

Supplementary Environmental Assessment

# Farm Shop Storage Building Project

California Polytechnic State University

FEMA-1505-DR-CA

*July 2007*



**FEMA**

**U.S. Department of Homeland Security**  
1111 Broadway, Suite 1200  
Oakland, California 94607

*This document was prepared by*



URS Corporation  
1333 Broadway, Suite 800  
Oakland, California 94612

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**Supplemental Environmental Assessment to the Programmatic Environmental Assessment (PEA) for Typical Recurring Actions Resulting From Flood, Earthquake, Fire, Rain, and Wind Disasters in California as Proposed by the Federal Emergency Management Agency**

California Polytechnic State University  
Farm Shop Storage Building Project  
FEMA-DR-1505-CA, Project Worksheet 242  
July 2007

## 1. INTRODUCTION

The California Polytechnic State University (Cal Poly) has applied to the Federal Emergency Management Agency (FEMA) through the State of California Governor's Office of Emergency Services (OES) for assistance with the repair and relocation of the farm shop storage building. The storage building was damaged during the San Simeon Earthquake of December 22, 2003 which resulted in the presidential disaster declaration FEMA-DR-1505-CA. FEMA intends to fund the proposed action under the Public Assistance (PA) Program that was implemented in response to the disaster.

### 1.1 SCOPE OF DOCUMENT

FEMA has prepared a Final Programmatic Environmental Assessment for Typical Recurring Actions Resulting From Flood, Earthquake, Fire, Rain, and Wind Disasters in California (PEA), which assesses common impacts of the action alternatives that are under consideration at the proposed project site (FEMA, 2003). The PEA adequately assesses impacts from the action alternatives for some resource areas, but for the specific actions of this particular project, some resources are not fully assessed in the PEA.

Therefore, for this project to comply with the National Environmental Policy Act (NEPA), FEMA has prepared this Supplemental Environmental Assessment (SEA) to tier from the PEA and fully assess the additional impacts to resources that are not adequately addressed in the PEA. The SEA hereby incorporates the PEA by reference, in accordance with Title 40 Code of Federal Regulations (CFR) Part 1508.28.

### 1.2 PURPOSE OF AND NEED FOR ACTION

Under the authority of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended, and Title 44 CFR Part 206, the PA Program provides supplemental aid to states and communities to help them recover from major disasters as quickly as possible. Specifically, the program provides assistance for the removal of debris, the implementation of emergency protective measures, and the permanent restoration of public infrastructure. The program also encourages protection from future damage by providing assistance for mitigation measures during the recovery process. Therefore, the purpose of this project is to provide PA funding to Cal Poly to restore the farm shop storage building that was damaged during the 2003 disaster.

Cal Poly's College of Agriculture, Food and Environmental Sciences has over 3,500 students and maintains approximately 6,000 acres of agricultural lands for educational purposes. The farm shop storage building is used to store vehicles and equipment associated with this program. The 2003 San Simeon Earthquake damaged the north concrete retaining wall of the building. The retaining wall supports the farm shop slab as well as steel framing which supports the building roof and north exterior wall. Action is needed to repair or replace the building to an operational level.

## **2. DESCRIPTION OF THE PROPOSED ACTIONS AND ALTERNATIVES**

### **2.1 NO ACTION ALTERNATIVE**

NEPA requires the inclusion of a No Action Alternative in the environmental analysis and documentation. The No Action Alternative is defined as maintaining the status quo with no FEMA funding for any alternative action. The No Action Alternative is used to evaluate the effects of not providing eligible assistance for the project, thus providing a benchmark against which action alternatives can be evaluated. The No Action Alternative is in conflict with FEMA's mission and the purpose of the PA Program. For the purpose of this alternative, it is assumed that Cal Poly would be unable to implement a project for lack of federal assistance, and the farm shop storage building would not be repaired or replaced. The building would no longer be able to fulfill its original purpose of storing farm equipment in a safe and organized manner. The structural integrity of the building would be at risk, threatening both the health and safety of Cal Poly students and staff and the quality of Brizzolara Creek. Adverse environmental, health, and safety effects resulting from such hazards would not be addressed under the No Action Alternative.

