JH Ranch Planned Development Plan Amendment

Revised November 2013

JH Ranch
8525 Homestead Lane
Etna, CA 96027
530.467.3468 (phone)
530.467.5890 (fax)
rob@jhranch.com

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1.0 Intent of Planned Development Plan Amendment

JH Ranch has applied for a Planned Development Plan Amendment (PDPA) to increase the amount of land zoned in the Planned Development (PD) District from 79 acres to 202 acres and to modify the existing PD district's narrative to accommodate the JH Ranch's existing and future operations. The proposed PDPA is an amendment to the PDPA (Z-93-11) and includes the following:

I. The incorporation of existing JH Ranch property contiguous to the current Planned Development District into the proposed PDPA.
II. PDPA development standards that will provide guidelines for the future development of facilities within identified zones.
III. Address Guest Ranch occupancy as it relates to the following potential issues from this use:
    A. Adequate utility systems to serve both wastewater and potable water needs.
    B. Noise effects from JH Ranch activities on adjacent private property.
    C. Traffic related impacts to uses associated with French Creek Road.
    D. Emergency vehicle access.

2.0 General Development and Use

2.1 Overall Use and Intent

The use of the properties shown in the proposed PDPA is for a year-round **"Guest Ranch"** operation. This use has not deviated from the solitary land use and Guest Ranch activities described and approved in the 1993 PD Amendment (J.H. Ranch Planned Development Amendment (Z-93-11), Staff Report for Siskiyou County Board of Supervisors Resolution approving amendment, (Oct, 26, 1993). Refer to Attachment E (Land Use Compatibility Memorandum) for more information. Furthermore, this use is consistent with the SCMC for a Planned Development described as a single use "Planned Development District" with a solitary land use.

The intent of the proposed PDPA is to clearly describe the relationship between program occupancy, utility system capacities and traffic related impacts as measured by Average Daily Traffic (ADT) on French Creek Road (FCR). Specifically, Section 2.4.3 provides a methodology developed by the Siskiyou County Planning Department and JH Ranch to convert guest and staff occupancy into ADT. This methodology was applied to the guest program with the greatest traffic impact and has subsequently produced an ADT within acceptable environmental thresholds.

Further information on JH Ranch programs can be found in Section 6.0, Program Overview. The intent of this section is to provide a description of current program use and operations that has been developed since the 1993 PD Amendment. This description of uses does not however represent an agreement of current or future staff and guest occupancy. Additionally, this discussion reflects all current Ranch operation and was used as a reference point for the analysis of Biological, Noise and Traffic assessments prepared by SHN, Consulting Engineers & Geologists, Inc. in 2010 (see Attachments A, C & D). Since the completion of the 2010 studies modifications to the program operations have been adopted in particular the assignment of different days for guest departure and arrival. Whilst this operational change has eliminated 7-days of peak season revenue for JH Ranch it has resulted in reducing the overall traffic ADT volumes on French Creek Road during peak season.

2.2 Site Access

2.2.1 Vehicular access

Primary access to the property is provided via a single lane bridge (Bridge A) across French Creek at the main JH Ranch entrance. This location provides a central access point for guests, staff and deliveries. As shown in Attachment J (JH Ranch Circulation Plan), the primary vehicular guest patterns occur from the main access point at Bridge A up to the main lodge and down to the Housing area. Parking for guest vehicles is provided adjacent to guest housing facilities. Refer to Attachment J (JH Ranch Circulation Plan). This access point will continue to be the main access to JH Ranch and will be the focal point for all guest arrivals and departures, access by staff and other general uses of the property. No changes to the access road are required for current or anticipated future uses.

Secondary access to JH Ranch properties is provided by the bridge and access road at Homestead Lane (Bridge B). This road provides access to private residences, not associated with JH Ranch, as well as some of JH Ranch properties. Built by JH Ranch, this new bridge and access road was constructed to eliminate conflicts between local residents and guest ranch staff and visitors along the access road through the JH Ranch guest housing area. Construction of this road and bridge provides public access as well as secondary guest ranch access, emergency vehicle access and large highway load vehicle access that might not have been provided for by the main access road.

2.2.2 Pedestrian Access

Pedestrian access is the primary form of traffic throughout the PDPA. Except for program arrival and departure dates as well as some predictable daily excursions, dominant travel on the JH Ranch properties is by foot. Pedestrian access is currently provided along existing roadways, trails and bridges. Future uses are expected to expand pedestrian access through construction of new trails, walkways and other pedestrian related features.

2.3 Facility Renovation and Construction

Current facilities are expected to be maintained for the continuation of existing uses. Maintenance is anticipated to include building and facility renovations to keep buildings updated, provide for occupant safety and enhance user amenities. Renovations will include typical scheduled maintenance such as replacement of roofs, mechanical and electrical equipment, water and sewer line repairs and the like. As buildings reach their optimal life expectancy, renovations may be undertaken to update these buildings to current needs and standards. Renovations may include removal and replacement of interior walls, sleeping areas, bathrooms, and kitchens, as well exterior modifications to bring the buildings into alignment with the JH Ranch Architectural Design Standards (refer to Section 3.2), enhancement of on-site parking, development of pedestrian facilities, or improvement to emergency vehicle access.

New construction is anticipated for growth and/or to replace existing buildings or facilities that have reached the end of their serviceable life and/or introduce new facilities that enhance JH Ranch programs. In these instances, buildings may be completely removed and replaced with new structures. All new construction will be subject to development area and architectural standards outlined in the PDPA. Guidelines on renovations and new construction are outlined in Section 5.0, Development Interpretation and Amendments.

2.4 Occupancy and Related Considerations

This section is provided to address current and future guest ranch occupancy. As mentioned in Section 1.0, guest ranch occupancy and use is primarily a function of the following issues, which are outlined below:

a. Adequate utility systems to serve both wastewater and potable water capacity.

b. Noise effects from JH Ranch activities on adjacent private property.

c. Traffic related impacts to uses associated with French Creek Road.

d. Emergency vehicle access.

Occupancy itself is not being regarded as the sole factor to measure consistency between the PDPA and guest ranch activities. Rather, occupancy is driven by the capacity of current and modified utility systems servicing guest needs at JH Ranch and how the capacities of such systems interact with noise and traffic thresholds requirements.

2.4.1 Utility Systems

2.4.1.1 Wastewater Capacity

JH Ranch has developed an on-site sewage treatment facility that has been approved for use by the Siskiyou County Public Health Department (SCPHD). Refer to Attachment K (JH Ranch Existing Utilities Plan) for the location of wastewater infrastructure components. The system currently treats all wastewater from all Ranch facilities with the exception of the following facilities, which are serviced though individual septic tanks approved for use by the SCPHD:

1. Hemlocks & Birches (guest housing)
2. Ritz (staff housing)
3. Woodlands (staff housing)
4. Wrangler (staff housing)
5. Convent (staff housing)
6. Hilltop A & B (staff housing)

All existing waste water treatment systems are capable of treating waste for 500 persons (2010 California Plumbing Code), or 38,100 gallons a day. This is sufficient to support JH Ranch use which estimates that present on-site sewage demand is the equivalent of 437 persons. Under the current system, an additional 63 persons could be added to the overall occupancy level without any improvements to the sewage treatment system.

As listed above, the PDPA identifies six housing facilities which use individual septic tanks. Two of these housing facilities provide sleeping accommodations for a total of 40 staff members (Ritz and Convent) and an additional two housing facilities provide sleeping accommodations for a total of 40 guests (Hemlock and Birches). The remaining two housing units that use individual septic tanks service single family residences. While the use of the individual systems were originally approved as single-family residences, it is anticipated that this usage is not an issue given the part time occupancy of these homes and that cooking and laundry does not occur at these housing facilities.

Due to the modular design of the system, proposed modifications to the treatment system through adding air flow and surge tank capacity could increase the capacity of the system to serve additional persons without having to modify the existing sub-surface effluent disposal systems (leach fields).

Based on SCPHD density standards, the maximum amount of effluent that could be accommodated on the 202 acre PD area would be 96,000 gallons with nitrate reduction measures. **Based on the designed parameters of the system (at the maximum sewage**

density parameters with nitrate reduction) and taking into consideration the actual flow numbers from 2010, the maximum amount of flows that could be permitted would be the equivalent of 2,000 persons.

The installation of additional sewage infrastructure has been identified as a permitted use in the various development areas within the PDPA. Modifications to the waste water system been identified as a permitted use in the various development areas and any construction that would increase total occupancy beyond 500 persons on-site for overnight use would necessitate review by the Siskiyou County Community Development Department Environmental Health Division and the North Coast Regional Water Quality Control Board prior to the issuance of a building permit from the County's Building Department.

2.4.1.2 Potable Water Capacity

JH Ranch provides water to its facilities through a series of existing groundwater wells with storage tanks. JH Ranch's potable water system is regulated by the California Department of Public Health (CDPH) as a Type N1, Transient Non-community System; System No. 4700807. Testing is performed on a quarterly basis by Basic Labs in Redding , CA and is submitted directly to the CDPH. As shown in Table 3.0, current water storage capacity is 44,300 gallons of potable water. Refer to Attachment K (JH Ranch Existing Utilities Plan) for locations of wells and storage tanks.

JH Ranch's water system is designed to provide daily and peak flow demands to meet the needs of up to 552 persons and is sufficient for existing uses. Given that current occupancy is estimated at 475 persons during the student leadership (SL) program occupancy during the student leadership program could increase by an additional 77 persons without any changes to the water supply system. In addition, since occupancy during the Parent/Child (PC) and Husband/Wife (HW) programs is currently estimated to be 400 persons, occupancy during these periods could increase by approximately 152 without requiring any water systems improvements.

This is based on resident occupancy. Further explanation of the periodic one-night camp-out overlap that occurs with the group retreats is described herein. As referenced in Section 6.1.4 of the PDPA application, there are two times throughout the year when there is an overlap between group retreats and our SL program. During this one-night overlap, students participating in the SL program along with associated staff utilize off-site showers and restroom facilities at Etna High School before returning to JH Ranch. During this overlap evening, the SL program will "camp-out" and use portable restroom facilities placing no additional demand on the Ranch's potable water system. **The group retreat that utilizes the housing and lodge facilities during this time along with the remaining JH Ranch staff and does not exceed the potable water capacity of 552 persons.**

The existing well supply system is expected to be sufficient to provide for future demands. However, to serve additional persons above those identified herein,

additional storage tanks would be required. The installation of these tanks has been identified as a permitted use in the various development areas and would necessitate the issuance of a building permit from the County's Building Department.

Additionally, a Water Supply Assessment as defined by the Water Code Section 10912 will not be required unless consumption exceeds 133,912 gallons per day if water is used year round (see Attachment F, Water Supply Assessment Memorandum) **which would equate to slightly over 1600 occupants.**

Table 3.0
Potable Water Capacity and Supply Summary (see Sheet C-5)

Storage Tank (location)	Capacity (gallons)	Serving	Associated Well	Well Capacity
Storage Tank "A"	5000	Main Lodge	Well #1	20 GPM
Storage Tank "B"	1100		Well #1	20 GPM
Storage Tank "C"	1100		Well #1	20 GPM
Storage Tank "D"	1100		Well #1	20 GPM
Storage Tank "E","F" & "G"	4000	Ritz, Woodlands, Laundry, ALL Guest Cabins & Storage Tank (A)	Well #1	45 GPM
Storage Tank "H"	13000	Ritz, Woodlands, Laundry, ALL Guest Cabins & Storage Tank (A)		
Storage Tank "J"	5000	Maintenance Shop, Green Bean, Convent, Manor, Ranch House and Red Barn & Winter servicing of Lodge	Well #3	20 GPM
Storage Tank "I"	5000	Maintenance Shop, Green Bean, Convent, Manor, Ranch House and Red Barn & Winter servicing of Lodge	Well #3	20 GPM
Storage Tank "K"	1000	Back-up for Storage Tanks (B,C & D)	Well #2	5 GPM
		Convent, Green Bean, Maintenance Shop & Main Lodge	Well #5	45 GPM
			Well #6	10 GPM
Total Storage Capacity	**44300**			

2.4.2 Noise

SHN prepared a noise analysis which analyzed the noise conditions during on-peak Summer and off-peak Winter noise levels of 2010. This report (dated August 23, 2010)

was updated with a revised report (dated August 10, 2011). The sound level measurements (Attachment C, Revised Sound Analysis Results for JH Ranch -Table 2) showed similar sound measurements between the Winter and Summer periods during the day ranging from 44.1 dBA to 55.1 dBA.
Accordingly, the day-time sound level measurements taken during the SL program (indicated by JH Ranch to have the highest noise potential) are not significantly different from the Winter sound level measurements. With regard to night time noise levels, the noise analysis found that during the anticipated loudest time of the peak summer period (during noise events at the Big Top) sound levels were all below 50 dBA immediately adjacent to the Big Top tent.

All other guest-related noise is minimal by comparison, and incremental increases in occupancy as a result of modified utility capacity at JH Ranch would not significantly increase the noise volumes beyond existing levels. Because the General Plan Noise Element has not changed since the 1993 approval, the same standards that were applicable with the 1993 approval are still applicable today.

2.4.3 Traffic

Traffic at JH Ranch is typically generated from three sources; 1) guests arriving and departing for their programs at the Ranch, 2) program traffic that departs and returns to the Ranch during the week taking guests to various destinations, and 3) staff and related maintenance traffic.

Over the past four years a concerted effort has been made by both Siskiyou County and JH Ranch to evaluate the potential environmental impact of traffic generated from this project. This has included the following:

A. Traffic volume analysis prepared by SHN. Refer to Attachment A (Revised JH Ranch Traffic Volume Study dated April 30, 2012);
B. PEER review of applicant prepared Traffic Analysis. Refer to Attachment N (PEER Review of Applicant prepared Traffic Analysis dated October 18, 2012);
C. VISSIM micro-simulation analysis prepared by Kittleson and Associates. Refer to Attachment O (VISSIM Micro-simulation analysis dated May 10, 2013).

Although Siskiyou County Planning Department and JH Ranch have disagreed regarding the outcomes of the above referenced studies this revised PDPA application reflects a change to the scope of the traffic volume generated by JH Ranch. The revised scope along with guest program operational changes has resulted in traffic volumes well below environmental thresholds.

The traffic analysis conducted by SHN for JH Ranch captured the peak traffic volumes by counting trips during the peak summer season in 2010 during the PC program for which guests utilize their own vehicles (as compared with the SL program where

students are brought in by bus), thereby capturing incoming and outgoing traffic levels at their highest. The report documented that average daily traffic volumes during the non-Summer period was 225 trips a day along French Creek Road. To ascertain the increase from the Summer program, traffic counters were set up at three locations on French Creek Road and the access to JH Ranch to conduct a volume survey during a portion of the summer guest season. Specifically, the traffic counts were taken during the PC and HW program because the participants provide their own transportation to and from the Ranch (as compared to the SL programs where guests are brought to and from by bus).

During this monitoring period, French Creek Road was open to the public and provided unimpeded access to National Forest lands and wilderness areas, as well as to other residential, agriculture and timber lands. During this time at JH Ranch, there were approximately 125 seasonal staff, 40 full-time staff, and 175 guests from the PC and HW programs. Guests arrived and left (program transition periods) on Saturdays which were July 31 and August 7, 2010. Based on the data collected, French Creek Road had an ADT of 439 vehicles, in comparison to the ADT of 225 vehicles during the non-Summer period. Note, both these ADT figures do not include a projected 10 year growth rate of 1.5% for non Ranch traffic on French Creek Road as included in Table 4.0.

Since the completion of the 2010 traffic studies operational changes have been implemented to separate all guest arrival and departure days (program transition periods). Whilst this operational change has eliminated 7-days of peak season revenue for JH Ranch it has resulted in reducing the overall traffic ADT volumes on French Creek Road during peak season. Therefore, if this operational change had been implemented during the 2010 summer it would have produced a summer ADT of 347 vehicles, as compared with the ADT of 439 vehicles reported by SHN.

Table 4.0 describes the potential future traffic volume generated by the PC program on French Creek Road. **The PC program currently generates the highest traffic impact for the proposed project.** The methodology used in Table 4.0 was produced by a collaborate effort between Siskiyou County Planning Department and JH Ranch. The result of this methodology produced an ADT for the current and future PC programs within acceptable environmental thresholds. Additionally, it provides a simple process to convert guest and staff population at JH Ranch into ADT on French Creek Road. Therefore, alternate programs such as the SL program would a considerably lower ADT due to utilizing mass transit as the main mode of guest transportation.

As stated in Section 2.4, occupancy itself is not being regarded as the sole performance standard to measure consistency between the PDPA and guest ranch activities. Rather, occupancy is driven by the capacity of current and modified utility systems servicing guest needs at JH Ranch and how the capacities of such systems interact with noise and traffic thresholds requirements.

TABLE 4

Peak Summer Time Traffic Estimate

	Occupancy	No. of Vehicles	Trips Per Day	Person Per Car	Total Trips Per Day
Weekend					
Guest					
Program	600	300	1	2	300
Full Time Staff					
Commuting	75	23	1	2	45
Summer Staff					
Program	300	30	0.25	4	15
Support Services	1	2	1	1	4

Weekday					
Guest					
Program - Guest Cars	600	43	4	2	172
Program - Vans	0	2	2	10	4
Program - Buses	0	1	2	48	2
Incidental - Personnel Cars	0	0	0	0	0
Full Time Staff					
Commuting	75	23	1	2	45
Summer Staff					
Program	300	30	1	4	60
Support Services	0	5	1	2	10

Totals	Occupancy		Trips
Weekend	975		364
Weekday	975		293

TRAFFIC SUMMARY					
	Existing Traffic(1) No Ranch Activities	2024 Projected Traffic (1.5%)	Projected Summer ADT		***Total Avg. Trips Per Day (ADT)***
Weekend	71	82	364		***446***
Weekday	257	298	293		***591***
Weekly Average	204	237	313		**550**

Notes:

(1) Traffic volumes obtained from 2010 SHN Traffic Report summer monitoring without JH Ranch Traffic.

The Siskiyou County General Plan states that the goal is not to exceed LOS C. Refer to Attachment B (Level of Service Technical Memorandum). Additional traffic analysis performed by Kittleson and Associates identified traffic volumes were not at a level that would change the Level of Service (LOS) for French Creek Road. Incremental increases in occupancy as stated in Table 4.0 as a result of modified utility capacity at JH Ranch will not increase the traffic volumes to a level that would change the LOS for French Creek Road.

Future improvements to French Creek Road such as the widening of one narrow width section of FCR due to a rock outcrop and utility pole would provide additional roadway capacity. The existing traffic analysis including Attachment A (Revised JH Ranch Traffic Volume Study dated April 30, 2012) and Attachment O (VISSIM Micro-simulation analysis dated May 10, 2013) would provide the benchmark for an amendment to this application if such improvements were proposed and constructed.

2.4.4 Emergency Vehicle Access

Emergency vehicle access at JH ranch is provided by two vehicle bridges. Refer to Attachment J (JH Circulation Plan). The bridges have been constructed to provide emergency vehicle access and meet the current CALFIRE and County standards for fire truck load ratings. Paved and gravel roads provide all-weather access to developed portions of the Ranch property and structures. Circular driveways and hammerhead turn-a-rounds are provided at most structures. Future renovations and new construction projects will continue to provide emergency vehicle access to structures and ranch property, pursuant to the County's standard design requirements that are in place at the time of building permit application.

2.4.5 Emergency Shelter Plan

In the event of a wildfire in the vicinity of JH Ranch, the Ranch implements the following on-site evacuation procedure and awaits instructions from fire officials.

On-site evacuation will consist of on-site assembly at the "Playfield" as shown on Attachment G (JH Ranch Existind Development/Zoning).

On-site evacuation is to occur when one or more of the following conditions exist:

A. When off-site evacuation is required
B. When a wildfire is not under control and is known to be within 5 miles of JH Ranch;
C. When Emergency service personnel order on-site evacuation; or
D. JH Ranch staff believe it may be unsafe to evacuate off-site due to surrounding spread of fire or blockage of access, and they have been unable to obtain confirmation of this risk with emergency services.

On-site evacuation procedure:

A. Notify staff and guests of the need to seek refuge and activate the Plan
B. In the event of a wildfire emergency, JH Ranch to instruct all staff and guests to move immediately towards the "Playfield";
C. Assist in the welfare of all evacuees through advice and first aid where required and safety permitting;
D. Personnel delegated by the JH Ranch may be required to assist emergency services Confirm site is free and safe before declaring the incident over

3.0 Project Design Standards

The purpose of this section is to establish guidelines for different built environments within the PDPA to be used as a benchmark for the approval of future buildings, groups of buildings and exterior elements and structures. These Project Design Standards are intended to provide clarity regarding the desired elements that promote flexible and sustained development with the PDPA. These include the appropriate height of buildings, parking areas, open space and site amenities.

3.1 Site Design Standards

3.1.1 Parking, Loading and Circulation

Vehicle parking is designed to encourage a balance between pedestrian-oriented development and necessary vehicle parking. The majority of parking shall be provided in the Commercial Resort, Housing, and Maintenance Areas (see Section 4.0 Development Areas). Parking and storage of operation-related vehicles, machinery and equipment shall be limited to the Maintenance Area and shall be buffered from adjacent areas and neighboring property boundaries.
Larger parking areas may be provided in the Commercial Resort area, not to exceed 100 vehicles per parking area. If larger parking areas are developed, they shall be landscaped to diminish and conceal their visibility from French Creek Road, as site and topographic conditions allow.

Handicap parking shall be provided in compliance with applicable regulations.

Service and loading areas shall be provided for in the Commercial Resort and Maintenance areas and shall be screened from off-site views to the greatest extent possible. Vehicular circulation on roads in all Development Areas shall meet the access needs of emergency and public safety vehicles.

3.1.2 Outdoor Lighting

Outdoor lighting should be designed to ensure safety, functionality and convenience through illumination of the roadways, pathways, walking trails and gathering areas while conserving energy and limiting transient lighting. Lighting should be scaled appropriately to its functional uses. Lighting serving pathways and walking trails will not exceed ten feet in height, while lighting fixtures serving roads and parking areas may be taller, but not exceeding twenty feet in height.
The height of light fixtures shall be measured from the ground to the light emitting flat glass of the luminaries. Low level lighting of landscaped areas and signage within all zones in the district is encouraged. Neon lighting sources are prohibited.

Outdoor lighting will comply with County Code Section 10-6.5602 and is subject to review against such County Code during building permit plan check process by County staff prior to permit issuance.

3.2 Architectural Design Standards

Building heights shall meet standards pursuant to Section 10-6.3602 of the Siskiyou County Code.

Building setbacks for new buildings within each Area may be varied, but shall meet the standards set forth by the County and CALFIRE for property line setbacks at the time of construction. A minimum setback of 20' for new buildings shall be maintained within the Housing Area, between structures.

Typical building elevations include single-story and two story lodging facilities (cabins); single-story and two story houses; multi-story buildings including laundry, maintenance, Lodge and Dining Facility. Current facilities have been constructed over many decades, and while rustic, do not possess any single design element. Exterior renovations and upgrades to existing structures and construction of new structures will be designed so that their exterior incorporates elements of "mountain craftsman" style architecture (or similar) including but not limited to elements such as exposed wood beams and trusses, stone and other related natural materials and colors. Mechanical equipment at grade, attached to, or on the roof of a building shall be screened from view or made an integral part of the overall design of the building.

Transitions between program Areas (defined in Section 4.0, Development Areas) will be developed to promote a pedestrian friendly and visually appealing environment. Transition spaces may incorporate both landscaping, the preservation of natural vegetation and "hardscaping" such as plazas, seating areas, amphitheatres, outdoor fireplace and fire-pits. These areas may also include sidewalk furniture and small structures not exceeding one story in height to increase options for use and enjoyment of the spaces. Elements such as fencing, lighting, shade structures, decorative paving and seating areas are also permitted.

4.0 Development Areas

The proposed PDPA will be divided into four development areas, as identified below. These areas provide distinct uses, but are part of an overall single use at JH Ranch. A depiction of the areas is found in Attachment H, JH Ranch Development Plan.

- Area A: Commercial Resort
- Area B: Housing
- Area C: Maintenance
- Area D: Program Activities

Included in this section is a discussion of anticipated and proposed changes to the building, facility and infrastructure within each development area. As referenced in Section 2.3, current facilities are expected to be maintained for continued uses. Maintenance is anticipated to include building and facility renovations to keep buildings updated, provide for occupant safety and enhance user amenities. New construction is also anticipated to replace existing buildings or facilities that have reached the end of their serviceable life and/or introduce new facilities that enhance JH Ranch programs. Any such modifications or replacement of existing structures or new construction shall conform to the development area standards as defined in Section 2.4 and Section 5.2.

This description of facility, building and infrastructure changes does not represent an agreement of current or future staff and guest occupancy. References to current or future occupancy is approximate in nature due to fluctuating guest registrations affected by external factors. Future developments in each development area are congruent with the performance standards outline in Section 2.4 and are subject to the Section 5.0: Development Interpretations and Amendments.

4.1 Area A: Commercial Resort

The Commercial Resort area is that area previously described as C-R zoning and PD, and consists of the general commercial operations that are required to fully administer the guest operations at JH Ranch.

4.1.1 Permitted Uses

Permitted uses in the Commercial Resort area will be consistent with commercial activities generally associated with commercial uses and recreation resorts, and include the uses described below.

A. Administrative offices and meeting rooms.

B. Guest Services including but not limited to:
    a. Guest reception and information desk;
    b. First aid/medical services and emergency contacts;

c. Computer and telephone access;
d. Guest merchandise and bookstore.

C. Recreation activities including but not limited to:
    a. Swimming pools;
    b. Recreational ponds;
    c. Miscellaneous water sports;
    d. Bike rental/use;
    e. Horse back riding;
    f. Table games (pool, ping-pong, etc.);
    g. Origination point for hiking and other recreation activity.
    h. Indoor and Outdoor program talks and messages with amplified music;

D. Food Services for guests and staff including but not limited to:
    a. Guest and staff Dining facilities;
    b. Food preparation for on-site and off-site food services;
    c. Snack bar operations;
    d. Food and beverage vending;
    e. Beverage services such as coffee etc;

E. Picnic areas.

F. Guest room lodging

G. General meeting and assembly facilities including but not limited to:
    a. Conference rooms;
    b. Chapel;
    c. Staff meeting rooms.
    d. Staff offices.

I. Delivery zones, ramps and turn-a-rounds associated with commercial uses. These uses include food service deliveries, package delivery (UPS/FEDEX), service vehicles (JH Ranch, repair services, etc.), and other related activities. Numbers of delivery vehicles fluctuate, but a minimum of two deliveries per day occur during peak summer periods.

J. Other uses incidental and ancillary to the defined permitted uses.

K. Utility infrastructure systems and accessory structures including but not limited to:
    a. Underground and above ground water, power and sewer lines;
    b. Pump houses, water storage tanks and ancillary structures;

c. Waste water treatment facilities, septic tanks and leach fields;
d. Water storage ponds, lakes and culverts.
e. New infrastructure components such as water tanks and components shall be painted a flat color that generally matches the background color of the location.

4.1.2 Anticipated Changes/Alterations

Anticipated changes include:

- Main lodge renovation
  - Phase 1: New Kitchen Facility and Storage, Indoor staff dining and meeting room, staff offices
  - Phase 2: Existing Lodge Renovation
  - Phase 3: Indoor meeting room/additional staff offices

a. Overnight guest house for non-program related guests such as board members, summer staff parents, etc.
d. Program clubhouse with restroom facilities/snack bar/equipment rental/offices
f. Expansion of existing pond and ancillary structures;
h. Welcome center
i. Renovations or expansion of indoor and outdoor meeting facilities including but limited to the semi-permanent or permanent tent structures and outdoor ampitheatres.

4.2 Area B: Housing

The Housing area is designated for guest housing, staff housing and ancillary facilities related to these uses. Housing areas were previously identified in the PD and R-R-B-80 zoning areas. (Refer to Attachments G to I). As shown in Table 5.0, current Guest Housing overnight capacity is 380 persons, Staff Housing overnight capacity is 167 persons, for a total overnight capacity of 547 persons at one time, although such capacity is constrained by utility capacities, as described above.

Table 5.0 List of Housing Units				
Name of Housing Unit	**Capacity**	**Current Use**	Accommodations	Parking Spaces available
Alders	4	Family Staff/Board Members/overnight guests	Queen bed/bunk beds/kitchenette	2
Birches	20	Guest	Bunk beds/no living area/no kitchen	12
Breezeway	8	Staff	Bunk beds/living area/no kitchen	2
Bunk House Village (7 units)	84 (12 per unit)	Guests	Bunk beds/no living area/no kitchen	2
Cedars	4	Board Members, overnight guests	Queen bed/bunk beds/kitchenette	2
Convent	22	Staff	Bunk beds/living area/kitchen	8
Cottonwoods	32	Guest	Bunk beds/no living area/no kitchen	17
Dogwoods	32	Guest	Bunk beds/no living area/no kitchen	17
Eden	6	Staff	Bunk beds/no living area/no kitchen	2
Evergreens	40	Guest	Bunk beds/no living area/no kitchen	22
Firs	4	Family Staff/Board Members/overnight guests	Queen bed/bunk beds/kitchenette	2
Green Bean	24	Staff	Bunk beds/living area/kitchen	3
Guys Village (7 units)	28 (4 per unit)	Staff	Use description	4
Hemlocks	20	Guest	Bunk beds/no living area/no kitchen	12
Hilltop Residence A	6	Family Staff	Single family dwelling	5
Hilltop Residence B	6	Family Staff	Single family dwelling	5
Manor House	13	Single and Family Staff	Double beds/bunks beds/living area/kitchen	6
Madrones	20	Guest	Bunk beds/no living area/no kitchen	12
Maples	20	Guest	Bunk beds/no living area/no kitchen	12
Oaks	4	Board Members, overnight guests	Queen bed/bunk beds/kitchenette	4
Pines	4	Family Staff	Queen bed/bunk beds/kitchenette	2
Ponderosa	40	Guest	Bunk beds/no living area/no kitchen	22

Table 5.0 List of Housing Units				
Ranch House	6	Staff	Single family dwelling	3
Redwoods	40	Guest	Bunk beds/no living area/no kitchen	22
Ritz	18	Staff	Bunk beds/living area/kitchen	6
Willows	24	Guest	Bunk beds/no living area/no kitchen	10
Woodlands (2 units)	10 (5 per unit)	Family Staff	Single family dwelling	5
Wrangler	8	Staff	Bunk beds/living area/kitchenette	5
Total Guest Housing	18 Units	380 Persons		
Total Staff Housing	22 Units	167 Persons		
Total JH Ranch Housing	**40 Units**	**547 Persons**		

4.2.1 Permitted Uses

Permitted uses in the Housing area will be consistent with facilities generally associated with resort style accommodations, full time and seasonal staff housing, and include the uses described below:

A. Guest cabins and cottages;

B. Staff cabins, cottages and dormitories;

C. Guest and staff bath houses;

D. Vehicular parking associated with housing uses (areas designated on map);

E. Pedestrian and vehicular roads, paths, trails and footbridges;

F. Outdoor fireplaces, self contained fire pits and rings;

G. Meeting gazebos and outdoor structures;

H. Picnic areas;

I. Outdoor furniture such as swings, benches and trash receptacles;

J. Ancillary utility facilities including but not limited to:

    a. Exterior lighting and utility structures;

    b. Signage.

K. Utility infrastructure systems and accessory structures including but not limited to:

    a. Underground and above ground water, power and sewer lines;
    b. Pump houses, water storage tanks and ancillary structures;
    c. Waste water treatment facilities, septic tanks and leach fields;

d. Water storage ponds, lakes and culverts.

e. New infrastructure components such as water tanks and components shall be painted a flat color that generally matches the background color of the location.

4.2.2 Anticipated Changes/Alterations

Anticipated changes include:

a. Replacement of single level duplex cabins with new single level guest housing. This includes the following existing guest cabins:
    1 Maples;
    2 Madrones;
    3 Birches;
    4 Hemlocks and;
    5 Willows.

a. Removal of the "Convent" (single staff housing);
b. Removal of the "Green Bean" (single staff housing) and replace with guest housing for husband and wife program or new staff dormitory;
c. Replace "Wrangler" (single staff housing) with new staff dormitory.
d. Construct additional girls staff dormitory;
e. Relocate Bunk House and Guys Village to alternate location within Housing Area.
f. Update remaining two story guest housing units;
g. Renovation and/or addition to existing guest and staff bath houses.

4.3 Area C: Maintenance

The Maintenance area is designated to house both the maintenance and operations facilities and equipment used in support of all JH Ranch programs and activities. These areas were previously designated as PD and R-R-B-80 zones. Refuse collected from all development areas is collected and managed in the Maintenance area. All refuse is placed in a refuse compactor prior to being hauled off-site by a waste disposal company.

4.3.1 Permitted Uses

Permitted uses in the Maintenance area will be consistent with maintenance and operations activities generally associated with the support of guest ranch activities and facilities, and include the uses described below:

A. Maintenance offices and storage rooms;

B. Maintenance Services including but not limited to:

    a. Vehicle and machinery repair,

b. Vehicle and machinery parts storage;

c. Fuel storage;

d. Hardware and building supply storage.

C. Trash and recycling collection facilities;

D. Sanitary sewer facilities;

E. Vehicle and Machinery parking and storage;

F. Off site program and activity vehicle and equipment storage;

G. Other uses incidental and ancillary to the defined permitted uses.

L. Utility infrastructure systems and accessory structures including but not limited to:

a. Underground and above ground water, power and sewer lines;
b. Pump houses, water storage tanks and ancillary structures;
c. Waste water treatment facilities, septic tanks and leach fields;
d. Water storage ponds, lakes and culverts.
e. New infrastructure components such as water tanks and components shall be painted a flat color that generally matches the background color of the location.

4.3.2 Anticipated Changes/Alterations

Anticipated changes include:

a. Construction of new maintenance and storage facilities as needed.

4.4 Area D: Program Activities

The Program Activities area consists of the all guest related programs and activities associated with guest Ranch activities and events. Program Activities Areas are located on parcels currently zoned on PD, R-R-B-80, and TP-B-80 zoning, although the non-PD zoned parcels are proposed for rezoning to PD. Program activities located on the parcel currently zoned TP-B-80 will comply with the applicable provisions of California Government Code § 51100 et seq..

4.4.1 Permitted Uses

Permitted uses in the Program Activities area will be consistent with activities associated with guest recreation and events and include the uses described below:

A. High and low ropes course elements;

B. Hiking and orienteering;

C. Ball sports including football, baseball, volleyball, tennis, basketball, soccer, rugby and cricket.

D. Recreation activities including but not limited to:

   a. Recreational water sports;

   b. Skeet shooting;

   c. Horse Back riding;

   d. Mountain bike riding.

E. Rodeo style activities including horse riding, skits and amplified music;

F. Indoor and Outdoor program talks and messages with amplified music;

G. Agricultural and livestock storage and feeding structures.

H. Other uses incidental and ancillary to the defined permitted uses.

I. Utility infrastructure systems and accessory structures including but not limited to:

   a. Underground and above ground water, power and sewer lines;

   b. Pump houses, water storage tanks and ancillary structures;

   c. Waste water treatment facilities, septic tanks and leach fields;

   d. Water storage ponds, lakes and culverts.

   e. New infrastructure components such as water tanks and components shall be painted a flat color that generally matches the background color of the location.

4.4.2 Anticipated Changes/Alterations

Anticipated changes include:

a. Renovation of Red Barn;
b. Construct indoor/outdoor equestrian facility;
c. Additional program related storage.
d. Renovations or expansion of indoor and outdoor meeting facilities including but limited to the semi-permanent or permanent tent structures and outdoor ampitheatres.

5.0 Development Interpretation and Amendments

This section is provided to discuss interpretation of the Planned Development and Amendments that may be needed from time-to-time to address unanticipated questions, modified uses and activities and modifications or replacement of existing structures or other facilities.

5.1 Uses Not Listed

In those instances where a particular use has not been specifically defined as permitted in a particular Area, the Planning Director may deem a use to be a "Permitted Use" if such use is substantially similar in nature and intensity to the other permitted uses, and the use is clearly compatible with the intent of the PDPA. Where such a use is similar to a use that is allowed by matter of right, but the intensity or impacts of the use substantially exceed that reasonably expected to be associated with the other uses, the Planning Director may require a Conditional Use Permit for the use.

5.2 Modification and Replacement of Structures

Notwithstanding the requirement for Building Permit and any necessary agency approvals as outlined in the Siskiyou County Land Development Manual (November 2011) including Siskiyou County Code Section 10-6.1187 (b) modifications (upgrades, renovations) and replacement (removal of existing and building of new) of existing structures may be approved by the Planning Director within each Area defined in the PDPA provided that:

A. The total occupancy as related to allowable utility capacities is not exceeded;
B. Any such modifications or replacement of existing structures conforms to the development area standards as defined in Section 5.0.

Modifications and replacement of buildings or structures does not constitute a separate phase (as defined by Section 10-61183(c)).

5.3 Changes to Building Uses

From time-to-time, the use of structures may change as JH Ranch programs are modified, updated or phased out, depending on Ranch operations. In such cases, current uses of buildings may need to be modified to meet the new or modified programs. These future uses cannot be reasonably anticipated at this time. When program changes require that building uses be modified, the Planning Director has the ability to approve these modifications provided that the total occupancy as related to allowable utility capacities is not exceeded. Such modifications to building uses will not constitute a separate phase (as defined by Section 10-61183(c)). Where building uses require modifications to the structure that would normally require a Building Permit and any necessary agency approvals as outlined in the Siskiyou County Land

Development Manual (November 2011) including Siskiyou County Code Section 10-6.1187 (b), the Planning Director will require a Building Permit to be secured.

5.4 Changes to Development Areas

When a modification to the existing Development Area is proposed, either overall programs or boundary of such Area, the Planning Director may approve the modification if such use is substantially similar in nature to the other permitted uses, and the use is clearly compatible with the intent of the PDPA.

6.0 Program Overview

The intent of this section is to provide a baseline of current program use and operations that has been developed since the 1993 PD Amendment. This description of uses and occupancy does not represent an agreement of current or future staff and guest occupancy. References to current occupancy is only approximate in nature due to a variety of external factors such as the economy, etc. An overview of the summer season is graphically represented in Attachment L (Program Summary Chart).

JH Ranch program calendar is divided into a summer and winter season.

6.1 Summer Season

- **Duration:** The summer season occurs from May until September each calendar year.

- **Activities:** As of 2013, summer Season programming consists primarily of Ranch facilitated programs. These include:

  A. Five, one-week long **Parent/Child** (PC) programs that consist of approximately 250 guests. During selected weeks of the PC programs we also host our **Husband & Wife (HW)** programs as well as our **Cloud Nine (C9)** programs. The guest numbers of both HW and C9 are included in the 250 total guest number referenced above.
  B. Two, twelve day **Student Leadership** (SL) programs that consists of up to 325 students.
  C. **Volunteer Intercession** (VI) Program.
  D. Additionally, the Ranch rents the facility during the summer for **Group Retreats** that consist of approximately 225 students and 25 staff.

6.1.1 Parent/Child (PC), Husband & Wife (HW) and Cloud Nine (C9) Programs

As of 2013, the Ranch operates Five, one-week long **Parent/Child** (PC) programs that consist of approximately 250 guests. During selected weeks of the PC programs we also host our **Husband & Wife** (HW) programs as well as our **Cloud Nine** (C9) programs. The guest numbers of both HW and C9 are included in the 250 total guest number referenced above.

Arrival and Departure
Guests typically arrive at the Main Lodge between 2 p.m. and 6 p.m. on the day of arrival and depart between 6 a.m. and 10 a.m. on the day of departure**. The day of arrival and departure occur on different days.**

Transportation
Guests arrive and depart from the Ranch by private car. During these program weeks we typically have between 80-90 private passenger vehicles that are parked at the various guest housing locations. A combination of private guest vehicles and bus transportation are used to transport guests to overnight river rafting trip.

Housing
Lodging is provided for guests in one of several guest units (refer to Table 5.0). Housing is determined based on the program needs, with PC groups housed in similar units; HW program guests housed in smaller units to provide privacy; and C9 guests housed in larger units. Actual housing units used vary depending on participant numbers and availability.

Staff
JH Ranch hires approximately 120 volunteer summer staff and 30 full time staff to support the primary summer programs. For more information on staffing please see staff section below.

Off-site Facilities
On selected weeks of this program guests are transported by Ranch vans as well as 5-10 private vehicles for a local off-site day trip. Guests typically depart at 10 a.m. and return at 3 p.m. Two summer staff members guide this trip. All off-site activities are permitted either through the Forest Service or private guide companies.

6.1.2 Student Leadership (SL) Programs

As of 2013, the Ranch operates two, twelve day SL that consists of 325 students. There are three categories of the student leadership programs **Challenge**, **Second Wind** and **Trac II**. These programs are described in more detail in this section. All of the Student Leadership Programs have the same general arrival, transportation, housing and program schedule, which is outlined below.

Arrival and Departure
All students arrive at the Main Lodge between 8 p.m. and 9 p.m. on the day of arrival and depart at early morning on the day of departure.

Transportation
All students arrive and depart from Sacramento Airport and are transported to and from the Ranch by several school buses, one to two U-Haul luggage truck and several passenger vans provided by the Ranch. All bus transportation is provided under contract and therefore no buses are parked on site. JH Ranch has a small fleet of passenger vans that are parked on site.

