

**United States Department of the Interior**

**National Park Service**

**RECORD OF DECISION**

**Yosemite Environmental Education Center**

**Environmental Impact Statement**

**Yosemite National Park**

**California**

The Department of Interior, National Park Service has prepared this Record of Decision on the Yosemite Environmental Education Center/ Environmental Impact Statement for Yosemite National Park, California. This Record of Decision includes a description of the background of the project, synopses of the alternatives considered, identification of the environmentally preferable alternative, a statement of the decision made, the basis for the decision, measure to minimize environmental harm, finding on impairment of park resources and values, and an overview of public and agency involvement in the decision-making process. Following the Record of Decision is an appendix of errata sheets for the Final Environmental Impact Statement.

**BACKGROUND OF THE PROJECT**

The Yosemite Institute (YI, a campus of NatureBridge) and a National Park Service (NPS) non-profit park partner, has provided environmental education programs in Yosemite National Park since 1971. In 1973, YI began using the old CCC/NPS Blister Rust camp at Crane Flat for overnight programs and operations. YI also leads programs out of Curry Village in Yosemite Valley, and rotates students in and out of the two park areas throughout their week-long stay. Most of the Crane Flat campus NPS structures and utilities are approaching 70 years old, are energy inefficient, and are increasingly difficult to retrofit to achieve modern standards for health, safety, and accessibility. Crane Flat campus currently provides overnight lodging for 76 students per night, while the remainder is housed in commercial lodging in Curry Village (now in adjacent Boystown) at a significantly higher cost. To address these issues, and provide a more suitable educational facility, YI and NPS are considering options to redevelop the existing campus or construct a new campus at a different location.

This Environmental Impact Statement (EIS) presents and analyzes three alternatives the agency is considering for public input and review, according to the National Environmental Policy Act (1969, as amended): Alternative 1—No-Action ; Alternative 2—Redevelop Crane Flat Campus; and Alternative 3 (Preferred)—Construct a new campus at Hennes Ridge, and restore Crane Flat to natural conditions. Under both action alternatives, a new education center would be owned by the NPS and operated jointly by the NPS and YI.

The park began public scoping for this project in 2002. Input received from the public, tribes, and other agencies has been welcomed and considered throughout the development of this EIS. Environmental studies and comments received on an administrative Draft EIS prepared in 2003 led to reconsideration and formulation of a new alternative, which would locate the campus in a new area of the park to avoid sensitive resources in and around Crane Flat meadows. After completion of further studies and analyses at both sites, a public review Draft EIS was released in May 2009. The park hosted several public review meetings, open houses, and site tours during the public review period. The Park received more than 40 comment letters on the Draft EIS, which have been reviewed and considered in the Final EIS.

The purpose of the proposed action is to:

Provide a sustainable environmental education campus and program that best meets the educational and interpretive mission and goals of Yosemite Institute and Yosemite National Park, by

- Providing a safe, universally accessible campus that meets modern health and safety standards
- Creating a sustainable, ecologically sensitive, campus that protects park resources and attains standards for national Leadership in Energy and Environmental Design (LEED)
- That extends opportunities for children of all backgrounds to participate, and nurtures the development of future stewards of our National Parks and the environment

## **ALTERNATIVES CONSIDERED (ALTERNATIVES 1, 2, AND 3)**

The Yosemite Environmental Education Center Final EIS describes three alternatives, the environment that will be affected by those alternatives, and the environmental consequences of implementing each alternative. The No Action Alternative (Alternative 1) represents a baseline upon which to compare the two action alternatives. Alternative 2 considers the redevelopment of Crane Flat and Alternative 3 considers a new center at Henness Ridge. The action alternatives represent two approaches for implementing expanded environmental education activities through YI programs. An environmentally preferred alternative is also identified.

### **No Action Alternative (Alternative 1)**

Under the No-Action Alternative (Alternative 1), there would be no change in the management direction, program, location, or conditions at the Crane Flat campus. Necessary maintenance and repairs would continue, but no major rehabilitation of facilities, construction of buildings, or improvements to utilities would occur. There would be no change in size of facilities—the number of student and staff beds (76 and 8, respectively) would remain the same. The overall number of students in the park per session would remain the same (390 students), with the majority of students in commercial lodging in Yosemite Valley.

### ***Elements Common to the Action Alternatives (Alternatives 2 and 3)***

Several elements are common to the action alternatives, including portions of construction design, sustainability and green technology, lighting, site drainage, Americans with Disabilities Act (ADA) compliance, emergency access, and some techniques to increase water and energy conservation.

### ***Construction Design***

Most structures for the campus would be single-story construction; the dining hall would be two stories. Construction design is influenced by the following:

- Short construction season from April to November and the need to establish a weather-tight shell by start of winter
- Structures need to withstand heavy snow loading
- Construction work force would be local and regional
- Limited sun exposure and use patterns of cabins may limit the effectiveness of thermally massive heating strategies
- Winter heating demands necessitate importance of insulation
- The foundations need to accommodate both flat and sloped sites
- The need for fire-resistive construction is not so great as to mandate concrete or other such construction

## ***Sustainability and “Green” Technology***

Under the action alternatives, state-of-the-art sustainable and “green” technologies designed to minimize impacts on natural resources, consistent with the NPS’s *Guiding Principles of Sustainable Design* (1993b), would be implemented. The campus would act as a teaching instrument for instructors to introduce sustainable and environmentally friendly practices. Central to the concept of sustainable development is the idea that all decisions—from initial concept through design, construction, and operation—are evaluated in light of the principles of natural and cultural conservation. The sustainable principles and technologies incorporated into each of the action alternatives are as follows:

- Reuse and recycle materials
- Orient buildings to maximize sun exposure for heat gain, photovoltaic panels, photovoltaic cells, and/or solar water heating and to minimize effects of prevailing winds
- Minimize grading by building on existing contours and landforms
- Minimize tree and vegetation removal
- Restore disturbed areas with native, drought-resistant plants
- Use sustainable technology, such as cogeneration and geothermal, for heating
- Install energy- and water-efficient features and utilities
- Promote water infiltration

## ***Lighting***

Natural darkness and the night sky play an important part in the overall visitor experience to the park and the environmental education campus, providing outstanding opportunities for stargazing and observing the moon. Unlike urban or suburban settings, there is essentially no ambient light. For this reason, all proposed lighting systems for the action alternatives would conform to NPS’s Dark Sky Policy and the draft Yosemite National Park lighting guidelines while also meeting public health and safety needs.

All lighting would be energy efficient. Most lighting fixtures would use fluorescent lamps with electronic ballasts. Small fixtures would use compact fluorescent lamps or LED (light-emitting diode) lamps as applicable. Exterior lighting would use energy-efficient metal halide or compact fluorescent lamps. The exterior lighting system would conceal light sources, to the extent possible, to minimize the impact on the night sky. Low-height lighted bollards would be used in parking areas in lieu of overhead pole lighting. Low-level down-lighting and unobtrusive luminaries would be used at facilities and building entrances and exits.