### **2.2 PROPOSED ACTION ALTERNATIVE**

As defined in Section 2.3.5 of the PEA, the proposed project falls under the action alternative of Constructing New Facilities or Relocating Existing Facilities. The action area is located north of the City of San Luis Obispo, San Luis Obispo County, California, and the existing farm shop storage building and the proposed relocation site are located within the Cal Poly campus, as shown in Appendix A.

On December 22, 2003, the San Simeon Earthquake caused damage to the north concrete retaining wall of the Cal Poly farm shop storage building. The retaining wall supports the farm shop slab as well as steel framing, which supports the building roof and north exterior wall. The retaining wall is 74 feet long by 7.5 feet high and 6 inches thick. The retaining wall is located in Brizzolara Creek.

The first part of the proposed action includes the demolition of a portion of the existing farm shop storage building, removal of the retaining wall, attachment of siding on the open side of the building, and restoration of the creek bed. The proposed action would remove approximately 3,000 square feet (sq ft) of the existing storage structure. It would include the demolition and disposal of electrical wiring, structural steel, metal siding and roofing, the concrete slab, the retaining wall, and footings. It would also include lead-based paint abatement. Demolition of the existing farm shop storage building would take place in the

summer when Brizzolara Creek is dry to avoid potential impacts to sensitive species and their habitat. The creek bank at the site of the existing farm shop storage building would be graded to 2:1 and vegetated with native riparian vegetation. Rock weirs would also be incorporated in the restoration of the creek banks.

The second part of the proposed action includes the construction of a replacement facility in a location away from the creek (See Appendix A). The new building would occupy approximately 3,000 square feet in a disturbed upland area. Work at the new location would include site grading and compaction; construction of the foundation, slab, and new metal building; and installation of electrical systems.

### **2.3 OTHER ACTION ALTERNATIVES NOT CARRIED FORWARD**

Cal Poly considered rebuilding the farm shop storage building in its existing location. However, the potential problems of obtaining a permit to repair the portion of the structure in Brizzolara Creek made this alternative an impracticable solution. Therefore, the alternative was dismissed from further consideration.

## **3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

The PEA has adequately described the affected environment and impacts of the proposed action for many resource areas, except for geology, seismicity, and soils; air quality; water resources; biological resources; cultural resources; socioeconomics and public safety; and noise. Therefore, the affected environment and environmental consequences for those resources are described in this section, which is intended to supplement the information contained in the PEA. Necessary minimization and avoidance measures, either stipulated in the PEA, or based on the results of the impact analysis in the SEA, that are appropriate for the proposed action, are discussed in Section 4.

### **3.1 GEOLOGY, SEISMICITY, AND SOILS**

The project area is located on the Cal Poly campus outside downtown San Luis Obispo, which lies at the base of the Santa Lucia Mountains of the Coastal Range. The project area is bordered by the Santa Lucias to the north and east, the town of San Luis Obispo to the south, and Highway 1 to the west. The project area is approximately 480 feet above sea level. The common landforms of the area are east-west valleys running from the Santa Lucia Mountains to the Pacific coast. It is a seismically active area, with the San Andreas Fault lying approximately 50 miles to the east and the Sur-Nacimiento and Rinconda Faults running straight through the San Luis Obispo area.

Most of the rocks in the San Luis Obispo region belong to two sedimentary formations that were created on the ocean crust of the Pacific Plate during the Cenozoic and Mesozoic periods. As the Pacific Plate subducted under the North American Plate 20 million years ago, the crust was crushed, mixed up, and eventually uplifted to form the Franciscan Formation, which is now the dominant rock formation of the San Luis Obispo area (Cal Poly 2003). The Toro Formation is the other major rock formation in the area. It is also a sedimentary formation, and it was formed in a basin along the marine trench while the subduction that led

to the Franciscan Formation was taking place (Cal Poly 2003). The sandstone and shale of the Franciscan and Toro Formations are the most dominant rocks in the San Luis Obispo area, although a serpentinite intrusion runs through the area along the ridgelines (Cal Poly 2003).