Housing
Lodging is provided for guests in one of several guest housing units, and is determined by teams with girls and guys occupying separate duplex units.

Staff
JH Ranch hires approximately 120 volunteer summer staff and 30 full time staff to support the primary summer programs. For all off site activities, staff is transported by the means described below.

Off-site Activities
In general, each student leadership program spends the first six days of the program on Ranch property and the second half of the program off Ranch property. All students arrive back at the Ranch during the remaining time of the program before departing from the Ranch for departing flights from Sacramento. All off-site activities are permitted either through the Forest Service or private guide companies.

6.1.3 Volunteer Intercession (VI) Program

As of 2013, The Ranch operates one-week long **Volunteer Intercession (VI)** programs that consist of approximately 5-10 guests. During selected weeks. This program operates from Saturday to Saturday or Sunday to Sunday.

Arrival and Departure
Guests involved in the VI program typically arrive at the Main Lodge between 2 p.m. and 6 p.m. on the day of arrival and depart between 6 a.m. and 10 a.m. on the day of departure. **The day of arrival and departure occur on different days.**

Transportation
Guests arrive and depart from the Ranch by private car.

Housing
Lodging is provided for guests in the "Manor" housing unit.

6.1.4 Groups Retreats

As of 2013, during the middle of the student leadership programs, the Ranch facility is rented for group retreats that operate four day long programs that consist of approximately 225 students and 25 staff. The arrival and departure of these church groups coincide with the JH Ranch student leadership programs being off property. There are only two nights each calendar year where both the JH Ranch student leadership programs and the church group overlap. During these two overlap evenings, the church group is housed in the guest housing units and the Ranch leadership program students "camp-out" adjacent to the red barn and big top facility.

Arrival and Departure
The church groups typically arrive at the Main Lodge at 4 p.m. on the day of arrival (first Friday of the JH Ranch student leadership program) and depart at 9 a.m. on the day of departure (second Tuesday of the JH Ranch student leadership program).

Transportation
All church groups provide their own transportation that typically consists of 2 school buses, one U-Haul luggage truck and two, ten passenger vans. Vehicles remain on-site at JH Ranch and are parked at existing parking areas near the entrance or at the guest housing assigned to the program.

Housing
Lodging is provided for students in one of several guest housing units, but the use of the housing varies by program year and not all of these units may be required each year.

Off-site Activities
On each day the church group is on Ranch property, approximately 45 students are transported daily by a single bus for an off-site day trip. Students typically depart at 10 a.m. and return at 3 p.m.

6.1.4 Staffing

As of 2013, during the summer season, JH Ranch employs approximately 10-15 full time staff that are based in the Etna area, who provide maintenance, program management and other administrative functions for the Ranch. Also during the summer season, approximately 20 full time staff relocates to the Ranch from the winter office in Birmingham, Alabama. These staff augment the local full time staff and assist in administrative and program management for operations of the Ranch.

Additionally, JH Ranch utilizes approximately 120 volunteer summer staff (VSS) from across the United States. In many cases, VSS are students that have been attending programs at JH Ranch in the past, and seek a volunteer position. The VSS serve in many different areas including:

- Programs (ropes courses/bikes/horses etc);
- Maintenance and grounds improvements;

- Housekeeping;
- Food service and cleaning.

Arrival and Departure
As of 2013, the summer staff season occurs from May 20th until August 20th each calendar year.

Transportation
All VSS staff arrives and departs from Sacramento Airport and are transported to the Ranch on two school buses and several passenger vans. During the summer season, all of our VSS and full time staff live on property and walk to their work site. Vehicle parking for full time staff is provided at their housing units. Many of our Etna based full time staff (typically varies from 5-10 people) commute to the Ranch daily via private vehicles. Parking for these staff is provided at the Lodge parking area.

Housing
Housing is provided for all of the VSS in one of several staff housing units. These include those units described below (Refer to Table 4.0 and Sheet C-5):

A. Green Bean
B. Convent
C. Ritz
D. Guys Village
E. Breezeway
F. Eden

Our Birmingham based full time staff are housed in one of several full time staff housing. These include the following, (Refer to Table 4.0 and Sheet C-5)::

- Ranch House
- Woodlands
- Wrangler
- Alders
- Firs
- Pines

6.2 Winter Season

1. **Duration**: The winter season occurs approximately from October through April each calendar year.
2. **Activities:** During the winter season the Ranch is used for retreats, conferences and groups. Historically, these uses range from long weekends to week long periods during school breaks (3-6 days in length). While the current programs typically do not overlap, JH Ranch can accommodate multiple groups at the same time, up to 300 guests and 50 staff.

6.2.1 Current Winter Programs

The current winter programs are typical of what has been occurring at JH Ranch in the past, and it is hoped that these programs continue into the future, these programs are developed by other entities and JH Ranch has no guarantee of long-term use by these specific groups.

6.2.1.1 Future Winter Programs

Future non-peak programs may include a mixture of both day use and overnight programs. As stated in Section 2.4, occupancy itself is not being regarded as the sole performance standard to measure consistency between the PDPA and guest ranch activities. Rather, occupancy is driven by the capacity of current and modified utility systems servicing guest needs at JH Ranch and how the capacities of such systems interact with noise and traffic thresholds requirements. Section 2.4.3 provides an explanation of this relationship between utility capacity and traffic thresholds. Furthermore, Table 4.0 details peak traffic generation from the PC program. For alternate peak programs such as the SL program and non-peak programs that use a mix of mass transit and private vehicles to access JH Ranch, utility capacity thresholds will be used to determine occupancy. This will include day use programs only, including but not limited to conferences, retreats, seminars and public gatherings.

6.2.1.2 Outdoor Education

Outdoor Education programs developed by Siskiyou County Schools operate a 3 day program for approximately 80 students and staff. This occurs typically 8 times during the winter season. This program also hosts one day intern training and field study workshops for approximately 10-15 staff involving 5-6 personal vehicles. Program elements typically include the following:

Arrival and Departure
Students typically arrive at the Main Lodge mid morning Wednesday on the day of arrival and depart early afternoon on Friday.

Transportation
Students arrive and depart from the Ranch by a single bus. Staff typically drives 5-6 personal vehicles.

Housing
Lodging is provided for students and staff in the Bunk House Village, shown on the attached map.

Activities
The program facilitates their own activities on Ranch property. No ropes courses or other Ranch activities are used.

6.2.1.3 Church groups

Various church groups operate three, 3 day retreats for approximately 300 students and staff. Program elements typically include the following:

Arrival and Departure
Students typically arrive at the Main Lodge mid afternoon on the day of arrival and depart mid morning on the day of departure.

Transportation
Students and staff arrive and depart from the Ranch by approximately 60-70 personal vehicles and several buses.

Housing
Lodging is provided for students in one of several guest housing units described in Table 4.0. Actual housing units depends on participant numbers and current availability of housing.

Activities
Bethel Church facilitates their own activities on Ranch property. No ropes courses or other Ranch activities are used.

6.2.1.4 School groups

Various schools operate multi-day retreats for students and staff ranging from 30-90 guests. The general program activities are as follows:

Arrival and Departure
Students typically arrive at the Main Lodge mid afternoon on the Monday and depart mid morning the following Saturday.

Transportation
Students arrive and depart from the Ranch by a combination of personal vehicles, vans, buses and luggage trailers.

Housing
Lodging is provided for students and staff in one of several guest housing units, and is assigned based on final participant numbers and availability.

Activities
Guests are guided by Ranch staff on our ropes course as well as the activity pond. Additionally, school staff typically take a day rafting trip leaving the Ranch early morning and returning late afternoon, with transportation is provided by two personal vans.

6.2.1.6 JH Ranch Volunteer Work Weeks

JH Ranch hosts several week-long volunteer work weeks to assist the full time staff with summer program facility preparation. These work weeks typically includes 50 volunteers. The schedule for these activities is shown below:

Arrival and Departure
Volunteers typically arrive at the Main Lodge early evening on Saturday and depart mid morning the following Sunday.

Transportation
Volunteers arrive and depart from the Ranch by approximately 10-15 personal vehicles.

Housing
Lodging is usually provided for students and staff at one of the guest housing units, with the actual units depending on final participant numbers and housing availability.

Activities
Activities consist of JH Ranch staff led work groups to prepare the Ranch for summer program activities. Work consists of opening housing facilities, making facility and equipment repairs, general maintenance, painting, and other routine and yearly tasks.

6.2.1.7 Local Meetings and Conferences

Local and State Agencies including the Fire Safe Council and Department of Fish and Game hold day meetings and conferences ranging in size from 15-50 participants. Transportation is provided by private vehicles. These day programs are hosted and managed by the agencies sponsoring the event. Use is typically at the Main Lodge.

6.3 Staffing

During the winter season there are approximately 10-15 full time staff that manage day-to-day operations, provide maintenance and manage/assist in the production of the winter programs. These staff live in the Etna area and travel each day to the ranch by private vehicles. These employees remain with JH Ranch during summer months and provide maintenance and program continuity.

CONSULTING ENGINEERS & GEOLOGISTS, INC.
350 Hartnell Avenue, Suite B • Redding, CA 96002-1875 • 530-221-5424 • FAX 530-221-0135

Reference: 509051.100

August 10, 2011

Rob Hayes-St. Clair
Jerry Stacher
JH Ranch
8525 Homestead Lane
Etna, CA 96027

Subject: REVISED JH Ranch Traffic Volume Study

Dear Mr. Hayes-St. Clair and Mr. Stacher:

This Revised Traffic Volume Study has been prepared by SHN Consulting Engineers & Geologists, Inc. (SHN) to provide additional information and clarifications to our original report prepared August 30, 2010. Modifications generally provide additional information regarding French Creek Road existing conditions as well as how the results of the study relate to the Siskiyou County Circulation Element of the General Plan. No additional traffic volume data or roadway analysis has been prepared as part of this revised document, nor have the conclusions in this report changed.

1.0 Scope of Report

SHN has prepared this traffic volume study for the JH Ranch. The JH Ranch is approximately 30 miles southwest of Yreka, California, and consists of multiple Assessors' Parcels Number (APNs). French Creek Road (Siskiyou County Road #3G002) bisects some of the parcels, but the JH Ranch offices, guest facilities and program areas are located west of French Creek Road. This study area encompasses French Creek Road, the main access to JH Ranch, and the new access to Homestead Lane at the bridge over French Creek.

This study conforms to the California Department of Transportation (Caltrans) requirements and standard engineering practice for a traffic volume survey. No standard traffic volume information or study requirements were available from Siskiyou County.

2.0 Existing Conditions

2.1 Existing Site Conditions

The area tributary to French Creek Road is currently developed with a mixture of uses, such as agriculture, timber production on private forest lands, multiple uses on National Forest lands, single-family residential and planned development and commercial operations at JH Ranch. French Creek Road is open year-round to public uses and provides access to public and private lands along its route. It is one of the routes for public access to the Klamath National Forest and the Marble Mountain Wilderness area.

French Creek Road in this area has characteristics fairly typical of roadways in the vicinity and contains a number of curves and limited shoulder widths in some areas. French Creek Road is paved its entire length from the intersection of State Highway 3 to past the JH Ranch. The roadway

generally consists of a 24-foot paved roadway with lane widths narrowing in some spot locations to 21-feet. One location consists of a 14-foot lane width that is caused by an existing rock outcrop and utility pole. Roadside ditches are maintained in locations along its length. Siskiyou County has signed various portions of French Creek Road with warning (intersection and curve signs) and regulatory speed signs (speed limits), with a maximum speed posting of 40 miles per hour. Several public and private roads connect to French Creek Road and provide access to other areas in the vicinity.

Access to JH Ranch is by two main routes: the main access road at the JH Ranch entrance (referenced in this report as JH Ranch Main) and at Homestead Lane at the new bridge across French Creek (referenced as JH Ranch Bridge). The JH Ranch Main access road provides the predominant access to JH Ranch, but also provides primary access to a single-family residence not associated with JH Ranch. The JH Ranch Bridge access provides access to JH Ranch facilities, and provides access to year-round, seasonal use, and undeveloped residential properties, also not associated with JH Ranch.

2.2 Existing Traffic Counts

SHN set up a single Trax (JAMAR Technologies, Inc.) traffic counter on French Creek Road (near its intersection with State Highway 3) on May 19, 2010 to conduct a volume survey prior to the summer guest season at JH Ranch. This counter was removed on May 25, 2010. Installation of the traffic counter collected traffic volume data that included daily traffic on French Creek, including Winter season operations at JH Ranch. During this time period, JH Ranch did not have summer seasonal staff, summer guests or guest programs in operation. Approximately 35 staff were working at JH Ranch setting up the summer programs. Additionally, JH Ranch was in the process of constructing its new dining pavilion, and there were approximately 10-20 construction workers, material suppliers and other construction vendors traveling on French Creek Road to access the Ranch. Information collected by the traffic counter included the arrival of approximately 120 volunteer summer staff (May 22) at JH Ranch for summer program training. According to the Ranch, these staff arrived on two charter buses and one 10-passenger van with luggage trailer.

The volume data collected during this period is attached, and Table 1 presents a summary of the traffic volumes for this Winter traffic count.

Table 1
Traffic Volumes for French Creek Road (Winter Ranch Season)
May 19 to May 25, 2010

Road Segment	Volumes (vehicles)						
	Average Daily Traffic	Weekday Average Daily Traffic	Weekday Peak Hour, a.m.	Weekday Peak Hour, p.m.	Weekend Average Daily Traffic[1]	Weekend Peak Hour, a.m.	Weekend Peak Hour, p.m. [1]
French Creek Road near Highway 3 (2 lanes)	225	229	32	52	216	17	23

The Highway Capacity Manual indicates that the ideal capacity of any road segment is approximately 1,800 vehicles per hour per direction. This number is based on free-flow conditions, and varies due to road conditions, sight distances, intersections, and other site specific roadway conditions. Additionally, the Circulation Element of the Siskiyou County General Plan identifies roadways in the County that have at least an 18-foot pavement width and the roadway is under free-flow conditions as Level of Service (LOS) "A". French Creek Road meets these County definitions except in one location where the land width is limited to 14-feet due to an existing rock outcrop and utility pole. As such, the County has calculated that the Service Volume (the volume of traffic that a roadway can accommodate and continue to meet LOS A standards) is 1,408 Average Daily Traffic (ADT), or 169 vehicles per hour (Siskiyou County Circulation Element, 1988).

As shown in Table 1, the combined peak volumes for French Creek Road at this location are well below the County thresholds of both ADT and vehicles per hour. Based on data collected, French Creek Road at this location has an ADT of 225 vehicles; both weekday and weekend ADT are calculated as well (Table 1) and confirms that the roadway is LOS A. For the purposes of this study, this ADT is used as the Winter traffic volume when the Ranch is not operating at its summer peak levels.

On July 27, 2010 three Trax traffic counters were set up at three locations on French Creek Road and the access to JH Ranch to conduct a volume survey during a portion of the summer guest season. One traffic counter was set up on French Creek Road at the same location of the May 19-25 study. Two were set up on JH Ranch property, one at JH Ranch Main access road just prior to traffic accessing the bridge and one at JH Ranch Bridge on the east side of the bridge. The counters were removed on August 9, 2010.

During this period, French Creek Road was open to the public and provided unimpeded access to National Forest lands and wilderness areas, as well as to other residential, agriculture and timber lands. Also, during this period JH Ranch was in summer operations, with approximately 125 seasonal staff, 40 full-time staff, and 175 guests for Parent / Child and Husband / Wife programs. Guests arrived and left (program transition periods) on Saturdays which were July 31 and August 7, 2010. JH Ranch has indicated that guests for the Parent / Child and Husband / Wife programs provide their own transportation to and from the Ranch (as compared to high school student programs where guests are brought in by bus), so this monitoring period represents the peak traffic scenario for the 2010 summer season.

The volume data for these collection locations is attached, and Table 2 presents a summary of the traffic volumes.

Table 2
Traffic Volumes for French Creek Road, JH Ranch Main[1] and JH Ranch Bridge[2] Access Points – Summer Peak Volumes
July 27 to August 9, 2010

Road Segment	Volumes (vehicles)						
	Average Daily Traffic (ADT)	Weekday Average Daily Traffic	Weekday Peak Hour, a.m.	Weekday Peak Hour, p.m.	Weekend Average Daily Traffic[1]	Weekend Peak Hour, a.m. [3]	Weekend Peak Hour, p.m. [1]
French Creek Road[4]	439	449	104	76	409	72	56
JH Ranch Main	220	191	40	29	293	77	45
JH Ranch Bridge	59	59	13 (58[5])	11	59	8	9

1. JH Main refers to the main JH Ranch entrance road
2. JH Bridge refers to the Homestead Lane access at the new bridge over French Creek.
3. JH Ranch programs transition on Saturdays with guest leaving and arriving.
4. Trax Counter stopped working after 9 days and prior to end of complete study. Counter was able to count both weekday and weekend traffic.
5. The Weekday Peak Hour a.m. volume of 58 vehicles appears to be an anomaly, based on the other traffic data for this site for other weekday mornings and is not used in this analysis at the peak morning hour.

As shown in Table 2, the combined peak volumes for French Creek Road are well below the service volumes calculated for the roadway (1,408 ADT) based on the County Circulation Element. Based on the data collected, French Creek Road at this location has an ADT of 439 vehicles; JH Ranch Main has an ADT of 220 vehicles; and, JH Ranch Bridge has an ADT of 59 vehicles.

As noted in Table 2, an anomaly appears in the Weekday Peak Hour, a.m. traffic volume. On the first day of the study (July 27, 2010) there were 58 vehicle counts at the JH Ranch Bridge site coming onto the bridge accessing Homestead Lane. This count does not coincide with any organized program activities at JH Ranch, does not account for incoming vehicles at the start of a new program week, and is otherwise unexplained. There are no corresponding return trips out at this site to account for the 58 vehicles on that day. A detailed look at the data shows that 54 vehicles accessed this point between 10:00 and 10:15 a.m. (48 inbound and 6 outbound). Guest traffic for JH Ranch is typically routed to the JH Ranch main entrance where traffic was counted during the study by the JH Ranch Main counter. While this volume was used to calculate the Annual Daily Traffic for this point, the value of 13 vehicle trips was used as the peak weekday hour for morning traffic as it appears to reflect traffic at this point based on visual observations and data from the other days of the week.

Siskiyou County had total traffic volume data for French Creek Road from a 1988 traffic study that showed a volume of 245 ADT. Refer to Section 3.2 for details of the study. The only other traffic data available for review was from Caltrans that provides Average Annual Daily Traffic (AADT) and Peak Hour counts and projections for various roadway segments of State Highway 3. Review of the data found that Highway 3 had traffic counts for a location at Main Street, Etna for the 2009 year. Etna is approximately 4 miles to the north of the site, and provides a reasonable estimate of

traffic on Highway 3 that passes French Creek Road. Review of that data found that the AADT traffic at the Main Street point was 1,350 vehicles with the Peak Hour vehicle count of 190 (there was no distinction in a.m. or p.m. Peak Hour).

2.3 Transportation Facilities

The following is a summary of the roadway classifications identified in the by Siskiyou County Department of Public Works and descriptions of the study area as observed by SHN staff.

Roadway	Existing Lanes	Classification	Posted Speed
French Creek Road	2	Local Road	40
JH Ranch Main	1	Private Driveway	N / A
JH Ranch Bridge (Homestead Ln.)	1	Private Road	N / A

3.0 Intersection and Roadway Analysis

3.1 Intersection Capacity and Level of Service

Intersection capacity calculations were not conducted for this study, as review of traffic volume data and visual observations of intersections determined that these calculations were not warranted due to the low volume of traffic. There are no signalized intersections in the study area.

The County of Siskiyou has older traffic volume data for French Creek Road but does not have any intersection data. Review of Caltrans District 2 data determined that there were no current intersection classifications for French Creek Road at Highway 3.

The concept of Level of Service has been developed by traffic engineers to allow a qualitative measure of an intersection's operation. A level of service "A" is representative of generally free-flowing conditions while a level of service F is representative of long delays (greater than 50 seconds for un-signalized and 80 seconds for signalized intersections). Table 3 presents the level of service corresponding to delay under each stop control scenario.

Table 3
Level of Service and Delay Thresholds

Stop Control	Level of Service (seconds/vehicle)					
	A	B	C	D	E	F
Signalized	0-10	>l0-20	>20-35	>35-55	>55-80	>80
Un-signalized: Two-way or All-Way	0-10	>l0-15	>15-25	>25-35	>35-50	>50

Source: *Highway Capacity Manual, 2000 Edition*

Evaluation of signalized intersection capacity and operation uses two criteria standardized in the transportation engineering industry. The first measure of operational acceptability for roadways and intersections is the ratio of traffic volume to capacity of the roadway or intersection. This ratio is referred to as the volume-to-capacity ratio (v / c). The second measure of operation is Level of

Service (LOS). LOS for a signalized intersection is based upon average delay incurred by all vehicles using the intersection during the peak 15 minutes of the design hour.

Un-signalized two-way stop controlled intersections are evaluated on the delay experienced by individual lanes or lane groups rather than the intersection average, because the intersection average is significantly impacted by nearly unimpeded major street traffic and does not always reflect the delays experienced by side street traffic. The delay experienced by each lane or lane approach corresponds to the reserve capacity, which is a measure of the capacity of a movement that is unused. The lane or lane group that experiences the highest delay, generally the side street, will be reported for the intersection as a whole, along with the corresponding reserve capacity and LOS. For the study area, the side streets that would potentially have the longest delay would be JH Ranch Main entrance and JH Ranch Bridge (both a side street to French Creek Road) and French Creek Road at Highway 3 (where French Creek Road is a side street to Highway 3).

French Creek Road at Highway 3: By inspection, this intersection has little, if any, delays and is currently operating at an LOS A during all of the peak hours.

JH Ranch Main at French Creek Road: By inspection, this intersection has virtually no delays and is currently operating at an LOS A during all of the peak hours.

JH Ranch Bridge at French Creek Road: By inspection, this intersection has virtually no delays and is currently operating at an LOS A during all of the peak hours.

3.2 French Creek Road Level of Service

Discussions with Siskiyou County Department of Public Works determined that there was only one documented traffic study for French Creek Road that the County had knowledge of (*Scott Waite, Personal Communications, 2010*). That study, conducted in 1988, was at a location on French Creek Road approximately 600 feet west of the intersection of French Creek Road and Highway 3. That study determined that there was an ADT of 245 for French Creek Road. No additional information from the 1988 study, other than ADT was available, and it is unknown at what time of year this data was taken. Review of this information determined that the SHN study conducted for this report was at the same location as the 1988 study. Based on this data, and data collected by SHN, the LOS A classification of French Creek Road was confirmed.

4.0 Conclusions and Recommendations

SHN conducted a traffic volume survey in the area of the JH Ranch from May 19 to 25, 2010 and again from July 27 to August 9, 2010. The average daily volumes and peak volumes on French Creek Road for both the Winter condition (pre-summer activities at JH Ranch) and Summer conditions are well below capacity of the roadway. The Winter condition shows ADT levels on French Creek Road at 225 vehicles, compared to a summer ADT of 439. This represents a 214 vehicle per day difference between Winter and Summer conditions. Some of the increase in vehicles per day can be attributed to through traffic using French Creek Road for summer activities and access to the wilderness area trailheads. Other increases are due to seasonal fluctuations in traffic patterns, new home construction (below JH Ranch) and road and utility maintenance activities. Some of the increase is due to guests and summer operations at JH Ranch.

Review of data from traffic counters at JH Ranch found most of the Ranch traffic on the two roads counted (JH Ranch Main and JH Ranch Bridge) came through the main entrance to JH Ranch. The data for this road showed an ADT of 220 vehicles (by contrast the JH Ranch Bridge had an ADT of 59). By inspection, it was observed that most of the vehicles accessing this point were related to JH Ranch maintenance staff, guests and deliveries (UPS, FedEx). However, this road also provides primary access to one local residence and is also used by residences not associated with JH Ranch who do not use the new bridge across French Creek at Homestead Lane. Since this road has formerly been the primary access to other private properties on Homestead Lane, it still appears to be utilized from time-to-time for access by other residents (though the frequency appears to be quite low[1]). Primary access to these residences is provided by the new bridge across French Creek, but is not a required access and other residences have deeded access across JH Ranch property.

While the increase in ADT from the Winter cannot be completely assigned to activities at JH Ranch, it is reasonable to assume that a share of the volume increase is due to guests arriving and departing and other program activities. Using the conservative estimate that 75% of the summer volume increase on French Creek Road is due to JH Ranch activities (an ADT of 163), this accounts for 42% more traffic at the summer peak season compared to Winter. While this is an increase in traffic volume, and may be noticed by observers as a change from non-summer traffic volumes, it does not exceed LOS for the roadway (roadway continues to be LOS A) and is not considered to result in significant traffic issues. Also, according to the General Plan Circulation Element the Summer Ranch traffic levels are approximately 1/3 of the service volume of the existing roadway, therefore no LOS change from existing operations occurs and no LOS change is anticipated from expansion of operations.

The intersections of French Creek Road at Highway 3, JH Ranch Main at French Creek Road and JH Ranch Bridge at French Creek Road are all operating at an LOS A during the weekday and weekend peak hours, indicating minor delays, if any. There is little difference between Winter and Summer conditions, and the increase in summer traffic on French Creek Road has not impacted these intersection operations.

Please contact me with any questions at 707-441-8855.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

Brian A. Freeman, P.E., T.E.
Senior Civil Engineer

BAF:MSC: llc
Attachment 1. Traffic Volume Data

[1] Frequency of non-ranch traffic on this road was based on SHN observations at the site and from discussions with JH Ranch staff about their observations as related to non-ranch vehicles.

Attachment 1

Traffic Volume Data

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: French Creek Road
Near Intersection with Hwy 3

Start Time	17-May-10 Mon	18-May-10 Tue	19-May-10 Wed	20-May-10 Thu	21-May-10 Fri	Weekday Average	22-May-10 Sat	23-May-10 Sun
12:00 AM	*	*	*	0	2	1	0	0
01:00	*	*	*	0	1	0	0	0
02:00	*	*	*	0	0	0	0	0
03:00	*	*	*	0	0	0	0	0
04:00	*	*	*	1	1	1	0	0
05:00	*	*	*	1	2	2	5	3
06:00	*	*	*	8	9	8	4	2
07:00	*	*	*	25	22	24	11	3
08:00	*	*	*	24	18	21	14	8
09:00	*	*	*	24	13	18	15	17
10:00	*	*	*	16	15	16	16	12
11:00	*	*	*	32	14	23	17	16
12:00 PM	*	*	*	22	14	18	20	18
01:00	*	*	*	26	36	31	20	18
02:00	*	*	*	19	52	36	23	15
03:00	*	*	*	40	37	38	20	16
04:00	*	*	44	35	24	34	12	11
05:00	*	*	24	19	21	21	20	11
06:00	*	*	13	19	28	20	16	9
07:00	*	*	8	8	15	10	11	3
08:00	*	*	4	15	6	8	14	7
09:00	*	*	5	14	8	9	9	4
10:00	*	*	0	3	1	1	4	3
11:00	*	*	0	2	4	2	4	1
Total	0	0	98	353	343		255	177
Percentage	0.0%	0.0%	28.7%	103.2%	100.3%		74.6%	51.8%
AM Peak				11:00	07:00		11:00	09:00
Vol.				32	22		17	17
PM Peak			16:00	15:00	14:00		14:00	12:00
Vol.			44	40	52		23	18

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: French Creek Road
Near Intersection with Hwy 3

Start Time	24-May-10 Mon	25-May-10 Tue	26-May-10 Wed	27-May-10 Thu	28-May-10 Fri	Weekday Average	29-May-10 Sat	30-May-10 Sun
12:00 AM	2	1	*	*	*	2	*	*
01:00	0	1	*	*	*	0	*	*
02:00	0	0	*	*	*	0	*	*
03:00	0	0	*	*	*	0	*	*
04:00	0	1	*	*	*	0	*	*
05:00	1	2	*	*	*	2	*	*
06:00	6	6	*	*	*	6	*	*
07:00	20	19	*	*	*	20	*	*
08:00	21	16	*	*	*	18	*	*
09:00	25	*	*	*	*	25	*	*
10:00	22	*	*	*	*	22	*	*
11:00	18	*	*	*	*	18	*	*
12:00 PM	24	*	*	*	*	24	*	*
01:00	28	*	*	*	*	28	*	*
02:00	26	*	*	*	*	26	*	*
03:00	24	*	*	*	*	24	*	*
04:00	32	*	*	*	*	32	*	*
05:00	26	*	*	*	*	26	*	*
06:00	6	*	*	*	*	6	*	*
07:00	11	*	*	*	*	11	*	*
08:00	3	*	*	*	*	3	*	*
09:00	8	*	*	*	*	8	*	*
10:00	0	*	*	*	*	0	*	*
11:00	0	*	*	*	*	0	*	*
Total	303	46	0	0	0		0	0
Percentage	100.7%	15.3%	0.0%	0.0%	0.0%		0.0%	0.0%
AM Peak	09:00	07:00						
Vol.	25	19						
PM Peak	16:00							
Vol.	32							
Total			46	98				

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

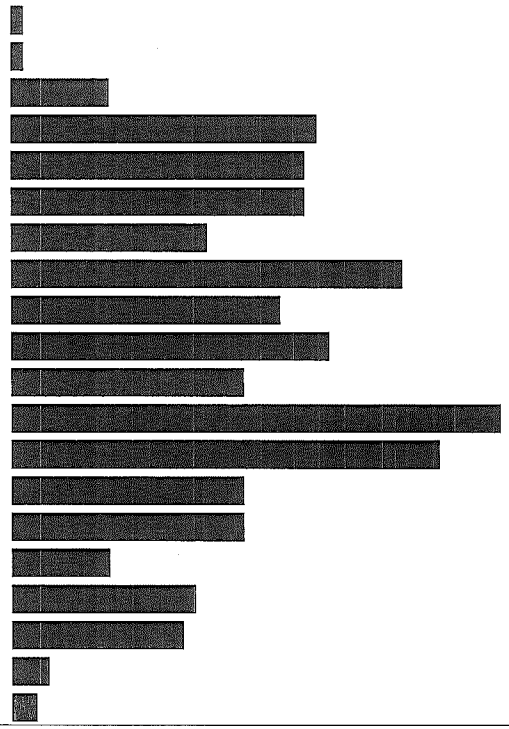
Site Code: French Creek Road
Near Intersection with Hwy 3

Start Time	19-May-10 Wed	Direction 1	Direction 2	Combined Total
12:00 AM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
12:00 PM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		25	19	44
05:00		17	7	24
06:00		7	6	13
07:00		5	3	8
08:00		1	3	4
09:00		4	1	5
10:00		0	0	0
11:00		0	0	0
Total		59	39	98
Percent		60.2%	39.8%	

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: French Creek Road
Near Intersection with Hwy 3

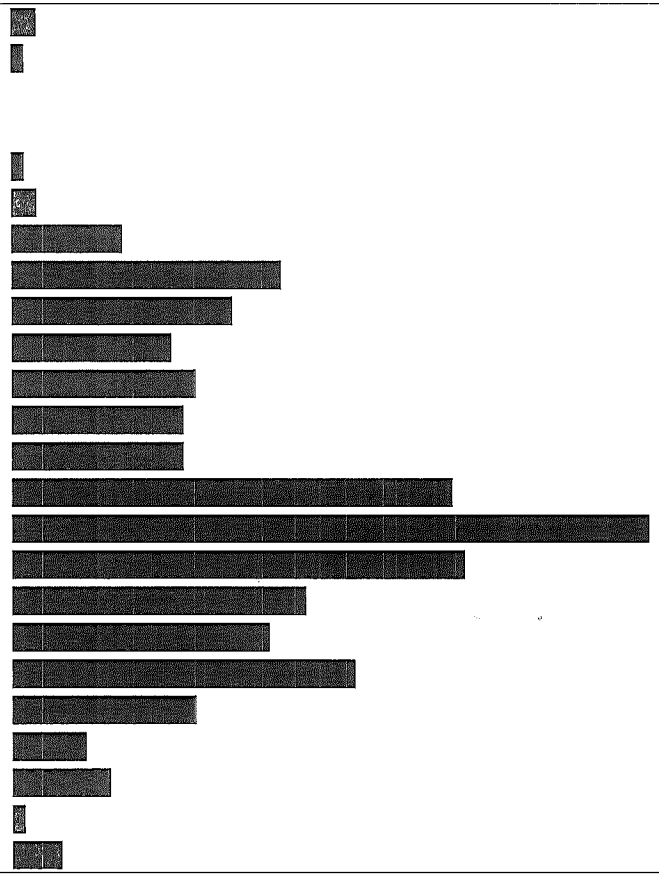
Start Time	20-May-10 Thu	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	1	1
05:00		1	0	1
06:00		6	2	8
07:00		8	17	25
08:00		8	16	24
09:00		9	15	24
10:00		8	8	16
11:00		14	18	32
12:00 PM		12	10	22
01:00		15	11	26
02:00		9	10	19
03:00		20	20	40
04:00		16	19	35
05:00		8	11	19
06:00		11	8	19
07:00		5	3	8
08:00		8	7	15
09:00		12	2	14
10:00		1	2	3
11:00		2	0	2
Total		173	180	353
Percent		49.0%	51.0%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: French Creek Road
Near Intersection with Hwy 3

Start Time	21-May-10 Fri	Direction 1	Direction 2	Combined Total
12:00 AM		2	0	2
01:00		0	1	1
02:00		0	0	0
03:00		0	0	0
04:00		0	1	1
05:00		1	1	2
06:00		8	1	9
07:00		5	17	22
08:00		7	11	18
09:00		5	8	13
10:00		8	7	15
11:00		7	7	14
12:00 PM		9	5	14
01:00		17	19	36
02:00		26	26	52
03:00		15	22	37
04:00		13	11	24
05:00		13	8	21
06:00		18	10	28
07:00		7	8	15
08:00		3	3	6
09:00		4	4	8
10:00		1	0	1
11:00		2	2	4
Total		171	172	343
Percent		49.9%	50.1%	



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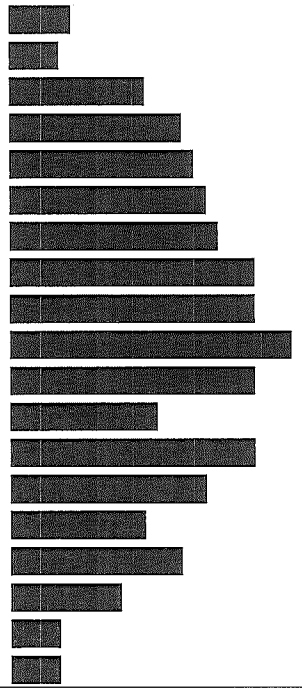
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: French Creek Road
Near Intersection with Hwy 3

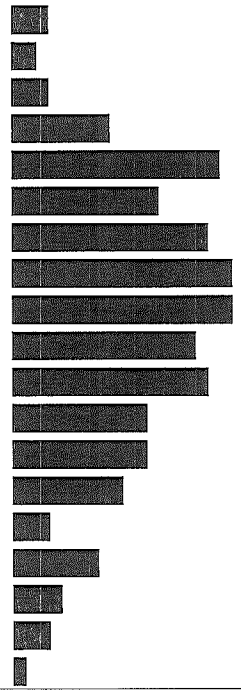
Start Time	22-May-10 Sat	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		1	4	5
06:00		2	2	4
07:00		3	8	11
08:00		7	7	14
09:00		6	9	15
10:00		7	9	16
11:00		9	8	17
12:00 PM		10	10	20
01:00		10	10	20
02:00		12	11	23
03:00		14	6	20
04:00		7	5	12
05:00		10	10	20
06:00		5	11	16
07:00		5	6	11
08:00		8	6	14
09:00		6	3	9
10:00		4	0	4
11:00		4	0	4
Total		130	125	255
Percent		51.0%	49.0%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: French Creek Road
Near Intersection with Hwy 3

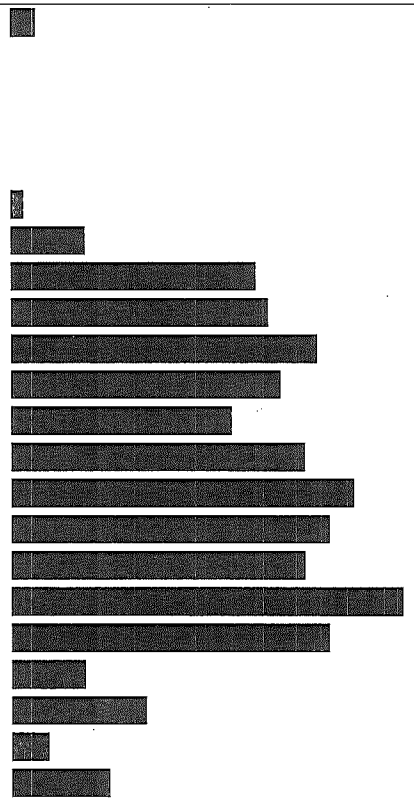
Start Time	23-May-10 Sun	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		1	2	3
06:00		2	0	2
07:00		1	2	3
08:00		1	7	8
09:00		5	12	17
10:00		6	6	12
11:00		7	9	16
12:00 PM		9	9	18
01:00		12	6	18
02:00		7	8	15
03:00		10	6	16
04:00		7	4	11
05:00		3	8	11
06:00		3	6	9
07:00		3	0	3
08:00		4	3	7
09:00		3	1	4
10:00		2	1	3
11:00		0	1	1
Total		86	91	177
Percent		48.6%	51.4%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: French Creek Road
Near Intersection with Hwy 3

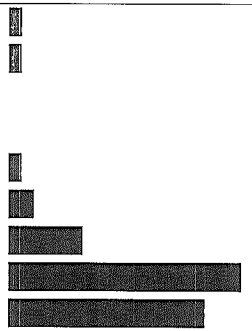
Start Time	24-May-10 Mon	Direction 1	Direction 2	Combined Total
12:00 AM		2	0	2
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	1	1
06:00		6	0	6
07:00		9	11	20
08:00		8	13	21
09:00		10	15	25
10:00		15	7	22
11:00		11	7	18
12:00 PM		10	14	24
01:00		15	13	28
02:00		12	14	26
03:00		8	16	24
04:00		17	15	32
05:00		16	10	26
06:00		4	2	6
07:00		7	4	11
08:00		0	3	3
09:00		5	3	8
10:00		0	0	0
11:00		0	0	0
Total		155	148	303
Percent		51.2%	48.8%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: French Creek Road
Near Intersection with Hwy 3

Start Time	25-May-10 Tue	Direction 1	Direction 2	Combined Total
12:00 AM		1	0	1
01:00		0	1	1
02:00		0	0	0
03:00		0	0	0
04:00		0	1	1
05:00		1	1	2
06:00		5	1	6
07:00		5	14	19
08:00		5	11	16
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
12:00 PM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
Total		17	29	46
Percent		37.0%	63.0%	
Grand Total		791	784	
Percentage		50.2%	49.8%	



ADT ADT 225 AADT 225

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: FRENCH CR RD

Start Time	26-Jul-10 Mon	27-Jul-10 Tue	28-Jul-10 Wed	29-Jul-10 Thu	30-Jul-10 Fri	Weekday Average	31-Jul-10 Sat	01-Aug-10 Sun
12:00 AM	*	*	2	0	0	1	0	2
01:00	*	*	0	0	0	0	0	0
02:00	*	*	0	0	0	0	0	0
03:00	*	*	0	0	0	0	0	2
04:00	*	*	9	3	2	5	0	8
05:00	*	*	10	14	2	9	4	46
06:00	*	*	15	14	12	14	6	20
07:00	*	*	55	50	34	46	8	42
08:00	*	*	37	41	22	33	12	50
09:00	*	29	42	44	28	36	72	28
10:00	*	47	60	104	52	66	26	24
11:00	*	41	54	55	22	43	20	18
12:00 PM	*	41	42	51	20	38	56	16
01:00	*	41	40	60	28	42	32	16
02:00	*	56	58	32	20	42	16	10
03:00	*	74	76	30	18	50	14	10
04:00	*	70	60	20	32	46	30	28
05:00	*	38	32	24	20	28	26	14
06:00	*	34	42	18	6	25	20	18
07:00	*	26	15	10	10	15	22	16
08:00	*	36	28	18	18	25	12	16
09:00	*	42	52	22	14	32	6	18
10:00	*	1	3	2	10	4	20	2
11:00	*	3	3	0	0	2	10	2
Total	0	579	735	612	370		412	406
Percentage	0.0%	96.2%	122.1%	101.7%	61.5%		68.4%	67.4%
AM Peak		10:00	10:00	10:00	10:00		09:00	08:00
Vol.		47	60	104	52		72	50
PM Peak		15:00	15:00	13:00	16:00		12:00	16:00
Vol.		74	76	60	32		56	28