Lighting in the cabins would be controlled via time switch and occupancy sensors, with manual overrides for emergencies. In the bathhouses, lighting would be controlled with occupancy sensors so the facilities could have 24-hour usage. Care would be taken to specify the correct type of sensor and install the correct locations to avoid inadvertent shut-off.

## ***Site Drainage***

Erosion and flood risks to life and property would be minimized through building design. Natural site drainage patterns would remain largely unchanged. Buildings and walkways would be elevated on concrete caisson foundations in lieu of continuous concrete spread footings to minimize the interruption of natural site drainage and reduce the impacts of foot traffic on the site. An on-grade gravel base would be installed at the base of structures to prevent erosion from rooflines.

## ***Americans with Disabilities Act Accessibility***

Designs of the action alternatives are consistent with NPS DO 16A (Accessibility for Employees and Job Applicants) and DO 42 (Accessibility for Park Visitors). Site design would incorporate accessibility into the

routes within the site, parking spaces, passenger loading zones, building entrances, and ground and floor surfaces, as required. Both action alternatives would result in improved accessibility.

### ***Fire and Emergency Access***

Designs under the action alternatives are consistent with the National Fire Protection Association (NFPA) standards. Fire lanes and emergency access will be provided for all human occupancy buildings but would be adjusted for buildings with approved sprinkler systems incorporated into the building design. Fire lanes providing one-way travel will be a minimum of 12 feet wide. Primary access interior roads would be designed to support up to 40,000 pounds of equipment with periodic turn-arounds allowing a turning radius of 50 feet. All gates will have standard park emergency access locks. Primary roads will be at a grade of 10% or less. Automatic fire sprinklers and fire safety equipment would meet NFPA standards. A fire sprinkler system would be installed in all overnight facilities. The fire sprinkler system requires 400 gallons per minute (gpm) for an approximate running time of 30 minutes, for a total of 12,000 gallons. Fire hydrants would be strategically located 300 feet apart throughout the campus, with flow rates of 1,500 gpm for two hours of operation. Flow of a hydrant for two hours would require a total of 180,000 gallons.

### ***Water Conservation***

The plumbing designs under both action alternatives include installation of state-of-the-art sustainable low-flow plumbing fixtures, low-volume urinals and toilets, and push showers. Because site restoration and landscaping would use native species, no long-term irrigation would be required.

With regard to water demand for fire protection, the amount provided would be the same under both action alternatives, though there is a difference in the number of accommodations. Recycled graywater from bathhouses plumbing fixtures would be used to flush low-volume toilets and urinals to greatly reduce the overall use of potable water and generation of wastewater. An advanced onsite wastewater treatment system, consisting of textile media filters, would polish the effluent to near reuse quality before disposal to soil absorption leach or drain fields.

Separation of graywater or laundry water would be used to flush toilets to greatly reduce the overall use of potable water and generation of wastewater. In addition, low-flow urinals and low-flow or foam toilets would be installed to further reduce wastewater generated. For advanced treatment, a recirculating sand filter or textile filter would be added to polish the clarified effluent to advanced standards, and with disinfection, the discharge quality would be equal to that of recycled water.

### ***Energy Conservation***

Net-zero energy use (meaning that the consumption of energy at the campus is no more than the energy produced by the campus in a given year) and the maximum Leadership in Energy and Environmental Design (LEED) rating are goals under both action alternatives. To accomplish this, energy use would be minimized through the use of energy-efficient equipment and controls that limit the use of power to only those times when necessary. Office use would be limited to laptop computers in lieu of desktops to save a significant amount of energy. In addition, occupancy-controlled plug strips would be used to turn off monitors and peripheral equipment when not in use. The most energy-efficient Energy Star-rated equipment would be installed throughout the campus, such as copiers, fax machines, refrigerators, dishwashers, and washing machines, which would help minimize loads to allow a smaller, more cost-effective photovoltaic system to be installed.

Energy meters would be installed in each building where energy production and use could be monitored and studied. Energy consumption was estimated based on energy-efficient systems, as recommended in the Mechanical/Electrical Green Building Study (Ayres 2002). Energy-efficient systems used in site design include natural ventilation (no air conditioning), entry vestibules to reduce heat loss, energy-efficient lighting, and thorough insulation.

## Alternative 2 – Crane Flat Redevelopment

Under Alternative 2, the Crane Flat campus would be redeveloped, doubling its capacity (to 154 students, 14 staff), and greatly reducing reliance upon commercial lodging in Yosemite Valley. Most campus buildings would be removed and replaced. Two historic properties, building numbers 6013 and 6017, would be retained, while two other historic properties, building numbers 6014 and 6015, would be removed. New sustainable, energy-efficient facilities would be constructed. Utilities would be upgraded to conserve water, meet additional capacity, and achieve health, safety, and accessibility standards. The new campus would be reconstructed largely in its existing location (shifting the campus cabins upslope, away from a sensitive meadow), with an expanded footprint, and would include approximately 34,575 square feet of space. The majority of the campus would be accessible to persons with disabilities under the Americans with Disabilities Act (ADA).

## Alternative 3 – Hennes Ridge Center

Under Alternative 3, a new center would be developed at Hennes Ridge in Yosemite National Park; the new facilities would be constructed to accommodate 224 students and 20 staff. Utilities would be installed at Hennes Ridge, including water storage, wastewater treatment, electricity, a solar array, geothermal heat pump, propane tank, and an emergency generator. A new firehouse would also be integral to the campus. A new water treatment facility would be constructed at Chinquapin (concealed inside a historic garage), and delivered to the campus via the Wawona Road utility corridor. The outmoded water system on Old Glacier Point Road and Indian Creek would be removed (removing modern utility buildings, while retaining a historic water tank), the historic roadbed would be maintained but restored as a Wilderness trail (fulfilling a longstanding goal of converting these 64 acres to Wilderness, as approved by Congress in 1984). Electricity would be supplemented by tying into existing electric transmission lines. The new facilities would be universally -accessible and meet fire, health, and safety standards. The campus would include approximately 82,000 square feet of developed space.

In addition, under Alternative 3, Crane Flat campus would be restored to natural conditions, and the site would revert from a development zone to a natural zone. Existing campus structures and facilities, including trailers, modern buildings, and several historic structures as well as the parking lot would be removed. Infrastructure such as the plumbing, electrical lines, septic system, and propane tanks would also be removed. The former campus site would be restored by loosening and preparing the soil (retaining and improving topsoil), and reseeding and planting with native materials. Wildlife habitat would also be improved with retention of large diameter woody debris, and meadow/wetland vegetation would be restored to improve hydrologic function. Social trails emanating from the former campus would be removed and restored.

## ENVIRONMENTALLY PREFERRED ALTERNATIVE

The CEQ Regulations and NPS policies on implementing NEPA require that “the alternative or alternatives which were considered to be environmentally preferable” be identified (CEQ Reg., Sec. 1505.2). Environmentally preferable is defined as “the alternative that will promote the national environmental policy as expressed in the NEPA Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources” (CEQ 1981).

