE, Sacramento District, determined that the INPR was insufficient to establish and initiate formal projects at the former NAAS. Thus, a draft Records Research Report (preliminary assessment) was prepared to provide the information needed to determine if any projects should be originated and proceed to the SI phase. To date, no other prior actions have taken place at the site.

The Records Research Report (**Appendix T**) determined that no further assessments were necessary for the NAAS. There is no record that the fueling of airplanes or that maintenance of airplanes took place at the NAAS. There is no evidence that DoD activity resulted in releases of hazardous materials that would pose a threat to human health or the environment.

On-Site Investigations

Public concerns raised during the EIS scoping period, prior to the publication of the Records Research Report, were focused on residual contamination from the airplane target range. The target range was located on the western edge of the east-west runway on the NAAS. The concern raised is that the possibility exists that lead or other contaminants from the target range could have affected soil conditions on the Wilfred or Stony Point sites. As a result, soil samples were collected from the Wilfred/Stony Point sites in an area in close proximity to the airplane target range. Surface and subsurface soil samples were collected and analyzed by a California State certified lab. Analytical Environmental Services collected a total of eight samples on June 7th, 2004 at depths of approximately 6 inches and 18 inches. These were chilled at 4 degrees Celsius and transported under chain-of-custody protocols to Kiff Analytical in Davis, California. A total of four sampling locations were chosen (**Figure 3.10-4**) and analyzed for the following:

- Volatile Organic Compounds (VOC's) including gasoline constituents benzene, toluene, ethylbenzene, and total xylenes by (BTEX) EPA Test Method 8260B.
- Oils and grease by EPA Method 418.1.
- CAM-17 Metals and Total Lead by EPA Methods 6010B/7471A.

Analytical data from soil samples collected show no contamination (**Appendix T**). Lead was detected in concentrations ranging from 4.25 milligrams per kilogram (mg/kg) to 7.08 mg/kg. These results represent normal background levels for lead. The ESL for lead is 200 mg/kg. Oil and grease were detected at concentrations ranging from 19 mg/kg to 54 mg/kg, again well within normal background levels from naturally occurring organics.

Hazardous Materials Investigations in the Vicinity of the NAAS

The former site of the NAAS is currently developed with commercial, residential, and industrial land uses. Numerous hazardous materials investigations have taken place in the area dating to 1973. No contamination from the NAAS was discovered in any of these investigations. The following is a chronological summary of each hazardous materials investigation conducted in the vicinity of the NAAS:

- The area of the airplane target range was redeveloped into the Rancho Verde Mobile Home Park in 1973. The Mobile Home Park project involved removal of approximately 27-acres of runway asphalt that was covering approximately 60 percent of the mobile home park site.
- An Environmental Impact Questionnaire from 1972 that was prepared by the mobile home project Civil Engineer stated “*The proposed mobile home park will not have a significant adverse affect (sic) on the environment*”. The following paragraphs describe the development and reuse of the remainder of the former NAAS site.
- In 1977, Santa Rosa Enterprises built a Pacific Gas and Electric Company (PG&E) facility as a Materials Distribution Center at 600 Rohnert Park Expressway, southeast of the Wilfred/Stony Point sites. By 2001, PG&E had relocated this facility to a new site. As part of the termination of lease activities, PG&E contracted with Kleinfelder, Inc. to complete a Phase I and Phase II Environmental Site Assessment of the site in 2002. An underground storage tank (UST) used by PG&E leaked petroleum hydrocarbons into the soil and groundwater at the site. The UST was removed and contaminated soils were excavated and removed for off-site disposal. The resulting contamination was remediated by placing oxygen releasing compounds into one of five ground water monitoring wells. The remediation efforts were reviewed by the Sonoma County Environmental Health Division, which closed the case in February 2002 (**Appendix T**). Hydrocarbons were detected in near surface soil samples collected in an area used for

Insert Figure 3.10-4 Sampling Locations

storage of emergency oil-filled equipment. The vertical and lateral extent was not delineated and further sampling was recommended. As a result soil and groundwater

- Samples were collected at depths up to 10 feet below ground surface (bgs). The samples were analyzed for benzene, toluene, ethyl benzene, xylene (BTEX), MTBE, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), and petroleum hydrocarbons such as diesel, gasoline, and motor oil. Petroleum hydrocarbons were detected in the upper 6-inches and concentrations dropped significantly in underlying soils with non-detected concentrations below 12 inches. It was determined that the hydrocarbons were the likely result of pretreatment of the sub-base with road oil and not likely the result of an accidental release. Groundwater samples collected at the site show that groundwater has not been impacted by significant levels of contaminants (**Appendix T**).
- In 1986, Coddling Enterprises began redevelopment of the NAAS for retail shopping centers. In December 1990, a Phase I Environmental Site Assessment was conducted on Coddling Properties Lots 2 and 3, Rohnert Park, California, by BACE Geotechnical, Inc., for Target Stores. The report stated there were no obvious adverse environmental problems on the site, or adjacent properties (**Appendix T**).
- In February 1991, a Phase II Environmental Site Assessment was conducted on Coddling Properties, Lots 2 and 3 south of W. Rohnert Park Expressway at Labath Avenue, Rohnert Park, California by Certified Environmental Consulting, Inc. A Phase II sampling and testing program was performed to demonstrate that the site has not suffered any identifiable or significant contamination. The sample results indicated that there was no significant contamination found on the property (**Appendix T**).
- The Final Focused Environmental Impact Report for Expressway Mall (**Appendix T**) was completed in March of 1991. In a cultural resources survey performed for this environmental impact report, Archaeological Services, Inc. reported that, “some areas are covered with fill and large pile of asphalt, possibly from a now defunct airport that was located nearby.” However, the Draft and Final Environmental Impact Reports did not identify hazardous materials as a significant environmental issue.
- In 1992, Target Stores had Kleinfelder, Inc. review the assessments listed above. The summary stated that the conclusion of the Phase II report (that there was no significant contamination found on the property, and therefore, no further work appears warranted) could not be substantiated. Kleinfelder recommended that a soil and groundwater sampling program be implemented at the site and focused on the proposed Target Stores parcel. As a result of this recommendation, Kleinfelder conducted the assessment,