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: FRENCH CR RD

Start Time	02-Aug-10 Mon	03-Aug-10 Tue	04-Aug-10 Wed	05-Aug-10 Thu	06-Aug-10 Fri	Weekday Average	07-Aug-10 Sat	08-Aug-10 Sun
12:00 AM	2	0	*	*	*	1	*	*
01:00	0	2	*	*	*	1	*	*
02:00	0	0	*	*	*	0	*	*
03:00	0	0	*	*	*	0	*	*
04:00	4	6	*	*	*	5	*	*
05:00	10	8	*	*	*	9	*	*
06:00	6	12	*	*	*	9	*	*
07:00	16	30	*	*	*	23	*	*
08:00	14	2	*	*	*	8	*	*
09:00	24	*	*	*	*	24	*	*
10:00	22	*	*	*	*	22	*	*
11:00	30	*	*	*	*	30	*	*
12:00 PM	26	*	*	*	*	26	*	*
01:00	8	*	*	*	*	8	*	*
02:00	30	*	*	*	*	30	*	*
03:00	28	*	*	*	*	28	*	*
04:00	30	*	*	*	*	30	*	*
05:00	20	*	*	*	*	20	*	*
06:00	10	*	*	*	*	10	*	*
07:00	16	*	*	*	*	16	*	*
08:00	8	*	*	*	*	8	*	*
09:00	16	*	*	*	*	16	*	*
10:00	10	*	*	*	*	10	*	*
11:00	8	*	*	*	*	8	*	*
Total	338	60	0	0	0		0	0
Percentage	98.8%	17.5%	0.0%	0.0%	0.0%		0.0%	0.0%
AM Peak	11:00	07:00						
Vol.	30	30						
PM Peak	14:00							
Vol.	30							
Total			639	735				

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
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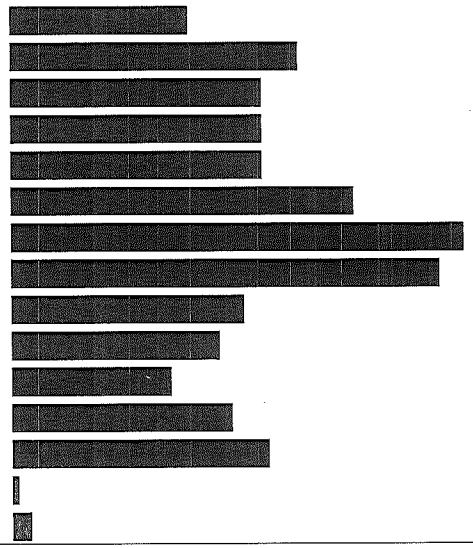
Site Code: FRENCH CR RD

Start Time	27-Jul-10 Tue	Lane 1	Lane 2	Combined Total
12:00 AM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		12	17	29
10:00		12	35	47
11:00		19	22	41
12:00 PM		22	19	41
01:00		22	19	41
02:00		29	27	56
03:00		44	30	74
04:00		40	30	70
05:00		21	17	38
06:00		18	16	34
07:00		10	16	26
08:00		19	17	36
09:00		20	22	42
10:00		1	0	1
11:00		2	1	3
Total		291	288	579
Percent		50.3%	49.7%	



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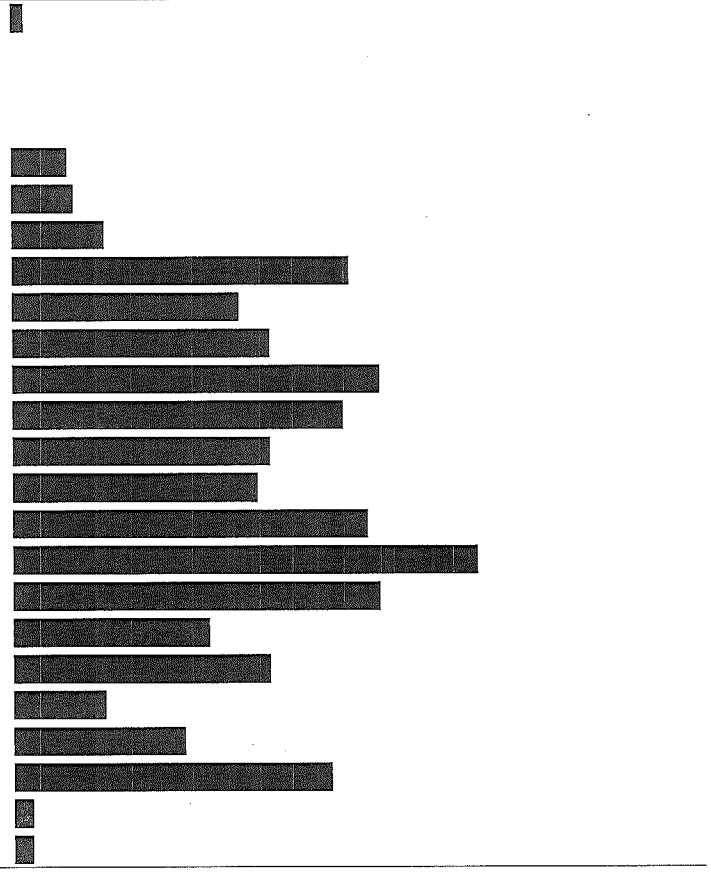
(530) 221-5424

Site Code: FRENCH CR RD

Start Time	28-Jul-10 Wed	Lane 1	Lane 2	Combined Total
12:00 AM		1	1	2
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		2	7	9
05:00		3	7	10
06:00		8	7	15
07:00		28	27	55
08:00		16	21	37
09:00		19	23	42
10:00		29	31	60
11:00		24	30	54
12:00 PM		27	15	42
01:00		23	17	40
02:00		31	27	58
03:00		37	39	76
04:00		29	31	60
05:00		18	14	32
06:00		23	19	42
07:00		8	7	15
08:00		14	14	28
09:00		19	33	52
10:00		3	0	3
11:00		2	1	3
Total		364	371	735
Percent		49.5%	50.5%	



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350 Hartnell Avenue, Suite B
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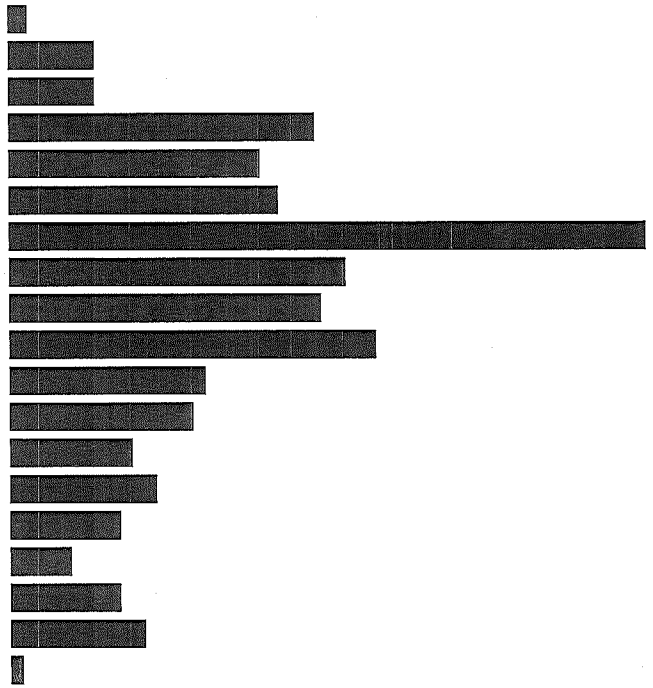
(530) 221-5424

Site Code: FRENCH CR RD

Start Time	29-Jul-10 Thu	Lane 1	Lane 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		1	2	3
05:00		5	9	14
06:00		5	9	14
07:00		28	22	50
08:00		19	22	41
09:00		19	25	44
10:00		40	64	104
11:00		30	25	55
12:00 PM		30	21	51
01:00		26	34	60
02:00		16	16	32
03:00		15	15	30
04:00		10	10	20
05:00		12	12	24
06:00		9	9	18
07:00		5	5	10
08:00		9	9	18
09:00		11	11	22
10:00		1	1	2
11:00		0	0	0
Total		291	321	612
Percent		47.5%	52.5%	



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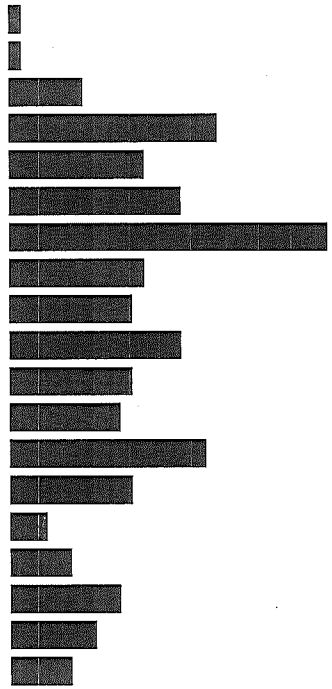
Site Code: FRENCH CR RD

Start Time	30-Jul-10 Fri	Lane 1	Lane 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		1	1	2
05:00		1	1	2
06:00		6	6	12
07:00		17	17	34
08:00		11	11	22
09:00		14	14	28
10:00		26	26	52
11:00		11	11	22
12:00 PM		10	10	20
01:00		14	14	28
02:00		10	10	20
03:00		9	9	18
04:00		16	16	32
05:00		10	10	20
06:00		3	3	6
07:00		5	5	10
08:00		9	9	18
09:00		7	7	14
10:00		5	5	10
11:00		0	0	0
Total		185	185	370
Percent		50.0%	50.0%	



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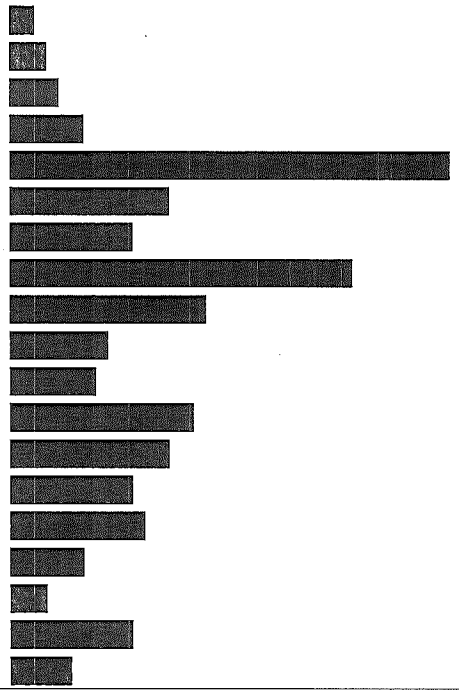
Site Code: FRENCH CR RD

Start Time	31-Jul-10 Sat	Lane 1	Lane 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		2	2	4
06:00		3	3	6
07:00		4	4	8
08:00		6	6	12
09:00		36	36	72
10:00		13	13	26
11:00		10	10	20
12:00 PM		28	28	56
01:00		16	16	32
02:00		8	8	16
03:00		7	7	14
04:00		15	15	30
05:00		13	13	26
06:00		10	10	20
07:00		11	11	22
08:00		6	6	12
09:00		3	3	6
10:00		10	10	20
11:00		5	5	10
Total		206	206	412
Percent		50.0%	50.0%	



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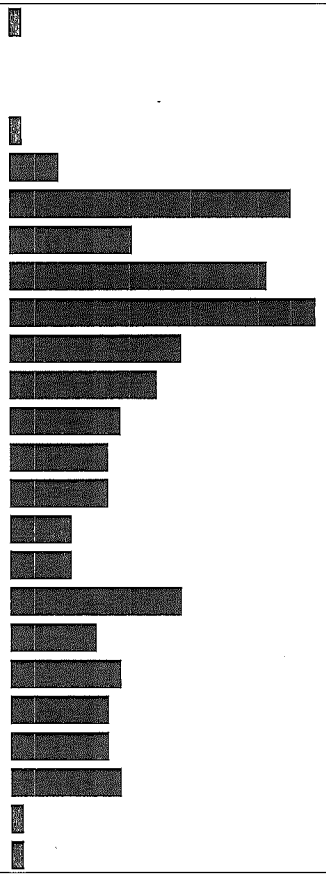
(530) 221-5424

Site Code: FRENCH CR RD

Start Time	01-Aug-10 Sun	Lane 1	Lane 2	Combined Total
12:00 AM		1	1	2
01:00		0	0	0
02:00		0	0	0
03:00		1	1	2
04:00		4	4	8
05:00		23	23	46
06:00		10	10	20
07:00		21	21	42
08:00		25	25	50
09:00		14	14	28
10:00		12	12	24
11:00		9	9	18
12:00 PM		8	8	16
01:00		8	8	16
02:00		5	5	10
03:00		5	5	10
04:00		14	14	28
05:00		7	7	14
06:00		9	9	18
07:00		8	8	16
08:00		8	8	16
09:00		9	9	18
10:00		1	1	2
11:00		1	1	2
Total		203	203	406
Percent		50.0%	50.0%	



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350 Hartnell Avenue, Suite B
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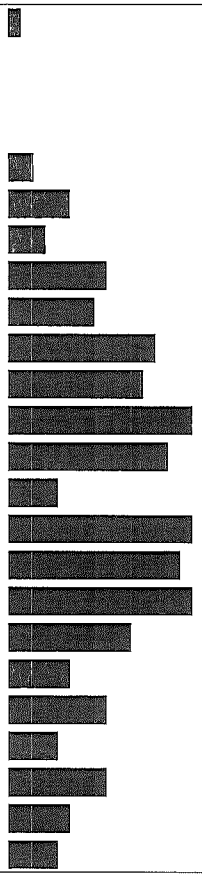
(530) 221-5424

Site Code: FRENCH CR RD

Start Time	02-Aug-10 Mon	Lane 1	Lane 2	Combined Total
12:00 AM		1	1	2
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		2	2	4
05:00		5	5	10
06:00		3	3	6
07:00		8	8	16
08:00		7	7	14
09:00		12	12	24
10:00		11	11	22
11:00		15	15	30
12:00 PM		13	13	26
01:00		4	4	8
02:00		15	15	30
03:00		14	14	28
04:00		15	15	30
05:00		10	10	20
06:00		5	5	10
07:00		8	8	16
08:00		4	4	8
09:00		8	8	16
10:00		5	5	10
11:00		4	4	8
Total		169	169	338
Percent		50.0%	50.0%	



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Site Code: FRENCH CR RD

Start Time	03-Aug-10 Tue	Lane 1	Lane 2	Combined Total
12:00 AM		0	0	0
01:00		1	1	2
02:00		0	0	0
03:00		0	0	0
04:00		3	3	6
05:00		4	4	8
06:00		6	6	12
07:00		15	15	30
08:00		1	1	2
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
12:00 PM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
Total		30	30	60
Percent		50.0%	50.0%	
Grand Total		1739	1773	
Percentage		49.5%	50.5%	

ADT ADT 339 AADT 339

SHN Consulting Engineers & Geologists, Inc.
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Site Code: JH MAIN

Start Time	26-Jul-10 Mon	27-Jul-10 Tue	28-Jul-10 Wed	29-Jul-10 Thu	30-Jul-10 Fri	Weekday Average	31-Jul-10 Sat	01-Aug-10 Sun
12:00 AM	*	*	3	2	2	2	0	5
01:00	*	*	0	0	0	0	0	0
02:00	*	*	0	1	0	0	0	0
03:00	*	*	0	0	0	0	0	2
04:00	*	*	0	0	0	0	0	5
05:00	*	*	3	1	2	2	1	22
06:00	*	*	4	5	3	4	0	10
07:00	*	*	13	14	12	13	8	27
08:00	*	*	6	5	8	6	4	24
09:00	*	*	15	9	9	11	77	8
10:00	*	26	21	40	32	30	19	11
11:00	*	7	9	15	3	8	17	4
12:00 PM	*	16	15	11	12	14	43	9
01:00	*	12	10	18	22	16	41	10
02:00	*	27	21	18	19	21	28	8
03:00	*	20	28	36	39	31	9	11
04:00	*	29	15	15	20	20	14	31
05:00	*	9	9	11	14	11	11	29
06:00	*	8	5	9	10	8	7	26
07:00	*	2	4	7	10	6	15	26
08:00	*	20	11	9	10	12	9	27
09:00	*	9	9	12	5	9	9	27
10:00	*	7	7	8	8	8	11	20
11:00	*	2	2	0	0	1	9	2
Total	0	194	210	246	240		332	344
Percentage	0.0%	83.3%	90.1%	105.6%	103.0%		142.5%	147.6%
AM Peak		10:00	10:00	10:00	10:00		09:00	07:00
Vol.		26	21	40	32		77	27
PM Peak		16:00	15:00	15:00	15:00		12:00	16:00
Vol.		29	28	36	39		43	31

SHN Consulting Engineers & Geologists, Inc.
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Site Code: JH MAIN

Start Time	02-Aug-10 Mon	03-Aug-10 Tue	04-Aug-10 Wed	05-Aug-10 Thu	06-Aug-10 Fri	Weekday Average	07-Aug-10 Sat	08-Aug-10 Sun
12:00 AM	3	0	0	0	0	1	2	8
01:00	1	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	6
05:00	3	4	1	1	1	2	2	14
06:00	1	0	0	5	1	1	1	7
07:00	11	17	15	10	16	14	5	14
08:00	19	10	7	6	5	9	14	24
09:00	13	15	8	9	11	11	75	22
10:00	11	29	20	35	26	24	11	12
11:00	4	8	11	6	10	8	12	4
12:00 PM	15	10	13	3	11	10	36	9
01:00	13	18	8	14	12	13	45	12
02:00	16	13	11	29	15	17	15	7
03:00	16	29	19	17	20	20	13	4
04:00	22	13	14	12	18	16	9	5
05:00	19	17	6	6	8	11	14	10
06:00	8	9	7	6	8	8	9	4
07:00	11	4	2	2	10	6	6	5
08:00	9	10	4	4	8	7	4	11
09:00	19	13	18	7	8	13	4	5
10:00	8	8	3	5	8	6	14	4
11:00	1	0	0	2	4	1	8	5
Total	223	227	167	179	200		299	196
Percentage	112.6%	114.6%	84.3%	90.4%	101.0%		151.0%	99.0%
AM Peak	08:00	10:00	10:00	10:00	10:00		09:00	08:00
Vol.	19	29	20	35	26		75	24
PM Peak	16:00	15:00	15:00	14:00	15:00		13:00	13:00
Vol.	22	29	19	29	20		45	12

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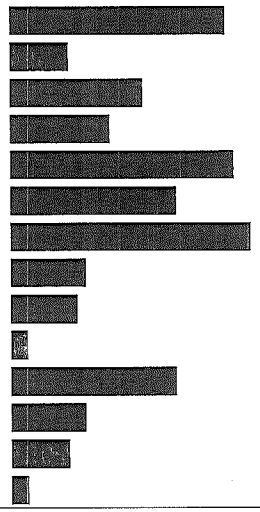
Site Code: JH MAIN

Start Time	09-Aug-10 Mon	10-Aug-10 Tue	11-Aug-10 Wed	12-Aug-10 Thu	13-Aug-10 Fri	Weekday Average	14-Aug-10 Sat	15-Aug-10 Sun
12:00 AM	3	*	*	*	*	3	*	*
01:00	0	*	*	*	*	0	*	*
02:00	0	*	*	*	*	0	*	*
03:00	1	*	*	*	*	1	*	*
04:00	0	*	*	*	*	0	*	*
05:00	1	*	*	*	*	1	*	*
06:00	1	*	*	*	*	1	*	*
07:00	8	*	*	*	*	8	*	*
08:00	2	*	*	*	*	2	*	*
09:00	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*
12:00 PM	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*
Total	16	0	0	0	0		0	0
Percentage	100.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%
AM Peak	07:00							
Vol.	8							
PM Peak								
Vol.								
Total			421	377				

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH MAIN

Start Time	27-Jul-10 Tue	Direction 1	Direction 2	Combined Total
12:00 AM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		6	20	26
11:00		3	4	7
12:00 PM		13	3	16
01:00		6	6	12
02:00		17	10	27
03:00		12	8	20
04:00		16	13	29
05:00		8	1	9
06:00		3	5	8
07:00		1	1	2
08:00		3	17	20
09:00		4	5	9
10:00		1	6	7
11:00		1	1	2
Total		94	100	194
Percent		48.5%	51.5%	



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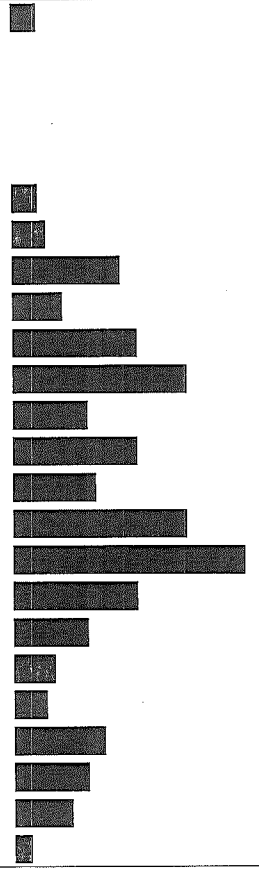
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH MAIN

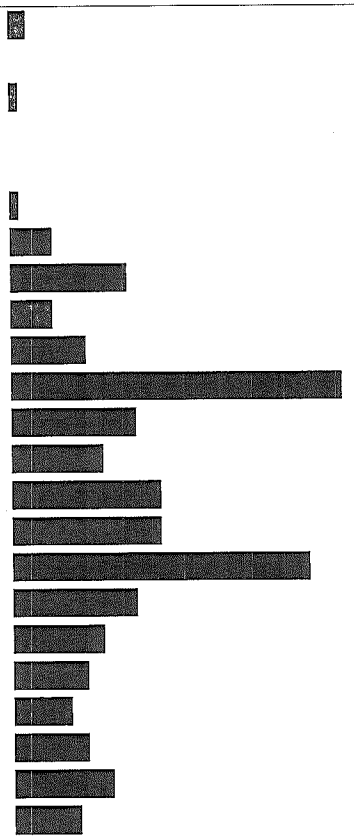
Start Time	28-Jul-10 Wed	Direction 1	Direction 2	Combined Total
12:00 AM		2	1	3
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		2	1	3
06:00		2	2	4
07:00		6	7	13
08:00		4	2	6
09:00		8	7	15
10:00		5	16	21
11:00		4	5	9
12:00 PM		10	5	15
01:00		4	6	10
02:00		14	7	21
03:00		14	14	28
04:00		5	10	15
05:00		6	3	9
06:00		2	3	5
07:00		2	2	4
08:00		5	6	11
09:00		0	9	9
10:00		1	6	7
11:00		1	1	2
Total		97	113	210
Percent		46.2%	53.8%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH MAIN

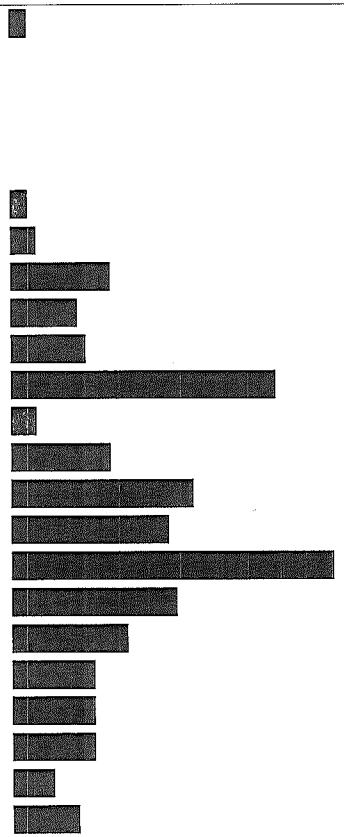
Start Time	29-Jul-10 Thu	Direction 1	Direction 2	Combined Total
12:00 AM		2	0	2
01:00		0	0	0
02:00		1	0	1
03:00		0	0	0
04:00		0	0	0
05:00		0	1	1
06:00		1	4	5
07:00		10	4	14
08:00		3	2	5
09:00		4	5	9
10:00		13	27	40
11:00		9	6	15
12:00 PM		8	3	11
01:00		7	11	18
02:00		7	11	18
03:00		24	12	36
04:00		10	5	15
05:00		6	5	11
06:00		7	2	9
07:00		3	4	7
08:00		5	4	9
09:00		2	10	12
10:00		2	6	8
11:00		0	0	0
Total		124	122	246
Percent		50.4%	49.6%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH MAIN

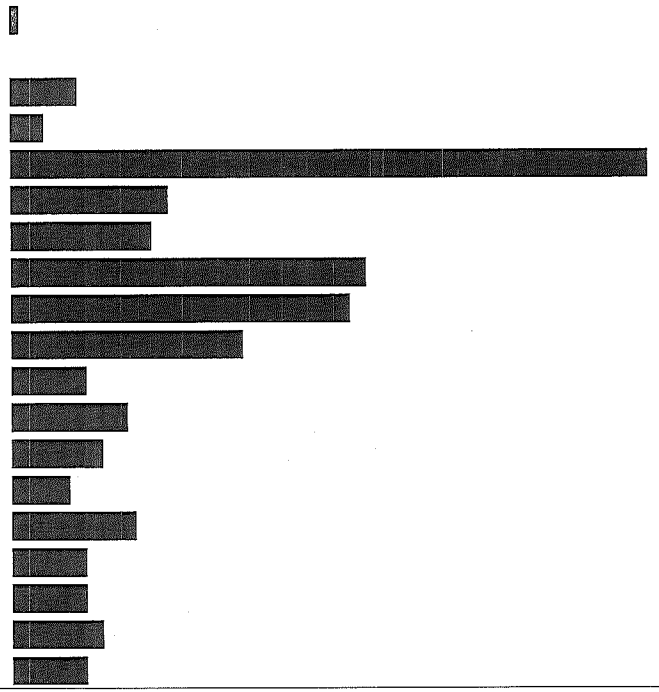
Start Time	30-Jul-10 Fri	Direction 1	Direction 2	Combined Total
12:00 AM		1	1	2
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		1	1	2
06:00		1	2	3
07:00		6	6	12
08:00		7	1	8
09:00		5	4	9
10:00		8	24	32
11:00		2	1	3
12:00 PM		10	2	12
01:00		11	11	22
02:00		8	11	19
03:00		31	8	39
04:00		12	8	20
05:00		7	7	14
06:00		3	7	10
07:00		5	5	10
08:00		4	6	10
09:00		0	5	5
10:00		2	6	8
11:00		0	0	0
Total		124	116	240
Percent		51.7%	48.3%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH MAIN

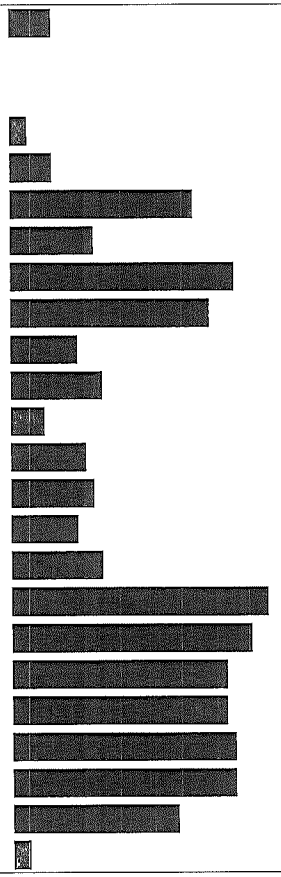
Start Time	31-Jul-10 Sat	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	1	1
06:00		0	0	0
07:00		5	3	8
08:00		3	1	4
09:00		4	73	77
10:00		8	11	19
11:00		11	6	17
12:00 PM		30	13	43
01:00		32	9	41
02:00		21	7	28
03:00		4	5	9
04:00		7	7	14
05:00		8	3	11
06:00		5	2	7
07:00		7	8	15
08:00		4	5	9
09:00		3	6	9
10:00		2	9	11
11:00		2	7	9
Total		156	176	332
Percent		47.0%	53.0%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH MAIN

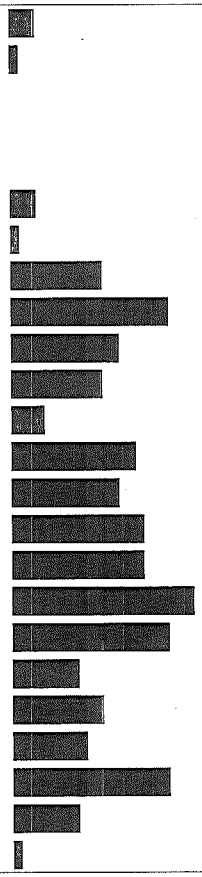
Start Time	01-Aug-10 Sun	Direction 1	Direction 2	Combined Total
12:00 AM		2	3	5
01:00		0	0	0
02:00		0	0	0
03:00		0	2	2
04:00		2	3	5
05:00		0	22	22
06:00		0	10	10
07:00		5	22	27
08:00		4	20	24
09:00		1	7	8
10:00		5	6	11
11:00		1	3	4
12:00 PM		5	4	9
01:00		4	6	10
02:00		6	2	8
03:00		6	5	11
04:00		20	11	31
05:00		21	8	29
06:00		19	7	26
07:00		22	4	26
08:00		23	4	27
09:00		18	9	27
10:00		7	13	20
11:00		1	1	2
Total		172	172	344
Percent		50.0%	50.0%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH MAIN

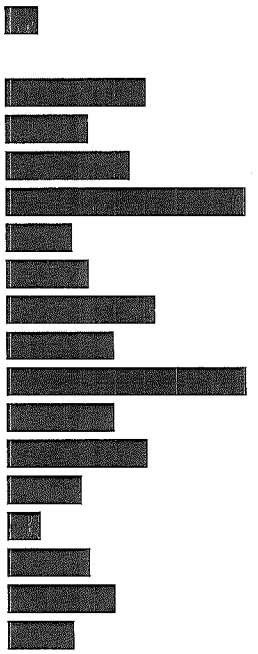
Start Time	02-Aug-10 Mon	Direction 1	Direction 2	Combined Total
12:00 AM		2	1	3
01:00		0	1	1
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		2	1	3
06:00		0	1	1
07:00		8	3	11
08:00		16	3	19
09:00		8	5	13
10:00		4	7	11
11:00		1	3	4
12:00 PM		10	5	15
01:00		5	8	13
02:00		5	11	16
03:00		6	10	16
04:00		11	11	22
05:00		9	10	19
06:00		4	4	8
07:00		7	4	11
08:00		5	4	9
09:00		3	16	19
10:00		1	7	8
11:00		1	0	1
Total		108	115	223
Percent		48.4%	51.6%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH MAIN

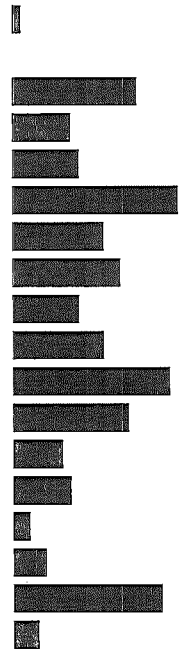
Start Time	03-Aug-10 Tue	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		3	1	4
06:00		0	0	0
07:00		12	5	17
08:00		7	3	10
09:00		6	9	15
10:00		6	23	29
11:00		5	3	8
12:00 PM		6	4	10
01:00		8	10	18
02:00		8	5	13
03:00		20	9	29
04:00		6	7	13
05:00		10	7	17
06:00		5	4	9
07:00		2	2	4
08:00		5	5	10
09:00		4	9	13
10:00		3	5	8
11:00		0	0	0
Total		116	111	227
Percent		51.1%	48.9%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH MAIN

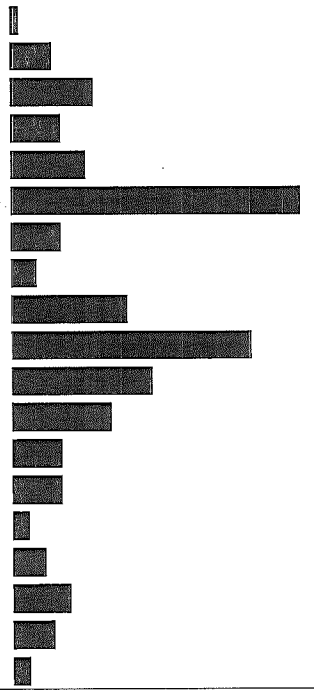
Start Time	04-Aug-10 Wed	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	1	1
06:00		0	0	0
07:00		10	5	15
08:00		6	1	7
09:00		3	5	8
10:00		7	13	20
11:00		5	6	11
12:00 PM		11	2	13
01:00		2	6	8
02:00		6	5	11
03:00		11	8	19
04:00		4	10	14
05:00		6	0	6
06:00		2	5	7
07:00		2	0	2
08:00		1	3	4
09:00		0	18	18
10:00		1	2	3
11:00		0	0	0
Total		77	90	167
Percent		46.1%	53.9%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH MAIN

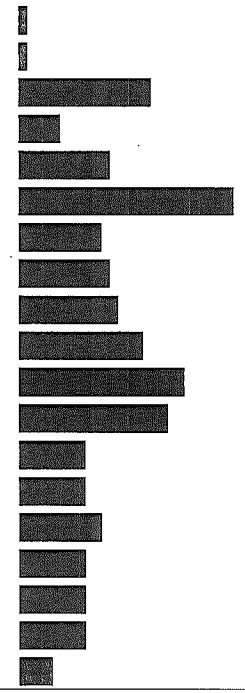
Start Time	05-Aug-10 Thu	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	1	1
06:00		2	3	5
07:00		6	4	10
08:00		5	1	6
09:00		3	6	9
10:00		4	31	35
11:00		4	2	6
12:00 PM		3	0	3
01:00		5	9	14
02:00		20	9	29
03:00		12	5	17
04:00		2	10	12
05:00		3	3	6
06:00		4	2	6
07:00		2	0	2
08:00		2	2	4
09:00		2	5	7
10:00		2	3	5
11:00		1	1	2
Total		82	97	179
Percent		45.8%	54.2%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH MAIN

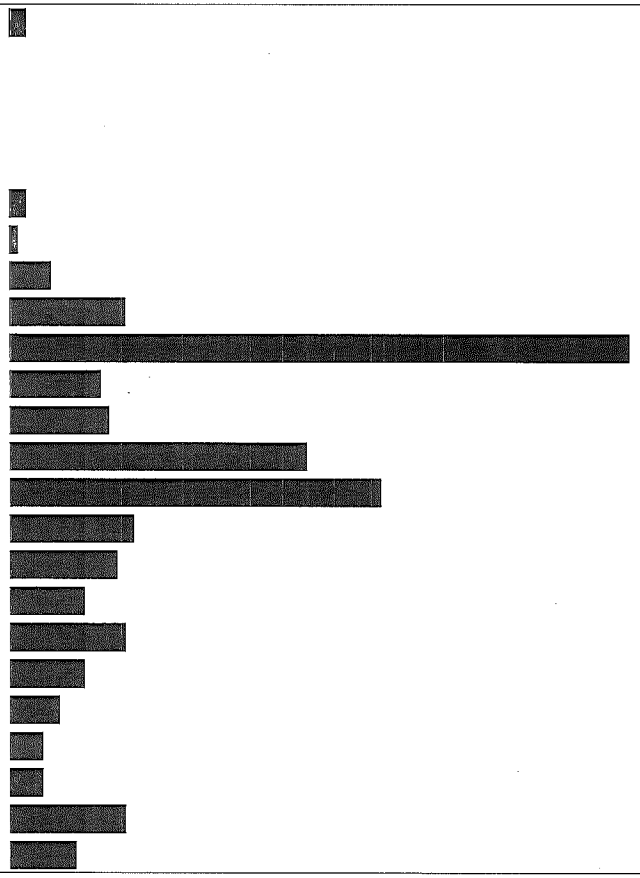
Start Time	06-Aug-10 Fri	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	1	1
06:00		1	0	1
07:00		11	5	16
08:00		2	3	5
09:00		4	7	11
10:00		9	17	26
11:00		5	5	10
12:00 PM		7	4	11
01:00		5	7	12
02:00		7	8	15
03:00		12	8	20
04:00		14	4	18
05:00		2	6	8
06:00		5	3	8
07:00		5	5	10
08:00		4	4	8
09:00		4	4	8
10:00		2	6	8
11:00		1	3	4
Total		100	100	200
Percent		50.0%	50.0%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH MAIN

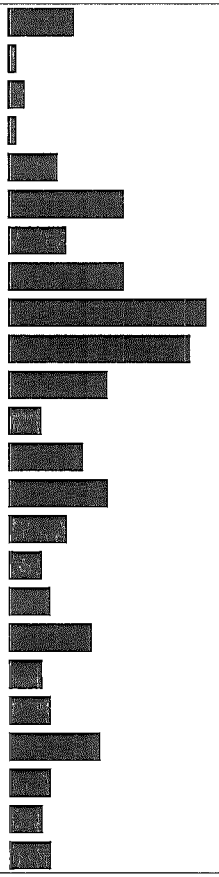
Start Time	07-Aug-10 Sat	Direction 1	Direction 2	Combined Total
12:00 AM		1	1	2
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		1	1	2
06:00		1	0	1
07:00		4	1	5
08:00		6	8	14
09:00		7	68	75
10:00		5	6	11
11:00		5	7	12
12:00 PM		30	6	36
01:00		37	8	45
02:00		8	7	15
03:00		9	4	13
04:00		4	5	9
05:00		8	6	14
06:00		7	2	9
07:00		3	3	6
08:00		1	3	4
09:00		0	4	4
10:00		2	12	14
11:00		2	6	8
Total		141	158	299
Percent		47.2%	52.8%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH MAIN

Start Time	08-Aug-10 Sun	Direction 1	Direction 2	Combined Total
12:00 AM		3	5	8
01:00		0	1	1
02:00		0	2	2
03:00		0	1	1
04:00		0	6	6
05:00		0	14	14
06:00		0	7	7
07:00		2	12	14
08:00		5	19	24
09:00		4	18	22
10:00		6	6	12
11:00		2	2	4
12:00 PM		3	6	9
01:00		4	8	12
02:00		4	3	7
03:00		2	2	4
04:00		2	3	5
05:00		5	5	10
06:00		2	2	4
07:00		1	4	5
08:00		7	4	11
09:00		3	2	5
10:00		2	2	4
11:00		4	1	5
Total		61	135	196
Percent		31.1%	68.9%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH MAIN

Start Time	09-Aug-10 Mon	Direction 1	Direction 2	Combined Total
12:00 AM		3	0	3
01:00		0	0	0
02:00		0	0	0
03:00		0	1	1
04:00		0	0	0
05:00		0	1	1
06:00		1	0	1
07:00		5	3	8
08:00		2	0	2
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
12:00 PM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
Total		11	5	16
Percent		68.8%	31.3%	
Grand Total		1463	1610	
Percentage		47.6%	52.4%	

ADT ADT 220 AADT 220

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
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Site Code: JH BRIDGE

Start Time	26-Jul-10 Mon	27-Jul-10 Tue	28-Jul-10 Wed	29-Jul-10 Thu	30-Jul-10 Fri	Weekday Average	31-Jul-10 Sat	01-Aug-10 Sun
12:00 AM	*	*	1	1	0	1	0	0
01:00	*	*	1	0	0	0	1	0
02:00	*	*	0	0	0	0	0	0
03:00	*	*	0	0	0	0	0	0
04:00	*	*	0	0	0	0	0	0
05:00	*	*	0	0	0	0	1	0
06:00	*	*	1	1	0	1	1	0
07:00	*	*	4	3	4	4	2	1
08:00	*	*	5	4	4	4	2	0
09:00	*	*	3	3	6	4	4	1
10:00	*	58	4	9	5	19	5	2
11:00	*	3	4	4	3	4	3	0
12:00 PM	*	6	6	7	7	6	5	3
01:00	*	5	5	5	9	6	4	2
02:00	*	9	4	7	4	6	4	5
03:00	*	2	5	3	6	4	3	8
04:00	*	4	0	2	2	2	2	9
05:00	*	8	4	1	7	5	2	2
06:00	*	2	3	4	3	3	2	1
07:00	*	0	1	4	2	2	5	4
08:00	*	2	2	0	1	1	3	3
09:00	*	3	1	4	1	2	1	3
10:00	*	1	3	2	2	2	1	1
11:00	*	1	2	0	0	1	2	3
Total	0	104	59	64	66		53	48
Percentage	0.0%	135.1%	76.6%	83.1%	85.7%		68.8%	62.3%
AM Peak		10:00	08:00	10:00	09:00		10:00	10:00
Vol.		58	5	9	6		5	2
PM Peak		14:00	12:00	12:00	13:00		12:00	16:00
Vol.		9	6	7	9		5	9

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH BRIDGE

Start Time	02-Aug-10 Mon	03-Aug-10 Tue	04-Aug-10 Wed	05-Aug-10 Thu	06-Aug-10 Fri	Weekday Average	07-Aug-10 Sat	08-Aug-10 Sun
12:00 AM	1	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0
04:00	0	0	1	0	0	0	0	2
05:00	0	0	0	0	0	0	0	0
06:00	0	2	1	0	1	1	0	0
07:00	5	3	3	2	2	3	2	2
08:00	6	5	4	3	4	4	4	8
09:00	1	13	4	2	3	5	3	7
10:00	7	3	3	2	3	4	2	2
11:00	2	6	3	2	5	4	4	7
12:00 PM	7	4	5	4	0	4	7	2
01:00	3	11	5	5	5	6	5	5
02:00	4	8	8	4	5	6	8	8
03:00	6	2	3	7	5	5	9	5
04:00	2	1	2	2	4	2	7	3
05:00	4	3	4	4	6	4	3	6
06:00	10	3	2	2	1	4	1	0
07:00	4	4	1	0	0	2	4	7
08:00	1	3	2	1	3	2	1	1
09:00	0	2	2	3	0	1	2	5
10:00	2	0	1	2	1	1	0	1
11:00	0	0	0	1	2	1	0	2
Total	65	73	54	46	50		62	73
Percentage	110.2%	123.7%	91.5%	78.0%	84.7%		105.1%	123.7%
AM Peak	10:00	09:00	08:00	08:00	11:00		08:00	08:00
Vol.	7	13	4	3	5		4	8
PM Peak	18:00	13:00	14:00	15:00	17:00		15:00	14:00
Vol.	10	11	8	7	6		9	8