The soils in this area were weathered from the Franciscan and Toro Formations' sandstone and shale and are generally soils of the fine-loamy and fine textural families such as the Los Osos, Lodo, Diablo, and Millsap series (Ernstrom 1977). The soil at the existing site of the farm shop storage building is predominantly Salinas silty clay loam, which is composed of gray silty clay loam to a depth of 29 inches, with stratified layers of pale brown fine sandy loam and yellowish brown silty clay loam underneath (Ernstrom 1977). The soil at the proposed new site of the farm storage building is mostly Lodo clay loam, which is composed of dark brown clay loam about 12 inches thick, underlain by fractured hard sandstone and occasional sandy loam or gravel (Ernstrom 1977).

Implementation of the proposed action would temporarily disturb soils. Demolition of the creek-side portion of the existing farm shop storage building would result in short-term soil loss through water and wind erosion due to disturbance of soil structure and removal of vegetation. Construction of the new building at the proposed site would entail grading, compaction, and digging 18 inches deep in a 3000 square foot area. Temporary construction and staging areas would be approximately 150 feet by 150 feet at each location.

Cal Poly would implement standard construction BMPs, as described in Section 4.1 of the SEA, to avoid and minimize soil loss, erosion, and compaction. No impacts to geology or seismicity are expected from implementation of the Proposed Action Alternative.

EO 12699, Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction, requires federal agencies to achieve appropriate earthquake resistance for new structures. The proposed project will be in compliance with EO 12699 because Cal Poly will ensure that the new building is designed and constructed in accordance with the most recent appropriate seismic design and construction standards.

### 3.2 AIR QUALITY

The Federal Clean Air Act (CAA) of 1970 was enacted to regulate air emissions from area, stationary, and mobile sources. This law authorized the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and the environment. The six criteria pollutants regulated by the CAA are carbon monoxide (CO), lead (Pb), nitrogen oxides (NO<sub>x</sub>), ozone (O<sub>3</sub>), particulate matter (less than 10 micrometers [PM<sub>10</sub>] and less than 2.5 micrometers [PM<sub>2.5</sub>]), and sulfur dioxide (SO<sub>2</sub>).

Additionally, the State of California set California Ambient Air Quality Standards (CAAQS) for ten criteria pollutants including CO, Pb, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, O<sub>3</sub>, SO<sub>2</sub>, sulfates, hydrogen sulfide (H<sub>2</sub>S), and visibility reducing particles. CAAQS are the same or more stringent than the NAAQS.

Under the 1977 amendments to the Clean Air Act, states with air quality that does not achieve the NAAQS are required to develop and maintain state implementation plans (SIPs). These plans constitute a Federally enforceable definition of the state's approach (or plan) and schedule for the attainment of the NAAQS. Air quality management areas are designated as

“attainment,” “non-attainment,” or “unclassified” for each individual pollutant depending on whether or not they exceed an applicable NAAQS or CAAQS. Areas that have been re-designated from non-attainment to attainment are called maintenance areas.

Prior to approval of any Federal action, the General Conformity Rule (GCR) (Title 40 CFR Part 51.853) states that a “a conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a non-attainment or maintenance area caused by a Federal action would equal or exceed any of the rates” (40 CFR 51.853 b) specified in the GCR. This requires the responsible Federal agency of a Federal action to determine the following:

- Whether or not the project is exempt based on exemption criteria listed in the GCR.
- The attainment status of each pollutant in the applicable County.
  - If the project is in a pollutant non-attainment or maintenance area, the direct and indirect project emissions must be compared against applicable emission threshold rates listed in the GCR to determine if the project’s emissions are:
    - Below specific emissions threshold rates (hence, exempt from conformity analysis); or
    - Above the threshold rates applicable to the specific area (hence, requiring a conformity analysis).