- “Preliminary Groundwater Quality Assessment, Proposed Target Store Site, Labath Avenue and Rohnert Park Expressway” per the request of Target Stores. The summary of the assessment is that there was no petroleum product contamination noted in any of the soil samples collected (**Appendix T**).
- In February 1992, a Phase I Environmental Assessment and Review of Property and Existing Building, Food 4 Less, 605 Rohnert Park, California was conducted by BACE Geotechnical. This report stated there was not a significant risk of soil and/or groundwater contamination by hazardous materials at the site either due to current or past uses of the property, or to off-site sources of contamination (**Appendix T**).
 - In September 1992, a Phase I Environmental Assessment was conducted by BACE Geotechnical for the House of Fabrics/The Craft Store, Lot 3, Rohnert Park Parcel Map, 145 Rohnert Park, California. This report stated there were no obvious adverse environmental problems on the study site, or adjacent properties (**Appendix T**).
 - In February 1993, “Phase I Environmental Site Assessment, Sears Homelife/Petsmart 565 & 575 Rohnert Park, California,” was prepared by BACE Geotechnical, Inc. Their report concluded that, “there were no obvious adverse environmental conditions on the study site, or on adjacent properties” (**Appendix T**).
 - The Draft Environmental Impact Report for the city of Rohnert Park General Plan Amendment and Update was completed in August of 1995. This environmental impact report did not identify any hazardous materials and concluded that hazardous materials were not a significant environmental issue (**Appendix T**).
 - In October 1997, a report was filed on a leaking UST at Chevron #9-1912 located at 300 Rohnert Park Expressway. According to the California State Water Resources Board’s Underground Storage Tank GeoTracker Program, there was a release of product containing methyl-tertiary-butyl ether (MTBE) at this address. Remedial action occurred in April 2000 by the excavation and removal of contaminated soil. Five groundwater-monitoring wells were installed and the site is currently being monitored (**Appendix T**).
 - In June 2002, “Phase I Environmental Site Assessment, 600 Rohnert Park Expressway, Rohnert Park, California,” was prepared by Kleinfelder, Inc. for the lot currently occupied by the California Highway Patrol. This report states that a release of petroleum hydrocarbons from an underground storage tank used by PG&E contaminated soil and groundwater at the site. The site has been remediated to the satisfaction of the County of Sonoma Environmental Health Division, and the North Coast Regional Water Quality Control Board, and no further action was required (**Appendix T**).

Research to date has indicated that the extensive redevelopment of the NAAS property has removed or obscured all signs of the structures, runways, underground storage tanks, and the machine gun firing range that comprised the former facility. No visible evidence of the former airfield remains (**Appendix T**).

Database Report

A regulatory agency database report was performed to identify locations of past and/or current hazardous materials involvement. Regulatory agency databases were searched for records of known storage tank sites and known sites of hazardous materials generation, storage, or contamination, or where violations pertaining to storage and/or use of hazardous materials have occurred. Databases were searched for sites and listings up to two miles from a point roughly equivalent to the center of the site. The environmental database review was accomplished by using the services of a computerized search firm, Environmental Data Resources, Inc. (EDR). EDR uses a geographical information system to plot locations of past and/or current hazardous materials involvement.

The EDR report, completed in August 2005, for the 3.86-acre section of the Wilfred site is included in the Phase I ESA (**Appendix S**). A summary of the databases accessed by EDR is listed in **Table 3.10-6**. The 3.86-acre site was not listed on any database searched by EDR; however, several adjacent sites were listed in the EDR report.

The EDR report including the 66-acre northeastern portion of the Wilfred site was conducted in August 2005 and is part of the Phase I ESAs in **Appendix S**. A summary of the databases accessed by EDR is listed in **Table 3.10-6**. The government regulatory agency database search shows no known contaminant sites located on the Wilfred site. The database report identified sites that are located on the west side of Stony Point Road, approximately 50 feet from the western edge of the Wilfred/Stony Point sites. Additionally, two leaking underground storage tank (LUST) sites with ongoing remedial activities are located within 0.50 miles of the eastern property boundary of the Wilfred site.

The findings of the database reports and subsequent file review at the RWQCB are described below.

The Pimentel Estate site, also known as the Morrison Brothers Dairy is located at 5151 Stony Point Road. The site is listed on the HAZNET database as producing wastes and mixed oils. The oils are transported off-site for recycling. The site is also listed on the Cortese database for discharges of water contaminated with animal waste. In 1994, the RWQCB staff inspected discharge locations that were observed during an aerial survey and confirmed that discharges of water contaminated with animal wastes to the Laguna de Santa Rosa was occurring. The

TABLE 3.10-6
DATABASES SEARCHED

Database	Type of Record	Agency
NPL	National Priority List	USEPA
CORRACTS ¹	RCRA ² Corrective Actions	USEPA
SPL	State equivalent priority	STATE
SCL	State equivalent CERCLIS ³ List	STATE
CERCLIS/ NFRAP ⁴	Sites currently or formerly under review by USEPA	USEPA
TSD	RCRA permitted treatment, storage, disposal facilities	USEPA
RCRA Large/Small Quantity Generators	Large quantity generator of a hazardous or acutely hazardous material. Facility produces more than 1,000 kg of hazardous wastes per month or over one kg of acutely hazardous waste per month.	USEPA
ERNS	Emergency response notification system records and stores information on reported releases of oil and hazard materials	USEPA
AWP	Known hazardous waste sites.	State DTSC ⁴
Cal-Sites	Potential or confirmed hazardous waste sites	CALEPA
LUST	Leaking Underground Storage Tanks	State Regulatory Commission
State Landfill	Permitted solid waste landfills	CALEPA
ERNS	Emergency response notification system records and stores information on reported releases of oil and hazard materials	USEPA
SWF/LF	Permitted as solid waste landfills, incinerators or transfer stations	State/Regional Regulatory Commission
DEED RSTR	Sites with deed restrictions	STATE
CORTESE ⁵	State index of properties with hazardous waste	STATE
TOXIC PITS	Toxic pits cleanup facilities	STATE
WATER WELLS	Federal and State Drinking Water Sources	USGS/STATE
RCRA Viol	RCRA violations/ enforcement actions	USEPA
TRIS	Toxic Release Inventory Database	USEPA
UST/AST	Registered underground or aboveground storage tanks	STATE
RCRIS SQG ⁶	Sites that generate hazardous materials	USEPA
HAZNET	Hazardous Waste Information System	STATE
CHMIRS	California Hazardous Materials Incident Reporting System	STATE

NOTES: ¹CORRACTS: Corrective Action Report System, a USEPA database of corrective actions taken at a RCRA Regulated site (also known as CARS).

²RCRA: Resource Conservation and Recovery Act.

³CERCLIS: Comprehensive Environmental Response, Compensation & Liability Information System.

⁴California State Department of Toxic Substances Control

⁴NFRAP: No Further Remedial Action Planned (archived CERCLIS sites).

⁵CORTESE: Based on input from 14 state databases.

SOURCE: EDR, 2005

discharges were the result of uncontrolled rainfall-induced runoff from animal confinement areas. As a result the RWQCB issued a Cleanup and Abatement Order (Order No. 94-45) that required the dairy to clean up and properly dispose of accumulated manure in animal confinement areas. The cleanup occurred and the order was archived at the RWQCB.

The Betty Bowles property is located at 5307 Stony Point Road and is currently listed in the State LUST database. A leak was discovered during tank closure activities in January 2000. Soil samples were collected and ground water monitoring wells were installed in the area adjacent to the tank. The analytical results revealed low-levels of benzene, 1,1-dichloroethane and 1,2-dichloroethane. The case is still active, however analytical results for March 2003, show concentrations have decreased to below the laboratory detection limits (**Appendix S**).