Section 101 of NEPA states that “...it is the continuing responsibility of the Federal Government to...(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice; (5) achieve a balance between

population and resource use which will permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources." The environmentally preferable alternative for the Yosemite Environmental Education Center is based on these national environmental policy goals.

Alternative 1, the No-Action Alternative, does not best achieve goals 2, 4, or 6. In regards to goal 2, the current campus could be much safer, more productive in terms of educational content and efficiency, and more aesthetically pleasing in terms of architectural design and layout. In regards to goal 4, the current campus environment does not preserve important natural features such as the fen and great gray owl populations. And finally, in regards to goal 6, the current campus does not enhance renewable resources but rather depends on technologies and resource use patterns developed nearly 40 years ago.

Alternative 2, when compared with the No-Action Alternative, better achieves goals 2 and 6 by creating a safer, more efficient campus that incorporates various green technologies and recycled materials. However, goal 4 is still not attained because impacts to important natural features, namely the fen and great gray owl populations, would continue.

Through analysis, Alternative 3, the Henness Ridge center, has been identified as the *environmentally preferred* alternative. Alternative 3 best achieves the six goals prescribed under Section 101 of NEPA. Alternative 3 would fulfill goal 1 by restoring to natural conditions (to the extent practicable) the existing Crane Flat site. Alternative 3 would fulfill goals 2 and 3 by reducing risks to public health and safety by removing structures and constructing new facilities that comply with current ADA and fire standards. Under Alternative 3, the fen system would be allowed to recover with no additional water removal, and the habitat for owls at Crane Flat would be protected when campus operations there cease and meadows are restored. Goals 4 and 5 would be attained under Alternative 3 by creating an educational environment that supports diversity and visitor enjoyment, and balances that use with resource protection and interpretation. In addition, under Alternative 3 Crane Flat would restore meadows used by American Indians in the region for traditional cultural practices such as plant gathering. Also, a 64-acre parcel of land near Henness Ridge along Indian Creek east of Wawona Road was previously evaluated for Wilderness and found suitable. Under Alternative 3, impediments, namely water utility structures, would be removed and this parcel would become Wilderness.

Consistent with goal 6, Alternative 3 would implement sustainable technologies designed to minimize impacts on natural resources, as indicated in the National Park Service's *Guiding Principles of Sustainable Design* (1993b). Sustainable principles and technologies incorporated into this alternative include use of recycled materials and installation of energy- and water-efficient features and utilities. Under Alternative 3, goal 6 would be even more fully realized as the new campus would utilize alternative energy sources including solar and geothermal which could attain annual net-zero energy use.

## **DECISION (SELECTED ACTION- ALTERNATIVE 3: HENNESS RIDGE)**

Under Alternative 3 (the selected action), following the construction of the new center, Yosemite Institute operations and activities would cease at Crane Flat. Yosemite Institute staff and student lodging at Crane Flat would be discontinued. Alternative 3 would establish a new campus location and program at Henness Ridge, just southwest of the intersection of Henness Ridge Road and Wawona Road. This site slopes to the southwest and is forested with a few openings that afford distant views of the South Fork of the Merced River canyon. The mixed-conifer forest includes white fir, incense cedar, sugar pine, Jeffrey pine, and ponderosa pine.

Facilities that would be constructed at the Henness Ridge site include living and non-living space. Living space consists of eight student cabins (for 224 students), one instructor bunkhouse (for 16 instructors), and a four-unit staff apartment building (for 4 staff) on 15,518 square feet. Non-living space buildings consist of an arrival shelter, dining hall/kitchen, two bathhouses, classroom, staff prep space and office, maintenance building, and NPS fire house on 21,470 square feet. Other non-living space includes an outdoor amphitheatre, solar array, water tanks, and parking lot on 45,164 square feet. Developed areas

have been consolidated during the design process to minimize the campus footprint. Examples of consolidation include: accommodating instructors in bunks, placing gear storage under the dining hall, and making more efficient use of space in all buildings. The total new campus/fire house footprint, including open space within the campus area, would be approximately 16 acres.

The new campus would meet NFPA standards. A new fire house would be onsite, and fire lanes and emergency access would include three exits from the campus: one onto Henness Ridge Road and two onto Wawona Road. Major paths reaching cabins would be wide enough to accommodate emergency fire vehicles.

### **Americans with Disabilities Act Accessibility**

The campus would be universally accessible (with on-grade access to every building), using a network of low-gradient paths and would comply with ADA and NPS DO 16A (Accessibility for Employees and Job Applicants) and DO 42 (Accessibility for Park Visitors). Site design would incorporate accessibility into the routes within the site, parking spaces, passenger loading zones, building entrances, and ground and floor surfaces, as required.

### **Utilities**

The center at Henness Ridge would be supplied with water from the Chinquapin area, electricity from a new onsite solar array, heating from a geothermal system, propane tank, and wood burning stove/fireplace, and telephone/internet from an existing line. The campus electricity system would be connected to the Pacific Gas and Electric Company (PG&E) grid.

Under Alternative 3, the groundwater well at Indian Creek would supply the campus with water. The treatment and control facilities would be built in the existing Chinquapin Ranger Station garage, which is a historic structure, to treat the groundwater so it would be appropriate for human consumption and use. Minor alterations would be made to the exterior of this historic structure in modifying it to treat water (e.g., venting, piping, electrical boxes and conduit, antennae, etc.). The electric and telephone lines running along the edge of Wawona Road from Chinquapin to Henness Ridge would be protected during the installation of the proposed water main along the same Wawona Road alignment. Pervious surfaces within the campus would be maximized where feasible to improve water filtration.

The peak winter water demand is estimated at approximately 11,480 gpd; the peak summer demand is estimated at 5,740 gpd. At-grade water tanks would be constructed on an elevated slope west of the proposed campus (but below ridgeline) to provide adequate water storage and pressure for both domestic service and fire suppression. The minimum amount of water storage required for both domestic water and fire protection would be 200,000 gallons based on a fire flow of 1,500 gallons per minute. Two 100,000 gallon water storage tanks, each approximately 24 feet in diameter by 30 feet in height would be placed at 6,245 feet elevation on the slope about 100 feet above the campus. Two tanks, rather than one, provide the option of shutting down one for maintenance when necessary, while still maintaining water supply to the campus. Approximately 1,100 feet of 1-inch service lines and 1,300 feet of 8-inch main would distribute water on the campus. Approximately 1,200 feet of 2.5-inch pipe and 2,900 feet of 8-inch main would be built along Wawona Road to distribute water from the water treatment plant to the campus. Approximately 1,100 feet of 10-inch transmission main would be installed to the storage tank to serve the Chinquapin/Henness Ridge area.