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

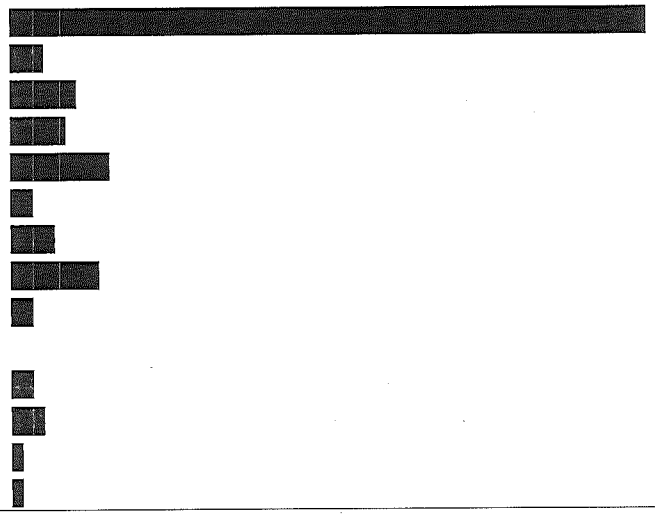
Site Code: JH BRIDGE

Start Time	09-Aug-10 Mon	10-Aug-10 Tue	11-Aug-10 Wed	12-Aug-10 Thu	13-Aug-10 Fri	Weekday Average	14-Aug-10 Sat	15-Aug-10 Sun
12:00 AM	0	*	*	*	*	0	*	*
01:00	0	*	*	*	*	0	*	*
02:00	0	*	*	*	*	0	*	*
03:00	0	*	*	*	*	0	*	*
04:00	0	*	*	*	*	0	*	*
05:00	0	*	*	*	*	0	*	*
06:00	2	*	*	*	*	2	*	*
07:00	3	*	*	*	*	3	*	*
08:00	3	*	*	*	*	3	*	*
09:00	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*
12:00 PM	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*
Total	8	0	0	0	0		0	0
Percentage	100.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%
AM Peak	07:00							
Vol.	3							
PM Peak								
Vol.								
Total			177	113				

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH BRIDGE

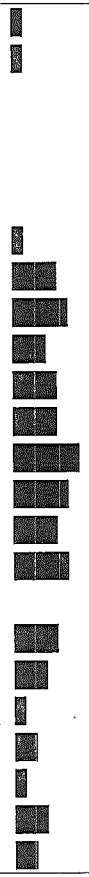
Start Time	27-Jul-10 Tue	Direction 1	Direction 2	Combined Total
12:00 AM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		50	8	58
11:00		0	3	3
12:00 PM		6	0	6
01:00		2	3	5
02:00		2	7	9
03:00		2	0	2
04:00		2	2	4
05:00		7	1	8
06:00		1	1	2
07:00		0	0	0
08:00		2	0	2
09:00		1	2	3
10:00		0	1	1
11:00		1	0	1
Total		76	28	104
Percent		73.1%	26.9%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH BRIDGE

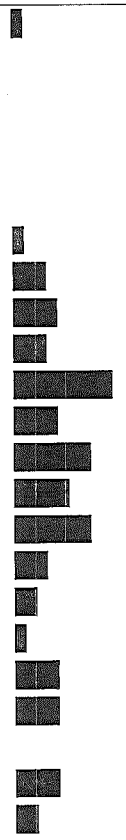
Start Time	28-Jul-10 Wed	Direction 1	Direction 2	Combined Total
12:00 AM		0	1	1
01:00		1	0	1
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	0	0
06:00		0	1	1
07:00		1	3	4
08:00		1	4	5
09:00		2	1	3
10:00		2	2	4
11:00		2	2	4
12:00 PM		2	4	6
01:00		3	2	5
02:00		2	2	4
03:00		2	3	5
04:00		0	0	0
05:00		3	1	4
06:00		2	1	3
07:00		1	0	1
08:00		2	0	2
09:00		1	0	1
10:00		1	2	3
11:00		1	1	2
Total		29	30	59
Percent		49.2%	50.8%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH BRIDGE

Start Time	29-Jul-10 Thu	Direction 1	Direction 2	Combined Total
12:00 AM		0	1	1
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	0	0
06:00		1	0	1
07:00		1	2	3
08:00		2	2	4
09:00		0	3	3
10:00		3	6	9
11:00		1	3	4
12:00 PM		2	5	7
01:00		2	3	5
02:00		6	1	7
03:00		3	0	3
04:00		0	2	2
05:00		1	0	1
06:00		3	1	4
07:00		2	2	4
08:00		0	0	0
09:00		3	1	4
10:00		0	2	2
11:00		0	0	0
Total		30	34	64
Percent		46.9%	53.1%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH BRIDGE

Start Time	30-Jul-10 Fri	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	0	0
06:00		0	0	0
07:00		0	4	4
08:00		3	1	4
09:00		1	5	6
10:00		2	3	5
11:00		1	2	3
12:00 PM		3	4	7
01:00		7	2	9
02:00		3	1	4
03:00		4	2	6
04:00		0	2	2
05:00		6	1	7
06:00		3	0	3
07:00		0	2	2
08:00		1	0	1
09:00		1	0	1
10:00		1	1	2
11:00		0	0	0
Total		36	30	66
Percent		54.5%	45.5%	

SHN Consulting Engineers & Geologists, Inc.
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(530) 221-5424

Site Code: JH BRIDGE

Start Time	31-Jul-10 Sat	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		1	0	1
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	1	1
06:00		0	1	1
07:00		0	2	2
08:00		1	1	2
09:00		1	3	4
10:00		3	2	5
11:00		3	0	3
12:00 PM		5	0	5
01:00		2	2	4
02:00		3	1	4
03:00		2	1	3
04:00		0	2	2
05:00		0	2	2
06:00		1	1	2
07:00		3	2	5
08:00		2	1	3
09:00		1	0	1
10:00		1	0	1
11:00		1	1	2
Total		30	23	53
Percent		56.6%	43.4%	

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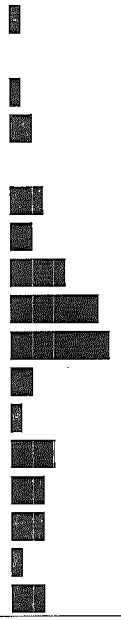
(530) 221-5424

Site Code: JH BRIDGE

Start Time	01-Aug-10 Sun	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	0	0
06:00		0	0	0
07:00		0	1	1
08:00		0	0	0
09:00		0	1	1
10:00		0	2	2
11:00		0	0	0
12:00 PM		2	1	3
01:00		1	1	2
02:00		4	1	5
03:00		4	4	8
04:00		5	4	9
05:00		1	1	2
06:00		1	0	1
07:00		2	2	4
08:00		3	0	3
09:00		2	1	3
10:00		1	0	1
11:00		1	2	3
Total		27	21	48
Percent		56.3%	43.8%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH BRIDGE

Start Time	02-Aug-10 Mon	Direction 1	Direction 2	Combined Total
12:00 AM		0	1	1
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	0	0
06:00		0	0	0
07:00		2	3	5
08:00		1	5	6
09:00		1	0	1
10:00		4	3	7
11:00		1	1	2
12:00 PM		4	3	7
01:00		2	1	3
02:00		1	3	4
03:00		2	4	6
04:00		1	1	2
05:00		4	0	4
06:00		7	3	10
07:00		1	3	4
08:00		1	0	1
09:00		0	0	0
10:00		1	1	2
11:00		0	0	0
Total		33	32	65
Percent		50.8%	49.2%	

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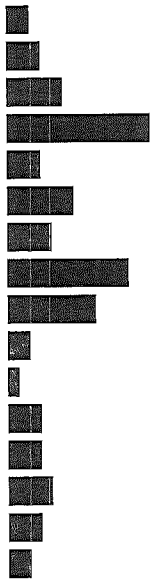
Redding, CA 96002
(530) 221-5424

Site Code: JH BRIDGE

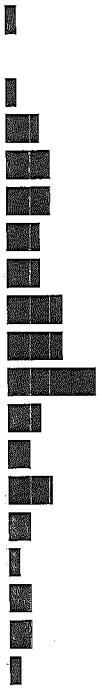
Start Time	03-Aug-10 Tue	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	0	0
06:00		0	2	2
07:00		1	2	3
08:00		5	0	5
09:00		8	5	13
10:00		1	2	3
11:00		3	3	6
12:00 PM		2	2	4
01:00		7	4	11
02:00		5	3	8
03:00		1	1	2
04:00		0	1	1
05:00		3	0	3
06:00		1	2	3
07:00		2	2	4
08:00		1	2	3
09:00		2	0	2
10:00		0	0	0
11:00		0	0	0
Total		42	31	73
Percent		57.5%	42.5%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH BRIDGE

Start Time	04-Aug-10 Wed	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	1	1
05:00		0	0	0
06:00		0	1	1
07:00		2	1	3
08:00		1	3	4
09:00		1	3	4
10:00		2	1	3
11:00		1	2	3
12:00 PM		2	3	5
01:00		2	3	5
02:00		2	6	8
03:00		1	2	3
04:00		2	0	2
05:00		4	0	4
06:00		1	1	2
07:00		1	0	1
08:00		1	1	2
09:00		2	0	2
10:00		1	0	1
11:00		0	0	0
Total		26	28	54
Percent		48.1%	51.9%	



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Redding, CA 96002
(530) 221-5424

Site Code: JH BRIDGE

Start Time	05-Aug-10 Thu	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	0	0
06:00		0	0	0
07:00		1	1	2
08:00		1	2	3
09:00		1	1	2
10:00		2	0	2
11:00		0	2	2
12:00 PM		1	3	4
01:00		2	3	5
02:00		3	1	4
03:00		3	4	7
04:00		2	0	2
05:00		3	1	4
06:00		2	0	2
07:00		0	0	0
08:00		1	0	1
09:00		2	1	3
10:00		1	1	2
11:00		1	0	1
Total		26	20	46
Percent		56.5%	43.5%	

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350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

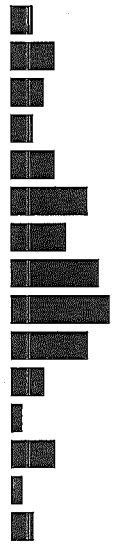
Site Code: JH BRIDGE

Start Time	06-Aug-10 Fri	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	0	0
06:00		0	1	1
07:00		0	2	2
08:00		1	3	4
09:00		1	2	3
10:00		1	2	3
11:00		4	1	5
12:00 PM		0	0	0
01:00		1	4	5
02:00		3	2	5
03:00		3	2	5
04:00		4	0	4
05:00		5	1	6
06:00		0	1	1
07:00		0	0	0
08:00		2	1	3
09:00		0	0	0
10:00		0	1	1
11:00		1	1	2
Total		26	24	50
Percent		52.0%	48.0%	

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH BRIDGE

Start Time	07-Aug-10 Sat	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	0	0
06:00		0	0	0
07:00		0	2	2
08:00		4	0	4
09:00		0	3	3
10:00		1	1	2
11:00		1	3	4
12:00 PM		3	4	7
01:00		3	2	5
02:00		6	2	8
03:00		4	5	9
04:00		3	4	7
05:00		3	0	3
06:00		0	1	1
07:00		2	2	4
08:00		1	0	1
09:00		2	0	2
10:00		0	0	0
11:00		0	0	0
Total		33	29	62
Percent		53.2%	46.8%	



SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH BRIDGE

Start Time	08-Aug-10 Sun	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	2	2
05:00		0	0	0
06:00		0	0	0
07:00		2	0	2
08:00		4	4	8
09:00		2	5	7
10:00		1	1	2
11:00		4	3	7
12:00 PM		1	1	2
01:00		3	2	5
02:00		5	3	8
03:00		3	2	5
04:00		1	2	3
05:00		3	3	6
06:00		0	0	0
07:00		4	3	7
08:00		1	0	1
09:00		2	3	5
10:00		1	0	1
11:00		1	1	2
Total		38	35	73
Percent		52.1%	47.9%	

SHN Consulting Engineers & Geologists, Inc.
350 Hartnell Avenue, Suite B
Redding, CA 96002
(530) 221-5424

Site Code: JH BRIDGE

Start Time	09-Aug-10 Mon	Direction 1	Direction 2	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		0	0	0
04:00		0	0	0
05:00		0	0	0
06:00		0	2	2
07:00		0	3	3
08:00		1	2	3
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
12:00 PM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
Total		1	7	8
Percent		12.5%	87.5%	
Grand Total		453	372	
Percentage		54.9%	45.1%	

ADT ADT 59 AADT 59

CONSULTING ENGINEERS & GEOLOGISTS, INC.
350 Hartnell Avenue, Suite B ● Redding, CA 96002-1875 ● Tel: 530/221-5424 ● FAX: 530/221-0135 ● E-mail: shnrdd@shn-engr.com

Memorandum

Reference: 509051 JH Ranch
Date: March 30, 2012
To: Rob Hayes-St. Claire
From: Brian Freeman, P.E., T.E.
Subject: Additional Discussions Regarding French Creek Level of Service Traffic Volumes

This memorandum has been prepared to provide you with additional discussions about the Level of Service (LOS) calculations for French Creek Road, and how our earlier traffic volume study data relates to this system.

Review of Previous Study Data

As noted in our earlier traffic volume studies (8/30/2010, and Revised 8/10/2011), Average Daily Traffic (ADT) and Peak Hour Volume (PHV) were determined. As previously documented, the French Creek ADT is 439 vehicles with a PHV of 104 vehicles during weekdays (morning traffic), which is the highest and most conservative value measured for PHV in the study.

As noted in our study, the Level of Service (LOS) for French Creek Road has been calculated using information from the Siskiyou County General Plan Circulation Element, which shows a "service volume" (the volume of traffic that the roadway can accommodate) for LOS A to be 1,408 ADT or 169 vehicles per hour. Review of the data findings in our report show that current ADT on French Creek road is approximately 3 times lower, than the calculated maximum volume for LOS A. Additionally, the hourly traffic volume (defined as the peak hour, or PHV for this analysis) calculated from the Circulation Element method is 169 vehicles per hour. When compared to the PHV in our study, current PHV is approximately 40% lower than the LOS A vehicle per hour numbers indicated by the County.

Additionally, the Circulation Element notes (page 26, Circulation Element, Improvement Program Review) that on roads where current uses meet or exceed service volume C (LOS C), no zone change substantially increasing use or other developments will be allowed until roads have been improved to handle the future anticipated uses. As such, uses on French Creek Road currently meet the LOS A criteria, and increased traffic volumes would not trigger improvements until they reached the LOS C standards. LOS C volumes are calculated in the following section.

LOS C Calculations

Using information previously collected, a review of data was undertaken to approximate the potential LOS C volume of traffic, in "vehicles per hour" in an effort to show comparisons to the data collected and potential future roadway conditions where improvements would be required by the County's Circulation Element. For this exercise, we have assumed that based on actual conditions on French Creek Road, the entire roadway length (100%) is considered a "no-passing zone" which provides the most restrictive assumptions for calculations. Using this assumption we have utilized data with various factors (percentages of roadway capacity) for roadway terrain. Those are Flat (0.32), Rolling (0.28) and Mountainous (0.16). Those factors are applied to the ideal capacity for the roadway based on the Highway Capacity Manual which is 1,800 vehicles per hour.

Using the above factors the following data was calculated to determine the LOS C vehicle per hour volumes:

Flat: 0.32 x 1,800 = 576 vehicles per hour
Rolling: 0.28 x 1,800 = 504 vehicles per hour
Mountainous: 0.16 x 1,800 = 288 vehicles per hour

It is our opinion that the portion of French Creek Road under review in this study is a "rolling" terrain segment, and would have a LOS C vehicle per hour volume of 504 vehicles. This is 400 vehicles per hour more than the current measurements of 104 vehicles per hour measured in the peak weekday hour (PHV).

Additionally, we received traffic accident information from the County for French Creek Road and found that there were only 11 reported accidents in about a 40 year time span. This number was so low that it did not change any roadway assumptions in our calculations.

Conclusions

Based on the review of the information above, and discussions about LOS conditions (current and potential future) for French Creek Road, our conclusions from our earlier studies have not changed.

Existing traffic volumes on French Creek Road (measures in both ADT and PHV) are within the LOS A standards for the roadway. Increases in traffic volumes (from both JH Ranch and other non-JH Ranch development and uses) that may occur in the future would need to generate upwards of 504 **vehicles per hour,** to reach the LOS C threshold at which roadway improvements would be required. Using this value (504 vehicles per hour), the estimated ADT at that time would be in the range of 2,500 to 3,300 vehicles per day, an increase in volume of over 5.6 times the current ADT. Even if an extremely conservative approach was taken and the 288 vehicle per hour value was used, this would still be more than double the current traffic volumes and over 4 times the current ADT. From this data, traffic volumes from JH Ranch activities alone, would need to increase significantly to trigger LOS threshold changes.

The other issue is how traffic relates to occupancy and use of the JH Ranch site. As we have discussed with both JH Ranch and the County, increases in occupancy of the JH Ranch has no "direct correlation" with traffic. Since JH Ranch uses a combination of personal vehicles and vans/buses to transport guest to the Ranch, occupancy levels could easily increase without an impact to the LOS designations for French Creek Road. While individuals may notice an increase in traffic, the volumes would not necessarily be in excess of any regulatory limits that would require improvements to the roadway by JH Ranch. It is conceivable that several thousand people could occupy and use JH Ranch without significant increases in traffic on French Creek Road.

Technical Memorandum

Reference: 509051.200
Date: **August 10, 2011**
To: **Mark Chaney**
From: **Rosalind Litzky**
Subject: REVISED Sound Analysis Results for JH Ranch, Siskiyou County, California

Revisions to the original Sound Analysis (dated August 23, 2010) have been made to clarify definitions used in the report as they relate to operations at JH Ranch, to reflect more accurately the numbers of staff and guests at the Ranch during the study and to provide additional explanation on results. The term "baseline" in the report has been changed to "existing" where the report intended to reflect what was occurring at the time the study was undertaken. In other areas, the term "baseline" was used to reflect winter or lighter use periods and was confusing in describing the overall measurements as the related to the programs. In these instances "baseline" has been replaced with the term "winter" to better reflect the seasonality of the measurements.

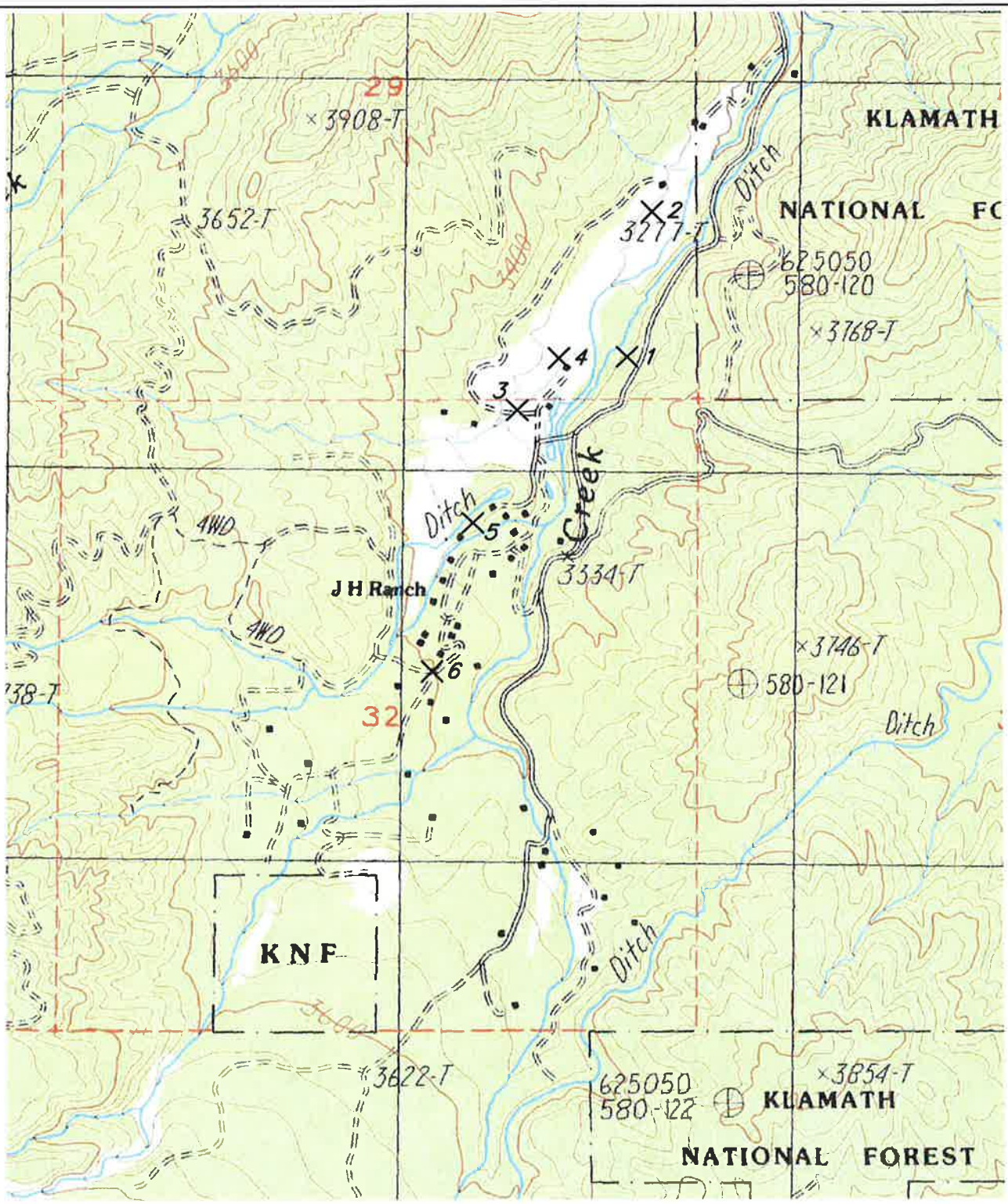
Additional modifications to the Sound Analysis include clarifications to the numbers of staff and guests present at the Ranch during our measurements. Staff and guest numbers in this revised study reflect attendance data from the 2010 use period when the study was conducted rather than estimates. As a result, the actual numbers of people at JH Ranch during our investigations were larger than previously reported. These revisions did not affect the report's conclusions.

Additional edits to the text were made to provide better definition and descriptions. Sound measurement results and conclusions were unchanged.

Purpose of Sound Analysis

SHN Consulting Engineers & Geologists, Inc. conducted sound measurements at JH Ranch for the purpose of establishing existing conditions and sounds associated with guest ranch activities. Sound measurements were conducted on May 18, 2010, for the purpose of establishing winter measurements prior to typical summer activities when full guest ranch programs were underway.

Guest ranch related sound measurements were again conducted on June 23, 2010 to measure sounds generated by program activities during the Ranch's high school student programs. Sound measurements were conducted during this period as the Ranch considers this session to have the highest potential for sound generation. Measurements conducted during this program period allowed for a comparison of the Ranch's contribution to ambient noise and contributions from the summer seasons highest use program. These measurements are described as "Winter" and "Summer" in this memorandum.



EXPLANATION

X5 MEASUREMENT LOCATION

NTS

SHN Consulting Engineers & Geologists, Inc.	JH Ranch Siskiyou County, California		Sound Measurement Locations 509051.300
	July 2010	509051-300-GPS	Figure 1

\\Eureka\Projects\CAD-FILES\Redding\2009\509051\300 , SAVED: 7/12/2010 3:08 PM NDOWNEY, PLOTTED: 7/14/2010 1:25 PM , NATHAN DOWNEY

Sound measurements were only conducted on property owned by JH Ranch, and no measurements on adjacent private property were taken. Sound measurements at JH Ranch and associated private property line were taken. Because of its proximity to neighboring residences, sound measurements specifically targeted activities associated with the use of the "Big Top" tent where an amplified system is used.

Site Description

JH Ranch owns several parcels along French Creek Road. Most of the guest ranch events occur at the developed areas west of French Creek Road. This area constitutes the study area (Figure 1). The study area can be generally characterized as having a variable topography with a few areas at higher elevations that overlook the low lying areas.

JH Ranch is a developed site with permanent and temporary structures and various access roads (paved and gravel). A paved access road from French Creek Road leads to the JH Ranch lodge, administrative offices, dining pavilion and kitchen area, and developed recreation sites; these facilities are at a location which is a geographically high spot that overlooks a small valley below. The existing dining pavilion, which sits adjacent to the lodge, was in the process of renovation and construction during site visits. Toward the southwest of the dining facility, there is a large recreation pond, basketball/tennis courts and a well maintained grass covered sports field and a separate area that is used for program activities.

A drainage located northwest of the recreation pond flows southwest into a series of ponds perpendicular to the renovated dining facility. Upslope of the drainage ditch is a forested area developed with a ropes course. From this vantage point the valley can be observed. At a break in slope from the recreation pond and grassy area, Paynes Lake Creek, a tributary to French Creek, was observed flowing northeast.

Down slope of the dining pavilion (to the south) are the primary guest accommodations. A series of gravel roads leads to guest cabins scattered throughout this area. This area is situated between French Creek and Paynes Lake Creek. North of the dining pavilion and along a paved access road is the "Big Top" tent, a large canvas tent with doors. A barn and horse corral are also located adjacent to the "Big Top" tent. The Ranch's bio-reactor (wastewater treatment) is located on the western edge of a pasture between the Big Top and the northern property line. A series of fenced pastures is located between the main lodge and northern property boundary. Some of the pastures are irrigated with horses and livestock keeping the grass low. The slope gradually steepens toward the west. French Creek is parallel to French Creek Road generally runs north to south.

Sound Measurements

General Sound Measurement Device Setup

Both the Winter and Summer sound levels were measured with a Quest Model 1900 Type 1 (Precision) Integrating and Logging Sound Level Meter, Serial # CC0090008 using a Bruel & Kjaer 4936 microphone (Prepolarized Free Field Electret), Serial #2128867 and calibrated with a QC-20

calibrator, Serial #QO0080023. Pre-survey calibration readings were 94 decibels (dB) on the Quest 1900 at a calibrator setting of 94 dB at 1,000 Hertz (Hz) and 114 dB on the Quest 1900 at a calibrator setting of 114 dB at 1,000 Hz. Post-survey calibration readings were exactly the same.

The settings on the sound level meter were A-weighted; fast response; 3-dB exchange rate; threshold level "off," no filter, and manual start. A windscreen was used to protect the microphone. The Quest 1900 was mounted on a tripod approximately 3 feet above the ground.

Winter Measurements

Meteorological conditions were colder than expected for the time of year due to late rain and snow storms: wind ranged from about 0 to 10 miles per hour, temperatures ranged from 62 to 67˚ Fahrenheit, and skies were clear to partly overcast throughout the studies. Sound measurements were taken from approximately 8:30 a.m. to 12 p.m. and for approximately 15 minutes at each location.

Winter sound measurements were taken prior to the arrival of summer staff and summer guest programs beginning. Activities at the ranch consisted of final setup of the Big Top tent's internal structures (stage, sound system, lighting), ranch related maintenance activities, pre-season grading of the gravel road in the cabin area, and final construction at the dining pavilion (electrical, rock facing, final grading). Ranch staff consisted of approximately 35 people and there were approximately 10 dining pavilion construction workers.

The results of the field measurements are summarized below in Table 1, with the measurement locations displayed on Figure 1.

Table 1
JH Ranch Recorded Sound Measurements for Winter[1] and Summer Conditions[1]

Measurements[2]	Location 1[3]		Location 2[4]		Location 3[5]		Location 4[6]		Location 5[7]		Location 6[8]	
	Winter (dBA)	Summer (dBA)	Winter (dBA)	Summer (dBA)	Winter (dBA)	Summer[8] (dBA)	Winter (dBA)	Summer (dBA)	Winter (dBA)	Summer (dBA)	Winter (dBA)	Summer (dBA)
Average (L_{eq})	55.0/ 52.8	52.3/55.9	47.7	48.6/60.2	61.2	49.9	46.9	44.4/48.9/ 45.6/46.0	50.5	55.1	60.6	44.2
Peak	84.7/ 74.1	82.7/ 84.1	77.7	48.6/ 99.4	99.0	87.9	85.0	83.2/ 82.7/ 87.0/82.8	88.1	98.7	90.6	84.9
L Maximum	60.4/ 58.3	57.0/ 60.5	63.4	70.0	87.9	70.0	68.1	56.9/60.9/ 59.1 59.4	66.4	78.1	77.8	61.3
L Minimum	53.9/ 51.8	51.3/ 55.0	43.7	43.9	43.4	44.0	43.3	41.6/ 45.3/ 42.6/43.5	45.8	47.1	42.1	42.3
LN 5	55.5/ 53.2	52.7/ 56.3	49.2	52.5	59.1	51.8	48.7	47.6/ 51.6/ 48.4/47.7	54.4	59.4	68.1	45.1
LN 10	55.3/ 53.1	52.6/ 56.2	49.2	48.5	53.9	49.8	47.8	46.4/ 50.5/ 46.9/ 47.2	53.0	57.6	64.5	44.3
LN 50	55.0/ 52.8	52.2/ 55.9	45.3	45.3	47.4	47.1	45.5	43.4/ 48.3/ 44.6/45.8	49.4	51.6	51.9	43.3
LN 90	54.7/ 52.4	51.9/ 55.6	44.5	44.7	44.7	45.2	44.4	42.5/ 47.0/ 43.5/ 44.8	47.1	48.7	43.1	42.9

1. Winter conditions measure noise prior to guests arriving in summer; Summer conditions measure noise during ranch operations with guest activities occurring.
2. Measurements taken include:
   - 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 sound. All sound levels in this report are A-weighted, unless reported otherwise.
   - Equivalent Noise Level (L_{eq}). The average A-weighted sound level during the measurement period.
   - PEAK. Maximum instantaneous A-weighted sound level during the measurement period.
   - Lmax, Lmin. The maximum and minimum A-weighted sound level during the measurement period.
   - L01, L10, L50, L90. The A-weighted sound levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
3. Measurement was taken at girls volunteer summer staff housing along French Creek Road. The first Winter measurement was taken within a direct line of sight of the "Big Top" tent and the second was not within a direct line of sight. The second Summer measurement was taken during evening activities. Amplified music was faintly heard. Doors facing the dining facilities were open.
4. Measurement was taken at the northern property boundary. During the Winter measurement, several geese and one emu were in the vicinity. During the Summer measurement, a Meadow lark was heard and observed within the field. There was also the sound of vehicles from the road during the study. The second Summer measurement was taken during evening activities from the pasture, at the property line, near the house. The "Big Top" tent was visible in the distance. Two dogs from a neighbor's property were barking, and likely increased the sound measurement. SHN began the evening measurement at the northern property line in the pasture; sound activity associated with the "Big Top" tent was noted.

Table 1
JH Ranch Recorded Sound Measurements for Winter[1] and Summer Conditions[1]

Measurements[2]	Location 1[3]		Location 2[4]		Location 3[5]		Location 4[6]		Location 5[7]		Location 6[8]	
	Winter (dBA)	Summer (dBA)	Winter (dBA)	Summer (dBA)	Winter (dBA)	Summer[8] (dBA)	Winter (dBA)	Summer (dBA)	Winter (dBA)	Summer (dBA)	Winter (dBA)	Summer (dBA)

5. Measurement was taken along the access road between the pastures. During the Winter measurements, a truck, quad, and construction equipment drove by the noise meter.
6. Measurement was taken at the "Big Top" tent. Sprinklers were operating in the vicinity when measurement started, but stopped during the study. During the daytime Summer measurement, some campers walked by and construction noise could be heard.
7. Measurement was taken near the new dining pavilion that was under construction. Some construction noise could be heard. During the daytime Summer measurement, two cars drove by the sound level meter.
8. Measurement was taken near the Ranch housing. During the Winter measurement, road grading using a construction loader and large trucks was occurring in the area.
9. The first measurement was taken during the day; the second measurement was taken in the southeast corner during evening activities; the third measurement was taken in the southeast corner during evening activities.

Summer Measurements

Meteorological conditions were considered pleasant with regard to time of year: wind ranged from about 0 to 10 miles per hour, temperatures ranged from 78 to 85˚ Fahrenheit, and skies were clear to partly cloudy throughout the studies. Sound measurements were taken from 12 p.m. to 8:30 p.m. and for approximately 15 minutes at each location.

Summer measurements were taken during the Ranch's high school student programs, with all summer Ranch staff present and full guest program activities underway. Activities observed consisted of staff and guests walking to program activities and meals, equestrian activities, ropes course activities, and other daily Ranch maintenance (vehicles and tractors, deliveries, etc.). Approximately 165 staff and 280 guests were present on the property during the measurement period. JH Ranch indicated to SHN that the high school program and the associated evening program activities reflected the highest potential sound generation event during the summer program schedule.

Night measurements were taken during the same period to determine sound levels from activities that may vary in the evening, specifically those programs that occur at the Big Top where amplified music and sound systems are used. Measurements were taken at the Big Top to measure sound levels from the approximately 425 guests and staff who participated in activities that included amplified music. The results of the field measurements are summarized in Table 1.

Discussion

The results from the sound level measurements are shown in Table 1 and the equivalent noise level (L_{eq}) measurements are summarized in Table 2.

Table 2
Equivalent Noise Level (L_{eq})[1] Measurement Comparison

Measurement Locations[2]	Winter[3] (dBA)[4]	Summer[3] (Daytime Activities) (dbA)	Summer[3] (Evening Activities) (dbA)
1	55.0	52.3	55.9
2	47.7	48.6	60.2
3	61.2	49.9	NM[5]
4	46.9	44.4	48.9[6]/45.6[7]/46.0[6]
5	50.5	55.1	NM
6	60.6	44.1	NM

1. L_{eq}: The average A-weighted sound level during the measurement period.
2. Refer to Figure 1 for locations.
3. Winter measurements are for noise prior to guests arriving in summer; Summer measurements show noise during ranch operations with guest activities occurring.
4. dBA: decibel, A-weighted
5. NM: No measurement taken because evening measurements focused on the activities around the "Big Top" tent.
6. Measurement taken within southeast corner.
7. Measurement taken within northeast corner.

The L_{eq} is the average A-weighted sound level during the measurement period and specifies maximum allowable average sound levels. The L_{eq} is commonly used in county and city general plans as a tool for regulating noise disturbances. According to "Table A-6: Summary of Noise Levels Identified as Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" of the *Siskiyou County General Plan Noise Element*, sound level measurements should be below 55dBA for outdoor activity in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use (Siskiyou County General Plan Noise Element, 1978). It should be noted that Table A-6 is based upon an L_{eq} measurement of 24 hours, but no other comparisons of data were available from the General Plan.

The sound level measurements for the Summer measurement period are at or below the 55 dBA level. Measurements also show that Winter sound levels are within the General Plan guidelines, with the temporary exceptions noted below.

During the sound measurement sessions, no unusually loud sounds occurred beyond those in the natural environment, with the exception of construction equipment at the JH Ranch dining pavilion and road grading in the housing area during the Winter measurement period, as well as a neighbor's dogs barking during the Summer measurement period. Some of the measurements were collected close to French Creek Road, but only a few vehicles passed by within the measurement period and did not adversely affect the study. French Creek and its tributaries were loud enough to be heard at some locations, and localized wind, although present, did not produce enough sound to distort measurements and obscure other noise producing sources. Localized point sources of sound increased sound level measurements, specifically birds calling and singing and dogs barking (owned by residents beyond the study area).

The A-weighted sound level measurements (Table 2) show similar sound measurements between the Winter and Summer periods. This means that the sound level measurements taken during the Ranch's high school program (indicated by JH Ranch to have the highest noise potential) are not significantly different from the Winter sound level measurements. However, there were two exceptions.

First, the Winter measurements taken within the housing area without guests (measurement location 6) was louder than the measurements taken during the Summer period. This higher sound measurement was strongly influenced by heavy equipment that was performing pre-season grading of interior roads and placing a gravel surface. This activity temporarily inflated the noise conditions at this site (60.6 dBA) for the Winter period, as compared to 44.1 dBA during the Summer season.

Second, the sound levels recorded during Summer Evening Activities (measurement location 2 shown in Table 2) at the northern property line in the pasture was louder than daytime activities (60.2 dBA as compared to 48.6 dBA). A dog (owned by the neighbor) was able to access the pasture at Location 2 through a hole in the fence and was barking in close proximity to the sound recorder for a significant period of the sound measurements at this site. This disturbance at the site caused higher sound levels than typically would be expected. Additionally, no amplified sound was observed during the evening activities at this location. In fact, when evening measurements began

at this location, it was unclear if activities were occurring at the Big Top tent as sound levels were essentially unchanged from Winter conditions established before the dog began barking.

This assumption that the dog barking at measurement location 2 caused a distortion in the measurements was later confirmed when review of the data collected adjacent to the Big Top during the same evening period (measurement location 4) showed that sound levels were considerably lower immediately adjacent to the Big Top (Table 2) than at location 2 which is approximately 2,000 feet distant. Based on this review, the sound measurements for location 2 during the evening activities is an anomaly, and is not used in the overall assessment of impacts.

Evening activities at the "Big Top" have been identified as having the potential to generate the most sound within the JH Ranch and as a potential source of noise to nearby residents. This is primarily due to periods of amplified music and concentration of guests and staff for evening activities. Other Ranch activities are located farther away than the Big Top. Based on these concerns, additional sound measurements during evening activities were conducted (Table 2). Results showed that sound coming from the Big Top was below 50 dBA for measurements immediately adjacent to the structure.

Sound measurements were taken at the JH Ranch property line at measurement locations 1 (55.0 dBA Winter; 52.3 dBA Summer Daytime; 55.9 dBA Summer Evening) and 2 (47.7 dBA Winter; 48.6 dBA Summer Daytime; 60.2 dBA Summer Evening[1]) near off-site private residence. Because sound pressure levels do not persist with distance (because as the distance from the source expands, the sound attenuation decreases), and the sound measurements taken at the property lines do not suggest enough sound pressure is generated that would result in inadequate noise levels, nearby residences are not subjected to sound pressure levels in excess of the *Siskiyou County General Plan Noise Element*.

Conclusions

Winter and Summer sound level measurements taken at JH Ranch are typical for rural areas with decibel levels ranging from 44.1 dBA to 60.6 dBA. Based on the measurements collected for this study, Summer measurements do not differ significantly from Winter measurements. Data analysis revealed that sound levels are within the ranges outlined by Table A-6 of the *Siskiyou County General Plan Noise Element*. The data collected does not suggest noise is being produced from JH Ranch activities at levels that would be considered significant and further study does not appear warranted.

References

Siskiyou County, 1978. *Siskiyou County General Plan Noise Element*. Yreka: Siskiyou County.

[1] As noted earlier in this report, Summer Evening measurements at location 2 exceed the 55 dBA measurement standards due to influence from a barking dog, are considered an anomaly and are not used in this report as a measurement of program activities on JH Ranch.

Natural Resources Assessment Report

JH Ranch

Siskiyou County, California

Prepared for:

JH Ranch

Consulting Engineers & Geologists, Inc.

350 Hartnell Ave., Suite B
Redding, CA 96002
530-221-5424

August 2010
509051.300

CONSULTING ENGINEERS & GEOLOGISTS, INC.
350 Hartnell Ave., Suite B • Redding, CA 96002• 530/221-5424 • FAX: 530/221-0135 •shninfo@shn-ngr.com

Reference: 509051.300

August 25, 2010

Rob Hayes-St. Clair
JH Ranch
8525 Homestead Lane
Etna, CA 96027

Subject: Natural Resources Assessment Report, JH Ranch, Siskiyou County, California

Dear Mr. Hayes-St. Clair:

Attached is the Natural Resources Assessment for JH Ranch in Siskiyou County, California. The purpose of this report is to assess potential impacts to any special status species and their habitat within the vicinity of JH Ranch from on-going activities associated with the JH Ranch activities. A habitat analysis has been conducted in order to determine the potential presence of natural resources occurring within the survey area. This report documents the methods, results, and conclusions for the natural assessment and analysis conducted.

If you have any questions about this report, please contact Mark Chaney, Project Manager, at our Redding office at (530) 221-5424.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

R. Litzky

Rosalind Litzky
Environmental Scientist

Hilary Sundeen

Hilary Sundeen
Botanist

RL:MSC:jlr
Enclosure: Natural Resources Assessment Report

Reference: 509051.300

Natural Resources Assessment Report

JH Ranch
Siskiyou County, California

Prepared for:

JH Ranch

Prepared by:

Consulting Engineers & Geologists, Inc.
350 Hartnell Ave., Suite B
Redding, CA 96002
530-221-5424

August 2010

QA / QC: MSC

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Appendices

List of Illustrations

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Acronyms and Abbreviations

ACOE	Army Corps of Engineers
BIOS	Biogeographical Information and Observation System
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CERES	California Environmental Resources Evaluation System
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CFGC	California Fish and Game Code
CH	Critical Habitat
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
DG	Disintegrated Granite
DPS	Distinct Population Segment
ESU	Evolutionarily Significant Unit
FC	Federal Candidate
FE	Federally Endangered
FESA	Federal Endangered Species Act
FT	Federally Threatened
HA	Hydrologic Area
HR	Hydrologic Region
HSA	Hydrologic Sub-Area
HU	Hydrologic Unit
MBTA	Migratory Bird Treaty Act
MSL	Mean Sea Level
NA	Not Applicable
NR	Not Referenced
NCCP	Natural Community Conservation Planning Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
OHWM	Ordinary High Water Mark
PSSC	Palustrine Scrub-Shrub Seasonally Flooded
PUBH	Palustrine Unconsolidated Bottom Permanently Flooded
PWS	Planning Watershed
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SFP	State Fully Protected
SE	State Endangered
SHN	SHN Consulting Engineers & Geologists, Inc.
SONCC	Southern Oregon Northern California Coast

Acronyms and Abbreviations, Continued

SPWS	Super Planning Watershed
SR	State listed Rare
SSC	Species of Special Concern
ST	State Threatened
SWRCB	State Water Resources Control Board
U.S. EPA	U.S. Environmental Protection Agency
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Services
USGS	United States Geological Survey
WDR	Waste Discharge Requirement

1.0 Introduction

SHN Consulting Engineers & Geologists, Inc. (SHN) has conducted site investigations, literature reviews, and an assessment to determine biological resources present at the JH Ranch in Siskiyou County, California. The findings in this report shall be used to facilitate ongoing discussion with Siskiyou County in regards to the existing Use Permit.