The Poncia Storage Site is located at Stony Point Road and Laguna de Santa Rosa. The site is a municipal wastewater facility with two USTs installed in 1978 to contain waste. The EDR report lists the tanks as leaking with no other information is given. The UST and LUST databases on the State Water Resources Control Board's online Geo Tracker were searched with no results given for the Poncia Storage Site. The EDR contact for this site had no knowledge of any UST's located on-site, presently or in the past. There are no listings for USTs in that vicinity on the current lists of the LUST database. If a LUST site were present at that location, any groundwater contamination would be south of the Wilfred and Stony Point sites. Due to the fact that all the information listed in the EDR report for this site could not be confirmed, it appears that this information is not reliable and should not be considered as a threat to surface and/or subsurface conditions on the Wilfred/Stony Point site.

The RPM Machine and Supply site is located approximately 0.25 miles southeast of the Wilfred and Stony Point sites at 560 Martin Avenue. The RPM Machine and Supply site is listed on the EDR report as a small quantity generator (SQG). There were no violations pertaining to the storage and/or disposal of hazardous materials listed in the EDR report for this site.

The DY3 productions site is located approximately 0.30 miles southeast of the Wilfred/Stony Point site at 539 Martin Avenue. The DY3 productions site is listed on the HAZNET database as producing .85 tons of organic wastes per year. Additionally, the site is listed on the Cortese database as the location of a LUST. However a telephone conversation with the property owner (Jones, pers. comm., 2004) confirmed that there are no USTs on that property.

The Aled Auto Truck Repair & Fleet Maintenance site is located approximately 0.30 miles southeast of the Wilfred/Stony Point site at 538A Martin Avenue. The site is listed as a small quantity generator on the RCRIS database. There were no violations pertaining to the storage and/or disposal of hazardous materials listed in the EDR report for this site.

The Arcturus Marine Systems site is located approximately 0.35 miles southeast of the Wilfred/Stony Point site at 517A Martin Avenue. The site is listed as a SQG on the RCRIS database. There were no violations listed in the EDR report for this site. Additionally, the site is listed on the HAZNET database as producing 0.1251 tons of liquid wastes per year. The wastes are transported off-site for disposal.

The Alvarado Bakery site is located approximately 0.35 miles southeast of the Wilfred/Stony Point site at 500 Martin Avenue. The site is listed as a LUST site that received a closure status in 1996. The Alvarado Bakery site is also listed on the Facilities Index Database (FID) as having an on-site active UST. There was no additional information in the EDR report as to whether the tanks are for gasoline, diesel fuel, or waste oils.

The DiSalvo Trucking Company is located approximately 0.50 miles southeast of the Wilfred/Stony Point site at 650 Carlson Court. The site is listed on the State Hazardous Substance Storage Container database as having two 10,000-gallon diesel USTs, one 10,000-gallon unleaded gasoline UST, and one 6,000-gallon UST. Information was lacking on what the 6,000 gallon tank is used for. Additionally, the site is reported by EDR as having an on-site LUST that received a closure status in 1995.

LUST sites located less than 0.50 miles from the Wilfred/Stony Point site have received regulatory agency closure status with the exception of the two sites. The RWQCB was contacted to determine the regulatory status of the sites and to review the case files.

The first site is the Tesoro fuel station located approximately 0.30 miles east of the Wilfred site at 5085 Redwood Drive, Rohnert Park. The Tesoro fuel station site is currently an open environmental case with the RWQCB. Contamination at the Tesoro fuel station was reported in 2003. Analytical data from groundwater samples collected at the gas station site have detected methyl tertiary-butyl ether (MTBE) and its breakdown product tertiary-butyl ether (TBA). The site has been evaluated by installing 6 groundwater monitoring wells throughout the site. There are currently no signs of off-site migration of contaminants. Domestic wells located west of the gas station were sampled, and to date, no contaminants have been detected. The Tesoro fuel station site has been given the highest priority MTBE Threat Classification and is designated as a Class I MTBE cleanup site. Mr. Cliff Ives, the County of Sonoma Department of Health Services (CSDHS) case worker for the site, indicated that after site characterization is complete, a Corrective Action Plan will be required for the site.

The second site is the Wilfred Shell (aka Redwood Shell) located approximately 0.35 miles east of the Wilfred site. Contamination at the Redwood Shell site was discovered in 1998. There are currently 16 groundwater monitoring wells on the Redwood Shell site that have detected MTBE and its breakdown product TBA. Groundwater extraction and treatment systems were installed in

2003 to remediate the groundwater contamination. A groundwater contour map provided in the third quarter 2006 groundwater monitoring event indicates that shallow groundwater at the Redwood Shell site is hydraulically contained; however, it is not clear how far the capture zone for the wells extends laterally off-site or vertically. Influent MTBE concentrations have ranged from 7,200 to 130 µg/L, and a total of about 119 pounds of MTBE and 12 pounds of TBA are estimated to have been removed since 2003. Since November 2005, system influent concentrations have been below 1,000 µg/L. Mr. Cliff Ives, the CSDHS case worker for the site, indicated that after site characterization is complete, a Corrective Action Plan will be required for the site.

Sites with hazardous materials involvement that are located beyond 0.50 miles from the project site have significantly less potential to affect the surface and/or subsurface conditions at the project site. The Rohnert Park Materials Center is located approximately 0.55 miles southeast of the Wilfred/Stony Point sites at 600 Rohnert Park Expressway. The site is listed on the EDR report as having a 1,000 gallon unleaded fuel UST. There are no reported leaks or spills listed in the EDR report. The Interior Finishing site is located approximately 0.60 miles southeast of the Wilfred/Stony Point sites at 619 Martin Avenue, # 4. The site is listed in the EDR report as a SQG with no reported violations. The site is also listed on the HAZNET database as producing oxygenated solvents that are transported off-site for disposal. The former PG&E equipment yard is located approximately 0.60 miles southeast of the Wilfred/Stony Point sites at 600 Rohnert Park Expressway. The former PG&E yard is listed as having closure status since 2002.

During cooperating agency review, an additional site was identified as being located approximately 0.45 miles southeast of the Wilfred/Stony Point sites. The site is the Groom Properties HVOC Plume. AES reviewed case files for the Groom Properties HVOC site at the RWQCB. The results of the file review are summarized in an AES memo included in **Appendix Z**.

Investigations of soil and groundwater quality at the 101 International Site (6100 Redwood Drive) began in 1989 following the removal of three USTs. Soil sampling at that time indicated a release of hydrocarbons into the soil and groundwater. During the preliminary investigations, groundwater samples from two of the three monitoring wells showed detectable levels of petroleum and halogenated hydrocarbons. Subsequently, additional upgradient wells and downgradient wells were installed to define the extent of groundwater contamination. Analytical results from the monitoring wells indicated the downgradient extent of contamination had been defined. The sampling results indicated that the concentration of trichloroethene (TCE) increased upgradient from the area of the removed gasoline tanks. This upgradient trend suggested a possible off-site source rather than the area of the removed USTs, as previously suspected.