The project area is located within the South Central Coast air basin, which covers San Luis Obispo, Santa Barbara, and Ventura Counties. The air basin consists of rural areas with interspersed urbanized clusters along the coast. The climate in the air basin is a typical coastal climate with cool, moist air and moderate temperatures year-round. The summers are dry, and most of the year’s precipitation occurs during the winter (11 to 12 inches per year). Specifically, the project area is under the jurisdiction of the San Luis Obispo County Air Pollution Control District (APCD). The primary sources of air pollution within the district are transportation vehicles such as planes, boats, trains, trucks, buses, and personal motor vehicles. Air pollution also travels into the district from the South Coast air basin to the south and the San Joaquin Valley air basin to the east. San Luis Obispo County is designated as unclassified/attainment for all federally-regulated National Ambient Air Quality Standards (NAAQS) and is not in a Federal maintenance area. The County is designated as non-attainment for the PM<sub>10</sub> and O<sub>3</sub> California Ambient Air Quality Standards (CAAQS), but is in attainment or unclassified for all other California criteria pollutants (California Air Resources Board 2007).

The GCR is a Federal regulation and provides emission threshold rates for federally designated non-attainment and maintenance areas. Project emissions are compared to these threshold rates to determine whether or not a conformity analysis is required. However, the GCR does not provide emission threshold rates for areas federally designated as unclassified or attainment.

Because San Luis Obispo County is federally designated as unclassified or attainment for all six criteria pollutants and is not in a maintenance area, comparison to the non-attainment and maintenance area emission threshold rates is technically infeasible. However, because the County is designated as non-attainment for the PM<sub>10</sub> and O<sub>3</sub> CAAQS, a comparison has been

made to demonstrate that the proposed action's emissions will be below the most stringent emission threshold rates listed in the GCR, which is a very conservative approach.

### San Luis Obispo County Emission Threshold Rates

	<b>GCR Guidance</b>	<b>GCR Guidance</b>
<b>Pollutant</b>	<b>Non-Attainment (ton/yr)</b>	<b>Maintenance Area (ton/yr)</b>
CO	100	100
NO <sub>x</sub>	10 (extreme, O <sub>3</sub> precursor)	100 (O <sub>3</sub> precursor)
PM <sub>10</sub>	70 (serious)	100
PM <sub>2.5</sub>	100	100
SO <sub>2</sub>	100	100
VOC	10 (extreme, O <sub>3</sub> precursor)	50 (O <sub>3</sub> precursor)

Implementation of the proposed action would result in temporary impacts to the existing air quality in the area. These impacts include temporary increases of fugitive dust (PM<sub>10</sub> and PM<sub>2.5</sub>) and combustion emissions (CO, NO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, and volatile organic compounds or VOC). Fugitive dust emissions would be generated by vehicle movement over paved and unpaved roads, dirt tracked onto paved surfaces from unpaved areas at access points, and particulate matter that is suspended during construction. Combustion emissions would be generated from the operation of construction equipment during the construction process.

It is important to note that there are no NAAQS or CAAQS for VOCs. However, VOCs are a precursor to O<sub>3</sub>, which has both a Federal and State ambient air quality standard. The formation of O<sub>3</sub> occurs in the troposphere as precursor pollutants react in the presence of sunlight. Therefore, the only way to regulate/reduce O<sub>3</sub> is through the control of its reactive precursors, one of which is VOC.

Unmitigated emission estimates were determined using the following guidance and assumptions:

- 170 construction days/year
- 10 working hours/day
- Assumed 0.5 acres of ground disturbance
- Emissions were estimated using the equipment loading for a permitted construction project with 38 acres of ground disturbance scaled down to the assumed 0.5 acres of this project.