1.1 Project Location

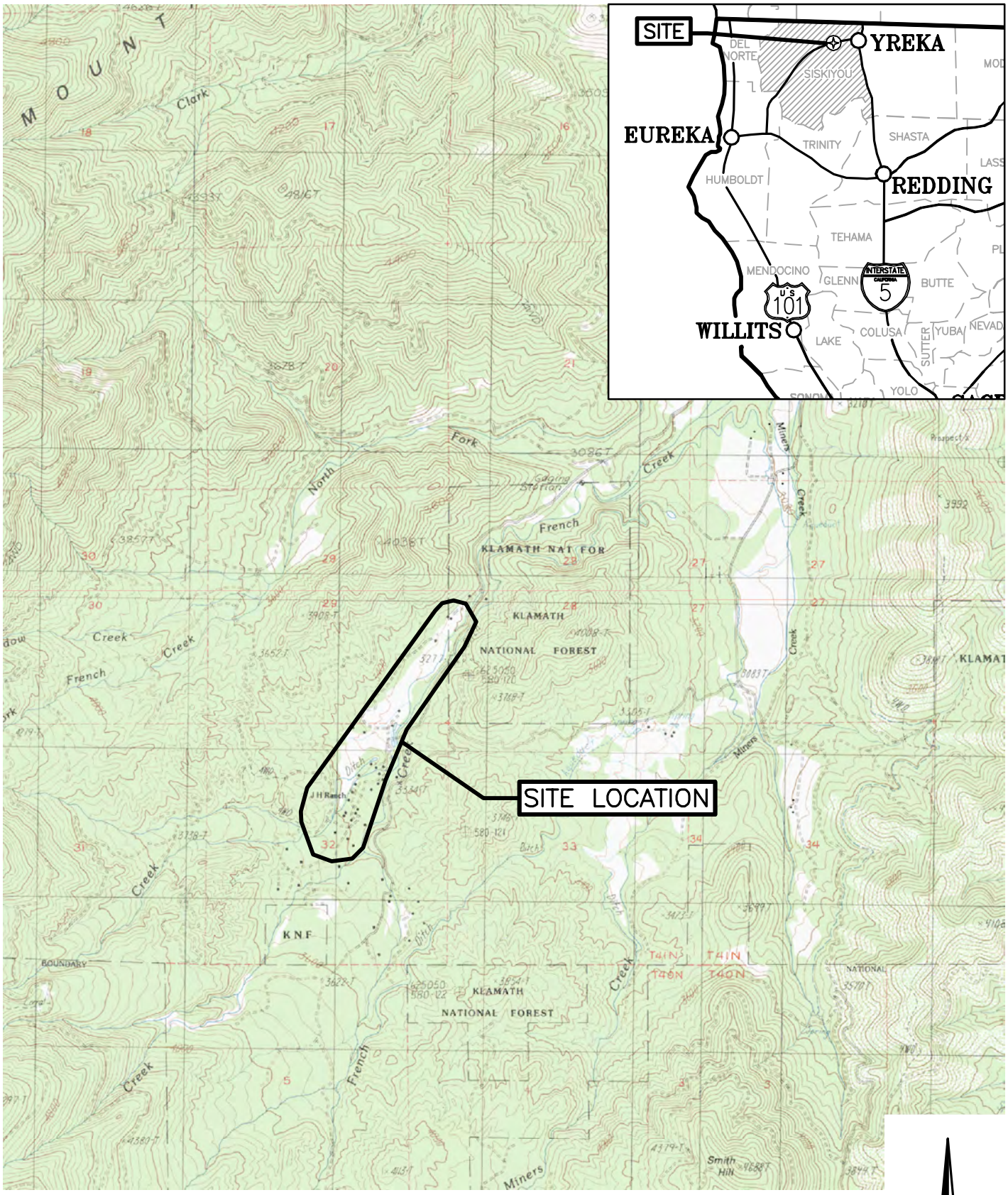
JH Ranch is located in the East ½ of Section 32, Township 41 North, Range 9 West, Mount Diablo Meridian (Figure 1). JH Ranch is located in a rural mountainous area of Siskiyou County, approximately 30 miles southwest of Yreka. Access to the JH Ranch site is from French Creek Road.

1.2 Site Description

JH Ranch owns several parcels along French Creek Road. Most of the guest ranch events occur at the developed areas west of French Creek Road, which constitutes the study area for this report (Figure 1). The study area can be generally characterized as having a range in topography with a few areas at higher elevations that overlook the low lying areas.

JH Ranch is a developed site with permanent and temporary structures onsite and various access roads (paved and gravel). A paved access road from French Creek Road leads up to a dining and kitchen area (at a geographically high spot). The existing dining pavilion, which sits adjacent to the lodge, was in the process of renovation and construction during site visits. Towards the southwest of the dining facility is a large recreation pond that appears to be used for swimming since several structures and lifeguard towers are found along the perimeter (Appendix A; Photo 1). A maintained grassy area is beyond the concrete pond. A drainage located northwest of the recreation pond flows southwest (Appendix A; Photo 2). It appears this drainage is diverted under an existing road and released into a series of ponds perpendicular to the dining facility (Appendix A; Photo 3). Upslope of the drainage ditch is a forested area developed with a ropes course (Appendix A; Photo 4). From this vantage point, the valley can be observed (Appendix A; Photo 5). At a break in slope from the recreation pond and grassy area, Paynes Lake Creek to French Creek was observed flowing northeast (Appendix A; Photo 6).

Downslope of the dining pavilion is primary ranch guest housing. A series of gravel roads leads to cabins found throughout this area (Appendix A; Photo 7). This area is situated between French Creek and Paynes Lake Creek. North of the ranch housing along a paved access road is the "Big Top" tent, a large canvas tent with doors (Appendix A; Photo 8). A barn and horse corral are within this area. A series of fenced pastures are located between the dining facility and northern property boundary (Appendix A; Photo 9). Some of the pastures are irrigated with horses and livestock mowing down the grass and the slope gradually increases towards the west. French Creek is parallel to French Creek Road where a wire fence is located approximately 100 feet from the edge of the water (Appendix A; Photo 9-11). Two ponds are located near paved access roads (Appendix A; Photo 12).



SOURCE: ETNA, CALLAHAN, EATON PEAK, MCCONAUGHY RIDGE USGS 7.5 MINUTE QUADRANGLE

1"=3000'±

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SHN Consulting Engineers & Geologists, Inc.	JH Ranch Siskiyou County, California	Site Location Map SHN 509051.300
	July 2010	509051-300-LOCATION
		Figure 1

2.0 Methods

2.1 Literature Review

This natural resources assessment includes a review of pertinent literature on habitat characteristics of the site, and a review of information related to species of plants and animals that could potentially utilize the described habitats.

The findings for this report are a result of several sources, including a review of existing literature regarding sensitive resources that have the potential to occur within the site. Resources for this determination included:

1. California Natural Diversity Database (CNDDB) query for the Etna and the surrounding[1] U.S. Geological Survey (USGS) 7.5 minute topographic quadrangles (California Department of Fish and Game [CDFG}, 2010a).
2. Electronic Inventory of Rare and Endangered Vascular Plants of California (California Native Plant Society ([CNPS], 2010) was queried for a list of all plant species reported for the USGS 7.5 minute topographic quadrangles.
3. U.S. Fish and Wildlife Service (USFWS) Listed / Proposed Threatened and Endangered Species for Siskiyou County (Candidates Included) (USFWS, 2010).
4. Special Animals (CDFG, 2010b).
5. State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFG, 2010c).
6. State and Federally Listed Endangered, Threatened, and Animals of California (CDFG, 2010d).
7. Biogeographical Information and Observation System (BIOS; CDFG, 2010f).

Nomenclature for special-status animals conforms to CDFG (2010a, 2010b, and 2010d), respectively. Plant community names conform to *A Manual of California Vegetation, Second Edition* (Sawyer, Keeler-Wolf, and Evans, 2009). Botanical nomenclature in this assessment follows the *Jepson Manual (*Hickman, 1993; UC, 2009). A list of species observed is included in Appendix A.

2.2 Field Observations and Studies

Two site visits were conducted, one in late May and the other in late June. The purpose of the site visits was to observe and inventory biological resources during floristically appropriate times for botanical species. Although no focused botanical surveys were conducted, a list of all species observed can be found in Appendix B. Areas surveyed by foot include the pastures, camp housing, the western side of French Creek and part of the eastern side. Due to difficult access and the steep slope, the east side of French Creek was not surveyed, except for a small section near the second access along French Creek Road.

[1] The surrounding USGS 7.5 minute topographic quadrangles include: Yellow Dog Peak, Etna, McConaughy Gulch, Tanners Peak, Eaton Peak, Callahan, Grasshopper Ridge, Deadman Peak, Billy's Peak.

During the site visits, SHN also conducted a reconnaissance-level field survey to evaluate the presence or absence of habitat necessary for the special status wildlife species listed on species database searches. The assessment at the study area included an on-site inspection, by foot. The reconnaissance level field survey was adequate to provide a thorough inspection of the study area. Focused wildlife and nesting bird survey(s) were not conducted. The lack of species present during investigations may have been due to multiple factors, such as the season, time of day, lack of surface water, lack of seed and berry sources (these occur in late summer/early fall months when tree cones become ripe and flowering plants set fruit).

3.0 Environmental Setting

The environmental setting within the project area is predominately affected by fluvial and glacial outwash plains. JH Ranch is situated within the western portion of Scott Valley in the foothills of the Salmon Mountains. Temperatures are moderated by the altitude of the site, along with affects of geographic features that influence local winds and precipitation events. The majority of precipitation and snowfall occur between October through May; rainfall averages 20.91 inches per year and snowfall 12.9 inches per year (Western Regional Climate Center, 2010). The summers are hot during the day, but cool off during the evenings. Influence from these factors is evident in the generally similar habitat found throughout the study area. JH Ranch is located within a mixed conifer forest environment comprised of vegetation consistent with mixed conifer forests typically found in the Klamath Mountains. Appendix A contains site photographs which depict the existing conditions at the site.

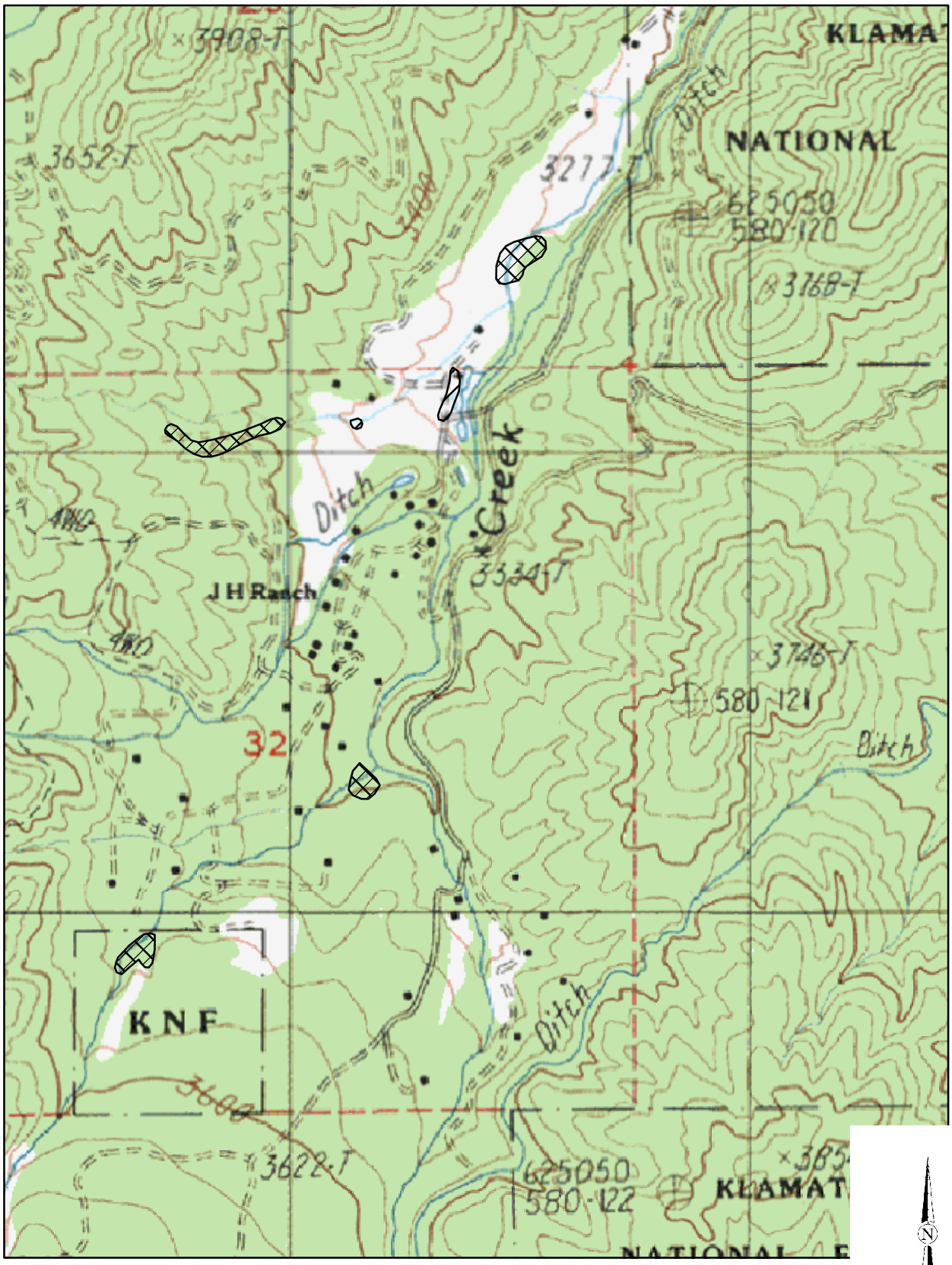
JH Ranch is located within the Scott Valley which is comprised of numerous rural ranch and timberlands that are used for a variety of ranching, timber production and residential purposes. The project area is surrounded by undeveloped private industrial forest lands and private land developed for rural residential uses. Public forest lands administered by the Klamath National Forest are located about 1 mile to the west.

3.1 Hydrology

The site is located within the North Coast Hydrologic Region (HR), Klamath River Hydrologic Unit (HU), Scott River Hydrologic Area (HA), Scott Valley Hydrologic Sub-Area (HSA), French Creek Super Planning Watershed (SPWS), and the Payne Lake Creek Planning Watershed (PWS) (California Environmental Resources Evaluation System [CERES] GeoFinder, 2009).

French Creek, a perennial stream, flows through the study area and eventually into the Scott River. The eastern side of the stream channel displays decomposed granite (DG) soils that are interspersed with minor amounts of cobbles and boulders at the stream margin. The western side of French Creek shows more evidence of recurrent flooding; cobbles, boulders and vegetative debris can be found along the stream margins. The French Creek Basin is predominately underlain by deeply weathered granitic soils that produce sandy sediments (Lisle and Hilton, 1999).

The USFWS is the federal agency responsible for tracking wetland trends as well as maintaining a reliable inventory through its National Wetland Inventory (NWI) (USDI, 1987). The NWI can be



EXPLANATION

Freshwater Forested/Shrub Wetland

Freshwater Pond

1 "=1,000'

Consulting Engineers & Geologists, Inc.	JH Ranch Siskiyou County, California	National Wetlands Inventory SHN 509051.300
	July 2010 | 509041-300-NWI.mxd	Figure 2

queried for specific locations throughout the U.S. to aid federal, state, and local agencies in making informed decisions concerning wetlands. According to the NWI, wetland types found in the project area include those shown below (Figure 2).

- **Palustrine Unconsolidated Bottom Permanently Flooded (PUBH)**: The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, emergents, and mosses or lichens. It includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones less than 6-7 cm (2.3-2.4 inches), and a vegetative cover less than 30%. Water covers the land surface throughout the year in all years (Cowardin, 1979).

- **Palustrine Scrub-Shrub Seasonally Flooded (PSSC):** The Palustrine System includes all nontidal wetlands dominated by woody vegetation less than 6 m (20 feet) tall. The species include true shrubs, young trees (saplings), and trees or shrubs that are small or stunted because of environmental conditions. Surface water is present for extended periods, especially early in the growing season (April/May), but is absent by the end of the growing season in most years (October) (Cowardin, 1979).

It should be noted that Figure 2 is included as reference and should not be considered a wetland boundary line delineated. Although NWI maps are excellent references for determining the presence or absence of wetlands, the resolution of the NWI tends to be on a macro scale, with no field verification. Site-specific wetland delineations are necessary to determine an accurate distribution of wetlands within a proposed study area. For the purpose of this study, no further analysis regarding wetlands was warranted.

3.2 Soils

Soils at the study area have been mapped by the USDA Natural Resources Conservation Service (NRCS). The NRCS Web Soil Survey 2.1 was queried to identify mapping for the site (NRCS, 2010a). This includes the following soil types:

- 106 - Atter Very Bouldary Loamy Fine Sand, 5 to 30 percent slopes, found in alluvial fans, somewhat excessively drained;
- 120 – Chaix-Chawanakee Gravelly Coarse Sandy Loam, 30 to 50 percent slopes, found in mountains, well drained;
- 163 - Jilson-Duzel Gravelly Loams, 5 to 50 percent slopes, found in mountains, well drained;
- 184- Marpa-Kinkel-Boomer, Cool Complex, gravelly loam, 15 to 50 percent slopes, found in mountains, well drained;
- 198 - Odas Sandy Loam, slope 0 to 2 percent, found in floodplains, poorly drained and;
- 212 – Riverwash, stratified extremely gravelly coarse sand to gravelly sand, found in drainageways and floodplains.

Atter and Riverwash are the only soils in the project area designated as hydric soils on the *National Hydric Soils List* (NRCS, 2010b). No serpentine soils are located within the study area. However, serpentine rock rip-rap was observed along French Creek Road cut banks at several locations

adjacent to the study area. It is assumed that this material was introduced to the area by Siskiyou County Public Works as stabilization material during roadway maintenance. Serpentine is not a native material at the study area.

3.3 Vegetation Communities

JH Ranch is located within a mixed conifer forest environment comprised of vegetation consistent with *Pinus ponderosa* alliance / ponderosa pine forest (hillsides) and *Pinus ponderosa - Calocedrus decurrens* alliance / mixed conifer forest (near creeks and lowland areas) (Sawyer, Wolfe, and Evans, 2009). Appendix A contains site photographs which depict the existing conditions at the site.

Approximately one third of the study area is grassland habitat dominated by a variety of grasses and herbaceous species. A series of fenced pastures exist between French Creek and the hillside. Some of these pastures were moderately grazed and / or irrigated. Flat, open areas with sparse tree and shrub stratum were observed along the outer edges of the grasslands. Dominant species found within the grassland habitat included shepherd's purse (*Capsella bursa-pastoris*), barley (*Hordem* sp.), bentgrass (*Agrostis*), orchard grass (*Dactylis glomerata*), wild rye (*Elymus* sp.), fescue (*Festuca* sp.), velvet grass (*Holcus lanatus*) and common sheep sorrel (*Rumex acetosella*).

Forested hillside areas exist on dry, moderately steep slopes along the east and west outer edges of the study area. This habitat was found east of French Creek above the paved road running through the property and along the western boundary above the pastures. Canopy coverage and tree stratum was moderate and included dominant tree species; ponderosa pine (*Pinus ponderosa*) and Douglas fir (*Pseutotsuga menziesii*). Shrub stratum was low and included dominant species; gooseberry (*Ribes* sp.), silver leaf lupine (*Lupinus albifrons*) and Himalaya berry (*Rubus discolor*). Herbaceous stratum was sparse in the drier sites along the ridge line and moderate within seasonal drainages. Dominant species include American vetch (*Vicia Americana* var. *americana*) and bracken fern (*Pteridium aquilinum* var. *pubescens*). Several saprophytic species were found in this area including snow plant (*Sarcodes sanguinea*), striped coralroot (*Corallorhiza striata)*, and pine drops (*Pterospora andromedea*).

Forested lowland areas were found near housing between the dining area and French Creek. These areas had a low to moderate canopy coverage with small undulating hills throughout this gently sloping habitat. Sandy soils with rocks and boulders were found throughout, providing microhabitats for several unique species including Tolmie's star tulip (*Calochortis tolmiei*) and bell catchfly (*Silene campanulata* ssp. *glandulosa*). Tree stratum was moderate and included dominant species; ponderosa pine, incense cedar (*Calocedrus decurrens*) and Oregon white oak (*Quercus garryana*). The shrub stratum was sparse and included dominant species; silverleaf lupine and young Oregon white oak. Herbaceous stratum was sparse and included various grasses.

The upper reach of Paynes Lake Creek in the study area is found near the southwestern property boundary. This area contains a closed canopy riparian habitat which exists on moderate to steep slopes. The tree stratum within these areas was dense and included dominant species; white alder (*Alnus rhombifolia*) and incense cedar. The shrub stratum within these areas was sparse and included dominant species; Himalaya berry and currant (*Ribes* sp.) The herbaceous stratum was

moderate to dense and included dominant species; miner's lettuce (*Claytonia perfoliata* ssp. *perfoliata*), small fruited bull rush (*Scirpus microcarpus*) and small flowered nemophila (*Nemophila parvilflora*).

Riparian areas found along the central portion of the property were gently sloping with rocky/sandy soils and had a moderate canopy cover. This habitat is found where French Creek and Paynes Lake Creek join and continues north to the property boundary. The tree stratum within this area was moderate and included dominant species; white alder, incense cedar and Fremont cottonwood (*Populus fremontii*). The shrub stratum within these areas was moderate and included dominant species; meadow lupine (*Lupinus polyphyllus* var. *polyphyllus*), snowberry (*Symphoricarpos albus* var. *laevigatus*) and willows (*Salix* sp.). The herbaceous stratum within this habitat was moderate and included dominant species; orchard grass, miner's lettuce, small flowered nemophila and bracken fern.

Several ponds have been developed by JH Ranch in the project area. The two ponds in the upper reaches of the property next to the dining facility, used as recreational swimming ponds, have been developed with recreational equipment and are surrounded by regularly mowed grasses. This area is within close proximity to the high traffic dining area and is regularly used by camp patrons. The larger of the two ponds is a permanent structure with a rock/cement basin. This pond is surrounded by unvegetated gravel. The second pond in this area is found along the edge of the dining facility. This pond is believed to be fed by water draining from the larger pond. This pond is lined by ornamental grasses which are mowed regularly, and has a moderate tree stratum that includes dominant species; ponderosa pine, white alder, and incense cedar. The shrub stratum around the second pond was sparse and limited to patches of Himalaya berry. Herbaceous species found along the banks of the second pond is moderate and include the dominant species small fruited bulrush and American vetch.

The two remaining ponds were found adjacent to French Creek within the riparian zone. Discussions with JH Ranch staff revealed that these ponds had been constructed many years ago to act as sedimentation basins, when significant surface erosion and sedimentation from private timber harvesting in the watershed caused frequent sediment loads to be deposited in French Creek. Both ponds had a moderate tree stratum and included dominant species; ponderosa pine, white alder and incense cedar. Shrub stratum along the ponds was dense and dominated by willows. Herbaceous stratum along these ponds was moderate and included dominant species; bedstraw (*Gallium* sp.), velvet grass and American speedwell (*Veronica americana*).

Both paved and unpaved roads were seen throughout JH Ranch. The main paved road travelled from the north end to the south end of the property boundary. Numerous paved and unpaved roads branched off from the main road, travelling though the grasslands and forested lowland areas.

3.4 Wildlife Habitats

Common wildlife species expected on the site are those typically associated coniferous forests. Wildlife species and/or wildlife signs observed at the site included Columbia black-tailed deer *(Odoicoileus hemionus columbiana*), chipmunk (*Eutamias* sp.), gopher (*Thomomys* sp.) (mounds only),

and little brown bat (*Myotis lucifugus*). Several bird species were seen or heard within JH Ranch and includes ruffed grouse (*Bonasa umbellus)*, common raven (*Corvus corax*), horned lark (*Ereophila alpestris*), barn swallow (*Hirundo rustica*) and Bullock's oriole (*Icterus bullockii*).

The study area is generally a moderate value habitat for wildlife because the majority of human impacts are found in a centralized location within the property boundary. Several common opportunistic wildlife species could utilize this habitat and associated forested edges for hunting prey and gathering seeds and other vegetative food matter. Mammalian species that could utilize this habitat include gray fox (*Urocyon cinereoargenteus*), coyote (*Canis latrans*), and various species of mice. Birds may also be attracted to the site, such as red tailed hawk (*Buteo jamaicensis*), Stellar's jay (*Cyanocitta stellari*), and Clark's nutcracker (*Nucifraga columbiana*).

Prairie falcons (*Falco mexicanus*) are known to occur in Scott Valley and vicinity (BIOS 2010), although none were observed during the assessment, it is believed that potential foraging habitat exists for this species in the grassland habitat. Numerous horned larks (*Eremophila alpestris*) were seen in the grassland habitats within JH Ranch; this species is known as a primary winter food source for prairie falcons (Steenhof, 1998). Grassland habitats in JH Ranch could serve as a potential winter foraging site for this species. No nesting habitat or nests were observed.

Marginal habitat for Northern Spotted Owls (*Strix occidentalis caurina)* exists adjacent to the study area; there are no known occurrences within a mile (Sam Cuenca, personal communication, 2010).

The common wildlife species typically found in coniferous forest habitat surrounded by, or adjacent to, the study area in addition to those above include pine marten (*Martes americana*), silver-haired bat (*Lasionycteris noctivagans*), long-eared myotis (*Myotis evotis*), red-tailed hawk, northern goshawk (*Accipiter gentilis*), and song birds that come seasonally for tree seeds (pine and fir cones).

3.5 Wildlife Movement Corridors

Wildlife movement includes migration (i.e., usually one-way per season), inter-population movement (i.e., long-term genetic flow) and small travel pathways (i.e., daily movement corridors within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities, such as foraging or escape from predators, they also provide connection between outlying populations and the main corridor, permitting an increase in gene flow among populations.

These linkages among habitat types can extend for miles from primary habitat areas and occur on a large scale throughout California. Habitat linkages facilitate movement between populations located in discrete areas and populations located within larger habitat areas. The mosaic of habitats found within a large-scale landscape results in wildlife populations that consist of discrete sub-populations constituting a large single population, which is often referred to as a meta-population. Even where patches of pristine habitat are fragmented, such as occurs with coastal scrub, the movement between wildlife populations is facilitated through habitat linkages, migration corridors and movement corridors. Depending on the condition of the corridor, genetic flow between populations may be high in frequency, thus allowing high genetic diversity within the population, or may be low in frequency. Low-frequency genetic flow may potentially lead to complete isolation and, if pressures are strong, potential extinction (McCullough, 1996 and Whittaker, 1998).

No identified wildlife movement corridors are known to exist in the area. Based on the significant amount of undeveloped forests on both public and private lands adjacent to the mine site, and the ability of wildlife to readily access sites in the vicinity, wildlife movement corridors will not be affected by this project.

4.0 Regulatory Setting

Regulatory authority over biological resources is shared by federal, state, and local authorities under a variety of legislative acts. The following section summarizes the federal, state, and local regulations for special status species, jurisdiction waters of the United States (U.S.) and State of California (State), and other sensitive biological resources. Only select regulations will be applicable to this project.

4.1 Federal Laws

4.1.1 Clean Water Act Sections 404 and 401

Under Section 404 (33 U.S. Code (USC) 1344) of the Clean Water Act (CWA), as amended, the Army Corps of Engineers (ACOE) retains primary responsibility for permits to discharge dredged or fill material into waters of the U.S. All discharges of dredged or fill material into jurisdictional waters of the U.S. that result in permanent or temporary losses of waters of the U.S. are regulated by the ACOE, and a permit from the ACOE must be obtained before placing fill or grading in wetlands or other waters of the U.S., unless the activity is exempt from CWA Section 404 regulation (for example, certain farming and forestry activities).

The ACOE defines wetlands as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (Environmental Laboratory, 1987)." In other words, the ACOE defines wetlands by the presence of all three wetland indicators: hydrophytic vegetation, hydric soils, and wetlands hydrology.

Waters of the U.S. are defined at 33 Code of Federal Regulations (CFR) Part 328, and include traditional navigable waters; relatively permanent, non-navigable tributaries of traditional navigable waters; and certain wetlands. Following recent court cases, the U.S. Environmental Protection Agency (U.S. EPA) and ACOE published a memorandum entitled Clean Water Act Jurisdiction (U.S. EPA / U.S. ACOE, 2008) to guide the determination of jurisdiction over waters of the U.S, especially for wetlands. The applicability of Section 404 permitting over discharges to wetlands is therefore a two-step process: (1) Determining the areas which are wetlands, and (2) where wetlands are present, assessing the wetlands' connection to traditional navigable waters and non-navigable tributaries to determine whether the wetlands are jurisdictional under the CWA. A wetland is considered jurisdictional if it meets certain specified criteria.

The ACOE is required to consult with the USFWS and/or National Marine Fisheries Service (NMFS) under Section 7 of the Federal Endangered Species Act (FESA) if the action subject to CWA permitting could result in "Take" of federally listed species or an adverse affect to designated critical habitat.

Section 401 of the CWA (33 USC 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification from the state in which the discharge originates or would originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the affected waters at the point where the discharge originates or would originate, that the discharge will comply with the applicable effluent limitations and water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and its nine (9) Regional Water Quality Control Boards (RWQCB). The project is within the jurisdiction of the North Coast RWQCB.

4.1.2 Rivers and Harbors Appropriation Act of 1899

The Rivers and Harbors Appropriation Act of 1899 addresses activities that involve the construction of dams, bridges, dikes, and other structures across any navigable water. Placing obstructions to navigation outside established federal lines and excavating from or depositing material in such waters require permits from the ACOE pursuant to Section 10 (33 USC 403) of the Rivers and Harbors Appropriation Act, which prohibits the unauthorized obstruction or alteration of any navigable water of the U.S. This section provides that the construction of any structure in or over any navigable water of the U.S., or the accomplishment of any other work affecting the course, location, condition, or physical capacity of such waters, is unlawful unless the work has been recommended and authorized by the ACOE, Chief of Engineers.

4.1.3 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 USC Sections 661-667e, March 10, 1994, as amended 1946, 1958, 1978, and 1995) requires that whenever waters or channel of a stream or other body of water are proposed or authorized to be modified by a public or private agency under a federal license or permit, the federal agency must first consult with the USFWS and/or NMFS and with the head of the agency exercising administration over the wildlife resources of the state where construction will occur (in this case the CDFG), with a view to conservation of birds, fish, mammals and all other classes of wild animals and all types of aquatic and land vegetation upon which wildlife is dependent.

If direct permanent impacts occur to waters of the U.S. from a proposed project, then a permit from ACOE under the CWA Section 404 is required for the construction of the proposed project. ACOE is required to consult with USFWS and/or NMFS as appropriate regarding potential impacts to federally listed species under FESA. Such action may prompt consultation with CDFG which would review the project pursuant to California Endangered Species Act (CESA) and issue a consistency letter with USFWS and/or NMFS, if required.

4.1.4 Federal Endangered Species Act

The United States Congress passed the FESA in 1973 to protect species that are endangered or threatened with extinction. The FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend and within which they live. The USFWS and the NMFS are the designated federal agencies responsible for administering the FESA.

The FESA prohibits the "Take" of endangered or threatened wildlife species. A "Take" is defined as harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species, or any attempt to engage in such conduct (16 USC 1532, 50 CFR 17.3). An activity can be defined as a "Take" even if it is unintentional or accidental. Taking can result in civil or criminal penalties. Activities that could result in "Take" of a federally listed species require an incidental "Take" authorization resulting from FESA Section 7 consultation or FESA Section 10 consultation. Plants are legally protected under the FESA only if "Take" occurs on federal land or from federal actions, such as issuing a wetland fill permit.

A federal endangered species is one that is considered in danger of becoming extinct throughout all, or a significant portion, of its range. A federal threatened species is one that is likely to become endangered in the foreseeable future. The USFWS also maintains a list of species proposed for listing as threatened or endangered. Proposed species are those for which a proposed rule to list as endangered or threatened has been published in the Federal Register. In addition to endangered, threatened, and proposed species, the USFWS maintains a list of candidate species. Candidate (formerly category 1 candidate) species are those for which the USFWS has on file sufficient information to support issuance of a proposed listing rule.

Pursuant to the requirements of the FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally-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 a species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under the FESA or result in the destruction or adverse modification of critical habitat designated or proposed to be designated for such species (16 USC 1536[3], [4]). Project-related impacts to species on the FESA endangered or threatened list would be considered significant and would require mitigation.

4.1.5 Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) of 1918 makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in CFR Part 10, including feather or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The MBTA also prohibits disturbance and harassment of nesting migratory birds at any time during their breeding season. The USFWS is responsible for enforcing the MBTA (16 USC 703).

4.2 State Laws

4.2.1 Porter-Cologne Water Quality Act

The state and RWQCB also maintain independent regulatory authority over the placement of waste, including fill, into waters of the State under the Porter-Cologne Act. Waters of the State are defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The SWRCB protects all waters in its regulatory scope, but has special responsibility for isolated wetlands and headwaters. These water bodies might not be regulated by other programs, such as Section 404 of the CWA. Waters of the State are regulated by the RWQCBs under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require an ACOE permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit, but does involve activities that may result in a discharge of harmful substances to waters of the State, the RWQCBs have the option to regulate such activities under its state authority in the form of Waste Discharge Requirements (WDRs) or Certification of WDRs. Water Quality Order No. 2004-0004-DWQ specifies general WDRs for dredged or fill discharges to waters deemed by the ACOE to be outside of federal jurisdiction under Section 404 of the CWA.

4.2.2 California Endangered Species Act

The State of California enacted the CESA in 1984. The CESA is similar to the FESA but pertains to state-listed endangered and threatened species. Under the CESA, the CDFG has the responsibility for maintaining a list of threatened and endangered species designated under state law (California Fish and Game Code [CFGC] 2070). Section 2080 of the CFGC prohibits "Take" of any species that the commission determines to be an endangered or threatened species. "Take" is defined in Section 86 of the CFGC as "to hunt, purse, catch, capture, or kill, or attempt to hunt, purse, catch, capture, or kill."

The state and federal lists of threatened and endangered species are generally similar; however, a species present on one list may be absent from the other. CESA regulations are also somewhat different from the FESA in that the State regulations included threatened, endangered, and candidate plants on non-federal lands within the definition of "Take." CESA allows for "Take" incidental to otherwise lawful development projects.

Pursuant to the requirements of the CESA, an agency reviewing a proposed 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. Project-related impacts to species on the CESA endangered or threatened list (or, in addition, designated by the CDFG as a "Species of Special Concern," which is a level below threatened or endangered status) would be considered significant and would require mitigation.

As a trustee agency under CEQA, CDFG reviews potential project impacts to biological resources, including wetlands. In accordance with the California Environmental Quality Act (CEQA)

thresholds of significance for biological resources, areas that meet the state criteria of wetlands and could be impacted by a project must be analyzed. Pursuant to CFGC Section 2785, CDFG defines wet areas as "lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools." Wet areas are determined by CDFG by the presence of one of the three-wetland indicators (hydrophytic vegetation, hydric soils, or wetland hydrology).

4.2.3 California Environmental Quality Act Guidelines Sections 15380 and 15370

CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. Thus, CEQA provides the ability to protect a species from potential project impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected, and requires a finding of significance if there will be substantial losses. Natural communities listed by CNDDB as sensitive are considered by CDFG to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as general plans often identify these resources as well.

Proposed projects that may result in an impact pursuant to Section 15380(b) must meet the requirements of CEQA Section 15370. Section 15370 specifies that a project must avoid, minimize, or mitigate the impact to a less than significant level as determined by the lead agency, resource agency(s), and trustee agency(s).

4.2.4 California Fish and Game Code Section 1600

Streams, lakes, and riparian vegetation as habitat for fish and other wildlife species, are subject to jurisdiction by the CDFG under Sections 1600-1616 of the CFGC. Any activity that will do one or more of the following: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake generally require a Streambed Alteration Agreement (SAA).

The term "stream," which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life." This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation (14 CCR 1.72).

In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG, 1994a).

Riparian is defined as "on, or pertaining to, the banks of a stream"; therefore, riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG, 1994a). Removal of riparian vegetation also requires an SAA from the CDFG.

4.2.5 California Fish and Game Code Sections 3503 and 3513

According to Section 3503 of the CFGC it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird (except English sparrows [*Passer domesticus*] and European starlings [*Sturnus vulgaris*]). Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 essentially overlaps with the MBTA, prohibiting the "Take" or possession of any migratory non-game bird. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "Take" by the CDFG.

4.2.6 Fully Protected Species and Species of Special Concern

The classification of "fully protected" was the CDFG's initial effort to identify and provide additional protection to those animals that were rare or faced with possible extinction. Lists were created for fish, amphibian and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The CFGC sections (fish at Sec. 5515, amphibian and reptiles at Sec. 5050, birds at Sec. 3511, and mammals at Sec. 4700) dealing with "fully protected" species states that these species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species," (CDFG, 1998) although "Take" may be authorized for necessary scientific research. This language makes the "fully protected" designation the strongest and most restrictive regarding the "Take" of these species. In 2003, the code sections dealing with fully protected species were amended to allow the CDFG to authorize "Take" resulting from recovery activities for state-listed species.

Species of Special Concern (SSC) are broadly defined as animals not listed under the CESA, but which are nonetheless of concern to the CDFG because they are declining at a rate that could result in listing or historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFG, land managers, consulting biologists, and others, and is intended to focus attention on the species to help avert the need for costly listing under CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although these species generally have no special legal status, they are given special consideration under CEQA during project review.

Table 2 (Section 5 [Special Status Biological Resources]) includes potentially occurring federal and state listed species and SSC animals from the project area.

4.2.7 Native Plant Protection Act of 1973

The Native Plant Protection Act (NPPA) of 1973 (Sec.1900-1913 of the CFGC) includes provisions that prohibit the taking of endangered or rare native plants from the wild and a salvage

requirement for landowners. The CDFG administers the NPPA and generally regards as "rare" many plant species included on Lists 1B, 2, 3, and 4 of the CNPS Inventory of Rare and Endangered Vascular Plants of California (Tibor, 2001; CNPS, 2008).

Table 1 (Section 5 [Special Status Biological Resources]) includes potentially occurring endangered or rare native plants from the project area (including CNPS Lists 1B through 3).

4.2.8 Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act (NCCP) of 1991 is an effort by the State of California, and numerous private and public partners that is broader in its orientation and objectives than the CESA and FESA (refer to discussions above). The primary objective of the NCCP Act is to conserve natural communities at the ecosystem scale while accommodating compatible land use. The NCCP seeks to anticipate and prevent the controversies and gridlock caused by species' listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process.

No regionally occurring natural communities are listed by the State in the project area.

4.2.9 Sensitive Vegetation Communities

Sensitive vegetation communities are natural communities and habitats that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. However, these communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies or regulations, or by the CDFG (i.e., CNDDB) or the USFWS. Impacts to sensitive natural communities and habitats must be considered and evaluated under the CEQA (CCR: Title 14, Div. 6, Chap. 3, Appendix G).

The study area is not considered a sensitive vegetation community.

4.3 Other Statutes, Codes, and Policies Affording Limited Species Protection

California Native Plant Society. CNPS maintains a list of plant species native to California whose members exist in significantly reduced populations from historical levels, occur in limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Plants of California (Tibor, 2001; CNPS, 2008). CDFG recognizes that Lists 1A, 1B, 2, 3, and 4 of the CNPS Inventory consist of plants that may qualify for listing, and the CDFG recommends they be addressed in projects pursuant to CEQA.

Table 1 (see Section 6 [Special Status Biological Resources]) includes CNPS Lists 1B through 3 from the project area.

4.4 Local Regulations and Ordinances

4.4.1 Siskiyou County General Plan

The Siskiyou County General Plan sets forth overall goals and objectives for development and land use in the County. Comprised of various "elements," the General Plan outlines guidance of development that is geared towards the appropriate use of the land based on site specific factors. For this study area, the Conservation Element (approved in 1973) and the Land Use and Circulation Element (approved 1980) provide overall guidance. Review of these elements found no specific information relating to the continued use and development of mining resources at this site, and no specific limitations or restrictions for continued project development.