A sheet metal degreasing unit (using TCE as a solvent) was operated at a business formerly located at 5925 Redwood Drive (a potential historic upgradient source of chlorinated hydrocarbon waste). This property is located adjacent to and north (upgradient) of the 5980 Redwood Drive property (Groom Property), which is also upgradient of from the 101 International site. With the exception of the property owner maintaining monitoring wells, there are no current or additional remedial activities required by the RWQCB at the 101 International site. The RWQCB has requested a work plan from the property owner of the Groom property. To date, the RWQCB has not received a work plan from the property owner to define the extent of groundwater impacts. Ms. Colleen Hunt, the RWQCB case worker for the site has indicated that the source of TCE has been identified and the RWQCB would continue its attempt in getting the property owner to comply. There are no suspected sources of TCE on the upgradient properties. According to the current information, the downgradient extent of the TCE contamination is delineated and no additional sampling is required at the 101 International site

LAKEVILLE SITE

The EDR report was conducted in November 2004 and is included in **Appendix U**. A summary of the databases accessed by EDR is listed in **Table 3.10-6**. The Lakeville site was not listed in the EDR report as having current or previous hazardous materials involvement; however, There are three sites located more than 0.50 miles from the Lakeville site. +

The first site is identified as the Ahlgrim Trust Waste Tire site located approximately 0.50 miles north of the Lakeville site at 7777 Lakeville Road in Petaluma. The Ahlgrim Trust Waste Tire site is listed on the Solid Waste Facilities/Landfill SWF/LF as a tire disposal site. The landfill is listed as closed in the EDR report and is not likely to affect the planned uses of the proposed Lakeville site.

The second site is identified as the Sleepy Hollow Dairy located approximately 0.60-miles north of the Lakeville site at 7689 Lakeville Highway in Petaluma. The Sleepy Hollow Dairy is listed on the HIST UST database as the location of one regular gasoline storage tank. The EDR report does not give information on the size of the tank.

The third site is a traffic incident listed on the CHMIRS database that occurred at 7685 Lakeville Highway, Petaluma. According to the EDR report, a K-Mart truck carrying a mixed load of paints and fertilizers was involved in a fatal accident in 1997. None of the sites listed in the EDR report has affected or will affect the Lakeville site.

3.10.3 VISUAL RESOURCES

CRITERIA FOR ANALYSIS

A viewshed is comprised of one or more viewing corridors, or *vistas*. Each of these vistas provides a line-of-sight that can be characterized uniquely from among other vistas within the viewshed. The visual experience within each vista is comprised of the following constituent elements:

1. Clarity in Line of Sight—the overall visibility of the object within the viewshed, influenced by such factors as trees, buildings, topography or any other potential visual obstruction within the viewshed.
2. Duration of Visibility—the amount of time the object is exposed to viewers within the viewshed. For example, a passing commuter will experience a shorter period of viewing time than a resident within the viewshed.
3. Proximity of the Viewer—the effects of foreshortening due to the distance of the viewer from the object will influence the dominance of the object in the perspective of the viewer within the viewshed.
4. Number of Viewers—the number of viewers anticipated to experience the visual character of the object in forward-oriented view (i.e., not through a rear-view mirror). A densely populated residential district, or a busy highway within the viewshed of the object would present more viewers than unpopulated areas.

WILFRED SITE

Regulatory Setting

Guidance for regional aesthetic values within the Wilfred site's viewshed is afforded by the regional and local regulatory setting. As discussed in **Section 3.8**, the Sonoma County General Plan, Sonoma County Zoning Regulations, City of Rohnert Park General Plan and Northwest Specific Plan comprise the regulatory framework for analysis of the visual impacts. Note that the Wilfred site is located within the Rohnert Park/Santa Rosa Community Separator. Community separators have been created within Sonoma County to maintain the visual distinction between communities.

Regional Context

The Wilfred site is located adjacent to the western boundary of the City of Rohnert Park in southern Sonoma County, just west of US-101 (designated by Sonoma County as a scenic corridor). The City of Santa Rosa is approximately five-miles away along the US-101 corridor from the project site. However, the City of Petaluma is approximately seven-miles away along the southbound US-101 corridor. Just beyond Cloverdale, California the northbound course of US-101 exits the region at the Sonoma County line just beyond Cloverdale, approximately 40 miles away. US-101 continues southward and crosses through Marin County where it exits the

region at the Golden Gate Bridge toward San Francisco. The community of Cotati abuts the southern boundary of Rohnert Park, with Sebastopol nearly eight-miles to the northwest. The Wilfred site is situated within the Santa Rosa Plain, also known as the Cotati Valley, which is bounded by the Sonoma Mountains and Mayacama Mountains to the east, and the Mendocino Range to the west.

Viewshed

The Wilfred site is located in unincorporated Sonoma County in an area dominated by commercial/business park developments, rural residential developments, and agricultural land uses. The Sonoma Mountains are visible to the east and the Mayacama Mountains are visible on the eastern and northern horizons. The topography of the Wilfred site is flat and level, with the Wilfred-Bellevue Channel bisecting the southwestern portion of the site from north to south. The Laguna de Santa Rosa transects the southwestern tip of the southwestern portion of the Wilfred site, running east-west. The Wilfred site is undeveloped except for two residences and associated structures on the south side of the northeastern portion of the site. The site has generally been used for agriculture, cattle grazing, and rural residential purposes. Rural residential development surrounds the site to the north and east, the Rancho Verde Mobile Home Park is located to the southeast, a business park and apartment complex are located further east and southeast. While multiple service, entertainment, and regional commercial businesses line Redwood Drive along US-101 to the north and south. Agricultural land uses are present to the west of the site, including a dairy and a vineyard.

Local and regional roadway geometry is detailed in the Transportation and Circulation discussion in **Section 3.8**. The main transportation route through Sonoma County passing the vicinity of the Wilfred site is northbound and southbound US-101. The streets abutting the Wilfred site include Wilfred Avenue, Stony Point Road, Business Park Drive, Park Court, Langner Avenue, Labath Avenue and the Rohnert Park Expressway (see **Figure 1-3**). Other streets in the viewshed include Primrose Avenue at its intersection with Wilfred Avenue to the northwest of the southwestern portion of the Wilfred site, Whistler Avenue, transecting Wilfred Avenue and continuing south approximately 530 yards, Dowdell Avenue crossing Wilfred Avenue to the northeast and continuing south approximately 280 yards, and Redwood Drive intersecting Wilfred Avenue approximately 580 yards east of Labath Avenue. The viewshed resulting from the above characteristics is shown on **Figure 3.10-5**.