An advanced onsite underground wastewater treatment system would be installed to treat the wastewater before disposal. The treatment process includes a septic tank of approximately 32,000 gallons (3 days of retention time) and an array of recirculation fixed film growth media filter cells. Multiple drain fields with perforated piping (2 foot by 3 foot trenches with  $\frac{3}{4}$  inch gravel) would be installed to allow for seasonal rotation of soil absorption disposal fields. These would be installed just southeast of the parking lot and west of Wawona Road and/or on the slope between the entrance turnaround and the solar array. The project would reuse graywater from plumbing fixtures in the two bathhouses for flushing of toilets and

urinals. This would reduce the overall consumption of potable water and generation of wastewater. With these water conservation features at maximum occupancy, the campus wastewater generation would be approximately 25 gallons per capita day or approximately 6,350 gpd for average daily flow and 10,800 gpd for maximum daily flow. Summertime flows would be half that amount because of the lower occupancy, or 3,675 gpd.

The Henness Ridge site is not currently connected to electricity, although there is an underground electrical line that runs diagonally through the site. The campus would connect to the existing Pacific Gas and Electric Company (PG&E) 22 kV distribution line running along an existing utility corridor on Henness Ridge Road and Wawona Road. The line serves Chinquapin, Badger Pass ski area, and Yosemite West. The park is coordinating with PG&E to determine the peak load from development at Henness Ridge.

The PG&E distribution line would provide reliable commercial electrical power as well as an opportunity to send excess renewable energy from the photovoltaic array (PV) system at the campus to the electrical grid. PV systems, geothermal, and propane would provide HVAC, water heating, and lighting needs with a goal of 'net zero energy' from fossil fuels. A net zero system is based on an annual average. For example, the campus would utilize electrical energy from the transmission grid during cold winter nights, but produce excess power from onsite PV systems on sunny summer days for a total of zero energy from fossil fuels. The NPS is continuing to explore options for an offsite PV system to minimize the area needed by onsite ground mounted solar arrays.

Solar, geothermal, and propane energy systems are described below. The annual power required to supply the campus would be approximately 613,000 to 816,000 kWh, depending on the composition of energy sources. The onsite PV array system would supply up to 67 percent of campus energy needs (excluding propane) while geothermal would supply 25 percent to 33 percent of energy needs.

The onsite PV array system would be situated on five building rooftops (east bathhouse, classroom, and three cabins) and on ground-mounted poles between the water tanks and campus buildings. The roof-mounted arrays would be limited to buildings with sufficient solar gain potential (at least 65 percent) given the buildings' solar orientation and the existing tree canopy. The ground-mounted solar panels would be placed with similar considerations for solar gain potential and the tree canopy. The array would not track the sun's position, though, because such systems disturb more surface area than the proposed fixed panels. Fixed panels maintain the same angle during the day but retract to a vertical position at night to avoid snow-build up. During summer and sunny days, the solar energy would be converted to electrical power for campus use with any excess power generated being metered and fed back into the PG&E grid to offset periods of limited solar availability, such as nights and the cloudy days of winter. The size of the onsite PV array system would be 12,470 to 18,700 square feet for the ground-mounted component (depending on the possibility of an offsite array system) and 6,780 square feet of roof-top area.

In order to minimize the disturbance area of the ground-mounted solar array and maximize net solar energy capacity, an additional roof-mounted PV array system may be constructed offsite (such as at a school participating in YI programs in nearby Merced) through a Power Purchase Agreement (PPA) by Yosemite Institute. Electricity generated by the solar array would be metered back to the PG&E power grid to be credited towards YI campus' annual energy consumption. The offsite location would facilitate the net zero energy goals of the project by providing sufficient solar access while also lowering overall installation and maintenance costs and minimizing impacts from tree removal and ground disturbances in Yosemite. The offsite location in the Central Valley (compared to the Henness Ridge site) would maximize solar access throughout the year by providing fewer cloudy days, no snow loads, and no pine litter to cover or damage the system.

Energy associated with the offsite PV array would be accounted for through the PPA. The electricity generated from the PPA constructed green power system would be either used locally or distributed through the commercial transmission grid to other users, thus having the same impact as if constructed at the Henness Ridge – reducing the amount of electrical generated by fossil fuels. The only difference from producing sustainable (green) power onsite as compared to offsite is that 10 percent to 15 percent of offsite electrical power is lost through the transmission/distribution grid because of resistance in electrical



lines. However, a solar array of similar size in the Central Valley would benefit from more months per year of sunny weather and generate more power overall to compensate for power lost through transmission.

A geothermal heat pump system would be constructed to heat the dining hall/kitchen and two bathhouses to lessen the electricity demand. These three buildings account for the largest loads at the Henness Ridge campus. Geothermal heat pump systems use 25 percent to 50 percent less electricity than conventional heating (or cooling) systems. Geothermal heat pumps use the constant temperature of the earth as the exchange medium instead of the outside air temperature. This allows the system to reach high efficiencies on the coldest of winter nights. Approximately 70 percent of the energy used in a geothermal heat pump system is renewable energy from the ground. These systems also run very quietly with no need for an external condenser and fan unit typical of air exchange heat pump systems.

Geothermal heat pumps would be located near each of the three buildings with approximately 174 boreholes spaced 20 feet apart and 300 to 400 feet deep (vertical closed loop system). The piping would be linked back to each building by horizontal piping, mostly along roads and paths at a depth of 18 to 24 inches.

A high mass wood burning stove will be located in the classroom and a masonry Rumford fireplace will be located in the dining room. These secondary heating units would be used up to five days a week from November to April. Both units are designed to burn more efficiently than traditional stoves and fireplaces. The classroom stove would be lit in the evenings (approximately 2 cords per season) and the dining room fireplace would be lit during the day (approximately 4 cords per season).

One above-ground propane tank would be located near the maintenance building to run the kitchen cooking equipment and for hot water. The propane tank would also run a back-up generator if electrical power fails. The tank would be approximately 500 gallons, which would be refilled approximately once every other month in winter.

Telephone service would be extended from the service to Yosemite West and would include a maximum of 25 lines, including the fire station. A data system would be required in the office, fire station, kitchen, and classroom and would be provided by a small system situated in a central location. Internet access would not be installed in the cabins. Television for staff quarters would be accomplished via satellite dish as an owner-installed system.

## **Administration**

Staffing for the Yosemite Institute program (Yosemite Valley and Henness Ridge combined) would include 35 instructors, 10 administrative personnel, and seven support staff. The campus would provide permanent housing for four staff in studio and one-bedroom apartments. An additional 16 temporary staff beds would be located in a staff bunkhouse onsite next to the teacher preparation office and the site office. Approximately 50 employees would continue to be housed in private housing in the vicinity, such as in El Portal, Foresta, Midpines, Wawona, or Yosemite West.