5.0 Special Status Biological Resources

An evaluation was conducted for the potential presence or absence of habitat for special status plant and animal species. CNDDB RareFind (CDFG, 2010a), BIOS (CDFG, 2010f), and CNPS (CNPS, 2010) searches were completed for the 7.5-minute USGS Eaton Peak Quad quadrangle and all adjacent quadrangles. The aforementioned databases were queried for historical and existing occurrences of state and federally listed threatened, endangered, and candidate plant and animal species; species proposed for listing; and all plant species listed by the CNPS (On-line 2010 inventory and Tibor, 2001). In addition to querying the CNDDB, a list of all federally listed species that are known to occur or may occur in the Eaton Peak Quad quadrangle was obtained from the Yreka USFWS website (USFWS, 2010).

Table 1 includes all plant species reported from the queries, their preferred habitat, and whether there is suitable habitat present within the study area for the species. Table 2 includes all animal species reported from the queries, their preferred habitat, and whether there is suitable habitat present within the study area for the species. The potential for occurrence of those species included on the list were then evaluated based on the habitat requirements of each species relative to the conditions observed during the field surveys.

Each species was evaluated for its potential to occur on the study area according to the following criteria:

1. **None**. Species listed as having "none" are those species for which:
   - there is no suitable habitat present in the study area (that is, habitats on the study area are unsuitable for the species requirements [for example, elevation, hydrology, plant community, disturbance regime, etc.]).
2. **Low**. Species listed as having a "low" potential to occur in the study area are those species for which:
   - there is no known record of occurrence in the vicinity; and
   - there is marginal or very limited suitable habitat present within the study area.

3. **Moderate**. Species listed as having a "moderate" potential to occur in the study area are those species for which:

   - there are known records of occurrence in the vicinity; and
   - there is suitable habitat present in the study area.

4. **High**. Species listed as having a "high" potential to occur on the study area are those species for which:

   - there are known records of occurrence in the vicinity (there are many records and/or records in close proximity); and
   - there is highly suitable habitat present in the study area.

5. **Present**. Species listed as "present" in the study area are those species for which:

   - the species was observed in the study area.

Table 1 Potential Regionally Occurring Sensitive Botanical Species from JH Ranch, California					
Species Latin Name	**Common Name**	**Status (Federal/ State/CNPS)[1]**	**Life Form/General Habitat Requirements[2]**	**Blooming Period**	**Potential for Occurrence**
Abies lasiocarpa var. *lasiocarpa*	subalpine fir	-/-/2.3	Evergreen tree. Subalpine forest, meadows; between approximately 945-2225 meters (m) above MSL.	N/A	None
Astragalus applegatei	Applegates's milk vetch	E/E/-	Perennial herb. Flat open seasonally moist remnants of floodplain alkaline grasslands of the Klamath Basin. Habitat was historically characterized by sparse, native bunchgrass and patches of bare soil. 1250 m above MSL.	Jun-Aug	Low
Balsamorhiza lanata	wooly balsamroot	-/-/1B.2	Perennial from taproot. Cismontane woodland/rocky, volcanic; between approximately 800-1895 m above MSL.	Apr-Jun	None
Balsamorhiza sericea	silky balsamroot	-/-/1B.3	Perennial from fleshy taproot. Yellow pine forest/serpentinite; between approximately 916-1740 m above MSL.	Apr-May	Low
Botrychium pinnatum	northwestern moonroot	-/-/2.3	Rhizomatous herb. Lower montane coniferous forest meadows and seeps, upper montane coniferous forest; between approximately 1770-2040 m above MSL.	Jun-Aug	Low
Botrychium virginianum	Rattlesnake fern	-/-/2.2	Perennial herb. Bogs and fens. Lower montane coniferous forest, meadows and seeps, riparian forest; between approximately 728-1300 m above MSL.	Jun-Sep	Moderate
Calochortus persistens	Siskiyou mariposa lily	C/Rare/1B.2	Bulbiferous herb. Lower montane coniferous forest, North Coast coniferous forest/rocky, acidic; between approximately 1000-1860 m above MSL.	Jun-Jul	Moderate
Chaenactis suffrutescens	Shasta chaenactis	-/-/1B.3	Perennial herb. Dry open areas, lower montane coniferous forest, upper montane coniferous forest/ sandy, serpentinite; between approximately 760-2800 m above MSL.	May-Sep	Low
Epilobium siskiyouense	Siskiyou fireweed	-/-/1B.3	Perennial herb. Alpine boulder and rock fields, subalpine coniferous forest, upper montane coniferous forest/rocky, serpentinite; between approximately 1700-2500 m above MSL.	Jul-Sep	None
Erigeronum bloomer var. *nudatus*	Waldo daisy	-/-/2.3	Perennial herb. Lower montane coniferous forest, upper montane coniferous forest/serpentinite; between approximately 600-2300 m above MSL.	Jun-Jul	Low

Table 1 Potential Regionally Occurring Sensitive Botanical Species from JH Ranch, California					
Species Latin Name	**Common Name**	**Status (Federal/ State/CNPS)[1]**	**Life Form/General Habitat Requirements[2]**	**Blooming Period**	**Potential for Occurrence**
Eriogonum umbellatum var. *lautum*	Scott Valley buckwheat	-/-/1B.1	Perennial herb. Cismontane woodland, lower montane coniferous forest. Known only in Scott Valley; between approximately 800-900 m above MSL.	Jul-Sep not blooming, but vegetative present in Jun	Low
Erythronium hendersonii	Henderson's fawn lily	-/-/2.3	Bulbiferous herb. Lower montane coniferous forest, dry woodlands, openings, strong affinity for serpentine soils; between approximately 300-1600 m above MSL.	Apr-Jul	Low
Fissidens aphelotaxifolius	Brook pocket moss	-/-/2.2	Moss. Lower montane coniferous forest, upper montane coniferous forest/rock, stream channels, waterfalls; between approximately 2000-2200 m above MSL.	N/A	Low
Galium serpenticum ssp. *scotticum*	Scott mountain bedstraw	-/-/1B.2	Perennial herb. Lower montane coniferous forest/ serpentinite; between approximately 1000-2075 m above MSL.	May-Aug	Low
Ivesia pickeringii	Pickering's ivesia	-/-/1B.2	Perennial herb. Lower montane coniferous forest, meadows and seeps, mesic, clay, usually serpentinite seeps; between approximately 800-1510 m above MSL.	Jun-Aug	Low
Lewisia cotyledon var. *howellii*	Howell's lewisia	-/-/3.2	Perennial herb. Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest/rocky; between approximately 150-2010 m above MSL.	Apr-Jul	Moderate
Lupinus elmeri	South Fork Mtn. lupine	-/-/1B.2	Perennial herb. Lower montane coniferous forest. Known only from South Fork Mtn. area; between approximately 1218-2000 m above MSL.	Jun-Jul	Low
Mitella caulescens	leafy stemmed mitrewort	-/-/4.2	Rhizomatous herb. Broadleafed upland forest, lower montane coniferous forest, meadows and seeps, North Coast coniferous forest; between approximately 5-1700 m above MSL.	Apr-Oct	Moderate
Orcuttia tenuis	Slender Orcutt grass	T/E/1B.1	Annual herb. Vernal pools; between approximately 35-1760 m above MSL.	May-Sep	None

Table 1 Potential Regionally Occurring Sensitive Botanical Species from JH Ranch, California					
Species Latin Name	**Common Name**	**Status (Federal/ State/CNPS)[1]**	**Life Form/General Habitat Requirements[2]**	**Blooming Period**	**Potential for Occurrence**
Phacelia greenei	Scott Valley phacelia	-/-/1B.2	Annual herb. Closed-cone coniferous forest, lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest/serpentinite. Known only in the vicinity of Scott Valley; between approximately 800-2440 m above MSL.	Apr-Jun	Low
Phacelia leonis	Siskiyou phacelia	-/-/1B.3	Annual herb. Meadows and seeps, upper montane coniferous forest/openings, often on serpentinite; between approximately 1200-2000 m above MSL.	Jun-Aug	None
Phlox hirsuta	Yreka phlox	E/E/1B.2	Perennial herb. Lower montane coniferous forest, upper montane coniferous forest/serpentinite. Known from only four occurrences near Yreka. Between approximately 820-1500 m above MSL.	Apr-Jun	None
Picea engelmannii	Engelmann spruce	-/-/2.2	Evergreen tree. Upper montane coniferous forest, cool moist mixed-conifer subalpine forest; between approximately 1065-2135 m above MSL.	N/A	Low
Pohlia tundrae	Tundra thread moss	-/-/2.3	Moss. Alpine boulder and rock field/gravelly, damp soil; between approximately 2700-3000 m above MSL.	N/A	None
Raillardella pringlei	Showy raillardella	-/-/1B.2	Rizomatous herb. Bogs and fens, meadows and seeps, upper montane coniferous forest/mesic, serpentinite; between approximately 1200-2290 m above MSL.	Jul-Sep	Low
Sidalcea oregana ssp. *eximia*	coast checkerbloom	-/-/1B.2	Perennial herb. Openings in lower montane and North Coast coniferous forests, meadows and seeps, and coastal prairie from 5-1,340 m above MSL.	June-August	None
Smilax jamesii	English Peak greenbriar	-/-/1B.3	Rhizomatous herb. Broadleafed upland forest, lower montane coniferous forest, marshes and swamps, North Coast coniferous forest/streambanks and lake margins; between approximately 580-2500 m above MSL.	May-Jul	Moderate
Vaccinium coccineum (not on list)	Siskiou Mountains huckleberry	-/-/3.3	Deciduous shrub. Lower montane coniferous forest, upper montaine coniferous forest/often serpentinite; between approximately 1095-2135 m above MSL.	Jun-Aug	Low
Vaccinium scoparium	Little-leaved huckleberry	-/-/2.2	Deciduous shrub. Subalpine coniferous forest/rocky; between approximately 1036-2200 m above MSL.	Jun-Aug	None

Table 1
Potential Regionally Occurring Sensitive Botanical Species from JH Ranch, California

Species Latin Name	Common Name	Status (Federal/ State/CNPS)[1]	Life Form/General Habitat Requirements[2]	Blooming Period	Potential for Occurrence

1. CNPS List 1B includes plants that are rare, threatened, or endangered in CA and elsewhere.
CNPS List 2 includes plants that are rare, threatened, or endangered in California but more common elsewhere.
CNPS List 3 includes plants for which more information is needed–a review list.
CNPS List 4 includes plants of limited distribution and should be documented as they are watch list species
FE: Federally listed Endangered, pursuant to the Federal Endangered Species Act (FESA), as amended. This designation includes taxa that are in danger of extinction throughout all or a significant portion of their range.
FT: Federally listed Threatened, pursuant to the FESA, as amended. This designation refers to species that are not presently threatened with extinction but are likely to become endangered throughout all or a significant portion of their range in the foreseeable future if special protection and management efforts are not undertaken.
MSL: Mean Sea Level
SE: State listed Endangered, pursuant to California Endangered Species Act (CESA). SE designation includes taxa that are in danger of extinction throughout all or a significant portion of their range.
SR: State listed Rare, pursuant to CESA. SR designation refers to species that although not presently threatened with extinction, occur in such small numbers throughout their range that they may become endangered if their present environment worsens.
ST: State listed Threatened, pursuant to CESA. ST designation includes taxa that are likely to become endangered throughout a significant portion of their range.
N/A: Not Applicable
"-": no status/listing.
2. Plant habitat descriptions are from CNDDB (2010), CNPS (2010), Tibor (2001), Hickman (1993), and Center for Plant Conservation (2010).

Table 2 Potential Regionally Occurring Sensitive Wildlife Species from JH Ranch, California				
Species Latin Name	**Common Name**	**Status (Federal/State)[1]**	**General Habitat Requirements**	**Potential for Occurrence**
Invertebrates				
Brachinecta lynchi	vernal pool fairy shrimp	FT / -	A freshwater fairy shrimp. Found in palustrine habitats of herbaceous wetland, scrub-shrub wetland and temporary pools. This species inhabits vernal pools or basalt flow depression pools in unplowed grasslands.	None
Monadenia infumata ochromphalus	yellow-based sideband	- / ST	A terrestrial snail. This sub-species is an old growth and riparian associate found on leaves, sticks, concrete wall of irrigation ditches and mossy boulders and stones. Species has not been found since 1960s and possibly extirpated from the region.	Low
Pacifastacus fortis	Shasta crayfish	FE / -	A freshwater crayfish. Prefers rocky, gravelly bottoms, usually volcanic rubble. The most important habitat requirement appears to be the presence of adequate volcanic rock rubble to provide escape cover from predators. Range of this species is limited to the Fall River region of eastern Shasta County.	None
Polites mardon	mardon skipper	FC / -	A dull yellowish and brown skipper. Found in terrestrial habitat including: Alpine, Grassland / herbaceous, Woodland-Conifer. In California, the species is usually found in serpentine outcrops, generally grassy openings in subalpine coniferous forests. In California, two isolated populations are known, located about 10 miles apart in serpentine-soil grasslands in Del Norte County.	None

Table 2 Potential Regionally Occurring Sensitive Wildlife Species from JH Ranch, California				
Species Latin Name	**Common Name**	**Status (Federal/State)[1]**	**General Habitat Requirements**	**Potential for Occurrence**
Fish				
Chasmistes brevirostris	shortnose sucker	FE / -	A sucker (fish) with a hump on the snout; up to 64 cm long. Adults and juveniles prefer shallow, turbid, and highly productive lakes that are cool, but not cold, in summer. Habitat for this species is found in the Upper Klamath Basin, with young utilizing the mouths of streams along the Klamath River during outmigration. Spawning occurs in lake tributaries, in riffles or runs with gravel or cobble substrate, moderate flows, and depths or 11-130 cm. Fry move into lakes soon after hatching. Shoreline river and lake habitats are important for larvae and young.	None
Deltistes luxatus	Lost River sucker	FE / -	A sucker (fish) with a distinct hump on the snout; to 86 cm long. Found in the upper Klamath River Basin. Habitat includes deep-water lakes and impoundments, and swift water and deep pools of small to medium rivers. Suckers can be found throughout the reservoirs they inhabit but they appear to prefer shorelines with emergent vegetation that can provide cover from predators and invertebrate food. Suckers move from lakes into tributary streams to spawn in riffles or runs with gravel or cobble substrate, moderate flows, and depths of 21-128 cm. Spawning also occurs along shore of Upper Klamath Lake (e.g., at spring inflows). Juveniles move downstream into lakes soon after hatching. Larval suckers prefer shallow, near shore, and emergent vegetated habitat in both the lakes and rivers.	None
Hypomesus transpacificus	delta smelt	FT / -	Restricted to the Delta region and Suisun Bay in central California. Euryhaline species that inhabits open waters of bays, tidal rivers, channels, and sloughs.	None

Table 2 Potential Regionally Occurring Sensitive Wildlife Species from JH Ranch, California				
Species Latin Name	**Common Name**	**Status (Federal/State)[1]**	**General Habitat Requirements**	**Potential for Occurrence**
Oncorhynchus kisutch	Southern Oregon / northern California (SONCC) coho salmon (ESU)	FT / -	Freshwater, near shore and offshore environments throughout their lifecycles. Coho prefer low stream velocity, shallow water and small gravel. Spawning and rearing habitat mainly in low gradient tributaries and side channels of river systems. Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water, and sufficient dissolved oxygen.	Moderate
Oncorhynchus mykiss	Central Valley steelhead (ESU)	FT / -	Optimal habitats for steelhead throughout its range in the Sacramento River system and on the Pacific Coast can generally be characterized by clear, cool water with abundant in stream cover, well vegetated stream banks, relatively stable water flow and a 50:50 pool-to-riffle ratio.	None; not located within the habitat range
Oncorhynchus mykiss irideus	summer-run steelhead trout	- / SC	A trout of variable appearance. In California, adult migrants of summer-run steelhead enter freshwater streams April-June (sometimes extending into July), during or shortly after final high spring flows. Spawns in gravelly substrate in cool, clear, well-oxygenated streams (natal stream), in water flowing 23-155 cm / sec and 10-150 cm deep, usually at the tail of a pool or at the riffle at the head of a pool; favors areas with well-vegetated banks and abundant in stream cover such as boulders, logs, and undercut banks	Moderate
Onchrhynchus tshawytscha	Central Valley fall / late-fall Chinook salmon (ESU)	FC / -	Spawns in streams of the Sacramento and Joaquin river systems in California; more than 190,000 naturally spawning individuals	None; not located within the habitat range
Oncorhynchus tshawytscha	Central Valley spring-run Chinook salmon	FT / -	Few wild spawning populations remain in the Sacramento River system, California; extirpated in San Joaquin River drainage.	None; not located within the habitat range
Oncorhynchus tshawytscha	winter-run Chinook salmon	FE / -	The Sacramento River winter-run Chinook salmon historically spawned in cold spring-fed tributaries of the Upper Sacramento River Basin. The run is now restricted to the main stem Sacramento River downstream of Keswick Dam.	None; not located within the habitat range

Table 2 Potential Regionally Occurring Sensitive Wildlife Species from JH Ranch, California				
Species Latin Name	**Common Name**	**Status (Federal/State)[1]**	**General Habitat Requirements**	**Potential for Occurrence**
Amphibians				
Ascaphus truei	Pacific tailed frog	-/SC	A small frog with a tail-like appendage in males. Found in clear, cold swift-moving mountain streams with coarse substrates. Primarily in older forest sites. May be found on land during wet weather near water in humid forests or in more open habitat. During dry weather stays on moist stream-banks.	Moderate
Rana cascadae	Cascades frog	/SC	A medium sized frog. Found in wet mountain meadows, sphagnum bogs, ponds, lakes, and streams, in open coniferous forest. Prefers quiet pond with shallow open water for breeding and egg laying.	Moderate
Rana aurora draytonii	California red-legged frog	FT/ -	A frog with dorsolateral ridges. This species usually occurs in or near quiet permanent water of streams, marshes, ponds, lakes, and other quiet bodies of water. In summer, frogs estivate in small mammal burrows, leaf litter, or other moist sites in or near (within a few hundred feet of) riparian areas. Individuals may range far from water along riparian corridors and in damp thickets and forests.	Moderate
Rana pretiosa	Oregon spotted frog	FC/ -	A medium sized frog. Highly aquatic, avoids dry uplands; rarely found far from permanent quiet water; usually occurs at the grassy margins of streams, lakes, ponds, springs, and marshes.	Moderate

Table 2 Potential Regionally Occurring Sensitive Wildlife Species from JH Ranch, California				
Species Latin Name	**Common Name**	**Status (Federal/State)[1]**	**General Habitat Requirements**	**Potential for Occurrence**
Birds				
Brachyramphus marmoratus	marbled murrelet	FT / -	Coastal areas, mainly in salt water within 2 km of shore, including bays and sounds; not uncommon up to 5 km offshore; occasionally also on rivers and lakes usually within 20 km of ocean. In California, most inland activity takes place in or to the west of old-growth stands of 250 ha or more.	None
Coccyzus americanus	Western yellow-billed cuckoo	Nesting FC / -	Nests in tall cottonwood and willow riparian woodland. Requires patches of at least 10 hectares (25 acres) of dense riparian forest with a canopy cover of at least 50 percent in both the understory and overstory; nests typically in mature willows.	None; not located within the habitat range
Falco mexicanus	prairie falcon	Nesting N / A	A brown falcon. Primarily open situations, especially in mountainous areas, steppe, plains or prairies. Typically nests in pot hole or well-sheltered ledge on rocky cliff or steep earth embankment. Vertical cliffs with rock structure overhanging the site are preferred. May use old nest of raven, hawk, eagle, etc. Winter foraging habitat includes wheat and other irrigated croplands. In all cases, large patches with low vegetation stature characterize the habitats used. Early sucessional stages, low vegetation height and large percentage of bare ground are an inferred requirement.	Low
Riparia riparia	bank swallow	Nesting - / ST	Habitat includes open and partly open situations, frequently near flowing water. Nests are in steep sand, dirt, or gravel banks, in burrows dug near the tip of the bank. They can also be found along the edge of inland water, or along the coast. Occasionally they are seen in gravel pits or road embankments. Individuals tend to return to the same nesting area in successive years.	None
Strix occidentalis caurina	northern spotted owl	FT / -	Northern spotted owl (*Strix occidentalis caurina*) is in the Family Strigidae and is generally found in coastal to mountainous mature coniferous forests. This species nests in cavities or on natural platforms.	Low

Table 2
Potential Regionally Occurring Sensitive Wildlife Species from JH Ranch, California

Species Latin Name	Common Name	Status (Federal/State)[1]	General Habitat Requirements	Potential for Occurrence
Mammals				
Gulo gulo	California wolverine	-/ST	A large mustelid. Found in Alpine and arctic tundra, boreal and mountain forests (primarily coniferous). Usually found in areas with snow on the ground in winter. Riparian areas may be important winter habitat. May disperse through atypical habitat. When inactive, occupies den in cave, rock crevice, under fallen tree in thicket, or similar site. Terrestrial and may climb trees.	None; not located within the habitat range
Martes americana	American (pine) marten	N/A	A medium-sized mustelid. Found in dense deciduous, mixed, or (especially) coniferous upland and lowland forest. May use rocky alpine areas. When inactive, occupies hole in dead or live tree or stump, abandoned squirrel nest, conifer crown, rock pile, burrow, or snow cavity. Often associated with coarse woody debris.	Moderate
Martes americana humboldtensis	Humboldt marten	-/SC	A medium-sized mustelid. This sub-species is found almost exclusively in old-growth forests along the coast from present-day Del Norte to Sonoma counties.	None; not located within the habitat range
Martes pennanti (pacifica) DPS	fisher, West Coast DPS	FC/SC	The key aspects of fisher habitat are best expressed in forest stands with late-sucessional characteristics. Fishers use habitat with high canopy closure, large trees and snags, large woody debris, large hardwoods, multiple canopy layers, and avoidance of areas lacking overhead canopy cover. Fishers also occupy and reproduce in some managed forest landscapes and forest stands not classified as late-successional that provide some of the habitat elements important to fisher, such as relatively large trees, high canopy closure, large legacy trees, and large woody debris, in second-growth forest stands.	Moderate

Table 2
Potential Regionally Occurring Sensitive Wildlife Species from JH Ranch, California

Species Latin Name	Common Name	Status (Federal/State)[1]	General Habitat Requirements	Potential for Occurrence

1. Abbreviations:
   CH: Critical Habitat
   DPS: Distinct Population Segment
   ESU: Evolutionarily Significant Unit
   FC: Federal Candidate. This designation includes taxa that require additional information to propose for listing pursuant to the Federal Endangered Species Act (FESA), as amended.
   FE: Federally-listed Endangered, pursuant to the FESA, as amended. This designation includes taxa that are in danger of extinction throughout all or a significant portion of their range.
   FT: Federally-listed Threatened, pursuant to the FESA, as amended. This designation refers to species that are not presently threatened with extinction but are likely to become endangered throughout all or a significant portion of their range in the foreseeable future if special protection and management efforts are not undertaken.
   NA: Not Applicable
   SE: State-listed Endangered, pursuant to California Endangered Species Act (CESA). SE designation includes taxa that are in danger of extinction throughout all or a significant portion of their range.
   SONCC: Southern Oregon Northern California Coast
   ST: State-listed Threatened, pursuant to CESA. ST designation includes taxa that are likely to become endangered throughout a significant portion of their range.
   SC: Species of Special Concern are species that the CDFG consider of conservation concern. These species must be considered pursuant to CEQA.
   "- ": No Status/Listing

5.1 Special Status Natural Communities

Natural communities are habitats that are generally defined by vegetation type and geographical location and are increasingly restricted in abundance and distribution. CNDDB natural communities are habitat for numerous special status plant and animal species. The natural communities that are included in the CNDDB are based on the state and global ranking status, which provides an estimate of the number of acres that remains of a particular community and threat level designation. Recognition of natural communities is an ecosystem-based approach to maintaining biodiversity in California.

No potential regionally occurring natural communities are listed by the CNDDB for the project area.

5.2 Special Status Plant Species

Based on a review for special-status plant species (CDFG, 2010a; CNPS ,2010; USFWS, 2010), a total of 29 special-status plant species have been reported from the region consisting of the site's quadrangle and the surrounding quadrangles. Of the 29 special status plant species reported for the region, five plants are considered to have a moderate potential to occur. These include:

- English peak greenbrier (*Smilax jamesii*)
- Engelmann spruce *(Picea engelmannii)*
- Howell's lewisia (*Lewisia cotyledon* var. *howellii*)
- Leafy stemmed miterwort *(Mitella caulescens)*
- Rattlesnake fern (*Botrychium virginianum*)
- Siskiyou mariposa lily (*Calochortus persistens*)

Only those plant species included in Table 1 with moderate to high (or present) potential to occur are described in more detail below. Engelmann's spruce has been included in the discussion below because CNDDB occurrence data has reported in the vicinity of the study area. None of the 29 special status plant species reported in Table 1 were observed during the 2010 site visits.

English peak greenbrier (*Smilax jamesii*) is a monocot, perennial herb (rhizomatous) endemic to California (Calflora, 2010). This species occurs in marshes, swamps, stream banks, and lake margins in broadleafed upland forest and in lower and upper montane coniferous forests (CNPS, 2010). The only occurrence is reported near the head of the north fork Salmon River at Finley's upper camp within the Klamath National Forest. Habitat is identified along the banks of French Creek and the Paynes Lake Creek. These areas were surveyed and no English peak greenbrier was observed.

Engelmann spruce *(Picea engelmannii)* is an evergreen tree found in upper montane coniferous forests and cool moist mixed-conifer subalpine forest. This species is found in Northern California and in other areas in North America (CNPS, 2010). Limited habitat for this species exists and is restricted to riparian areas along French Creek and Paynes Lake Creek. CNDDB occurrence data identified this species within the vicinity of the study area on private property, but the mapping precision is unclear. The study area is within the upper range for elevation requirements and not optimal habitat. Engelmann spruce was not observed in the study area.

Howell's lewisia *(Lewisia cotyledon var. howellii)* is a perennial herb native to California and found outside of California, but confined to Western North America (Calflora, 2010). This species is found in broadleafed upland forest, chaparral, cismontane woodland, and rocky lower montane coniferous

forest (CNPS, 2010). Habitat for this species was identified within the forested lowland and riparian habitats along French Creek and Paynes Lake Creek.

Leafy stemmed miterwort *(Mitella caulescens)* is a perennial herb native to California and also found outside California, but confined to Western North America (Calflora, 2010). This species is a rhizomatous found in broadleafed upland forest, lower montane coniferous forest, meadows and seeps and North Coast coniferous forest (CNPS, 2010). Habitat for this species was identified within the riparian habitats along French Creek and Paynes Lake Creek within JH Ranch. The closest occurrence is at headwaters of Etna Creek in the Klamath National Forest. Leafy stemmed miterwort was not observed.

Rattlesnake fern (*Botrychium virginianum*), a pteridophyte is a perennial herbaceous species known throughout the Western United States. However, in California it is only documented from Mendocino, Shasta, and Siskiyou Counties (Calflora, 2010). This species grows in bogs and fens, meadows and seeps, riparian forest, and in mesic micro-habitats in lower montane coniferous forest (CNPS 2010). Habitat for this species was identified within the riparian habitats along French Creek and unnamed Paynes Lake Creek within JH Ranch. The closest occurrence is approximately two miles from the study area. Rattlesnake fern was not observed.

Siskiyou mariposa lily (*Calochortus persistens*), a monocot, is a perennial herb (bulb) that is endemic to Siskiyou County (Calflora, 2010). Siskiyou mariposa lily grows in rocky soils in lower montane and North Coast coniferous forest types (CNPS ,2010). Habitat for Siskiyou mariposa lily was seen in the forested lowland habitat and along French Creek and Paynes Lake Creek in JH Ranch. Siskiyou mariposa lily was not observed.

5.3 Special Status Animal Species

Based on a review of special status animal species (CDFG, 2010a; USFWS, 2010), 26 special status animal species have been reported, but 21 have potential to occur in the project region. Of the 21 animal species potentially occurring in the region, the habitat present in the study area, and the geographical range of the various special status animal species, six animal species included in the tables are considered to have a moderate to high potential to occur within the site:

- California red-legged frog (*Rana aurora draytonii*)
- Cascades frog (*Rana cascadae*)
- Oregon spotted frog (*Rana pretiosa*)
- Pacific tailed frog (*Ascaphus truei*)
- Coho salmon *(Oncorhynchus kisutch)*
- Steelhead (*Oncorhynchus mykiss irideus*)
- American (pine) marten *(Martes americana)*
- Fisher, West Coast DPS (*Martes pennanti*)

Only those animal species included in Table 2 with moderate to high (or present) potential to occur are described in more detail below.

Information presented in this section was gathered during the site visits, from published habitat requirements of each species, and through professional knowledge and experience with several of the species and their habitat requirements, disturbance issues, and distribution in northwestern California.

California red-legged frog (*Rana aurora draytonii*) is a frog with dorsolateral ridges. This species usually occurs in or near quiet permanent water of streams, marshes, ponds, lakes, and other quiet bodies of water. In summer, frogs estivate in small mammal burrows, leaf litter, or other moist sites in or near (within a few hundred feet of) riparian areas (USFWS 1996). Individuals may range far from water along riparian corridors and in damp thickets and forests. Breeding occurs in permanent or seasonal water of ponds, marshes, or quiet stream pools, sometimes in lakes (Jones et al. 2005). Moderate habitat for California red-legged frog was identified within the riparian habitats and ponds found along French Creek and Paynes Lake Creek. No California red-legged frogs were observed.

Cascades frog (*Rana cascadae*) is a medium sized frog found in wet mountain meadows, sphagnum bogs, ponds, lakes, and streams, in open coniferous forest (Briggs 1987). This species prefers quiet pond with shallow open water for breeding and egg laying (Briggs 1987). Moderate habitat for Cascades frog was identified within the riparian habitats and ponds found near French Creek and Paynes Lake Creek. No Cascades frogs were observed.

Oregon spotted frog (*Rana pretiosa*) is a medium sized frog. This species is highly aquatic, avoids dry uplands and is rarely found far from permanent quiet water. Oregon spotted frogs usually occur at the grassy margins of streams, lakes, ponds, springs, and marshes (Licht, 1986). Moderate habitat for Oregon spotted frog was identified within the riparian habitats and ponds near French Creek and Paynes Lake Creek. No Oregon spotted frogs were observed.

Pacific tailed frog *(Ascaphus truei)* is a small frog with a tail-like appendage in males. Found in clear, cold swift-moving mountain streams with coarse substrates. This species is found to occur in primarily in older forest sites (Welsh, 1990). This species may be found on land during wet weather, near water in humid forests or in more open habitat; during dry weather this species stays on moist stream-banks (Diller and Wallace, 1999). Moderate habitat for this species was identified within the riparian habitats and ponds along French Creek and Paynes Lake Creek. No Pacific tailed frogs were observed.

Coho salmon *(Oncorhynchus kisutch)* in the Klamath River watershed are part of the federally-designated Southern Oregon / Northern California Coast (SONCC) Evolutionarily Significant Unit (ESU), which includes all coho salmon stocks between Cape Blanco in southern Oregon and Punta Gorda in northern California (NMFS, 1995). Coho salmon exist in freshwater, nearshore and offshore environments throughout their lifecycles. Coho prefer low stream velocity, shallow water and small gravel. Spawning and rearing habitat mainly in low gradient tributaries and side channels of river systems. This species requires beds of loose, silt-free, coarse gravel for spawning and also needs cover, cool water, and sufficient dissolved oxygen (USFWS, 1986). French Creek and Paynes Lake Creek are within the coho range (CDFG, 2010a). Field observations confirmed habitat is available within the study area. No Coho salmon were observed.

Steelhead (*Oncorhynchus mykiss irideus*) within the Scott River basin are part of the federally-designated Klamath Mountains Province Distinct Population Segment (DPS). Optimal habitats for steelhead throughout its range on the Pacific Coast can generally be characterized by clear, cool water with abundant in-stream cover, well vegetated stream banks, relatively stable water flow and a 50:50 pool-to-riffle ratio (Moyle, 2002). Habitat for this species was identified within the riparian habitats along French Creek and unnamed tributary within JH Ranch. No steelhead were observed.

American (pine) marten *(Martes americana)* is a medium-sized mustelid. Found in dense deciduous, mixed, or (especially) coniferous upland and lowland forest. This species may use rocky alpine areas.

When inactive, the American martin occupies a hole in dead or live tree or stump, abandoned squirrel nest, conifer crown, rock pile, burrow, or snow cavity; this species is often associated with coarse woody debris (Nowak, 1991). Requires large stands of mature coniferous forest with snags and large-woody debris and greater than 50% canopy closure. Habitat for this species was observed in the forested hillside and riparian areas within JH Ranch. American (pine) marten are sensitive to human activities and likely avoid the area. None were observed.

Fisher, West Coast DPS (*Martes pennanti*) use habitat with high canopy closure, large trees and snags, large woody debris, large hardwoods, multiple canopy layers, and avoidance of areas lacking overhead canopy cover. Fishers also occupy and reproduce in some managed forest landscapes and forest stands not classified as late-successional that provide some of the habitat elements important to fisher, such as relatively large trees, high canopy closure, large legacy trees, and large woody debris, in second-growth forest stands (USFWS, 2004). Moderate habitat for this species was observed in the forested hillside and riparian areas within the study area. No fishers were observed.

6.0 Conclusions

The purpose of this report was to assess the biological resources and habitat available within the study area, not to evaluate impacts of a specific development. The habitat value and availability was assessed for special status species that occur within the study area. Recommendations for avoiding impacts for continuing operations and future projects are addressed Section 7.0.

6.1 Special Plant Status Species

The majority of vegetation within the study area has been altered and modified by past and current land use activities. Some activities have altered the environmental conditions at the site so that common, non-native plant species dominate the site. In some locations, the ongoing disturbed nature of the site and regular impacts from human intrusion are factors that likely contribute to the absence of rare plants or their ability to colonize the site over time, with the exception of species that can tolerate a high disturbance regime.

Of the 29 special status plant species potentially occurring in the area, five plant species are considered to have a moderate potential to occur within the site (CDFG, 2010a; CNPS, 2010). Habitat was identified for the five special status plant species with the potential to occur within the forested lowland and riparian habitats along French Creek and Paynes Lake Creek. Focused botanical surveys were conducted in areas suspected of having habitat for special status species, and none were detected. The likelihood of these species in the study area is low since they were not observed and no nearby occurrences suggest they would be able to colonize the project area.

Future projects developed in riparian habitats may be subject to additional rare plant surveys in the future to assess the potential impacts of site-specific development to listed species.

6.2 Special Wildlife Status Species

Of the 22 special status wildlife species potentially occurring in the area, six wildlife species are considered to have a moderate potential to occur within the site (CDFG, 2010a; CNPS, 2010). The avian or mammalian species were not observed at the site, but have the potential to utilize the site. Species, such as the American (pine) marten or fisher could be become habituated to the human activity and

may create dens or travel through the property. These species were not located during field investigations. With respect to fish and frog species, they may be present within French Creek, Paynes Lake Creek, and ponds, but activities do not occur regularly in these areas and impacts to these species are not considered likely.

Future projects that may be developed in riparian habitats or within stream channels (and are outside the scope of this study) may be subject to permitting by the ACOE, CDFG, and RQWQCB. These agencies will address aquatic species, required studies or specific mitigations as needed during those future projects.

6.3 Nesting Birds

Bird species may potentially nest within the area, but no nests were observed during the study. Due to ongoing projects and noise generated by camp activities, birds may either avoid the area or nest if they are tolerant to noise disturbance. Nesting birds are protected by the MBTA and nests of native birds protected under CFGC (Section 3503). JH Ranch is responsible for compliance with these laws and policies.

6.4 Sensitive Natural Communities

There is no sensitive natural community within the study area.

6.5 Impacts on Wildlife Movement

JH Ranch is located in a rural setting surrounded by private industrial forest lands and a few residences. National Forest lands are located about one mile from the project site. The study area may facilitate home range and dispersal movement of resident wildlife species, but does not serve as wildlife movement corridor. Existing development does not restrict regional wildlife movement or wildlife migration patterns because there are available alternatives within the area.

6.6 Conflicts with Adopted Habitat Conservation Plan

No Habitat Conservation Plans, Natural Community Conservation Plans, or other local or regional plans have been adopted within the area that encompasses the site; therefore, no impacts are anticipated and no mitigation is considered necessary.

6.7 Conflicts with Local Policies or Ordinances Protecting Biological Resources

Siskiyou County does not have any local regulations and / or ordinances for the protection of biological resources; therefore the JH Ranch does not conflict with local polices or ordinances protecting these resources.

7.0 Recommendations

SHN recommends that the following mitigation measures be implemented for on-going operations at JH Ranch to minimize the potential impacts to nesting birds and to keep operations at the JH Ranch in compliance with the MBTA:

1. To avoid impacts to nesting birds and/or raptors, one of the following should be implemented. Either:

   A. conduct vegetation removal and other ground disturbance activities associated with any construction activities during mid-August through January, when birds are not nesting; or

   B. if vegetation removal or ground-disturbing activity is to take place during the nesting season (February 1 to August 31 for most birds), a qualified biologist shall conduct a pre-construction nesting bird survey. Preconstruction surveys for nesting pairs, nests, and eggs shall occur within the construction limits and within 100 feet (200 feet for raptors) of the construction limits. If active nests are encountered, species-specific measures shall be prepared by a qualified biologist in consultation with the USFWS and CDFG, and implemented to prevent abandonment of the active nest.

No special status plant species or high quality habitat was observed within the study area. If new parcels are acquired and/or development is proposed that is not included in the use permit, the following should be implemented to minimize potential impacts to special status plant species:

2. To avoid impacts to special status plant species, focused botanical surveys for species identified in Table 1 with a moderate to high potential for occurrence should be conducted. This should also include any special status plant species that may become listed in the future and have a moderate to high potential to occur.

By implementing the recommendations above, potential impacts to special status species would be avoided and minimized.

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Personal Communication

Sam Cuenca, Wildlife Biologist, Scott River and Salmon River Ranger District, Klamath National Forest, (May 2010). Conversation regarding Northern Spotted Owl locations.

Appendix A

Site Photographs

Photo 1: Concrete pond. Photo taken by SHN on June 23, 2010.

Photo 2: Taken from top unnamed drainage, flowing towards camp. Photo taken by SHN on June 23, 2010.

Photo 3: Taken of ponds going towards dining facilities. Photo taken by SHN on May 18, 2010.

Photo 4: Area uphill of unnamed drainage with the rope's course found throughout area. Photo taken by SHN on June 23, 2010.

Photo 5: Taken from top of hill looking south towards the "Big Top" tent and pastures. Photo taken by SHN on May 18, 2010.

Photo 6: Taken of Paynes Lake Creek near the confluence with French Creek. Orientation is southwest. Photo taken by SHN on May 18, 2010.

Photo 7: Taken in camp housing Photo taken by SHN on June 23, 2010.

Photo 8: Taken of pastures and "Big Top" tent. Orientation is southeast. Photo taken by SHN on May 18, 2010.

Photo 9: Taken in pastures with south of the "Big Top" tent. Orientation northeast. Photo taken by SHN on May 18, 2010.

Photo 10: Photo 9: Taken in pastures north of the "Big Top" tent. Orientation northeast. Photo taken by SHN on May 18, 2010.

Photo 11: Taken in pastures with north of the "Big Top" tent facing the dining facilities. Orientation southeast. Photo taken by SHN on May 18, 2010.

Photo 12: Taken of French Creek. Photo taken by SHN on May 18, 2010.

Photo 13: Taken of French Creek. Photo taken by SHN on June 23, 2010.

Photo 14: Taken of pond near confluence of French Creek and Paynes Lake Creek. Photo taken by SHN on June 23, 2010.