Based on the above assumptions, the following unmitigated emissions are expected for this project:

### San Luis Obispo County Emission Threshold Rates

	<b>Emission Rate</b>
<b>Pollutant</b>	<b>ton/yr</b>
CO	0.16
NO <sub>x</sub>	0.33
PM <sub>10</sub> <sup>a</sup>	0.33
PM <sub>2.5</sub> <sup>a</sup>	0.08
SO <sub>2</sub>	0.0003
VOC	0.05
<sup>a</sup> Includes particulate from fugitive dust and combustion activities	

Even without mitigation measures, the project emission estimates for CO, NO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, and VOC, are below the levels of the worst case GCR threshold emission rates. Therefore, no further analysis is required to establish conformity with the State Implementation Plan; air quality impacts as a result of implementation of this action would be temporary and minimal. Mitigation measures to minimize air quality impacts are outlined in Section 4.2 of the SEA.

### 3.3 WATER RESOURCES

Surface water bodies in the vicinity of the project area include Brizzolara Creek, Stenner Creek, and Miossi Creek. These streams and their tributaries feed into San Luis Obispo Creek. The San Luis Obispo Creek watershed covers 84 square miles of the coastal slope of the Santa Lucia Mountains. Its headwaters begin in the Santa Lucia Mountains near Cuesta Pass, and it empties into the Pacific Ocean at Avila Beach. The creek is approximately 15 miles long and its water levels fluctuate from 1 to 3 inches in the summer to 1 to 2 feet during non-flood periods in the winter (City of San Luis Obispo 2007).

Because the site of the existing farm shop storage building is located in Brizzolara Creek, demolition of the creek-side section of the building poses a direct threat to the stream. However, when water levels are low during the summer, the creek runs underground in the vicinity of the farm shop storage building. By June of every year, the creek disappears approximately 50 yards upstream of the building and re-emerges about 100 yards downstream of the building. Therefore, by limiting construction to this dry period and adhering to the other minimization and avoidance measures outlined in Section 4.3 of the SEA, the demolition of part of the existing building would have no adverse impact to the surface water in the area of the existing site.

The proposed site of the new farm shop storage building is not located close to any stream or tributary; therefore, the construction of the new building would have no impact to surface water resources in the area.

Neither construction at the existing site or the new site would affect groundwater recharge or groundwater quality.

### 3.3.1 Floodplain Management

In compliance with Executive Order 11988, Floodplain Management, FEMA considered the proposed action's impacts to the floodplain. FEMA applies the Eight-Step Decision-Making Process to ensure that it funds projects that are consistent with Executive Order 11988. The NEPA compliance process involves essentially the same basic decision-making process to meet its objectives as the Eight-Step Decision-Making Process. Therefore, the Eight-Step Decision-Making Process has been applied through implementation of the NEPA process. FEMA published an Initial Public Notice at the declaration of the disaster. FEMA would ensure publication of a Final Public Notice in compliance with Executive Order 11988 before implementation of the proposed action.

The existing site of the farm shop storage building is located within the 100-year floodplain. The proposed action would remove the part of the building closest to Brizzolara Creek. Accordingly, this part of the proposed action would result in a beneficial impact to the floodplain. Furthermore, restoring the bank of Brizzolara Creek with native vegetation and installing weirs would also have a positive impact on the floodplain. Therefore, this component of the proposed action would preserve and enhance floodplain values, in accordance with EO 11988.

The new site of the farm shop storage building associated with the proposed action was examined to determine if the new building would be located in either the 100-year or 500-year floodplain. The new site is not within the 100-year or 500-year floodplain. Therefore, construction of the new building would not affect the floodplain, thereby complying with EO 11988.

### 3.3.2 Protection of Wetlands

In compliance with Executive Order 11990, Protection of Wetlands, FEMA considered the proposed action's impacts to wetlands. FEMA applies the Eight-Step Decision-Making Process to ensure that it funds projects that are consistent with Executive Order 11990. The NEPA compliance process involves essentially the same basic decision-making process to meet its objectives as the Eight-Step Decision-Making Process. Therefore, the Eight-Step Decision-Making Process has been applied through implementation of the NEPA process. FEMA published an Initial Public Notice at the declaration of the disaster. FEMA would ensure publication of a Final Public Notice in compliance with Executive Order 11990 before implementation of the proposed action.