## **Environmental Education Program**

Under this alternative, the total number of students in the park per session would be approximately 490. Under this alternative, 224 students would be housed at the Henness Ridge campus and approximately 266 in Yosemite Valley (approximately 74 fewer students than in historic programming). The new facilities at Henness Ridge would provide indoor and outdoor learning environments that are tailored to teaching and learning. The new dining hall and classroom, as well as the circulation of students during their stay, would significantly improve the students' indoor educational experience. A diversity of trails around the campus at Henness Ridge would provide the environmental education program participants opportunities for exploration (Table 2-5). Different trails would be used than those used under either Alternative 1 or Alternative 2, including those that enter designated Wilderness just east of the campus site. American Indian tribes would be invited to collaborate on cultural heritage curriculum. Because there would be a fire

house onsite, there would be opportunities for students to interact with professional firefighters and to learn about fire ecology and fire-fighting careers. Students could learn about the wildland-urban interface (WUI) and forest management techniques such as prescribed burning, as the area is situated in a fire-adapted mature forest. Passive learning would be encouraged through signs (e.g., signs marking recycled materials, native plants, solar cells, and energy meters) on the new campus that would be augmented by traditional active instruction by staff. In addition, associated American Indian tribes would be participants in developing curriculum relevant to American Indian use of natural and cultural resources in the locales as well as student education on the necessity to continue to protect such resources, perhaps in concert with education hikes or trails.

## **Transportation**

The new campus would be south of Yosemite Valley, along Wawona Road (State Highway 41) at Henness Ridge Road, just south of Chinquapin. Students would arrive by school bus and carpool from communities across the state. School buses would continue to use the three western park entrances (Highway 120, Highway 140, and Highway 41) depending on school location and road conditions and restrictions. Buses would also shuttle students between the Henness Ridge campus and accommodations in Yosemite Valley (Curry Village/Boystown). With an overall program increase, bus and car-pool vehicle traffic would increase in and around Henness Ridge (but cease at Crane Flat) with a decrease of approximately two bus round trips per week in Yosemite Valley (considering 50 students per bus).

## **Construction at Henness Ridge**

Construction of the environmental education campus at Henness Ridge under this alternative would not begin until related agreements regarding fundraising, construction, restoration, and facility operations are approved. The duration of construction is 12 to 18 months (not including downtime during winter months) with the potential for phasing consolidation. The YI program would cease operations at Crane Flat when the campus at Henness Ridge is operational.

## **Restoration**

YI operations and activities would discontinue at the Crane Flat location and the campus site would be restored to natural appearing conditions to protect the rich biological diversity and unique natural features of the Crane Flat area. Regionally, within the Sierra Nevada, large montane meadows are increasingly rare due to development, and fens are even more unique and sensitive. Places where mature forest and meadow vegetation overlap ("ecotones") provide highly valuable nesting and foraging habitat for wildlife species of concern, such as the great gray owl and pacific fisher.

Restoration actions would begin in concert with concluding the construction phase at Henness Ridge, and includes restoring and enhancing habitat for pacific fisher and great gray owl as well as other species, restoring native vegetation and hydrologic function, and removing visible evidence of the campus while still preserving some historic elements and providing interpretation of the Civilian Conservation Corps (CCC) camp/Blister Rust camp history. The historic ranger cabin foundation, CCC cabin sites, and terraces would be preserved, and the giant sequoia heritage trees (planted during that era) would be preserved. All campus utilities and infrastructure, including the septic system and associated plumbing, would be removed. The parking lot would be eliminated and the area restored.

The historic road (Old Glacier Point Road) from Badger Pass along Indian Creek would be converted to a trail. Some impediments to wilderness character, including old water utility structures, would also be removed. Following restoration activities, approximately 64 acres would be eligible for designation as Wilderness (notice of such conversion would be published in the Federal Register).

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## FINDINGS ON IMPAIRMENT OF PARK RESOURCES AND VALUES

The National Park Service has determined that the implementation of Alternative 3 from the Final EIS will not constitute impairment to Yosemite National Park's resources and values. This conclusion is based on a thorough analysis of the environmental impacts described in the Yosemite Environmental Education Center/Final EIS, the public comments received, relevant studies, and the professional judgment of the decision-maker guided by the direction in NPS Management Policies.

In determining whether impairment may occur, park managers consider the duration, severity, and magnitude of the impact, the resources and values affected, and the direct, indirect and cumulative effects of the action. According to National Park Service Management Policies, "An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is: Necessary to the natural and cultural integrity of the park or to opportunities for enjoyment of the park; Identified as a goal in the park's general management plan or other relevant National Park Service planning documents" NPS Management Policies, Part 1.4.5).

The non-impairment policy does not prohibit impacts to park resources and values. The National Park Service has the discretion to allow impacts to the park resources and values when necessary and appropriate to fulfill the purposes of a park, so long as the impacts do not constitute impairment. Moreover, an impact is less likely to constitute impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values.

## BASIS FOR DECISION

After careful consideration of the alternatives presented, the environmental impacts, planning goals, and public comments received throughout the planning process, including comments on the Draft Yosemite Environmental Education Center EIS, the National Park Service selected Alternative 3 (Heness Ridge Center) for implementation. This alternative is the environmentally preferable alternative (discussed above) and best accomplishes the purpose of the proposed action:

- Promote the development of future stewards for the environment and our national parks
- Provide an environmental education campus location and program that better serves the combined missions of the Yosemite Institute and Yosemite National Park
- Provide a safe and universally accessible campus facility that meets modern health and safety standards
- Provide a location conducive to multi-day experiential programs that complement California state educational standards and offer opportunities for research and study of the natural world
- Provide a campus facility that meets or exceeds national Leadership in Energy and Environmental Design (LEED) standards
- Create a campus design that better encourages responsible interaction with the environment
- Establish an ecologically sensitive campus that protects park resources and provides exemplary environmental educational learning opportunities

## MEASURES TO MINIMIZE ENVIRONMENTAL HARM

The National Park Service has investigated all practical means to avoid or minimize environmental impacts that could result from implementation of the selected action. The measures have been

incorporated into Alternative 3, and are presented in Table 2-10 of the Yosemite Environmental Education Center/Final Environmental Impact Statement (<http://www.nps.gov/yose/parkmgmt/eecampus.htm>).

## PUBLIC INVOLVEMENT

The public scoping phase for the Environmental Education Campus Development Program at Crane Flat/Draft Environmental Impact Statement began on September 20, 2002, when a Yosemite National Park press release was sent to local and regional newspapers announcing the opening of public scoping on the Environmental Education Campus Development Program at Crane Flat/Draft Environmental Impact Statement. A Notice of Intent was published in the *Federal Register* on September 30, 2002, initiating a 45-day public scoping period. Scoping comments were accepted through November 14, 2002. During the scoping period, the National Park Service held discussions and briefings with: tribes, park staff, elected officials, public service organizations, and other interested members of the public.

The park conducted many public meetings about this project, including those on June 26 and June 29, 2002 at the East Auditorium in Yosemite Valley, and a site tour at the existing campus on June 29, 2002. Additional public meetings were held on July 20, August 21, and September 21, 2002, and February 26, March 28, and April 23, 2003. Detailed information on meeting locations and times was published in local and regional newspapers in advance and listed on the park's web page. Yosemite National Park management and planning officials attended these sessions to present the Environmental Education Campus Development Program at Crane Flat, receive oral and written comments, and answer questions.