The Wilfred site shares mutual views with local residences, streets and businesses. Views occur to and from Wilfred Avenue, Stony Point Road, and Rohnert Park Expressway adjacent to the Wilfred site, as well as the adjoining streets in the vicinity of the Wilfred site, named above, as well as residences and businesses located along these thoroughfares. Given the myriad of land uses of the vicinity of the Wilfred site, several context photos were taken that show views of the surrounding area from the Wilfred site vistas (**Figures 3.10-6 – 3.10-9**) to complement the views of the Wilfred site from the vistas shown below.

Figure 3.10-5

Figure 3.10-6

Figure 3.10-7

Figure 3.10-8

Figure 3.10-9

Identification of Vistas within the Viewshed

The viewshed is comprised of a set of vistas, which are identified by considering existing and planned land uses as well as the transportation network in the vicinity of the Wilfred site offering a potential view. Vistas within the viewshed are described by expressing the strength of the viewing experience, framed within the analytical criteria listed above. While the viewing experience is personal and subjective in nature, the application of the above criteria allows for an objective, baseline assessment of the visual environment and subsequent visual impacts of the Wilfred site alternative.

Vista A – Wilfred Avenue: Residential and Commuter Vista

Wilfred Avenue runs east-west along the approximately 1,100-foot northern boundary of the northeastern portion of the Wilfred site. The length of Wilfred Avenue of this vista is a 1.5-mile stretch that spans from Dowdell Avenue on the east to Taylor Avenue on the west.

Approximately 30 residences line Wilfred Avenue and its tributary streets in visible proximity to the Wilfred site. The northeast portion of the Wilfred site is proposed for construction under Alternatives A and H. The nearest residences to this portion are on the portions of Langner Avenue, Labath Avenue, Whistler Avenue and Dowdell Avenue, near their intersections with Wilfred Avenue, and on Wilfred Avenue near its intersection with these tributaries. This component of Vista A is located east of the Bellevue-Wilfred Channel. **Figure 3.10-10** shows the view to the Wilfred site from the northeast corner of Wilfred Avenue and Labath Avenue, northeast of the proposed construction area. **Figure 3.10-11** provides a view from the Bellevue-Wilfred Channel, northwest of the proposed construction area.

The commuter component of Vista A is provided from Wilfred Avenue and its tributaries named above, in addition to Primrose Avenue and Stony Point Drive at their intersections with Wilfred Avenue, west of the Bellevue-Wilfred Channel; as well as, Taylor Avenue at its intersection with Wilfred Avenue, west of Stony Point Road. The length of Wilfred Avenue offering a view is approximately 1.5 miles in length, however the duration of view is based on a forward-oriented perspective and thus depends upon traffic conditions and whether the approach is westbound or eastbound.

Eastbound commuters experience a forward oriented view of the proposed construction portion of the Wilfred site on the right quarter, for approximately 1.2 miles starting from Taylor Avenue. (While the duration of view is dependent upon deceleration, stopping and acceleration time; an average speed of 45 mph grants commuters a forward-oriented view of the construction component of the Wilfred site for approximately 60 seconds before this area falls from view at the commuter's right flank.) Westbound commuters entering the vista at Dowdell Avenue experience a forward oriented view of the proposed construction area for approximately 0.45 miles on the left quarter. At an average speed of 45 mph, westbound commuters on Wilfred Avenue experience a view for approximately 30 seconds.

Figure 3.10-10

Figure 3.10-11

Vista B – Stony Point Road: Commuter Vista

The duration of visibility is dependent upon traffic conditions and whether the commuter is on a northbound or southbound trajectory. **Figure 3.10-12** shows the Wilfred site as seen from the corner of Stony Point Road and Wilfred Avenue. The southbound vista begins approximately 50 yards north of Wilfred Avenue, and continues for another 0.31-miles south with the proposed construction area beginning nearly directly to the left. In all, the southbound vista is approximately 0.34 miles. While the duration of visibility is dependent upon traffic conditions, deceleration and acceleration time where stoppage is required, an average speed of 50 mph offers approximately 30 seconds of view to southbound commuters on Stony Point Road, until the proposed construction site falls back from view to the commuter's left flank. Northbound commuters on Stony Point road enter the vista at Rohnert Park Expressway, with the proposed construction site coming into view at the commuter's right quarter. **Figure 3.10-13** shows the Wilfred site as seen from Stony Point Road near the Rohnert Park Expressway. The distance of visibility on the northbound passing is approximately 0.7 miles. While the duration of visibility is dependent upon traffic conditions, deceleration and acceleration where stoppage is required, an average speed of 50 mph would offer approximately 60 seconds of view to the proposed construction area before the commuter passes Wilfred Avenue, and the proposed construction area passes from forward-oriented view at the commuter's right flank.

Vista C – Rohnert Park Expressway: Commuter Vista

The Rohnert Park expressway, running east to west just south of the Wilfred site; as well as, the Southeast Quadrant comprising Vista D below, is a commuter vista that connects Redwood Drive on the east side of the viewshed with Stony Point Drive on the west. Due to the existing built environment, landscaping and trees, no forward-oriented view to the portion of the Wilfred site to be built under Alternative A is offered to westbound commuters. Eastbound commuters receive an intermittent line of sight with breaks in near-ground vegetation and landscaping; however, no view is offered once abreast of the mobile home park at Rancho Verde circle in either the westbound or eastbound trajectory.

Vista D – Southeast Quadrant: Residential and Business Park Vista

Vista D provides a limited view northward for the mobile home park at Rancho Verde Circle off Rohnert Park Expressway and the business park on Business Park Drive, southeast of the Wilfred site. Landscaping, buildings and trees offer a limited view to the Wilfred site for residents abutting northern boundary of the trailer park. Similarly, landscaping and trees provide a limited view to the business park under existing conditions. Within this vista, an intermittent view of the proposed construction portion of the Wilfred site is afforded to westbound commuters on Business Park Drive, although it is largely obstructed by landscaping and trees along the northern side of the street. **Figure 3.10-14** shows this perspective to the construction portion of the Wilfred site, but was taken at the apex of the berm and parallel to the tree line that normally

Figure 3.10-12

Figure 3.10-13

Figure 3.10-14

obstruct views from the street.

Vista E – US-101 and Interchange Businesses: Regional Commercial and Commuter Vista

A southbound approach on US-101 offers a momentary clear view to the proposed construction portion of the Wilfred site at the commuter’s right quarter. The view is mostly obstructed by the regional commercial facilities along Redwood Drive between the highway and the Wilfred site. The moment of clear view comes at the apex of the Commerce Boulevard overpass. Descending from the overpass, a general occlusion of view occurs, with the Wilfred site still at the right quarter, due to commercial establishments and vegetation which dominate the view to the west. Southbound US-101 traffic and regional commercial establishments dominate the view to the west between northbound US-101 and the Wilfred site; therefore, no clear view is afforded to northbound vehicles. **Figures 3.10-16 – 3.10-19** show the view from US-101 in the direction of the Wilfred and Stony Point sites. The view from the Commerce Boulevard overpass is shown in **Figure 3.10-17**.