Because the existing farm shop storage building was constructed in a creek, removal of part of the building from the creek and restoration of the creek area will require a permit from the United States Army Corps of Engineers (USACE). The June 23, 2004 letter from USACE to Cal Poly (See Appendix B) indicates that the proposed action is practicable and less

environmentally damaging than other identified alternatives. USACE also states that the proposed action would likely qualify for a nationwide permit under Section 404 of the Clean Water Act of 1972. Acquisition of this permit is the responsibility of the Subgrantee.

The demolition of the creek-side portion of the existing building would cause temporary negative impacts to riparian vegetation currently bordering the building. Approximately 74 linear feet of riparian vegetation on the east side of Brizzolara Creek would be temporarily disturbed. There are no practicable alternatives to affecting wetlands because the existing building is located within the limits of Brizzolara Creek. Any construction on this building would affect wetlands. However, the minimization and avoidance measures described in Section 4.3 of the SEA would ensure that the temporary adverse impacts would not be permanent. In fact, the measures described in Section 4.3 of the SEA include the re-vegetation of the area with native riparian species; therefore, this portion of the project's permanent impact on wetlands will be positive. Accordingly, this portion of the proposed action is in compliance with EO 11990.

The construction of the new farm shop storage building is not located on a site containing wetlands; therefore, EO 11990 is not applicable to this part of the proposed action.

### 3.4 BIOLOGICAL RESOURCES

The primary aquatic habitat within one mile of the proposed project area is composed of three creeks: Stenner Creek, Brizzolara Creek, and Miozzi Creek. These streams and their tributaries typically support stands of central coast cottonwood-sycamore riparian forest (Holland 1986). This riparian forest typically has a partially closed tree canopy that is dominated by coast live oak (*Quercus agrifolia*), California sycamore (*Platanus racemosa*), and Fremont's cottonwood (*Populus fremontii*). The understory includes thickets of arroyo willow (*Salix lasiolepis*) and coyote brush (*Baccharis pilularis*). The understory also had California blackberry (*Rubus ursinus*), hair grass (*Deschampsia* sp.), poison oak (*Toxicodendron diversilobum*), California coffeeberry (*Rhamnus californica*), and a few individuals of castor bean (*Ricinus communis*). This plant community is typically associated with sub-perennial streams with a fairly coarse bedload and seasonally variable depths to the water table (Holland 1986). Other species typically associated with this vegetation community include bigleaf maple (*Acer macrophyllum*), red willow (*Salix laevigata*), and California bay (*Umbellularia californica*). This vegetation community is distributed in canyons and creeks throughout the south coast ranges (Holland 1986).

Other aquatic habitats within one mile of the proposed project include irrigation ponds and wastewater treatment ponds. Six irrigation ponds in the area provide permanent sources of water. They typically have emergent vegetation growing around the edges and common tule (*Scirpus acutus*) along the margins. Six wastewater treatment ponds in the area are permanently inundated. These features did not have emergent vegetation growing around the margins and have steep edges with muddy bottoms. Water quality in the wastewater treatment ponds is low.

The last types of aquatic habitats to exist in the area are sediment basins and roadside ditches. Three sediment basins exist within one mile of the proposed project. These basins were constructed as a stormwater management practice when the campus Sports Complex was

constructed in 2000. The basins retain water throughout the year. Overflow water is released during storm events. Two roadside ditches were identified within one mile of the proposed project. Both features were approximately 2 feet wide.

Non-aquatic habitat in the area of the proposed project is composed entirely of nonnative grasslands or developed areas. Nonnative grasslands include a dense to sparse cover of annual grasses, often associated with numerous species of showy-flowered, native annual forbs, especially in years of favorable rainfall (Holland 1986). Germination occurs with the onset of the late fall rains. Growth and flowering occur from winter through spring. With a few exceptions, these plants are dead through the summer and fall dry seasons, but persistent as seeds (Holland 1986). The dominant species include common wild oats (*Avena fatua*), brome (*Bromus* sp.), longbeak stork's bill (*Erodium botrys*), and Italian rye-grass (*Lolium multiflorum*). Other plant species identified that are not dominant include curlydock (*Rumex crispus*), bristly oxtongue (*Picris echioides*), narrowleaf plantain (*Plantago lanceolata*), and alkali mallow (*Malvella leprosa*). However, most of the upland areas near the proposed project are no longer grasslands because they have been developed as part of the Cal Poly campus. This habitat type includes buildings, parking lots, and landscaped areas.