In May 2003, an administrative draft EIS was produced for review by park staff, and draft concepts were presented to the public. However, during scoping, the park received comments from the public and park staff regarding concerns about possible impacts to sensitive areas and natural resources and suggested that a wider range of alternatives be considered. In response to these issues and concerns, the project team continued to collect and analyze resource data for the Crane Flat area (i.e., vegetation, wildlife, hydrologic, and cultural resource data) and expanded its range of options to consider 11 additional sites. The park conducted a Choosing by Advantage (CBA) workshop in 2006 to select another viable location, and selected Henness Ridge as an additional site for analysis in the EIS.

In April 2006, NPS staff (representing a broad range of disciplines) and Yosemite Institute staff participated internal scoping facilitate by a CBA workshop. Using an established set of criteria, the group evaluated site suitability and ranked the 11 sites as to whether they would be reasonable, feasible, and meet the project purpose and need. One of the potential additional sites at Henness Ridge, the "Sand Lot," ranked far above all other sites in meeting the project's objectives. The project team presented the workshop results to park management, and a decision has been made to include the Henness Ridge site as an alternative for full analysis in the EIS. The park and YI have been engaged in on-going dialogue with the interested public, and provided regular updates to and meetings with Yosemite West homeowners association throughout the project.

The Draft EIS was made available to the public, federal, state, and local agencies and organizations in May 2009, with a 60-day public review period during which the public and agencies were able to provide comments. A press release distributed to a wide variety of news media, direct mailing, placement on the park's website and announcements in Yosemite Planning Update Newsletters, as well as in local public libraries announced the availability of the Draft EIS.

Responses to comments received were included in the Final EIS, which was released on February 26, 2010. On March 19, 2010, the Environmental Protection Agency published its announcement of satisfactory completion in the *Federal Register* (stating that "no formal comment letter was sent the agency").

## Changes in Alternative 3 between the Draft and Final EIS as a result of Public Comment

The following list summarizes changes that were made to Alternative 3 (Hennes Ridge) between the Draft and Final Yosemite Environmental Education Center EIS based on public comments and agency review. Appendix B (Public Comment Report and Response Report) of the Final EIS provides additional detail.

- Added a refined site plan
- Clarified onsite wastewater treatment description per Environmental Protection Agency
- Added the water tank road alignment and two smaller water tanks, instead of one large tank
- Relocated and enlarged the solar array
- Added the geothermal system description and possible power purchase agreement for offsite solar
- Revised the Traffic Impact Analysis Report (Appendix H of the EIS) per Department of Transportation and corrected names
- Confirmed that a turn lane off of Wawona Road to the Hennes Ridge Center was not necessary
- Added historic photos and records as requested by the State Historic Preservation Officer
- Confirmed Yosemite Institute program differences (e.g., bus and trail use)
- Confirmed consistency with the September 29, 2009 Settlement Agreement for the Merced River Plan

## Agency and American Indian Consultation and Coordination

### *American Indian Consultation*

Yosemite National Park is conducting ongoing consultations with American Indian tribes having cultural association with Yosemite National Park and the Crane Flat and Hennes Ridge areas, including the American Indian Council of Mariposa County, Inc. (AICMC) (aka Southern Sierra Miwuk Nation), the Tuolumne Band of Me-Wuk Indians, the North Fork Rancheria of Mono Indians, Picayune Rancheria of the Chukchansi Indians and the Mono Lake Kutzadika<sup>a</sup> Tribe.

Tribes are being provided with a copy of the Final EIS, and consultation and partnering will continue throughout implementation of the project.

### *California State Historic Preservation Officer/Advisory Council on Historic Preservation*

The 1999 Park Programmatic Agreement Among The National Park Service At Yosemite, The California State Historic Preservation Officer and The Advisory Council On Historic Preservation Regarding Planning, Design, Construction, Operations And Maintenance, Yosemite National Park, California (1999 PA) (Appendix A) was developed among NPS at Yosemite, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation, in consultation with American Indian tribes and the public and stipulates methods for the Park to carry out its responsibilities under Section 106 of the NHPA.

For the purpose of NEPA and NPS policy, an impact to a historic property that is eligible or listed under the National Register of Historic Places would be considered significant if an adverse affect could not be resolved in agreement with the State Historic Preservation Officer (SHPO), Advisory Council on Historic Preservation (ACHP), American Indian tribal governments, or other consulting and interested parties and the public. Consultation with SHPO is required to resolve adverse effects by implementation of standard mitigation measures, pursuant to Stipulation VIII of the 1999 PA.

On June 4, 2009, the park received the SHPO comments on the DEIS, with a request to include photographs and historic records associated with the removal of the four structures in the final document. The FEIS was updated in response to these comments to include the Primary Records. A letter transmitting the FEIS, with notification of the Standard Mitigation Measures to be implemented, was sent to the SHPO on March 23, 2010 to close consultation.

### ***Central Valley Regional Water Quality Control Board***

The State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) are the regulatory boards within California's Environmental Protection Agency which derive their authority from Section 401 of the Clean Water Act. The SWRCB allocates rights to the use of surface water and, along with the RWQCBs are charged with protecting surface, ground, and coastal waters throughout the state. The RWQCBs issue permits which govern and restrict the amount of pollutants that can be discharged into the ground or surface water, which includes regulating stormwater during construction activities. Yosemite National Park is under the jurisdiction of Regional Board (5), Central Valley, and therefore consults with and obtains any necessary permits and/or certifications for construction activities from the Central Valley RWQCB.

The National Park Service is currently coordinating with the Central Valley RWQCB to obtain a Water Quality Certification (WQC) for the campus development project. A WQC stipulates requirements for water quality protection during reconstruction activities, such as calling for compliance with Best Management Practices (BMPs) during construction such as proper storage of materials in staging areas to avoid erosion during storm events. The Park will prepare and submit a Stormwater Pollution Prevention Plan prior to construction.

### ***U.S. Army Corps of Engineers***

This EIS has determined that Alternatives 1, 2, and 3 will not adversely affect waters of the United States or special aquatic sites. The National Park Service has notified the USACE of this finding and has requested the agency review these findings and return a letter concurring with this determination.

### ***U.S. Fish and Wildlife Service***

The Endangered Species Act of 1973, as amended (16 United States Code [USC] 1531 et seq.), requires all federal agencies to consult with the U.S. Fish and Wildlife Service to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or adversely modify critical habitat. The National Park Service requested a list of federally listed endangered and threatened species that may be present at Crane Flat in 2002. In 2006, the NPS updated the list to include Henness and requested a new species list to include the Henness Ridge site. The list was received from the U.S. Fish and Wildlife Service on June 23, 2008, and updated on January 23, 2009. The NPS reviewed these lists to determine whether these species were known to occur in the park, and the lists were used as a basis for the special-status analysis in this EIS. The alternatives will not adversely affect species that are federally listed as threatened or endangered. The U.S. Fish and Wildlife Service reviewed the Draft EIS and concurred with this determination and recommended that if special-status species are encountered during project implementation, to re-initiate consultation at that time (Jeremiah Karuzas, telephone communication, July 22, 2009).