Lighting and Glare

A site visit was conducted to measure nighttime lighting and glare on the night of February 22, 2006 between 7:00 PM and 8:00 PM. Using an Extech Instruments® Model 407026 heavy-duty light meter, existing lighting conditions were measured within each of the vistas identified above. The points of measurement are identified on the data points called out on **Figure 3.10-5**, and appear alongside measured lighting values on **Table 3.10-7**.

TABLE 3.10-7
DATA POINT LIGHT READINGS

Data Point	Existing Lighting
RP01	0.0 Foot-candles
RP02	0.0 Foot-candles
RP03	0.0 Foot-candles
RP04	5.3 Foot-candles
RP05	0.6 Foot-candles
RP06	1.9 Foot-candles

SOURCE: AES, 2006.

The existing lighting conditions in the immediate vicinity of the Wilfred and Stony Point sites were measured at the data points RP01, RP02, RP03, RP04, RP05, and RP06 as called out on **Figure 3.10-5**. Instrumentation registered 0.0 foot-candles at RP01; existing lighting was most prominent along the regional commercial area along Redwood Drive, adjacent to the US-101, and was below measurable thresholds on the instrumentation. Minor illumination occurred at the residences in the vicinity of RP01, and was generally confined to the residences at which it occurred.

Existing lighting was most prominent along the regional commercial area along Redwood Drive, adjacent to the US-101, and was below measurable thresholds on the instrumentation; therefore, the light meter registered 0.0 foot-candles at RP01, RP02, and RP03. Minor illumination also occurred at the residences in the vicinity of RP02 and RP03; however, it remained confined to the residences at which the illumination occurred.

RP04 is the data point occurring at the intersection of **Vista A** along Wilfred Avenue and **Vista B** along Stony Point Road. Here, instrumentation registered 5.3 foot-candles. Existing lighting was most prominent as a result of downcast lamppost lighting at this intersection. Minor illumination also occurred at the residences in the vicinity of RP04, and was generally confined to the residences at which it occurred.

RP05 is mapped at Stony Point Road near its intersection with Rohnert Park Expressway, and at the intersection of **Vista B** and **Vista C**. Lampposts and traffic signals place ambient lighting at this data point that, compounded with the flow of traffic, ranged from 0.3 foot-candles to 0.6 foot-candles. Minor illumination also occurred at the dairy in the vicinity of RP05, and was confined to the dairy itself.

The lighting along Business Park Drive near RP06, is more variable and offers a partial view. A 100-foot transect along Business Park Drive was walked under and between the downcast lampposts along the Drive. Instrumentation registered existing lighting conditions between 0.01 foot-candles and 1.9 foot-candles.

STONY POINT SITE

Regulatory Setting

Guidance for regional aesthetic values within the Stony Point site's viewshed is afforded by the regional regulatory setting. As discussed in **Section 3.8**, the Sonoma County General Plan and Sonoma County Zoning Regulations comprise the regulatory framework for analysis of the visual impacts from the project alternatives proposed for the Stony Point site.

Regional Context

The Stony Point site is located adjacent to the western boundary of the City of Rohnert Park in southern Sonoma County, just west of US-101 (designated by Sonoma County as a scenic corridor). The City of Santa Rosa is located approximately five-miles north along US-101, while the City of Petaluma lies approximately seven-miles south along southbound US-101. Just beyond Cloverdale, the northbound course of US-101 exits the region at the Sonoma County line approximately 40-miles away. US-101 continues southward crossing through Marin County where it exits the region at the Golden Gate Bridge toward San Francisco, approximately 42-miles distant. The City of Cotati abuts the southern boundary of Rohnert Park, with Sebastopol

nearly eight-miles to the northwest. The Stony Point site is situated within the Santa Rosa Plain, also known as the Cotati Valley, which is bounded by the Sonoma Mountains and Mayacama Mountains to the east, and the Mendocino Range to the west. The regional context photos taken for the Wilfred site apply to the Stony Point site as well (see **Figures 3.10-6 – 3.10-9**)

Viewshed

The Stony Point site is located in unincorporated Sonoma County in an area dominated by commercial/business park developments, rural residential developments, and agricultural land uses. However, the main development area of the Stony Point site is located further west than the Wilfred site, farther from the Rohnert Park/US-101 development area. The Sonoma Mountains are visible to the east and the Mayacama Mountains are visible on the eastern and northern horizons. The topography of the Stony Point site is flat and level, with the Wilfred-Bellevue Channel bisecting the site from north to south. The Laguna de Santa Rosa transects the southwestern tip of the Stony Point site, running east-west.

The Stony Point site is undeveloped except for a large barn located on the site's northwestern corner. The site has generally been used for agriculture, cattle grazing, and wastewater disposal. Rural residential development surrounds the site to the north and east, with the Rancho Verde Mobile Home Park to the southeast and a business park and apartment complex further east and southeast. Further east, multiple service, entertainment and regional commercial businesses line Redwood Drive to the north and south along US-101. Agricultural land uses are present to the west of the site, including a dairy and a vineyard.

Local and regional roadway geometry is detailed in the Transportation and Circulation discussion in **Section 3.8**. The main transportation route through Sonoma County and passing the vicinity of the Stony Point site is the northbound and southbound US-101. The streets abutting the Stony Point site include Wilfred Avenue, Stony Point Road, Business Park Drive, Park Court, Langner Avenue, Labath Avenue and the Rohnert Park Expressway (see **Figure 1-3**). Other streets in the viewshed include Primrose Avenue at its intersection with Wilfred Avenue to the northwest of the southwestern portion of the Stony Point site, Whistler Avenue, transecting Wilfred Avenue and continuing south approximately 530 yards, Dowdell Avenue crossing Wilfred Avenue to the northeast and continuing south approximately 280 yards, and Redwood Drive intersecting Wilfred Avenue approximately 580 yards east of Labath Avenue.

The viewshed resulting from the above characteristics is identical to that of the Wilfred site, above, and is shown on **Figure 3.10-5**, above. The Stony Point site shares mutual views with local residences, streets and businesses. Views occur to and from Wilfred Avenue, Stony Point Road, and Rohnert Park Expressway adjacent to the Stony Point site, as well as the adjoining streets in the vicinity of the Stony Point site, named above, as well as residences and businesses located along these thoroughfares.

Identification of Vistas within the Viewshed

The viewshed is comprised of a set of vistas, which are identified by considering existing and planned land uses as well as the transportation network in the vicinity of the Stony Point site offering a potential view. Vistas within the viewshed are described by expressing the strength of the viewing experience, framed within the analytical criteria listed at the beginning of this section. While the viewing experience is personal and subjective in nature, the application of the above criteria allows for an objective, baseline assessment of the visual environment and subsequent visual impacts of the Stony Point site alternatives.