Appendix B

Species List

JH Ranch Plant Species List		
Latin Name	**Common Name**	**Presence (1=tree, 2=shrub, 3=herb)**
Abies concolor	white fir	1
Acer macrophylum	big leaf maple	1
Alnus rhombifolia	white alder	1
Calocedrus decurrens	incense cedar	1
Pinus jeffreyi	Jeffrey pine	1
Pinus ponderosa	ponderosa pine	1
Populus balsamifera ssp. trichocarpa	black cottonwood	1
Populus fremontii	Fremont cottonwood	1
Populus tremuloides	quaking aspen	1
Pseudotsuga menziesii var. *menziesii*	Douglas-fir	1
Quercus garryana var. garryana	Oregon white oak	1
Queucus kelloggii	black oak	1
Salix lucida ssp. *lasiandra*	yellow willow	1
Arctostaphylos glandulosa ssp. *glandulosa*	eastwood manzanita	2
Berberis nervosa	Oregon grape	2
Ceanothus integerrimus	deerbrush	2
Cornus nuttallii	Pacific dogwood	2
Corylus cornuta var. *californica*	California hazel	2
Lonicera ciliosa	orange honeysuckle	2
Physocarpus capitatus	pacific ninebark	2
Prunus emarginata	bitter cherry	2
Prunus virginiana var. *demissa*	Western chokecherry	2
Rhododendron occidentale	Western azalea	2
Ribes sp.	gooseberry	2
Rosa californica	California wildrose	2
Rosa gymnocarpa	Sweet briar	2
Rubus discolor	Himalaya berry	2
Rubus glaucifolius	raspberry	2
Salix sp.	willow	2
Spiraea douglasii	Douglas's spirea	2
Symphoricarpos albus var *laevigatus*	snowberry	2
Symphoricarpos mollis	creeping snowberry	2
Vitis californica	California grape	2
Achillea millefolium	common yarrow	3
Adenocaulon bicolor	American trailplant	3
Agrostis sp.	bentgrass	3
Aira caryophyllea	silver hairgrass	3
Antennaria sp.	pussytoes	3
Anthoxanthum odoratum	sweet vernal grass	3
Avena fatua	wild oats	3
Avena sativa	cultivated oats	3
Brassica sp.	mustard	3
Brassica rapa	field mustard	3
Bromus sp.	brome grass	3

JH Ranch Plant Species List		
Latin Name	**Common Name**	**Presence (1=tree, 2=shrub, 3=herb)**
Calochortus tolmiei	Tolmie's star tulip	3
Calypso bulbosa	fairy slipper	3
Capeslla bursa-pastoris	shepherd's purse	3
Cardamine californica var. *californica*	California toothwort	3
Carex sp.	sedge	3
Carex obnupta	slough sedge	3
Cerastium arvense	field chickweed	3
Corallorhiza striata	striped coralroot	3
Cirsium arvense	Canada thistle	3
Cirsium vulgare	bull thistle	3
Claytonia perfoliata ssp. perfoliata	miner's lettuce	3
Cynoglossum grande	Western houndstongue	3
Dactylis glomerata	orchard grass	3
Deschampsia sp.	deschampsia grass	3
Dichelostemma ida-maia	firecracker flower	3
Elymus sp.	rye grass	3
Epilobium ciliatum ssp. *ciliatum*	fringed willowherb	3
Equisetum sp.	horsetail	3
Escschoizia californica	California poppy	3
Festuca sp.	fescue grass	3
Galium aparine	common bedstraw	3
Galium triflorum	bedstraw	3
Geranium oreganum	Oregon geranium	3
Heracleum lanatum	cow parsnip	3
Holcus lanatus	velvet grass	3
Hordeum sp.	barley grass	3
Juncus bufonius var. *bufonius*	toad rush	3
Juncus effuses var. *pacificus*	Pacific rush	3
Juncus patens	common rush	3
Lathyrus nevadensis var. *nevademsos*	Sierra pea	3
Leucanthemum vulgare	oxeye daisy	3
Lilium paardalinum ssp. *wigginsii*	leopard lily	3
Lolium multiflorum	Italian rye grass	3
Lolium perenne	perennial ryegrass	3
Lotus purshianus var. *purshianus*	Spanish clover	3
Lupinus albifrons	Silverleaf lupine	3
Lupinus polyphyllus var. *polyphyllus*	meadow lupine	3
Madia sp.	tarweed	3
Medicago lupulina	black medick	3
Melica californica	oniongrass	3
Mentha arvensis	field mint	3
Nemophila parviflora	small flowered nemophila	3
Osmorhiza chilensis	sweet cicely	3
Phacelia egena	rock phacelia	3

JH Ranch Plant Species List		
Latin Name	**Common Name**	**Presence (1=tree, 2=shrub, 3=herb)**
Poa sp.	blue grass	3
Potamogeton sp.	pondweed	3
Prunella vulgaris	self-heal	3
Pteridium aquilinum var. *pubescens*	hairy brackenfern	3
Pterospora andromedea	pine drops	3
Pyrola picta	white veined wintergreen	3
Ranunculus californicus	california buttercup	3
Rumex acetosella	common sheep sorrel	3
Rumex crispus	curly dock	3
Sanicua sp.	sanicle	3
Sarcodes sanguinea	snow plant	3
Scirpus microcarpus	small fruited bullrush	3
Silene campanulata ssp. *glandulosa*	bell catchfly	3
Smilacina racemosa	Western Solomon's seal	3
Smilacina stellata	false Solomon seal	3
Stachys ajugoides var. *ajugoides*	hedge nettle	3
Stellaria media	common chickweed	3
Tetaxacum officinale	dandelion	3
Tiarella trifoliate var. *unifoliata*	foamflower	3
Trifolium pratense	red clover	3
Trifolium repens	white clover	3
Trifolium wormskioldii	cows clover	3
Verbascum thapsus	common mullein	3
Veronica americana	American speedwell	3
Vicia americana var. americana	American vetch	3
Viola glabella	pioneer violet	3

Table B-2. JH Ranch Animal Species List	
Latin Name	**Common Name**
Bonasa umbellus	Ruffed Grouse
Corvus corax	Common Raven
Eremophila alpestris	Horned Lark
Hirundo rustica	Barn Swallow
Icterus bullockii	Bullock's Oriole
Myotis lucifugus	Little Brown Bat
Odocoileus hemionus	Black-tailed Deer
Thomomys mazama	Western Pocket Gopher

DOWNEY | BRAND
ATTORNEYS LLP

MEMORANDUM

To: GREG PLUCKER

From: G. BRAIDEN CHADWICK
GARRETT COLLI

Date: APRIL 4, 2012

Re: **JH RANCH LAND USE COMPATIBILITY**

cc: ROB HAYES-ST. CLAIR

I. FACTS

The Ranch is currently in the midst of an effort to amend the current PU (hereafter the Proposed Development Plan Amendment, or "PDPA"). This action requires California Environmental Quality Act ("CEQA") review, and the County has indicated a negative declaration may not be feasible due to the possibility of land use impacts. Specifically, the County has cautioned that the PDPA, as it uses performance standards rather than a quantitative limit for maximum occupancy, may be "inconsistent with the rural character of the French Creek area." To date, the County has only supported its conclusion by a brief reference to several General Plan policies. By comparison, the Ranch has amassed a significant amount of scientific data indicating that the Ranch could sustain 1,600 guests and staff without triggering significant environmental impacts under CEQA.

II. ISSUES PRESENTED

A. Whether the County may lawfully deny the PDPA based on an unsupported allegation that the PDPA would conflict with the "rural character" of the surrounding area.

B. Whether the law of vested rights and nonconforming uses gives the Ranch the right to increase the number of guests and staff on the property at a given time.

III. BRIEF ANSWER

A. No. The County cannot deny the PDPA based on an unsupported conclusion that increased occupancy at the Ranch would conflict with General Plan policies. The County is legally obligated to present evidence in support of either a quantitative occupancy limit and/or a decision to reject the PDPA based on a conflict with the General Plan. To date, the County has not provided such evidence, therefore, its position is arbitrary. By contrast, environmental analysis prepared in conjunction with the PDPA shows that the Ranch could sustain 1,600 persons at any one time without exceeding relevant environmental thresholds. As the only evidence pertaining to the issue of the impacts of increased occupancy favors the Ranch's position, the PDPA should be approved as is, or with a maximum occupancy limit of 1,600.

B. Yes. The Ranch substantially relied on a valid permit, the 1993 PD, by investing significant resources into that property; therefore, the Ranch has a vested right that cannot be divested without due process. Additionally, the County's reinterpretation of the General Plan has effectively turned the Ranch into a lawful nonconforming use. As a lawful nonconforming use, the Ranch has the right to house an increasing number of campers and staff in a manner reasonably commensurate with increasing demand.

IV. ANALYSIS

A. Because the Only Evidence Regarding the Impact of Increased Occupancy on Land Use Compatibility Favors the Ranch, The PDPA Should Be Approved As Is or With a Maximum Occupancy Limit of 1,600 People.

1. The County's Subordinate Land Use Decisions Must be Consistent With the General Plan.

The decisions of a local land use agency must be consistent with the applicable general plan. While lead agencies (i.e., the County) do have discretion to interpret their own land use regulations, this authority is significantly restrained by the requirement that each decision of the agency, be it anything from a rote building permit approval to the adoption of a comprehensive zoning ordinance, be consistent with the general plan. (See *Friends of Lagoon Valley v. City of Vacaville* (2007) 154 Cal.App.4th 807, 812 ("the propriety of virtually any local decision affecting land use and development depends upon consistency with the applicable general plan and its elements").) The consistency doctrine applies both vertically, meaning that subordinate land use decisions including zone changes like the PDPA must coincide with general plan policies, and horizontally, meaning that the policies codified in a general plan must not conflict with one another. (See *Id.*; see also Cal. Gov't Code, § 65300.5.) Thus, a decision either to demand a particular maximum occupancy limit or to deny the PDPA must be consistent with the General Plan.

2. The County Cannot Arbitrarily Determine a Maximum Occupancy Limit for the Ranch.

The County's action with regard to either approving or denying the PDPA must be supported with evidence. Moreover, the County ordinance that provides authority for planned development zones outlines procedures for both the establishment and amendment of PDs in a manner consistent with the General Plan. (See County Ordinance §§ 10-6.1184, 10-6.1186.) Therefore, in a mandamus proceeding, the County will be compelled to present evidence justifying its position.

The only relevant evidence presented thus far affirms the Ranch's position that there is no significant environmental or land-use conflict generated by the PDPA. First, the County has

already determined, as a matter of record, that the Ranch is consistent with the General Plan. Specifically, the Board of Supervisors' findings regarding the adoption of the 1993 PD state:

- The development [i.e., the Ranch] exists as an independent unit capable of creating an *environment of sustained desirability* and stability and the existing uses are not detrimental to present and potential surrounding uses, but instead have a *beneficial effect*… (emphasis added)
- The residential portion of the development constitutes an environment of sustained desirability and stability and is in harmony with the character of the surrounding neighborhood and community…
- The area surrounding the [Ranch] is planned and zoned in coordination and substantial compatibility with the proposed development
- The [Ranch] conforms with the Siskiyou County General Plan and the Scott Valley Area Plan

(J.H. Ranch Planned Development Amendment (Z-93-11), Staff Report for Siskiyou County Board of Supervisors Resolution approving amendment, (Oct. 26, 1993).)

Second, the Ranch achieves its objective of training young leaders and strengthening family bonds by promoting activities that are synonymous with a rural lifestyle. Guests come from around the nation to engage in hiking, swimming, horseback riding and campouts in a country setting. The very ethos of the Ranch is rural in nature. Because the activities taking place on, and emanating from the Ranch are inherently rural, a conclusion that the Ranch compromises rural values is unwarranted.

Finally, the fact that a portion of the Ranch property is already zoned for commercial use undercuts the County's concern regarding the Ranch's impact to the area's "rural character." In particular, over five acres of property are designated C-R under the County Zoning Ordinance, thereby allowing for such by-right uses as copy and printing shops, liquor stores, banks, laundry facilities, and office buildings. (County Ordinance, Sec. 10-6.4102(b)-(g).) It would be incongruous to argue, on one hand, that too many people hiking or horseback riding would compromise the area's "rural character" and on the other hand, that a liquor store or an office building filled with modern-day professionals would not have such an effect. In short, it is wholly arbitrary to argue that a guest ranch that emphasizes activities synonymous with a rural lifestyle may compromise rural values, but commercial development would not.

In addition, the County refers to four universally applicable policies from the General Plan's Land Use Element, none of which refer to a policy of promoting "rural" characteristics, or even open space. The referenced policies, included below, are derived from General Plan Policy 41: Composite Overall Policies:

3. *The following policies shall determine the location of any proposed use of the land:*

b. *All light commercial, light industrial, multiple family residential, and commercial/recreational, public, and quasi public uses must provide or have direct access to a public road capable of accommodating the traffic that could be generated from the proposed use.*

e. *All proposed uses of the land shall be clearly compatible with the surrounding and planned uses of the area*.

Policy 41(3)(b) refers not to "rural character" but the need for a development to have access to roads that can accommodate traffic generated by the development. The ability of adjacent roadways to accommodate traffic speaks to safety and access, not to the "rural character" of the site. Policy 41(3)(e) requires land use compatibility, but does nothing to define "rural character" let alone to suggest that maintenance of a rural atmosphere is desirable.

9. *Buildable, safe access must exist to all proposed uses of land. The access must also be adequate to accommodate the immediate and cumulative traffic impacts of the proposed development.*

Policy 41(9), like Policy 41(3)(a), merely refers to traffic safety, and is not relevant to this supposed land use conflict.

18. *Conformance with all policies in the Land Use Element shall be provided, documented, and demonstrated before the County may make a decision on any proposed development.*

This policy requires documented conformance with the General Plan prior to the County making land use decisions, but it, too, does nothing to define "rural character" or suggest that promotion of a rural atmosphere is even a General Plan goal.

19. *It is the intent of all the policies in the Land Use Element to accomplish the following:*

a. *Encourage intensive development near existing urban areas and away from the natural resources.*

b. *Insure compatibility of all land uses.*

Policy 41(19)(a) refers to "intensive development." The Ranch is a recreational facility where guests partake in outdoor activities. The Ranch consists of minimal infrastructure, and only operates during the late-spring and summer months. In short, the Ranch is not the type of "intensive development" contemplated by Policy 41(19)(a). Policy 41(19)(b) echoes Policy 41(3)(a), and similarly does nothing to further the County's position.

The County offers no justification as to why the potential for increase in guest and staff would conflict with the "rural character" of the area, let alone a threshold identifying the tipping point

for when rural values would be compromised by the Ranch. In summary, the County has neither identified a policy in the General Plan that promotes preservation of the area's "rural character" nor identified how expanded Ranch operations would compromise that nebulous goal.

B. The Ranch Has a Right to Reasonably Expand Its Operations Based on the Law of Vested Rights and Nonconforming Uses.

The Ranch has a vested a right to maintain its operations. It is well established that a party that has substantially relied on a valid land use permit cannot be divested of that entitlement without due process of law. (See *Avco Community Developers, Inc. v. South Coast Regional Commission* (1976) 17 Cal.3d 785, 791 ("It has long been the rule in this state and in other jurisdictions that if a property owner has performed substantial work and incurred substantial liabilities in good faith reliance upon a permit issued by the government, he acquires a vested right…").) In this case, the Ranch obtained an entitlement, the original PD, in 1993. Since that time, the Ranch has expended considerable sums on the construction of new facilities, maintenance, staffing, and advertising. Thus, the Ranch has a vested right to operate its facilities to the full extent allowed by the 1993 PD, which contains no clear limitation on occupancy.

The County's drastic reinterpretation of the General Plan has turned the Ranch's operations into a lawful nonconforming use. Under the law of nonconforming uses, a lawfully established use of land that is subsequently invalidated by a land use regulation may nevertheless continue as a nonconforming use. (See *Hill v. City of Manhattan Beach* (1971) 6 Cal.3d 279, 285; see also *Tenderloin Housing Clinic v. Astoria Hotel* (2000) 83 Cal.App.4th 139, 143.) Here, the County Board of Supervisors has already determined that the Ranch conforms with the General Plan (see *supra*, at p. 4.) However, despite the fact that the same activities will continue taking place on the property, the County now feels that the Ranch would jeopardize one or more General Plan policies. It is this sudden and unexplained reinterpretation of the General Plan that has turned the Ranch into a lawful nonconforming use.

As a lawful nonconforming use, the Ranch is entitled to reasonably increase the number of guests and staff that frequent the property. The California Supreme Court has recognized that a lawful nonconforming use may be expanded beyond the exact circumstances that existed on the date when the use was transformed into a nonconforming use. (See *Hansen Brothers Enterprises v. Nevada County Board of Supervisors* (1996) 12 Cal.4th 533, 573 (hereafter "*Hansen Brothers*").) In *Hansen Brothers*, the Court used an analogy to exemplify how gradual expansion of a lawful nonconforming use does not render that use invalid, stating:

> By way of example, we assume that a grocery store operating as a lawful nonconforming use in an area of increased population would not be restricted to the same number of customers and volume of business…neither an increase in the number of patrons or in the volume of goods sold would be considered an enlargement or intensification of use.

(*Id.* at 574.)

Thus, the Court specifically rejected the notion that a mere increase in people frequenting the relevant property would undermine the property owner's right to continue the lawful nonconforming use. Similar to the Court's grocery store example, the Ranch is in no way changing its operations and, as evidenced by the environmental documentation provided to the County, the PDPA will not result in a significant environmental impact. On the contrary, the Ranch is instead simply satisfying increased demand by housing additional guests and staff. *Hansen Brothers* is clear indicia of the Ranch's right to perform the same activities it has always performed, albeit with an increasing number of people, as is reflected in the PDPA.

V. CONCLUSION

The County cannot arbitrarily limit the Ranch's ability to house campers and staff. To date, the County has not provided the necessary evidence to support its conclusion in the DIS/MND that the PDPA would conflict with the "rural character" of the area surrounding the Ranch. On the contrary, the only substantive environmental data shows that the PDPA should be approved as is, or with a maximum occupancy limit of 1,600 people. In addition, the Ranch's vested right as a nonconforming use affirms the Ranch's right to accommodate additional people. Approving the PDPA would ensure that the County does not run afoul of the Constitution when modifying and/or applying land use regulations with regard to the Ranch.

DOWNEY | BRAND
ATTORNEYS LLP

Garrett J. Colli
gcolli@downeybrand.com
916/520-5289 Direct
916/520-5689 Fax

621 Capitol Mall, 18th Floor
Sacramento, CA 95814
916/444-1000 Main
916/444-2100 Fax
downeybrand.com

April 2, 2012

JH Ranch
Rob Hayes-St.Clair
402 Office Park Dr.
Suite 310
Birmingham, AL 35223

Re: SB 610 Water Supply Assessment

Dear Mr. Hayes-St.Clair:

You asked us to address whether the California Water Code requires a water supply assessment ("WSA") for JH Ranch's Planned Development Plan Amendment.

Brief Answer

No. WSA applicability is limited to "projects," which are defined in reference to a discrete list of specific types of developments. JH Ranch does not fall within any of these enumerated categories.

Factual Background

JH Ranch owns and operates a camp facility in Siskiyou County ("County"). JH Ranch has submitted an amendment that would modify the planned development zoning under which the property is currently designated (the "PDPA"). The County has asked JH Ranch to evaluate whether a water supply assessment is needed for the PDPA.

Discussion

SB 610, codified in California Water Code Sections 10910 through 10915, requires cities and counties to prepare a water supply assessment ("WSA") for "projects" that are subject to the California Environmental Quality Act ("CEQA") AND that meet the statutory definition of "project" in Water Code Section 10912. Under these sections, "project" is a statutorily defined term that encompasses only a few enumerated categories of development. Specifically, such projects only include:

- Proposed residential developments of more than 500 dwelling units.

- Proposed shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space.
- Proposed commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- Proposed hotels or motels, or both, having more than 500 rooms.
- Proposed industrial, manufacturing, or processing plants, or industrial parks planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area. (This does not include wind or solar facilities that demand no more than 75 acre feet of water annually.)
- Mixed-use projects that include one or more of the projects specified in this subdivision.
- Projects that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

Cal. Water Code § 10912(a). Few courts have had occasion to interpret this section, and none have examined the project definitions in the context of a camp or recreational facility such as JH Ranch. Therefore, a plain reading of the statute offers the best insight regarding whether a WSA is required for JH Ranch's PDPA.

None of the categories above would apply to JH Ranch. For example, JH Ranch is not a "business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space." First, in this subsection, "business establishment" is paired with "shopping center," suggesting that the former term was intended to apply to large store fronts and is not so broad as would encompass a camp.[1] Second, the reference to "floor space" lends further weight to an interpretation that would exclude an outdoor recreation and educational facility like a camp.

Even the catch-all definition, referring to projects that demand an amount of water equal to or greater than that demanded by a 500 dwelling unit project, does not apply to JH Ranch. However, according to the California Department of Water Resources *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001* (Oct. 8, 2003) (http://www.water.ca.gov/pubs/use/sb_610_sb_221_guidebook/guidebook.pdf), a 500 dwelling unit project would consume 150 to 250 acre-feet of water per year. JH Ranch's water use is not even close to this level, placing it well outside of this catch-all category.

Similary, the remaining definitions of "project" under California Water Code Section 10912(a) clearly would not include a facility like JH Ranch. JH Ranch is not a residential development, commercial office building, hotel/motel with more than 500 rooms, or industrial facility.

---

[1] The *ejusdem generis* canon of statutory interpretation dictates that "where general words follow an enumeration of specific items, the general words are read as applying only to other items akin to those specifically enumerated." *Harrison v. PPG Industries, Inc.*, 446 U.S. 578, 588 (1980); *see also Khan v. Los Angeles City Employees' Retirement System*, (2010) 187 Cal. App. 4th 98, 106 (applying *noscitur a sociis*: "words grouped in a list should be given similar meaning"); *Ass'n of Irritated Residents v. San Joaquin Valley Unified Air Pollution Control District*, (2008) 168 Cal. App. 4th 535, 551 (applying both *ejusdem generis* and *noscitur a sociis*).

Accordingly, it does not qualify as a "project" under Water Code section 10912(a), relieving Siskiyou County of any potential obligation to prepare a WSA.

Very truly yours,

DOWNEY BRAND LLP

Garrett J. Colli

GJC

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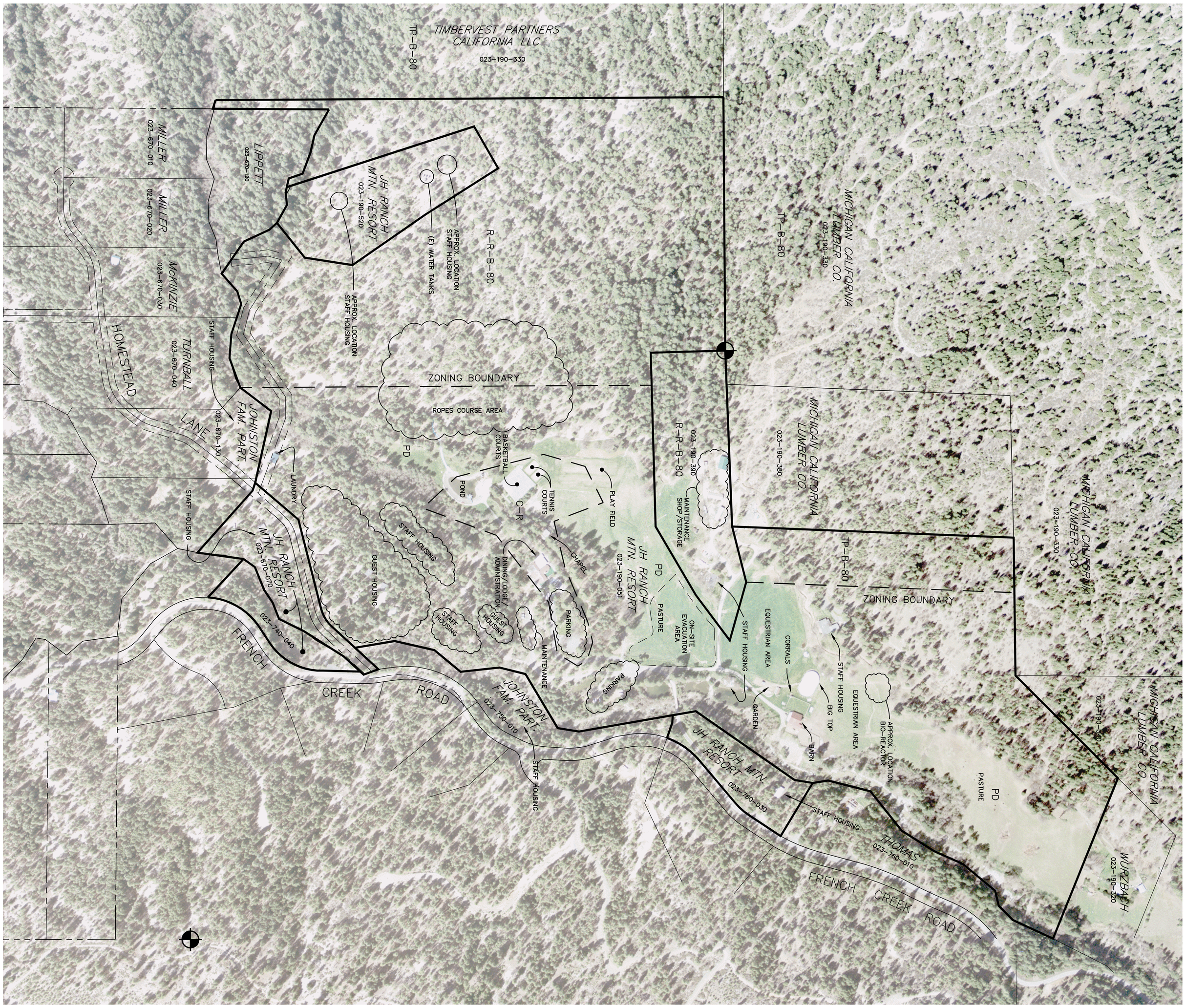

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INDICATES MULTIPLE STRUCTURES WITHIN AREA

PROJ. NO. 509051	DATE 11/2010	SHT 1 of 4	DRAWING C-1	JH RANCH MOUNTAIN RESORT ETNA, CALIFORNIA JH RANCH EXIST. DEVELOPMENT/ZONING	DSGN DAR DR DAR CHK MSC APVD	NO. / DATE / REVISION / BY

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash Ave. (707)441-8855
Eureka, CA 95501 FAX (707)441-8877

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TIMBERVEST PARTNERS CALIFORNIA LLC
023-190-330
TP-B-80
MILLER 023-670-010
MILLER 023-670-020
MCKINZIE 023-670-030
TURNBALL 023-670-040
LIPPETT 023-670-120
JH RANCH MTN. RESORT 023-190-520
JH RANCH MTN. RESORT 023-190-051
JH RANCH MTN. RESORT 023-670-070
JOHNSTON FAM. PART. 023-670-100
JOHNSTON FAM. PART. 023-750-010
JH RANCH MTN. RESORT 023-760-030
THOMAS 023-760-010
WURZBACH 023-190-320
MICHIGAN CALIFORNIA LUMBER CO. 023-190-330
MICHIGAN CALIFORNIA LUMBER CO. 023-190-380
MICHIGAN CALIFORNIA LUMBER CO. 023-190-390
MICHIGAN CALIFORNIA LUMBER CO. 023-190-340
HOMESTEAD LANE
OFF SITE
MAINTENANCE ROAD
EXISTING DIRT ROAD (TYP.)
HEMLOCKS
TANK & WELL
LAUNDRY
BIRCHES
WILLOWS
CEDARS
MAPLES
OAKS
REDWOODS
COTTONWOODS
MADRONES
DOGWOODS
EVERGREENS
PONDEROSA
PINES
ASPENS
BREEZEWAY
EDEN
BUNKHOUSE VILLAGE
BUNKHOUSE BATH HOUSE
FIRS
COOKE & DINING PAVILION
EXISTING PAVED ROAD (TYP.)
EQUIP. STORAGE & MAINTENANCE
GREENBEAN
EXIST. DIRT ROAD (TYP.)
EXIST. PAVED ROAD (TYP.)
BIG TOP
MANOR HOUSE
RANCH HOUSE
BARN
CONVENT
MAIN ENTRANCE
BRIDGE A
BRIDGE B
HOMESTEAD LANE
FRENCH CREEK ROAD
WRANGLER
SCALE: 1"=200'

LEGEND

- LIMITS OF PROPOSED PD ZONE
- PROGRAM ACTIVITIES AREA
- COMMERCIAL RESORT AREA
- HOUSING AREA
- MAINTENANCE AREA

JH RANCH MOUNTAIN RESORT
ETNA, CALIFORNIA
JH RANCH DEVELOPMENT PLAN

PROJ. NO. 509051
DATE 1/2011
SHT 2 OF 4
DRAWING C-2

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DR DAR
CHK MSC
APVD

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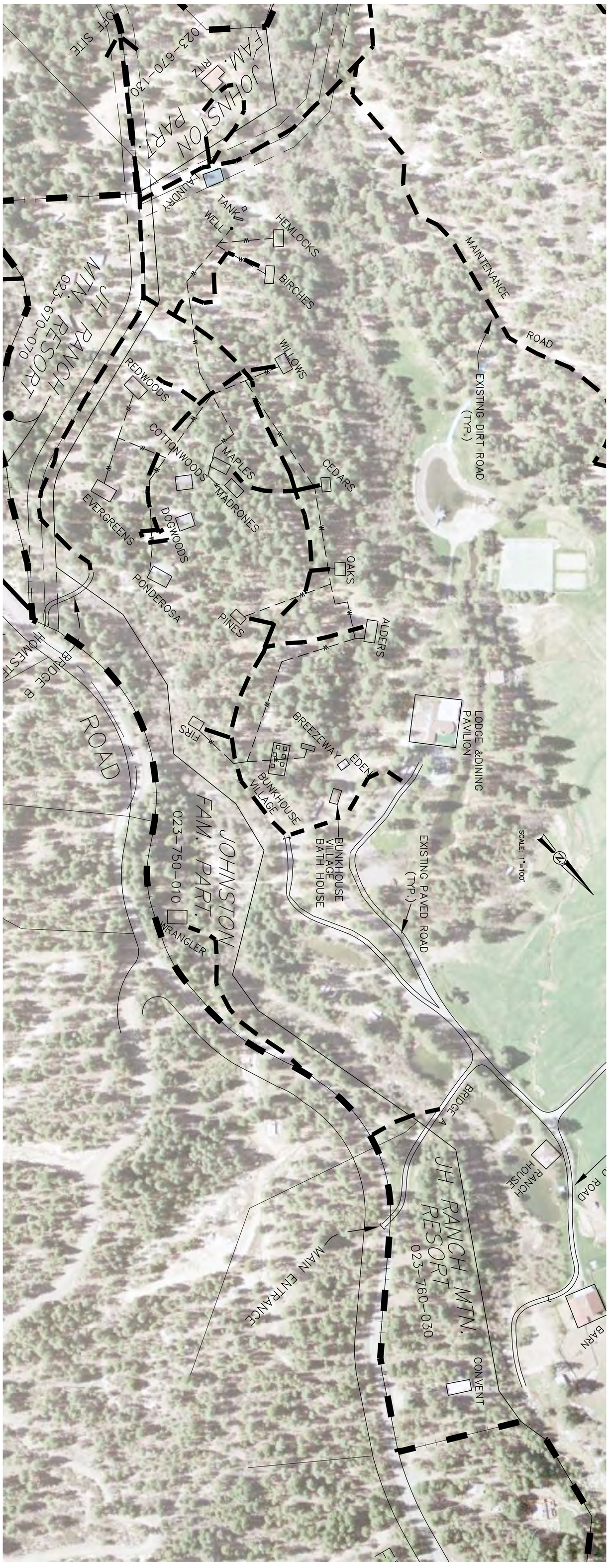

PROJ. NO. 509051	DATE 1/2011	SHT 3 OF 4	DRAWING C-3	JH RANCH MOUNTAIN RESORT ETNA, CALIFORNIA JH RANCH EXISTING SITE PLAN	DSGN DAR DR DAR CHK MSC APVD	NO. / DATE / REVISION / BY	

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SCALE: 1"=200'

LEGEND

(W)#–	WELL
(WT)"A"	WATER TANK
(SP)	SPRING w/PRESSURE TANK
(BIO)	BIO–REACTOR
	LEACH FIELD
(S#–)	SEPTIC SYSTEM (SEPTIC TANK & LEACHFIELD)

EXISTING POTABLE WATER SYSTEM

WELL LOCATION AND CAPACITY

#1	NEAR LAUNDRY	15–20 GPM (BACKUP TO WELL #4)
#2	WAGON WHEEL	5 GPM
#3	GREEN BEAN	20 GPM
#4	NEAR LAUNDRY	45 GPM (PRIMARY WELL)
#5	BIG TOP	45 GPM (NOT CURRENTLY CONNECTED TO SYSTEM)
#6	HIGH ROPES	10 GPM (NOT CURRENTLY CONNECTED TO SYSTEM)

SPRING LOCATION AND CAPACITY

(SP) SPRING LOCATED NEAR "WRANGLER" CAPACITY UNKNOWN. SERVES THE WRANGLER THRONG PRESSURE PUMP.

WATER SYSTEM OPERATIONS

1. WELL #1 IS A BACKUP WELL TO WELL #4, AND PROVIDES ADDITIONAL TO STORAGE TANKS "A", "B", "C" AND "D".
2. WELL #2 SERVES STORAGE TANK "K" AND PROVIDES ADDITIONAL WATER TO STORAGE TANKS "B", "C" AND "D", AS NEEDED.
3. WELL #3 SERVES STORAGE TANKS "I" AND "J", AS WELL AS PROVIDING WATER TO THE FOLLOWING STRUCTURES:
   - MAINTENANCE SHOP
   - GREENBEAN
   - CONVENT
   - MANOR HOUSE
   - RANCH HOUSE
   - BARN

   ADDITIONALLY, WELL #3 PROVIDES WATER TO THE LODGE IN THE WINTER.
4. WELL #4 IS THE PRIMARY RANCH WELL. IT PROVIDES WATER TO STORAGE TANKS "A", "E", "F", "G" AND "H" AS WELL AS THE BALANCE OF THE RANCH NOT SERVED BY WELL #3.

WATER TANK DESIGNATION, STORAGE CAPACITY & TYPE)

"A" –	5,000 GAL. (ABOVE GROUND)
"B" –	1,100 GAL. (UNDERGROUND)
"C" –	1,100 GAL. (UNDERGROUND)
"D" –	1,100 GAL. (UNDERGROUND)
"E" –	4,000 GAL. (ABOVE GROUND)
"F" –	4,000 GAL. (ABOVE GROUND)
"G" –	4,000 GAL. (ABOVE GROUND)
"H" –	13,000 GAL. (ABOVE GROUND)
"I" –	5,000 GAL. (ABOVE GROUND)
"J" –	5,000 GAL. (ABOVE GROUND)
"K" –	1,000 GAL. (ABOVE GROUND)

EXISTING SEWAGE DISPOSAL SYSTEM

BIO–REACTOR DESCRIPTION

THE EXISTING BIO–REACTOR ACCEPTS SEWAGE FROM ALL FACILITIES ON THE JH RANCH, EXCEPT THOSE INDICATED BELOW THAT ARE ON INDIVIDUAL SEPTIC DISPOSAL SYSTEMS. (SEPTIC TANK WITH LEACHFIELD)

EFFLUENT FROM THE BIO–REACTOR IS DISPOSED OF THROUGH THE LEACH FIELDS INDICATED HEREON.

SEPTIC SYSTEMS

THE FOLLOWING STRUCTURES ARE SERVED BY SEPTIC SYSTEMS AND ARE NOT CONNECTED TO THE BIO–REACTOR TREATMENT SYSTEM.

· LAUNDRY	(SEPTIC SYSTEM S# 1)
· WRANGLER	(SEPTIC SYSTEM S# 2)
· RITZ	(SEPTIC SYSTEM S# 3)
· CHEF BOB	(SEPTIC SYSTEM S# 4 & 5)
· HEMLOCKS	(SEPTIC SYSTEM S# 6)
· BIRCHES	(SEPTIC SYSTEM S# 7)
· WOODLANDS	(SEPTIC SYSTEM S# 8)
· CONVENT	(SEPTIC SYSTEM S# 9)

NOTES

1. THE LOCATIONS AND CAPACITIES OF EXISTING WATER AND SEWER FACILITIES INDICATED HEREON IS BASED UPON INFORMATION PROVIDED BY JH RANCH.
2. THE LOCATION AND SIZES OF THE EXISTING WATER DISTRIBUTION AND SEWAGE COLLECTION SYSTEMS ARE UNKNOWN.

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NO.	DATE	REVISION	BY

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DR DAR
CHK MSC
APVD

JH RANCH MOUNTAIN RESORT
ETNA, CALIFORNIA
JH RANCH
EXISTING UTILITIES PLAN

DRAWING C–4
SHT 1 OF 1
DATE 7/2011
PROJ. NO. 509051

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JH Ranch Planned Development Plan Amendment (Rev. April, 2012) ATTACHMENT

SCALE: 1"=200'

LEGEND

W #–	WELL
WT "A"	WATER TANK
SP	SPRING w/PRESSURE TANK
BIO	BIO–REACTOR
	LEACH FIELD
S#–	SEPTIC SYSTEM (SEPTIC TANK & LEACHFIELD)

EXISTING POTABLE WATER SYSTEM

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#4	NEAR LAUNDRY	45 GPM (PRIMARY WELL)
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"I"	–	5,000 GAL. (ABOVE GROUND)
"J"	–	5,000 GAL. (ABOVE GROUND)
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EXISTING SEWAGE DISPOSAL SYSTEM

BIO–REACTOR DESCRIPTION

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· RITZ	(SEPTIC SYSTEM S# 3)
· CHEF BOB	(SEPTIC SYSTEM S# 4 & 5)
· HEMLOCKS	(SEPTIC SYSTEM S# 6)
· BIRCHES	(SEPTIC SYSTEM S# 7)
· WOODLANDS	(SEPTIC SYSTEM S# 8)
· CONVENT	(SEPTIC SYSTEM S# 9)

NOTES

1. THE LOCATIONS AND CAPACITIES OF EXISTING WATER AND SEWER FACILITIES INDICATED HEREON IS BASED UPON INFORMATION PROVIDED BY JH RANCH.
2. THE LOCATION AND SIZES OF THE EXISTING WATER DISTRIBUTION AND SEWAGE COLLECTION SYSTEMS ARE UNKNOWN.

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
0 1"

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash Ave. Eureka, CA 95501
(707)441-8855 FAX (707)441-8877

NO.	DATE	REVISION	BY

DSGN DAR
DR DAR
CHK MSC
APVD

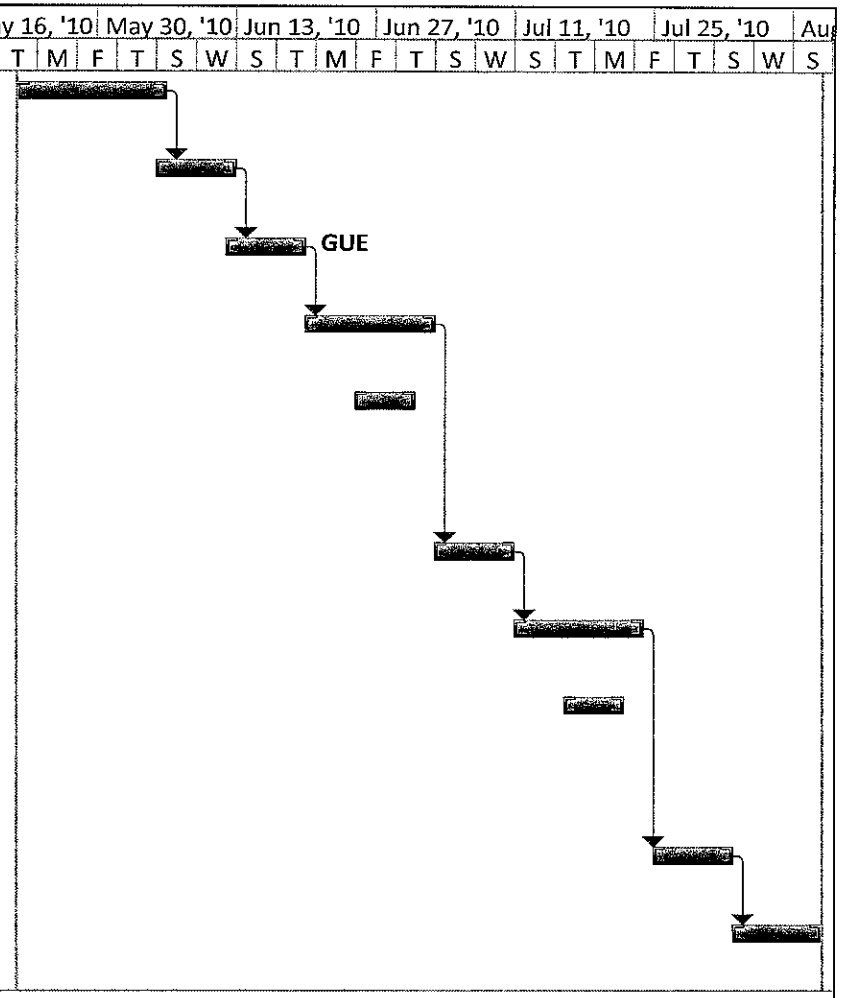
JH RANCH MOUNTAIN RESORT
ETNA, CALIFORNIA
JH RANCH
EXISTING UTILITIES PLAN

DRAWING C–5
SHT 5 OF 5
DATE 7/2011
PROJ. NO. 509051

SAVED: 3/30/2012 11:40 AM DROPER, PLOTTED: 3/30/2012 11:45 AM DALE ROPER
X:\2009\509051-JHRANCHPLANNING\DWGS\509051-UTILITY PLAN.DWG

JH Ranch Planned Development Plan Amendment (Rev. April, 2012) ATTACHMENT

ID	Task Name	Duration	Start	Finish	Guests	Staff
1	STAFF ORIENTATION	12 days	Sat 5/22/10	Sat 6/5/10	0	155
2	PC/HW/C9 - SESSION 1	7 days	Sat 6/5/10	Sat 6/12/10	166	155
3	PC/HW - SESSION 2	7 days	Sat 6/12/10	Sat 6/19/10	106	155
4	CH/SW/T2 - SESSION 1	11 days	Sun 6/20/10	Fri 7/2/10	274	155
5	GROUP RETREAT - SESSION 1	4 days	Fri 6/25/10	Wed 6/30/10	10	
6	PC/HW - SESSION 3	7 days	Sat 7/3/10	Sat 7/10/10	218	155
7	CH/SW/T2 - SESSION 2	11 days	Sun 7/11/10	Fri 7/23/10	280	155
8	GROUP RETREAT - SESSION 2	4 days	Fri 7/16/10	Wed 7/21/10	50	
9	PC/HW - SESSION 4	7 days	Sun 7/25/10	Sun 8/1/10	172	155
10	PC/HW - SESSION 5	7 days	Mon 8/2/10	Tue 8/10/10	174	155



Project: 2010_SummerProgram_S
Date: Thu 8/4/11

Task	External Milestone	Manual Summary Rollup	
Split	Inactive Task	Manual Summary	
Milestone	Inactive Milestone	Start-only	
Summary	Inactive Summary	Finish-only	
Project Summary	Manual Task	Deadline	
External Tasks	Duration-only	Progress	

ATTACHMENT "M"

JH RANCH
CALIFORNIA

402 OFFICE PARK DRIVE, SUITE 310
BIRMINGHAM, AL 35223
JHRANCH.COM
800.242.1224

March 5, 2014
Mr. Greg Plucker
Deputy Director Planning
County of Siskiyou
806 South Main Street
Yreka CA 96027

RE: JH Ranch Z-11-01 Planned Development Plan Amendment PDPA Application
JH Ranch Groundwater Wells and Surface Water Memo

Dear Greg,

This letter serves as notice that the JH Ranch Groundwater Wells and Surface Water Memo prepared by SHN dated August 6, 2013 may be release for public review.