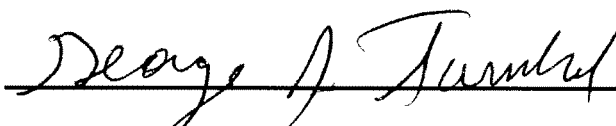
### ***Environmental Protection Agency***

On July 15, 2009, the Environmental Protection Agency (EPA) submitted a comment letter on the Draft EIS stating that the EPA did not object to the proposed project (with a Lack of Objection rating), but requested additional information regarding applicability of Clean Air Act general conformity. The NPS incorporated the response to the EPA's comment into the Final EIS. On March 19, 2010, the Federal Register published the conclusion of the EPA stating that "no formal comment letter was sent the agency."

## CONCLUSION

Alternative 3 provides the most comprehensive and effective method among the alternatives considered for meeting national environmental policy goals and Yosemite National Park's management objectives. The selection of Alternative 3, as reflected by the Final Yosemite Environmental Education Center/Environmental Impact Statement, would not result in the impairment of park resources and would allow the National Park Service to conserve park resources while improving environmental education opportunities for student visitors.

Approved:



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George Turnbull, Acting Regional Director  
Pacific West Region, National Park Service

4/2/10

Date

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## APPENDIX: ERRATA SHEETS FOR THE YOSEMITE ENVIRONMENTAL EDUCATION CENTER FINAL ENVIRONMENTAL IMPACT STATEMENT

The following list includes clarifications or corrections to the Final Environmental Impact Statement (FEIS). Some of these items were brought forward by the public following release of the FEIS, and some derive from park staff. The National Park Service appreciates this opportunity to correct and improve the FEIS. None of the corrections listed below substantively affect the analyses or conclusions of the effect of the FEIS.

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Abstract (second paragraph): The following sentence was added to the FEIS abstract: "Under both action alternatives, a new education center would be owned by the NPS and operated jointly by the NPS and NatureBridge."

Abstract (third paragraph): "Environmental studies and comments received on an administrative Draft EIS prepared in 2004 led to reconsideration and formulation of a new alternative, which would locate the campus in a new area of the park to avoid sensitive resources in and around Crane Flat meadows" has been rewritten to read, "Environmental studies and comments received on an administrative Draft EIS prepared in 2003 led to reconsideration and formulation of a new alternative, which would locate the campus in a new area of the park to avoid sensitive resources in and around Crane Flat meadows."

Page iii: "Under Alternative 3, some impediments, namely water utility structures, would be removed and this parcel could become Wilderness" has been rewritten to read "Under Alternative 3, impediments, namely water utility structures, would be removed and this parcel would become Wilderness."

Page vii (second paragraph): The FEIS states [under Alternative 3], "However, restoration of the existing Crane Flat campus would result in an adverse effect to *three* historic structures, which have been determined eligible for listing on the NRHP in consensus between the California State Historic Preservation Officer (SHPO) and the National Park Service." This sentence has been rewritten to read, "However, restoration of the Crane Flat campus would result in an adverse effect to *four* historic structures, which have been determined eligible for listing on the National Register of Historic Places."

Page 2-6: The FEIS states in the sustainability and green technology section, "Use cogeneration technology to heat water" and "Promote infiltration." The sentence has been rewritten to read, "Use *sustainable technology, such as cogeneration and geothermal, for heating*" (bullet six) and "Promote *water filtration*" (bullet eight).

Page 2-15: The FEIS states [under Alternative 1] that the number of instructors is 33. The correct number is 27 (19 in Yosemite Valley and 8 at Crane Flat).

Page 2-23: "This phase includes *demolition* of existing structures" has been rewritten to read, "This phase includes *removal* of existing structures."

Page 2-34: "Geothermal heat pumps would be located near each of the three buildings with approximately 25 boreholes spaced 20 feet apart and 300 to 400 feet deep (vertical closed loop system) in each location" has been rewritten to read, "Geothermal heat pumps would be located near each of the three buildings with approximately 174 boreholes spaced 20 feet apart and 300 to 400 feet deep (vertical closed loop system)."

Page 2-37: *tank* is misspelled as *take*.

Page 2-38: "The duration of construction is 12 to 18 months with the potential for phasing consolidation" has been rewritten to read, "The duration of construction is 12 to 18 months (not including downtime during winter months) with the potential for phasing consolidation."



Page 2-30: "(page intentionally left blank) blank)" has been rewritten to read, "(page intentionally left blank)."

Page 2-37: The FEIS states [under Alternative 3] that the number of instructors is 36. The correct number is 35 (19 in Yosemite Valley and 16 at Henness Ridge).

Page 2-40: The FEIS states [under Alternative 3] that actions would include "providing interpretation of the Civilian Conservation Corps (CCC) camp and *one historic structure (6017, Oil and Light plant) representative of the park's CCC/Blister Rust camp history.*" This sentence has been rewritten to read that actions would include "providing interpretation of the Civilian Conservation Corps (CCC) camp/Blister Rust camp history."

Page 2-41: The FEIS states [under Alternative 3], "Consultation with the SHPO and the public is brought about in this document, for the proposed measures to resolve adverse effects as a result of removal of *three* historic properties (buildings 6013, 6014, and 6015)." This sentence has been rewritten to read, "Consultation with the SHPO and the public is brought about in this document, for the proposed measures to resolve adverse effects as a result of removal of *four* historic properties (buildings 6013, 6014, 6015, and 6017)."

Page 2-46: *Hodgdon* is misspelled as Hodgon.

Page 2-43: The caption, "Figure 2-11 Project *Management* Leading 2006 CBA Workshop" has been rewritten to read, "Project *Manager* Leading 2006 CBA Workshop."

Page 2-57: "*demolished* buildings" has been rewritten to read, "*removed* buildings" (twice).

Page 2-59: The FEIS in Table 2-9 states [under Alternative 3], "Restoration of the existing Crane Flat campus would result in an adverse effect to *three* historic properties (Buildings 6013, 6014, and 6015), and a no adverse effect to historic property Building 6017." This sentence has been rewritten to read, "Restoration of the existing Crane Flat campus would result in an adverse effect to *four* historic properties (Buildings 6013, 6014, 6015, and 6017)."

Page 2-71: The FEIS in Table 2-10 states, "Consultation with the SHPO, American Indian tribes, and the public is effectuated in this document, for the proposed measures to resolve adverse effects as a result of removal of historic properties (Buildings 6013, 6014 under Alternative 2, and 6013, 6014, and 6015 under Alternative 3) at Crane Flat." This sentence has been rewritten to read, "Consultation with the SHPO, American Indian tribes, and the public is effectuated in this document, for the proposed measures to resolve adverse effects as a result of removal of historic properties (Buildings 6013, 6014 under Alternative 2, and 6013, 6014, 6015, and 6017 under Alternative 3) at Crane Flat."