Vista A – Wilfred Avenue: Residential and Commuter Vista

Wilfred Avenue runs east-west along the northern boundary of the Stony Point site. The length of Wilfred Avenue in this vista is a 1.5-mile stretch that spans from Dowdell Avenue on the east to Taylor Avenue on the west. Approximately 30 residences line Wilfred Avenue and its tributary streets in visible proximity to the Stony Point site. The portion of the Stony Point site located east of the Bellevue-Wilfred Channel in Vista A is shown on **Figure 3.10-11**, above. The portion of the Stony Point site located west of the Bellevue-Wilfred Channel in this vista is shown on **Figure 3.10-15**.

The commuter component of Vista A is provided from Wilfred Avenue and its tributaries named above, in addition to Primrose Avenue and Stony Point Road at their intersections with Wilfred Avenue, west of the Bellevue-Wilfred Channel; as well as, Taylor Avenue at its intersection with Wilfred Avenue, west of Stony Point Road. As noted above, the length of Wilfred Avenue offering a view is approximately 1.5 miles in length, however the duration of view is based on a forward-oriented perspective and thus depends upon traffic conditions and whether the approach is westbound or eastbound.

Eastbound commuters experience a forward-oriented view of the Stony Point site on the right quarter, for approximately 0.85 miles if starting from Taylor Avenue. While the duration of view is dependent upon deceleration, stopping and acceleration time; an average speed of 45 mph grants commuters a forward-oriented view of the Stony Point site for approximately 30 seconds before the site falls from view at the commuter's right flank. Westbound commuters entering the vista at Dowdell Avenue experience a forward oriented view of the Stony Point site for approximately 1.3-miles on the left quarter. At an average speed of 45 mph, westbound commuters on Wilfred Avenue experience a view for approximately two minutes (120 seconds) until the Stony Point site falls out of forward oriented view at the commuter's left flank upon reaching Stony Point Road.

Figure 3.10-15

Vista B – Stony Point Road: Commuter Vista

The Stony Point Road commuter vista is approximately 0.73 miles in overall length. The duration of visibility is dependent upon traffic conditions and whether the commuter is on a northbound or southbound trajectory. The southbound vista begins approximately 50 yards north of Wilfred Avenue, and continues for another 0.7 miles south with the Stony Point site coming into view on the left quarter and falling back directly to the commuter's left upon crossing Wilfred Avenue. **Figure 3.10-12**, shows the Stony Point site as seen from the corner of Stony Point Road and Wilfred Avenue. While the duration of visibility is dependent upon traffic conditions, deceleration and acceleration time where stoppage is required, an average speed of 50 mph offers nearly 60 seconds of view to southbound commuters on Stony Point Road, until the Stony Point site falls back from view to the commuter's left flank upon reaching the Rohnert Park Expressway. Northbound commuters on Stony Point road enter the vista at Rohnert Park Expressway, with the proposed construction site coming into view at the commuter's right quarter. **Figure 3.10-13**, shows the Stony Point site as seen from Stony Point Road near the Rohnert Park Expressway. The distance of visibility on the northbound passing is approximately 0.7 miles. While the duration of visibility is dependent upon traffic conditions, deceleration and acceleration where stoppage is required, an average speed of 50 mph would offer nearly 60 seconds of view to the proposed construction area before the commuter passes Wilfred Avenue, and the Stony Point site passes from forward-oriented view at the commuter's right flank.

Vista C – Rohnert Park Expressway: Commuter Vista

The Rohnert Park expressway, running east-west south of the Stony Point site, is a commuter vista connecting Redwood Drive on the east side of the viewshed with Stony Point Drive on the west. Due to the existing built environment, landscaping and trees, no forward-oriented view to the Stony Point site is offered to westbound commuters. Eastbound commuters receive an intermittent line of sight with breaks in near-ground vegetation and landscaping, however no view is offered once abreast of the mobile home park at Rancho Verde circle in either westbound or eastbound trajectory.

Vista D – Southeast Quadrant: Residential and Business Park Vista

Vista D provides a limited view northward for the trailer park at Rancho Verde Circle off Rohnert Park Expressway and the business park on Business Park Drive, southeast of the Stony Point site. Landscaping, buildings and trees offer a limited view to the Stony Point site for residents within and abutting the northern boundary of the trailer park. Similarly, landscaping and trees provide a limited view to the business park under existing conditions. Within this vista, an intermittent view of the Stony Point site is afforded to westbound commuters on Business Park Drive at their right quarter, although it is largely obstructed by landscaping and trees along the northern side of the street. **Figure 3.10-14**, above, shows this perspective to the Stony Point site, but was taken at the apex of the berm and parallel to the tree line that normally obstruct views from the street.

Vista E – US-101 and Interchange Businesses: Regional Commercial and Commuter Vista

A southbound approach on US-101 offers a momentary and mostly obstructed view to the Stony Point site at the commuter's right quarter. The occlusion in this view is caused by the regional commercial facilities along Redwood Drive, residences and trees between the highway and the Stony Point site. A moment of relatively clear view of the southern portion of the Stony Point site comes at the apex of the Commerce Boulevard overpass. Descending from the overpass, complete occlusion of view occurs, with the Stony Point site still at the right quarter. Southbound US-101 lanes and regional commercial establishments dominate the view to the west between northbound US-101 and the Stony Point site; therefore, no view is afforded to northbound vehicles. Views in the direction of the Stony Point site from US-101 are shown in **Figures 3.10-16 – 3.10-19**.

Lighting and Glare

The movements and resultants were taken at the same data points as the Wilfred site and are identical to the conditions noted therein.

LAKEVILLE SITE

Regulatory Setting

Guidance for regional aesthetic values within the Lakeville site's viewshed is afforded by the regional regulatory setting. As discussed in **Section 3.8**, the Sonoma County General Plan and Sonoma County Zoning Regulations comprise the regulatory framework for analysis of the visual impacts from the project alternative proposed for the Lakeville site.

The Lakeville site is located within a Sonoma County General Plan designated "Scenic Landscape Unit." Both Lakeville Highway and SR-37 are designated by the County as scenic corridors. In addition, SR-37 in the vicinity of the Lakeville site is listed by Caltrans as eligible for designation as a California scenic highway. The Lakeville site's parcels are within the land use area designated as Land Extensive Agriculture (LEA).

Regional Context

The Lakeville site is in an unincorporated area of Sonoma County in its southern end, southeast of the City of Petaluma and east of the City of Novato within Marin County. The site is at the lower end of the Petaluma Valley, at the base of the Sonoma Mountains in a structural depression in the Coast Ranges. The Lakeville site is located in a rural, agricultural area near the intersection of Lakeville Highway (a Sonoma County Scenic Corridor) and SR-37, a California Scenic Highway and a County Scenic Corridor. The Lakeville Highway is the main thoroughfare characterizing the region, and begins on its south at SR-37, running northward until it turns west and joins US-101 at the City of Petaluma. The western boundary is at the Petaluma River, nearly two-miles west of the Lakeville Highway along SR-37, and the eastern boundary is at the Sonoma

Insert Figure 3.10-16

Insert Figure 3.10-17

Insert Figure 3.10-18

Insert Figure 3.10-19

Mountains, less than two-miles east of the Lakeville site. The San Pablo Bay is just south of the Lakeville site, approximately 2.2-miles south of the site.