Sincerely,

Rob Hayes-StClair

CONSULTING ENGINEERS & GEOLOGISTS, INC.
350 Hartnell Ave., Ste B, Redding, CA 96002-1875 • 530-221-5424 • FAX: 530-221-0135 • reddinginfo@shn-engr.com

ATTACHMENT "M"

Reference: 509051

August 6, 2013

Rob Hayes-St. Clair
JH Ranch
402 Office Park Drive, Suite 310
Birmingham, AL 35223

Subject: **CONFIDENTIAL WATER RECORDS**
JH Ranch Groundwater Wells and Surface Water Impacts, JH Ranch Facilities, Siskiyou County, California

Dear Mr. Hayes-St. Clair:

This letter provides a brief interpretation of the existing JH Ranch groundwater wells as they relate to the potential drawdown effect on surface waters of French Creek and Paynes Lake Creek, based upon our understanding of the wells located at your facilities. Our information has been taken from confidential water records provided by the California Department of Water Resources (DWR), and we recommend that this document be retained as confidential, and released only to Siskiyou County Planning as needed for your continued operations, with the understanding that this document is not to be released to the public.

It is our understanding that groundwater wells developed at JH Ranch facilities in the French Creek drainage are being used for the primary purpose of providing potable water for onsite uses at JH Ranch. Uses include drinking, cooking, bathing, laundry, and other uses typically associated with domestic and recreational facilities. In review of the DWR well logs, we confirm that the wells on your property are located at depths ranging from 88 to 310 feet below ground surface (BGS). These wells are located along the flanks of the hillsides and adjacent to both French and Paynes Lake Creeks.

Well Descriptions

There are seven water wells on the JH Ranch. The wells have been screened at varying depths from between 30 and 140 feet BGS. All wells were advanced into bedrock; none of the wells encountered alluvial materials. Descriptions of the various wells, derived from the well drilling logs, are as follows:

- **Well #1** is located on the broad ridge between French Creek and Paynes Lake Creek, approximately 225 and 450 feet from French and Paynes Lake Creeks, respectively. The well was advanced into broken quartz and soft schist, to total depth of 88 feet BGS. This well is screened from the 30 -to 88-foot depth, and has an estimated production of 12 gallons per minute (gpm).
- **Well #2** is located near Well #1 on the broad ridge between French Creek and Paynes Lake Creek, approximately 225 and 450 feet from French and Paynes Lake Creeks, respectively. The well is located in decomposed granite and schist, with quartz seams; the well screening is from 40 to 100 feet with a total depth of 190 feet BGS. Production is estimated at approximately 6 gpm.

is from 40 to 100 feet with a total depth of 190 feet BGS. Production is estimated at approximately 6 gpm.

- **Well #3** is located near the "Green Bean" building, approximately 650 feet west of French Creek. The well is located in decomposed granite and granite, with a total depth of 130 feet BGS. Well screening is from 120 to 130 feet, with an estimated capacity of 10 gpm.

- **Well #4** is located south of Wells #1 and #2 on the broad ridge, but nearer to Paynes Lake Creek, approximately 100 feet in distance. The well is located in decomposed granite and boulders, with a total depth of 310 feet BGS. The well is screened from 52-62 feet, with an estimated capacity of 30 gpm. This well had a 2-hour drawdown pump test at the time of drilling; there was no total draw-down in water column.

- **Well #5** is located west of the "Big Top" tent structure, approximately 425 feet west of French Creek. The well is located in decomposed granite and granite, with a total depth of 140 feet BGS. The well is screened from 60 to 140 feet with an estimated yield of 45 gpm. A 2-hour drawdown pump test at the time of drilling recorded no total draw-down in the water column.

- **Well #6** is located on the north side of Paynes Lake Creek and is elevated above the creek on the flanks of the hillside approximately 175 feet from the creek. The well was advanced into hard bedrock to a depth of 269 feet BGS, and has an estimated production of 7 gpm. Screening is not disclosed on the well log, but is assumed to be below the casing, which terminates at 53 feet.

- **Well #7** is located near the swimming pond above Paynes Lake Creek; the well site is approximately 225 feet from the creek. The well was advanced into decomposed granite to a depth of 125 feet BGS. Screening is not disclosed on the well log, but is assumed to be below the casing, which terminates at 73 feet. The well has an estimated production of 2 gpm.

Conclusions and Recommendations

Based upon our review of the wells at the JH Ranch, the DWR information, and our knowledge of surface and subsurface interactions related to groundwater wells, it is our opinion that the existing groundwater wells at JH Ranch have a negligible effect on surface water flows in French Creek, Paynes Lake Creek, or other area tributaries. The wells are spread over a large area, and are generally associated with low yields, which even at full production would not be sufficient to impact surface flows in the nearby streams (both of which are perennial streams). Pump tests in the two wells with the highest output (wells #4 and #5) exhibited an absence of drawdown, indicating lack of impact on groundwater levels (and by extension, lack of impact on surface waters). This is particularly significant at well #4, which is relatively close to Paynes Creek and is screened at a relatively shallow depth.

ATTACHMENT "M"

We hope that this letter provides the information that you need at this time. If we can answer any questions, or provide additional information, please don't hesitate to contact our office.

Respectfully,

SHN Consulting Engineers & Geologists, Inc.

REGISTERED GEOLOGIST
GARY D. SIMPSON
No. 2107
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Gary D. Simpson, CEG
Geoscience Director
Senior Engineering Geologist

GDS:lms

omni·means
ENGINEERS · PLANNERS

October 18, 2012

Mr. Greg Plucker
Deputy Director of Planning
Siskiyou County
806 S. Main Street
Yreka, CA 96097
Via. email: gplucker@co.siskiyou.ca.us

Mr. Rob Hayes-St. Clair
JH Ranch
8525 Homestead Lane
Etna, CA 96027
Via. email: rob@jhranch.com

Mr. Carl Jones
JH Ranch
Via. email: cjones@jhranch.com

RE: JH Ranch Planned Development Plan Amendment Application #Z-11-01 - PEER Review of Applicant Prepared Traffic Analysis (DRAFT)

Dear Mr. Plucker, Mr. Hayes-St. Clair & Mr. Jones:

The applicant's (JH Ranch) traffic impact analysis (TIA) for the JH Ranch Planned Development Plan Amendment Application (herein after referred to as "project"), prepared by SHN Consulting Engineer's and Geologists, Inc. (SHN), has been reviewed by Omni-Means. Omni-Means was retained by JH Ranch to provide an impartial technical PEER review to assist the County in its efforts to establish the adequacy of the TIA prepared by SHN. The outcome of this PEER review is an engineering opinion of the adequacy and/or deficiencies of the TIA and whether a California Environmental Quality Act (CEQA) negative declaration (ND) or mitigated negative declaration (MND) is appropriate as related to Transportation/Traffic.

PEER Review Professionals

Mr. Russell Wenham, Registered Civil Engineer, Registered Traffic Engineer & Professional Traffic Operations Engineer, was the lead reviewing professional. Mr. Wenham has over 28 years of experience in Transportation/Traffic Engineering and Operations and hold a Bachelor's degree in Civil Engineering.

Mr. Kamesh Vedula, Registered Civil Engineer & Registered Traffic Engineer, was a reviewing professional. Mr. Vedula has over 11 years of experience in Transportation/Traffic Engineering and Operations and holds a Master's degree in Civil Engineering.

Methodology/Approach

The PEER review consisted of:

1. Field review of French Creek Road and JH Ranch by Mr. Wenham on September 25, 2012. Mr. Scott Waite, Siskiyou County Engineering and Land Development Manager, joined Mr. Wenham on the field review.
2. Meetings with:
    a. Mr. Greg Plucker, Siskiyou County Deputy Planning Director
    b. Mr. Scott Sumner, Siskiyou County Public Works Director

c. Mr. Scott Waite, Siskiyou County Engineering and Land Development Manager
d. Mr. Mark Chaney, Redding Office Manager for SHN
e. Mr. Brian Freeman, Traffic Engineer for SHN

3. Review of the following documents:
   a. SHN August 30, 2010 JH Ranch Traffic Volume Study (SHN Report #1).
   b. SHN August 10, 2011 JH Ranch Revised Traffic Volume Study (SHN Report #2).
   c. SHN August 8, 2012 French Creek Road Traffic Analysis (SHN Report #3).
   d. JH Ranch Planned Development Plan Amendment, Revised July 2011 (PDPA).
   e. County's May 7, 2012 draft Initial Study/Mitigated Negative Declaration (IS/MND) Section XVI, "Transportation/Traffic" for the project.
   f. County's June 15, 2012 meeting notes regarding the TIS for the project.
   g. County's August 16, 2012 comments on the August 8, 2012 SHN TIS.
   h. County's May 13, 2008 Speed Zone Engineering and Traffic Surveys for French Creek Road.
   i. Highway Capacity Manual, Chapter 8, "Two Lane Highways", 1985.
   j. Highway Capacity Manual, Chapter 15, "Two Lane Highways", 2010.
   k. County's 1980 General Plan Circulation Element Minor Roads table on page 63.
   l. County's 1988 General Plan Circulation Element, Chapter 4.
   m. American Association of State Highway Transportation Officials (AASHTO) "Guidelines for Geometric Design of Very Low-Volume Local Roads, 1st Edition".
4. This written summary.

ANALYSIS

Project Description

The July 2011 PDPA describes the purpose of the project, whichis to bring all existing guest ranch property and uses into conformance with County codes and to provide guidelines for future development on the ranch project.

Project traffic is typically from three sources; 1) guests arriving and departing for their programs at the Ranch, 2) program traffic that leaves the Ranch during the week taking guests to various destinations, and 3) staff and related maintenance traffic.

The PDPA will be divided into four development areas, as described below:

1. Area A – Commercial Resort: The commercial resort consists of administrative offices, meeting rooms, guest services, recreation activities, food services, picnic areas, guest rooms, general meeting/assembly facilities, delivery areas, utility infrastructure and incidental uses. Anticipated changes include renovations of existing facilities, new indoor meeting room, additional staff offices, new guest house, new program clubhouse, expansion of ancillary structures and a new welcome center.
2. Area B – Housing: The housing area consists of Guest Housing overnight capacity for 380 persons and Staff Housing overnight capacity for 167 persons (for a total overnight capacity of 547 persons). Anticipated changes include replacement of single level duplex cabins with new single level guest housing, removal of some single staff housing, new husband/wife housing, new girl's staff dormitory, relocation of some housing and renovations.
3. Area C – Maintenance: The maintenance area consists of maintenance offices, storage rooms, maintenance service facilities, refuse collection facilities, sanitary sewer facilities, vehicle/machinery parking/storage facilities, off-site program and activity vehicle/equipment storage facilities, utility infrastructure and incidental facilities. Anticipated changes include construction of new maintenance and storage facilities as needed.

4. Area D – Program Activities: The program activities consist of ropes courses, hiking, orienteering, sports fields, water sports, skeet shooting, horseback riding, mountain bike riding, rodeo style activities, music programs, speaking programs, agricultural and livestock storage and feeding structures, utility infrastructure and ancillary uses. Anticipated changes include renovations of existing facilities, new equestrian facilities and additional program related storage facilities.

The JH Ranch calendar is divided into two main seasons (with program activities described in the PDPA):

- Summer Season (May – September)
  - Existing operations are described in detail in the PDPA
- Winter Season (October – April)
  - Existing operations are described in detail in the PDPA

While the PDPA includes detailed information about current operations there is insufficient information to determine the increases in traffic that may result from the anticipated changes in use. Typically, project descriptions, with clear descriptions of future uses/programs, would be documented and used as the basis to derive anticipated traffic increases. In the absence of this information, the approach taken to date is to attempt to quantify the maximum increase in project traffic that can be accommodated within the framework of the existing circulation system. If this increase in project traffic can be quantified, then the project description will need to be updated to match the derived traffic capacity.

Analysis Scenarios

The SHN reports analyze Winter and Summer conditions for Years 2010, 2015 and 2020. The Transportation Planning Handbook, 2nd Edition, Institute of Transportation Engineers (page 105) suggests using a traffic impact study horizon year of the anticipated opening year, assuming full project build out, for small developments. Anticipating a moderate pace for full build out of the project, OMNI-MEANS agrees that the Year 2020 horizon year is reasonable.

Study Locations

The SHN reports analyze the impact of traffic growth on French Creek Road. French Creek Road is further broken down into six different sections for analysis. OMNI-MEANS agrees with the identification of the sections along French Creek Road.

SHN Report #1 and #2 discuss the impact of traffic growth at the following intersections:

- French Creek Road at Highway 3
- JH Ranch Main Access Road at French Creek Road
- JH Ranch Bridge (2nd Access Road) at French Creek Road

Intersection capacity calculations were not conducted by SHN since the existing traffic volumes are low. Under existing conditions, the traffic volumes are sufficiently low that the SHN determination is supported by OMNI-MEANS. Since the project's anticipated traffic growth is not well defined, OMNI-MEANS cannot determine if there will be future impacts at these intersections. It is unlikely that there would be an impact at the JH Ranch access roads but there could be an impact at the French Creek Road/Highway 3 intersection.

Data Collection

SHN's data collection methods are described in SHN Report #1, #2 and #3. The traffic counts document conditions for both Summer and Winter operational seasons and for both Weekday and Weekend

conditions. Traffic counts were conducted at the following locations:

- 5/19/10 – 5/25/10: French Creek Road near Highway 3
- 7/27/10 – 8/9/10: French Creek Road near Highway 3
- 7/27/10 – 8/9/10: JH Ranch Main access road.
- 7/27/10 – 8/9/10: JH Ranch Bridge access road.

It appears that appropriate effort was put into collecting data for representative time periods and seasons.

Spot checks of the data summaries attached to the SHN Reports vs. the data used in the body of the report for analysis purposes found the following:

1. Weekend and Weekday peak hour data is accurate.
2. There was an anomaly in the JH Ranch Bridge data and SHN made an appropriate adjustment before using the data.
3. The ADT information presented in the SHN reports was not reviewed because this information is not used in the calculation of LOS per HCM 2010.

The County's Draft IS/MND contains a detailed discussion that identifies potential issues with SHN's derivation of ADT data. While there may be valid issues raised in the County's document, these issues were not evaluated by OMNI-MEANS since LOS and capacity issues only relate to the peak hour volumes.

Base Traffic Volumes and Project Trip Generation

Traffic data was collected by SHN for the dates and locations described in *"Data Collection"* above.

It appears that appropriate effort was put into collecting data for representative time periods and seasons. Since only peak hour data is used for analysis purposes, any anomalies in derivation of ADT aren't applicable to the analysis.

Future (Year 2020) background traffic growth is presented in SHN Report #3 as follows:

- 2 percent growth rate.
- 1 percent growth rate.
- Assumed development of 12 single family homes (out of approximately 66 available parcels). This development rate equates to approximately a 2% background growth rate on French Creek Road.

The County's Draft IS/MND addresses Year 2020 background traffic growth as follows:

- Assumed development of 33 single family homes (out of approximately 66 available parcels).

California Department of Finance statistics, obtained from the Siskiyou County internet site, lists county population growth as follows:

YEAR	POPULATION	GROWTH RATE
1950	30,733	
1960	32,885	+0.6%
1970	32,225	-0.2%
1980	39,732	+2.0%
1990	43,530	+0.9%
2000	44,200	+0.2%
2010	44,900	+0.2%

SHN Report #3 uses a 2% background growth rate for analysis purposes which is considered conservative by OMNI-MEANS.

Roadway Geometry Analysis

SHN Report #3 analyzes the character of French Creek Road. OMNI-MEANS finds that the geometry appears to be accurately described.

In accordance with American Association of State Highway Transportation Officials (AASHTO) guidelines, French Creek Road should not be considered a "Very Low Volume Local Road, ADT<400" because the ADT currently exceeds 400 with regularity.

Level of Service Analysis

The 1980 Siskiyou County General Plan Circulation Element Minor Roads table on page 63 identifies the capacity of French Creek Road as 200 ADT (Average Daily Traffic). According to County staff, there isn't any backup to support this capacity determination.

The 1988 Siskiyou County General Plan Circulation Element, Chapter 4, contains a level of service (LOS) and capacity discussion beginning on Page 5. The Circulation Element does not use modern General Plan language that would specifically enumerate the plan's policies. A review of the document suggests the following General Plan policies and guidance of significance to the project:

A. POLICY: *"… the developer shall make improvements to the county road providing direct access to his development. Improvements required shall be those necessary to improve the county road fronting the property (and the roadway off-site of the property if the development significantly increases traffic thereon) to provide for a service volume at level of service "C"."*

   This policy is clear and establishes LOS "C" as the threshold for off-site determination of project related significant traffic impact.

B. GUIDANCE: *"The critical elements requiring consideration for capacity on 2-lane rural highways are:*

1. *Percent of passing sight distance*
2. *Average highway speed*
3. *Lane width*
4. *Lateral clearance*
5. *Grades*

The traffic elements relate to the nature of traffic itself and can change or be changed at any time. Traffic elements include:

1. *Percent of trucks or busses*
2. *Peak hour traffic*
3. *Traffic interruptions such as left turns, stop signs, etc.*
4. *Livestock, wildlife, etc.*
5. *Pedestrians, bicycles"*

   This guidance is clear but is based on outdated Highway Capacity Manual (HCM) guidance. The latest HCM was published in December 2010 by the Transportation Research Board (HCM 2010). HCM 2010 should be used for this project.

   SHN Report #1 and #2 include discussions of the French Creek Road/Highway 3, JH Ranch

Main/French Creek Road and JH Ranch Bridge/French Creek Road intersections but does not analyze the LOS due to the low volume of traffic. While this may be an appropriate approach, it cannot be validated by OMNI-MEANS because there isn't a project description sufficient to determine the anticipated project traffic.

The SHN Reports use HCM 2000 methodologies for French Creek Road. This was appropriate when SHN Report #1 was published but HCM 2010 should have been used for SHN Report #2 and #3. OMNI-MEANS did not perform a comparison of HCM 2000 and HCM 2010 to determine the impact, if any, on the LOS calculations in SHN Report #2 and #3.

SHN Report #3 breaks French Creek Road into six sections for HCM LOS determinations. HCM 2010 Chapter 15 methodologies assume a minimum of 18 feet of traveled way width and uninterrupted flow operation. Roadway Section #4 consists of sight-restricted curves and spot locations as narrow as 11.5 feet of traveled way. Roadway Section #4 cannot be analyzed via. the HCM 2010 Chapter 15 methodologies. In its current configuration, Roadway Section #4 will operate as a 1-lane stop-and-go roadway as traffic volumes grow. Micro-simulation computer modeling may be necessary to determine the LOS and associated traffic capacity for Roadway Section #4.

Roadway Sections #1, # 2, #3, #5 and #6 can accurately be analyzed using HCM 2010 Chapter 15 methodologies. The parameters used in SHN Report #3 are compared to OMNI-MEANS' findings below:

Parameter	SHN Report #3 Value	OMNI-MEANS Suggested Value	Comments
Roadway Class	Class II	Class II	French Creek Road conforms to HCM's definition of Class II Highways.
Lane Width	Per Table 2	Per Table 2	SHN used actual field measurements.
Shoulder Width	Per Table 2	Per Table 2	SHN used actual field measurements.
Access-Point Density	0	0	A review of the roadway shows very few existing access points and future access points will be very few.
Terrain	Rolling	Rolling	Grades are short and range from 0.4% to 4.5%
Percent No-Passing Zone	100%	100%	Assuming 100% no-passing is reasonable due to the rolling curvilinear alignment.
Speed Limit	40 MPH for Section #1 & #2; 30 MPH for Section #3 & #5	40 MPH for Section #1 & #2; 30 MPH for Section #3 & #5	Supported by the County's Speed Zone Studies.
Base Design Speed	Not directly addressed	Speed Limit + 10 mph (HCM	Will have a very minor impact on the

		Recommendation)	calculation of the Free Flow Speed.
Length of Passing Lane (if present)	N/A	N/A	There are not any passing lanes on French Creek Road.
Pavement Condition	Not directly addressed	Pavement is in good condition	Only applicable to bicycle transportation. Bike transportation is so light on this roadway that there is not a reason to perform an analysis.
Hourly Auto Volume	Per Table 3	See "Base Traffic Volumes & Project Trip Generation" Section above.	If the volumes change then the analysis will need to be updated.
Length of Analysis Period	1 hour	15 minute (HCM Recommendation)	This relates to the application of a Peak Hour Factor discussed below.
Peak Hour Factor	1.0	0.88 (HCM Default)	The use of a PHF of 0.88 would increase the volumes used for analysis by approximately 14%.
Directional Split	50:50	50:50	Supported by the actual vehicle counts.
Heavy Vehicle Percentage	2%	6% (HCM Default)	Since heavy vehicle data was not collected, the HCM default of 6% should be used.
Percent Occupied by On-Street Parking	0%	0% (HCM Default)	Any isolated on-street parking is negligible.

C. GUIDANCE: *"The generally accepted formula for computing capacities is taken from the Highway Capacity Manual published by the National Academy of Sciences in 1965."*

This guidance is clear but is based on outdated Highway Capacity Manual (HCM) guidance. The latest HCM was published in December 2010 by the Transportation Research Board (HCM 2010). HCM 2010 should be used for this project.

D. POLICY: *"A two-lane rural highway shall have a minimum of 18 feet of paved traveled way."*

This policy is clear and is applicable to new construction. In the case of the traffic impact analysis for the project, the question is whether there is a significant CEQA impact that necessitates improvements to Roadway Section #4. As previously stated, computer micro-simulation may be necessary to determine the traffic volumes that can be accommodated on Roadway Section #4 while maintaining a LOC "C".

E. GUIDANCE: *"The formula for two-lane PAVED rural highways considering adjustments for a*

given level of service: SV = 2000 V/C WL TL"

This guidance is clear but is based on outdated Highway Capacity Manual (HCM) guidance. The latest HCM was published in December 2010 by the Transportation Research Board (HCM 2010). HCM 2010 should be used for this project.

F. GUIDANCE*: "In Siskiyou County we have elected to compute service volumes for unpaved roads having a minimum of 18 feet of traveled way as follows: "The formula for 2-lane unpaved rural highways considering adjustments and for a given level of service: SV = 1000 V/C WL TL, where*

SV = service volume (total for both directions/hour)
V/C = volume to capacity ratio including percent of passing sight distance adjustment
WL = adjustment for lane width and lateral clearance
TL = truck factor at given level of service"

This guidance is clear but is based on outdated Highway Capacity Manual (HCM) guidance. The latest HCM was published in December 2010 by the Transportation Research Board (HCM 2010). HCM 2010 should be used for this project.

G. GUIDANCE: *"It is difficult to determine the capacity of roadways less than 18 feet in width. We can safely assume that the allowable volumes will be progressively less as the width decreases. ADTs should be limited to values between 25 and 400 vehicles per day depending on width, surface condition and sight distance."*

It is accurate that it is difficult to determine the capacity of roadways less than 18 feet in width. It is accurate that capacity will decrease as the width of the roadway decreases. The "25 – 400 vehicles per day" limit is not supported. The actual capacity for roadways less than 18 feet in width should be based on computerized micro-simulation.

Safety Analysis of French Creek Road

The SHN Reports did not address traffic safety.

Approximately 20 years of vehicle collision data (1974 to 1994) is included in the County's Speed Zone studies. A review of the collision data reveals the following:

- There were 10 reported collisions.
- The collisions appear somewhat random and scattered along the entire Roadway.
- The cause is listed as "unknown" for 8 collisions.
- The cause is listed as "speeding" for 1 collision.
- The cause is listed as "DUI" for 1 collision.
- 3 collisions were during summer months.
- 3 collisions were during fall months.
- 0 collisions were during winter months.
- 4 collisions were during spring months.

Collision data for the most recent 10-year period should be obtained and analyzed. The average ADT for the same 10-year period should be estimated, which along with the 4.7 mile road length, the collision rate per million vehicle mile (mvm) should be derived. This rate should be compared to appropriate state or federal data and conclusions reached regarding the safety impact of the project's traffic volume increases.

CONCLUSIONS

1. The project should be defined and trip generation derived from said defined project.
2. Section #4 of French Creek Road should be reanalyzed as a 1-way road.
3. The technical analysis parameters used for LOS determination on all other sections of French Creek Road should be updated along with the associated calculations.
4. Depending on the traffic growth anticipated from a defined project, Caltrans may request analysis of French Creek Road at Highway 3.
5. A safety analysis of French Creek Road should be performed.
6. Existing ADT volumes are such that French Creek Road should not be considered a "Very Low Volume Road, ADT<400" in accordance with AASHTO guidelines.
7. The number of additional daily trips that can be added to French Creek Road, while maintaining LOS "C", cannot be determined until the above-described issues are addressed.

Sincerely,

OMNI-MEANS, Ltd.
Engineers & Planners

Mr. Russell A. Wenham, PE, TE, PTOE
Associate

Cc: Mr. Scott Sumner, Public Works Director, Siskiyou County

RW:rw
C1653LTR001.docx / 45-3864-01

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash Ave. • Eureka, CA 95501-2138 • 707-441-8855 • FAX: 707-441-8877 •shninfo@shn-engr.com

Reference: 509051.100

November 8, 2012

Mr. Greg Plucker, Deputy Director
Siskiyou County Planning
806 South Main Street
Yreka, CA 96097

Subject: Response to Omni-Means Peer Review of SHN Traffic Analysis, JH Ranch Planned Development Plan Amendment Application, #Z-11-01

Dear Mr. Plucker:

SHN Consulting Engineers & Geologists, Inc. (SHN) has reviewed the Peer Review document prepared by Omni-Means for SHN's traffic analysis work products for the above referenced project. At this time SHN is providing Siskiyou County with our responses to those items found in the Conclusions section of the Omni-Means Peer Review (Peer Review) that pertain directly to our work on this project or to traffic related items that are appropriate for our response. For ease of review, we have provided the conclusion item as it appears in the Peer Review along with our response.

Omni-Means Conclusion 2:

Section #4 of French Creek Road should be reanalyzed as a 1-way road.

SHN Response 2:

As identified in Conclusion 2 of the Peer Review, SHN performed an analysis of one-way traffic volumes for French Creek Road, Section 4. SHN performed this one-way analysis using TRAFFIX 10 software and existing data collected by SHN for this project. The TRAFFIX 10 software is compliant with the Highway Capacity Manual (HCM) 2010 version. SHN conducted a peak hour analysis for this roadway section due to the low traffic volumes recorded on the roadway. Analysis was completed for both the 2010 (Existing) and 2020 (Future) conditions. Assumptions utilized in this analysis included:

- Section 4 considered a single lane road with one-way traffic
- All-way stop controls
- A two legged intersection
- 50/50 traffic split based upon actual traffic data and visual inspection

Attached are the analysis outputs for roadway section. The 2010 Existing conditions show that the Level of Service (LOS) for the roadway section is LOS A. This value conforms to the information previously developed in our traffic analysis. The 2020 Future conditions show the roadway section also at a LOS A; the future conditions include an increase in traffic volumes, consistent with our previous analysis. Based on the analysis for the roadway segment the future LOS at the 2020 time period remains unchanged from existing conditions, at LOS A.

Omni-Means Conclusion 3:

The technical analysis parameters used for LOS determination on all other sections of French Creek Road should be updated along with the associated calculations.

SHN Response 3:

Technical analysis performed for the project was begun under the guidelines and general direction of the Highway Capacity Manual (HCM) 2000 edition (work began in 2009). Updates are generally provided to the HCM on a 10-year interval period and the most recent update was published in 2010 as noted in the Peer Review. Since SHN's work products began in 2009 and were covered under the HCM 2000, we opted to continue analysis of this low volume roadway under the HCM 2000 guidelines to be consistent with data analysis. Review of the HCM 2010 guidelines finds that the difference between the two versions for a roadway such as French Creek Road are negligible, if any, and re-working the analysis to reflect values in the HCM 2010 would not produce any significantly different information than that developed with the HCM 2000.

Omni-Means Conclusion 4:

Depending on the traffic growth anticipated from a defined project, Caltrans may request analysis of French Creek Road at Highway 3.

SHN Response 4:

Review of the project by Caltrans may occur as part of the agency review process under CEQA. While we cannot predict what Caltrans may or may not comment on as part of their review process, it is our opinion that due to the current low volume and data that shows service volume will remain at LOS A for the roadway, additional intersection studies are not anticipated.

Omni-Means Conclusion 5:

A safety analysis of French Creek Road should be performed.

SHN Response 5:

As noted in the Peer Review, SHN did not address traffic safety in our analysis as there was no evident safety concern for the roadway based on actual vehicle collision data or our discussions with County Public Works staff. Vehicle collision data discussed in the Peer Review noted "the collisions appear somewhat random and scattered along the entire Roadway" (Peer Review, page 8).

SHN's discussions with County staff during our analysis revealed that there was no recent (within the last decade) vehicle collision data analysis or roadway assessment to evaluate potential roadway safety improvement projects that may be needed, based on documented safety issues. Lacking any recent vehicle collision data, or problematic accident locations along the roadway, it is our opinion that a safety analysis is not needed for the review and approval of the PDPA.

ATTACHMENT "N"

Omni-Means Conclusion 6:

Existing ADT volumes are such that French Creek Road should not be considered a "Very Low Volume Road, ADT<400" in accordance with AASHTO guidelines.

SHN Response 6:

SHN concurs with the Peer Review conclusion.

Thank you for the opportunity to comment on the Peer Review. Submittal of this response concludes SHN's work on the traffic analysis for this project.

If you have any questions, please feel free to call me at 707-441-8855, or email me at bfreeman@shn-engr.com.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

Brian A. Freeman, P.E., T.E.
Senior Civil Engineer

BAF:MSC:bmd

Attachment: Peak Hour Analysis Section 4 (2010 and 2020)
c. w/attach.: Rob Hayes-St. Claire

Attachment

Peak Hour Analysis Section 4 (2010 and 2020)

2010 Existing Conditions

French Creek Road Section 4

ATTACHMENT "N"

Node 1: Section 4-French Creek	
Control Type	AWSC
Average Delay	7.35
Average LOS	A
Intersection PHF	0.88
Critical V/C	0.07

Volume and Adjustments		
Approach	E	W
Movement	T	T
Existing Traffic	52	52
Future Growth Adjustment	1.00	1.00
Future Growth Volume	63	63
In Process Volume	0	0
Site Volume	0	0
Pass-by Volume	0	0
Other Volume	0	0
Total Volume	52	52
PHF	0.88	0.88
Flow Rate	59	59
Geometry Group	1	1

Saturation Headway		
Approach	E	W
Lanes	Lane 1	Lane 1
Total Lane Flow Rate	59	59
Left Turn Flow Rate	0	0
Right Turn Flow Rate	0	0
Proportion LT	0.00	0.00
Proportion RT	0.00	0.00
Proportion HV	0.06	0.06
Hlt adj	0.20	0.20
Hrt adj	-0.60	-0.60
Hhv adj	1.70	1.70
H adj	0.10	0.10

Departure Headway		
Approach	E	W
Lanes	Lane 1	Lane 1
Total Lane Flow Rate	59	59
Hd initial	3.20	3.20
X initial	0.05	0.05
Hd, iteration 1	4.05	4.05
Difference, iteration 1	0.85	0.85
Hd, iteration 2	4.06	4.06
Difference, iteration 2	0.01	0.01
Convergence	Y	Y
Hd final	4.06	4.06
X final	0.07	0.07

Capacity and Level of Service		
Approach	E	W
Lanes	Lane 1	Lane 1
Total Lane Flow Rate	59	59
Departure Headway	4.06	4.06
Degree of Utilization	0.07	0.07
Move Up Time	2.00	2.00
Service Time	2.06	2.06
Capacity	887	887
Delay	7.35	7.35
LOS	A	A
Approach Delay	7.35	7.35
Approach LOS	A	A
Intersection Delay	7.35	
Intersection LOS	A	

2020 Future Conditions
French Creek Road Section 4

Node 1: Section 4-French Creek	
Control Type	AWSC
Average Delay	7.43
Average LOS	A
Intersection PHF	0.88
Critical V/C	0.08

Volume and Adjustments		
Approach	E	W
Movement	T	T
Existing Traffic	63	63
Future Growth Adjustment	1.00	1.00
Future Growth Volume	63	63
In Process Volume	0	0
Site Volume	0	0
Pass-by Volume	0	0
Other Volume	0	0
Total Volume	63	63
PHF	0.88	0.88
Flow Rate	72	72
Geometry Group	1	1

Saturation Headway		
Approach	E	W
Lanes	Lane 1	Lane 1
Total Lane Flow Rate	72	72
Left Turn Flow Rate	0	0
Right Turn Flow Rate	0	0
Proportion LT	0.00	0.00
Proportion RT	0.00	0.00
Proportion HV	0.06	0.06
Hlt adj	0.20	0.20
Hrt adj	-0.60	-0.60
Hhv adj	1.70	1.70
H adj	0.10	0.10

Departure Headway		
Approach	E	W
Lanes	Lane 1	Lane 1
Total Lane Flow Rate	72	72
Hd initial	3.20	3.20
X initial	0.06	0.06
Hd, iteration 1	4.06	4.06
Difference, iteration 1	0.86	0.86
Hd, iteration 2	4.07	4.07
Difference, iteration 2	0.01	0.01
Convergence	Y	Y
Hd final	4.07	4.07
X final	0.08	0.08

Capacity and Level of Service		
Approach	E	W
Lanes	Lane 1	Lane 1
Total Lane Flow Rate	72	72
Departure Headway	4.07	4.07
Degree of Utilization	0.08	0.08
Move Up Time	2.00	2.00
Service Time	2.07	2.07
Capacity	884	884
Delay	7.43	7.43
LOS	A	A
Approach Delay	7.43	7.43
Approach LOS	A	A
Intersection Delay	7.43	
Intersection LOS	A	

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
428 J Street, Suite 500, Sacramento, CA 95814 P 916.266.2190 F 916.266.2195

MEMORANDUM

Date: May 10, 2013

Project #: 13278

To: Rob Hayes-St. Clair
JH Ranch

From: Chirag Safi, (916) 822-5356, Frank Cai, (916) 822-5355

Project: French Creek Road

Subject: DRAFT Micro-Simulation Analysis & Findings

Kittson & Associates, Inc. (KAI) has completed the VISSIM micro-simulation analysis of the French Creek Road Section 4. The purpose of the capacity threshold analysis was to determine the number of vehicles that can be added without exceeding the County's Level of Service (LOS) threshold. Findings indicate that a bidirectional volume of 865 additional JH Ranch trips can be accommodated without backing up traffic outside the Section 4 of French Creek Road and exceeding delays corresponding to LOS D.

VISSIM ANALYSIS

The VISSIM simulation analysis was prepared according to the technical parameters and assumptions provided in the memorandum developed by KAI and agreed to by Omni-Means dated April 16, 2013. However, based on visual inspection of the simulation runs, the coding for the northern priority rule was modified to ensure a conservative approach as follows:

The directional stop rule will be coded within 30 feet of the southern power pole. The priority (stop) rules in this case will be applied in the event of northbound and southbound traffic arriving within the predetermined 30 feet vicinity of the southern power pole. In this event the following rules apply:

- *Pick-up trucks or heavy vehicles would stop and provide right-of-way to the opposing passenger car*
- *Heavy vehicles would stop and provide right-of-way to the opposing vehicle of another classification.*
- *When two heavy vehicles or two pick-up trucks encounter each other from the opposite directions, whichever vehicle is the second to arrive to this section of roadway (100 feet) will yield right of way to the opposing vehicle.*

KAI determined that the priority rule would result in essentially the same travel conditions for a range of traffic volumes, which may not be the case on the ground. In other words, the prevailing roadway

constraints as depicted through the priority rules would not greatly affect travel patterns of vehicles. In order to make the model match the anticipated ground conditions, a "conflict area" was coded at this single location in lieu of the "priority rule". For all other locations, priority rules were maintained consistent with the April 16, 2013 memorandum. The conflict area performs similar functions as the priority rule which is managing right of way between vehicles on two different links. While a "conflict area" is an alternative to a "priority rule", it offers greater and more intelligent control.

The priority rules at the northern pole location were modified using conflict areas with the following features:

- Conflict areas measure about 30 feet (consistent with the priority rule assumption)
- Northbound direction provides clear sight distance to view on-coming traffic, while southbound direction does have some sight distance restrictions. Therefore, northbound traffic is supposed to and is assumed to give right of way to the southbound traffic.
- Gap time is assumed to be 0.5 second for cars and 1 second for pick-up trucks and heavy vehicle.
- Safety factor is assumed as 1.5.
- Visibility was assumed to be low (100 feet) given prevailing roadway constraints, i.e. sight obstructions and horizontal curve.

VISSIM CALIBRATION

The calibration was based on the peak hour traffic volumes. Table 1 compares simulation outputs with the traffic volume inputs. VISSIM simulation runs were based on a minimum 10 minute seeding time, 60 minute analysis time (divided into four 15 minute intervals), and reflect an average of 10 multiple runs. As shown, the baseline simulation model replicated actual traffic volumes for each direction of travel within prescribed error limits (Guidelines for Applying Traffic Micro-simulation Modeling Software, Publication NO. FHWA-HRT-04-040, Dowling Associates, June 2004).

Table 1: VISSIM Model Calibration Results (Section 4)

Direction	Simulated Traffic Volumes [1] (veh/hour)	Traffic Counts [1] (veh/hour)	Difference
Northbound	62	64	4%
Southbound	41	40	-1%

1 Shows average of ten runs

2 Data collected by SHN Consulting Engineers

The measure of effectiveness i.e. travels time, delay and LOS under the baseline conditions are illustrated in Table 2. As such, the segment currently operates at LOS B.

Table 2: Baseline Conditions Measure of Effectiveness (Section 4)

Simulated Travel Time [1] (sec)	Free Flow Speed [2] (mph)	Distance (ft)	Free Flow Travel Time (sec)	Delay (sec)	LOS [3]
21.6	40	578	9.9	11.7	B

1 Average of simulation ten runs and two directions

2 Assumed as posted speed limit

3 Based on Highway Capacity Manual 2010 Signalized Intersection criteria

CAPACITY THRESHOLD ANALYSIS - ADDITIONAL JH RANCH TRAFFIC

Once the model was calibrated to traffic counts, traffic volumes originating from and destined to JH Ranch were iteratively increased until the delay corresponding to LOS D was reported (in which case system gridlock is also observed). The performance measures and visualization were tracked for all iterations. The maximum throughput before vehicles start experiencing average delays corresponding to LOS D for signal controls was computed as 969 for both directions combined. In other words, an estimated additional 865 JH Ranch vehicles in both directions can be accommodated by the narrow section of French Creek Road without exceeding the County's LOS threshold criteria.

Table 3 provides measures of effectiveness for the baseline-plus-additional-JH-Ranch traffic scenario. It shows that an additional 865 bidirectional peak hour trips would result in an average delay of 31.7 seconds per vehicle which is denoted as LOS C. Although transition from LOS C to LOS D is marked at 35 seconds of delay per vehicle, the increase in traffic volumes to 870 resulted in roadway gridlock according to the simulation (visual check). Hence, a maximum of 865 additional vehicles could be accommodated without causing gridlock.

Table 3: Measures of Effectiveness for Additional JH Ranch Traffic

Added Traffic (Both Directions)	Simulated Travel Time [1] (sec)	Free Flow Speed [2] (mph)	Distance (ft)	Free Flow Travel Time (sec)	Delay (sec)	LOS [3]
865	41.5	40	578	9.9	31.7	C

1 Average of ten runs and two directions

2 Assumed as posted speed limit

3 Based on Highway Capacity Manual 2010 Signalized Intersection criteria

FINDINGS AND CONCLUSION

The VISSIM model represents 10 a.m. traffic conditions on a weekday, which is reported as the peak hour on an average weekday. The VISSIM model was calibrated to the existing ground counts. The baseline simulation model estimates the French Creek Road's Section 4 to be operating at LOS B. The simulated travel time was compared with the free flow travel time for the 578 feet of Section 4 to estimate delay and LOS.

The VISSIM simulation analysis estimated that a bidirectional 865 additional JH Ranch trips can be accommodated without backing up traffic outside the Section 4 of French Creek Road and exceeding delays corresponding to LOS D.