Page 2-71: The FEIS in Table 2-10 states, "Adverse effect of removal of two historic properties under Alternative 2 and *three* under Alternative 3 would be resolved by implementing SMMs in Section VIII of the Park's 1999 PA, enumerated above, and retention and repair of Building 6017 according to the Secretary of Interior's Standards and Guidelines for Historic Preservation." This sentence has been rewritten to read, "Adverse effect of removal of two historic properties under Alternative 2 and *four* historic properties under Alternative 3 would be resolved by implementing SMMs in Section VIII of the Park's 1999 PA, enumerated above."

Page 3-9: Under impact significance, *specific* is misspelled as *specfic*.

Page 3-9: Under Crane Flat Setting, *Tuolumne* is misspelled as Tuolomne.

Page 3-111: Under Environmental Consequences for the No-Action Alternative, the FEIS states, "Operation-related impacts would include non-significant impacts by visitor use or routine maintenance and repair of historic structures, and buildings.," The punctuation has been rewritten to read: "...repair of historic *structures and buildings.*"

Page 3-112: The FEIS states [under Alternative 3], "At Crane Flat, *three* historic structures (Buildings 6013, 6014, and 6015) would be removed along with all modern buildings and infrastructure, and the area would be restored to natural forest and meadow conditions." This sentence has been rewritten to read, "At Crane Flat, *four* historic structures (Buildings 6013, 6014, 6015, and 6017) would be removed along with all modern buildings and infrastructure, and the area would be restored to natural forest and meadow conditions."

Page 3-113: The FEIS states [under Alternative 3], "Restoration-related Impacts on Built Historic Resources and Cultural Landscapes. Demolition activities to remove buildings at the Crane Flat Campus to a natural state would result in an adverse effect under Section 106 of the NHPA to *three* historic properties (Buildings 6013, 6014, and 6015) determined eligible for listing on the National Historic Register. The adverse effect on three historic properties under Section 106 of the NHPA would be resolved in accordance with Stipulation VIII (A) of the 1999 PA, with standard mitigating measures including recordation, salvage, and documentation of the *three historic structures, and retention of one small historic structure (Building 6017)*. The *three* historic structures to be removed would first be documented according to the standards of the Historic American Buildings Survey (HABS). In addition, the Yosemite historical architect would conduct a documented inspection to identify architectural elements that may be reused in rehabilitating the remaining historic structure." This section has been rewritten to read, "Restoration-related Impacts on Built Historic Resources and Cultural Landscapes. Removing buildings at the Crane Flat Campus to a natural state would result in an adverse effect under Section 106 of the NHPA to *four* historic properties (Buildings 6013, 6014, 6015, and 6017) determined eligible for listing on the National Historic Register. The adverse effect on the *four* historic properties under Section 106 of the NHPA would be resolved in accordance with Stipulation VIII (A) of the 1999 PA, with standard mitigating measures including recordation, salvage, and documentation of *the structures*. The *four* historic structures to be removed would first be documented according to the standards of the Historic American Buildings Survey (HABS)."

Page 3-113: The FEIS states [under Alternative 3], "*No adverse affect* would occur to the *one retained historic structure, NPS Building 6017. Methods for repairing and securing the building would follow the Secretary of Interior's Guidelines for Historic Preservation standards for salvage, interpretation, and National Register re-evaluation, following policies and regulations for the preservation and use of historic properties (16 USC470h-2(a)1() and Treatment of Cultural Resources (Sec. 5.3.5, NPS 2006). NPS Building 6017 would continue to represent the contribution of the CCC/Blister Rust Camp at Crane Flat to Yosemite National Park.*" This section has been rewritten to read, "*An adverse affect* would occur to NPS Building 6017, *which would be removed.*"

Page 3-113: The FEIS states that [under Alternative 3] "Impact Significance and Determination of Effect. Restoration of the Crane Flat Campus would have an adverse effect on *three* historic properties (Buildings 6013, 6014, and 6015) that would be resolved in accordance with the 1999 PA and mitigations described herein. *There would be no adverse effect on one historic property (Building 6017).*" This section has been rewritten to read, "Impact Significance and Determination of Effect. Restoration of the Crane Flat Campus would have an adverse effect on *four* historic properties (Buildings 6013, 6014, 6015, and 6017) that would be resolved in accordance with the 1999 PA and mitigations described herein."

Page 3-113: The FEIS states [under Alternative 3], "Conclusion. Under Alternative 3, there would be no impact or no effect to historic structures, buildings, or cultural landscapes at the proposed Henness Ridge campus location. Removal of the existing Crane Flat campus would result in an adverse effect to Buildings 6013, 6014, and 6015, which have been determined eligible for listing on the NRHP, that would be resolved in accordance with Stipulation VIII of the 1999 PA and mitigations described herein. *There would be no adverse effect on one historic property (Building 6017).*" This section has been rewritten to read, "Conclusion. Under Alternative 3, there would be no impact or no effect to historic structures, buildings, or cultural landscapes at the proposed Henness Ridge campus location. Removal of the existing Crane Flat campus would result in an adverse effect to Buildings 6013, 6014, 6015, *and 6017* which have been determined eligible for listing on the NRHP, that would be resolved in accordance with Stipulation VIII of the 1999 PA and mitigations described herein."

Page 3-130: Under wastewater, *system* is misspelled as *sytem*.

Page 3-145: Under Restoration-related impacts on Land Use, *Creek* is misspelled as *Crekk*.

Page 3-156: Under Impacts under Alternative 3, *regional* and *compared* are misspelled as *regionall* and *comparied*.

Page 3-162: Under Happy Isles, *affected* is misspelled as *affectedd*.

Page 3-173: Under Alternative 3, *impacts* is misspelled as *impacs*.

Page 4-1: Capitalization in *NatureBridge* should be corrected from *Naturebridge*.

Page 4-3: Acronym for the U.S. Army Corps of Engineers (*USACE*) should be corrected from *USCOE*.

Page 4-3: "This EIS has determined that Alternatives 1, 2, and 3 will not adversely affect waters of the United States or special aquatic sites in such a manner that would require a permit from the U.S. Army Corps of Engineers (USCOE)" has been rewritten to read, "This EIS has determined that Alternatives 1, 2, and 3 will not adversely affect waters of the United States or special aquatic sites."

Page 4-3: "The U.S. Fish and Wildlife Service reviewed the Draft EIS and concurred with this determination and recommended that if special-status species are encountered during project implementation, to re-initiate consultation at that time (Ann Roberts, personal communication, July 2009)" has been rewritten to read, "The U.S. Fish and Wildlife Service reviewed the Draft EIS and concurred with this determination and recommended that if special-status species are encountered during project implementation, to re-initiate consultation at that time (Jeremiah Karuzas, telephone communication, July 22, 2009).

Page 4-3: The following agency consultation has been added to the Final EIS: "Environmental Protection Agency: On July 15, 2009, the Environmental Protection Agency (EPA) submitted a comment letter on the Draft EIS stating that the EPA did not object to the proposed project (with a Lack of Objection rating), but requested additional information regarding applicability of Clean Air Act general conformity. The NPS addressed the EPA comment in the Final EIS."

Page 5-3: *Megan Robertson* is misspelled as *Megan Roberston*.