Lakeville Site Viewshed

The Lakeville site is located in a rural, agricultural area in unincorporated Sonoma County near the intersection of Lakeville Highway and SR-37. **Figure 3.10-20** shows the viewshed of the Lakeville site and its constituent vistas. The Lakeville site is currently undeveloped and is used for cattle grazing. Vegetation on the site primarily consists of uninterrupted grasslands. The only public viewpoints of the Lakeville site are from surrounding roadways. The views from Lakeville Highway and SR-37 are relatively unobstructed, although the view from SR-37 is relatively distant. The topography of the Lakeville site is largely level, with an upslope located in the northeastern corner of the site. Agricultural and grazing land uses surround the Lakeville site, with residences in visual proximity.

Identification of Vistas within the Viewshed

Vistas within the viewshed are described by expressing the strength of the viewing experience, framed within the analytical criteria listed above. While the viewing experience is personal and subjective in nature, the application of the analytical criteria at the beginning of this section allows for an objective, baseline assessment of the visual environment.

Vista A – Lakeville Highway Residential, Commercial and Commuter Vista

The Lakeville Highway contains residential, commercial and commuter vistas and has a total length of approximately 1.7-miles. The duration of visibility is dependent upon traffic conditions and whether the commuter is on a northbound or southbound trajectory. The southbound vista begins approximately 0.5 miles south of Twin House Ranch Road along the Lakeville Highway, at the Sleepy Hollow Vineyard and approximately a quarter mile north of the Lakeville site, and continues for another 0.8 miles. **Figure 3.10-21** shows the Lakeville site as seen from the southbound approach along the Lakeville Highway. While the duration of visibility is dependent upon traffic conditions, deceleration and acceleration time where stoppage is required, an average speed of 50 mph offers nearly 1.3 minutes of view to southbound commuters on the Lakeville Highway, until the proposed construction area falls back from view to the commuter's left flank on the near approach to the Lakeville site's southern boundary.

Northbound commuters on the Lakeville Highway enter the vista at SR-37, with the Lakeville site coming into view at the commuter's left quarter. **Figure 3.10-22** shows the Lakeville site as seen from a northbound approach along the Lakeville Highway. The viewing distance on the northbound passing is approximately 1.7 miles. While the duration of visibility is dependent upon traffic conditions, deceleration and acceleration where stoppage is required, an average speed of 50 mph would offer approximately two minutes of view to the proposed construction

Figure 3.10-20

Figure 3.10-21

Figure 3.10-22

area before the commuter passes from the vista, and the Lakeville site falls back from forward-oriented view at the commuter's left flank.

Vista B – SR-37 Scenic and Commuter Vista

The portion of SR-37 that includes Vista B in the Lakeville site viewshed is designated a scenic corridor by the State of California, and provides a wide field of view for commuters. Including a view of open space and agricultural lands to the north, and beyond a field of salt flats and bay marshlands the northern shore of San Pablo Bay is visible to the south. Approximately 2.4-miles of view to the Lakeville site occur in this vista, in a stretch that spans the viewshed from its western boundary at the Petaluma River, to its eastern boundary beyond the intersection with the Lakeville Highway. The westbound view begins approximately 0.4-miles east of the Lakeville Highway, and continues approximately 0.6-miles west of the Lakeville Highway. The Lakeville site as seen from the SR-37 and Lakeville Highway intersection is shown on **Figure 3.10-23**. While the duration of visibility is dependent upon traffic conditions; deceleration and acceleration where stoppage is required, an average speed of 50 mph would offer approximately 1.2 minutes (90 seconds) of view until the Lakeville site falls out of forward oriented view at the commuter's right flank.

The eastbound SR-37 view begins at the Petaluma River, and spans the viewshed to provide approximately 2.4 miles of view. The Lakeville site view is at the commuter's left quarter, against a backdrop comprised of agricultural land and the Sonoma Mountains, northeast of the Lakeville site. **Figure 3.10-24** shows the view to the Lakeville site from the SR-37 bridge over the Petaluma River. While the duration of visibility is dependent upon traffic conditions, deceleration and acceleration where stoppage is required, an average speed of 50 mph would offer approximately three minutes of view to eastbound commuters on SR-37, until the Lakeville site falls out of forward oriented view at the commuter's left flank, approximately 0.4 miles east of Lakeville Highway.

Vista C – Regional Residential and Commercial Vista

A number of residences and commercial activities west, northwest and southwest of the Lakeville site, and not in Vista A or Vista B, are afforded a view of the Lakeville site. **Figure 3.10-20** shows the vistas within the Lakeville site's viewshed. In this frame of view, the Lakeville site appears in the distance, against a backdrop of agricultural land and haloed by the Sonoma Mountains. The Lakeville site appears upgrade of most viewers in Vista C.

Lighting and Glare

A site visit was conducted to measure nighttime lighting and glare, on the night of February 22, 2006 between 8:30 PM and 9:30 PM. Using an Extech Instruments® Model 407026 heavy-duty light meter, existing lighting conditions were measured within each of the viewsheds identified

Figure 3.10-23

Figure 3.10-24

above. The points of measurement are identified on the data points called out on **Figure 3.10-20**, and appear alongside measured lighting values on **Table 3.10-8**.

TABLE 3.10-8
DATA POINT LIGHT READINGS

Data Point	Existing Lighting
LV01	0.0 Foot-candles
LV02	0.0 Foot-candles
LV03	0.6 Foot-candles
LV04	0.3 Foot-candles

SOURCE: AES, 2006.

The existing lighting conditions within **Vista A** were measured at the data points LV01, LV02, LV03, and LV04 as called out on **Figure 3.10-20**. Instrumentation registered 0.0 foot-candles at LV01 and LV02; however, existing lighting was most prominent further south, at the intersection of the Lakeville Highway and SR-37. Therefore, the illumination was below thresholds. Minor illumination occurred at various points along the Lakeville highway and sparsely distributed around parts of Vista C, and was generally confined to the locations at which it occurred.

LV03 is mapped at the Lakeville Highway at its intersection with SR-37, and at the intersection of **Vista A** and **Vista B**. Lampposts and traffic signals place ambient lighting at this data point and when compounded with the flow of traffic, ranged from 0.2 foot-candles to 0.6 foot-candles. Moreover, additional illumination occurs as a result of passing nighttime traffic. The lighting at LV04 within **Vista B** registered existing lighting conditions between 0.00 foot-candles and 0.3 foot-candles. The major source of illumination here is from passing traffic.