The presence of federally listed species in the action area was evaluated based on a review of the existing data and a reconnaissance survey of the action area. The primary source of existing data was the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDDB) records for species occurrences within the nine U.S. Geological Survey (USGS) quadrangles surrounding the action area: San Luis Obispo, Morro Bay South, Morro Bay North, Atascadero, Santa Margarita, Lopez Mountain, Arroyo Grande NE, Pismo Beach, and Port San Luis. To further research the presence of federally listed species in the action area, NISTAC, as a consultant to FEMA, conducted a reconnaissance survey to the project site on September 23, 2005, and a site visit on March 9, 2006. As a result of the field and background review, FEMA determined that the action area provides habitat suitable to support one federally listed species regulated by the United States Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA)—the California red-legged frog (*Rana aurora draytonii*)—and one federally listed species regulated by the National Marine Fisheries Service (NMFS) under the ESA—the South Central California coast steelhead (*Oncorhynchus mykiss irideus*).

To investigate the presence of the CRLF, NISTAC completed a survey report after conducting 8 protocol surveys in the action area and one-mile radius around the existing farm shop storage building and the proposed new site from May through July 2006. FEMA concluded that there are no CRLF within one mile of either of the sites associated with the proposed project and that the proposed action would not impact the CRLF. FEMA concluded that, with the implementation of the appropriate avoidance and minimization measures, the proposed project would have no adverse effect on the CRLF. For more information about these avoidance and minimization measures, refer to Section 4.4 of this SEA. USFWS verbally concurred with this finding in a conversation with FEMA's Regional Environmental Officer for Region IX on June 18, 2007. FEMA confirmed this conversation in a letter dated June 19, 2007 (See Appendix B).

FEMA also concluded that the habitat within one mile of the action area was such that, with the implementation of the appropriate avoidance and minimization measures, the proposed

project would not be likely to adversely affect the steelhead. FEMA described this conclusion and provided a list of the necessary avoidance and minimization measures to NMFS in a NLAA letter report dated May 11, 2007 (See Appendix B). NMFS concurred with this finding in a letter dated June 21, 2007 (See Appendix B).

Therefore, with implementation of the appropriate minimization and avoidance measures described in Section 4.4 of this SEA, this project will have no adverse impact on any federally listed species or their critical habitat and is thus in compliance with the ESA.

### **3.5 CULTURAL RESOURCES**

FEMA subjected the project area to a cultural resources records review at the Central Coast Information Center (CCIC) of the California Historical Resources Information System (CHRIS) on April 17, 2007. According to the data provided by the CCIC, there are no properties listed on, or eligible for inclusion on, the NRHP within 0.25-mile of the area of potential effects. In addition, the California Native American Heritage Commission (NAHC) was contacted for a review of its Sacred Lands File and a list of Native American groups and individuals that the Commission believes should be contacted about the project. The Sacred Lands File search was negative. On May 8, 2007, FEMA sent letters to those groups and individuals listed by NAHC, but no responses have been received to date. An archaeological survey of the project area was undertaken on April 25, 2007 by a NISTAC archaeologist, as a consultant to FEMA. The results of the survey were negative.

The literature review and archaeological and architectural field reconnaissance of the area of potential effects identified the farm shop storage building as the only historic era building within the project area. However, it does not meet the eligibility criteria of the National Register of Historic Places (NRHP). The archaeological survey of the staging area associated with the building repair and the separate parcel where the new structure will be built was negative for cultural resources. Therefore, FEMA has determined that there will be no historic properties affected as described in Stipulation VII, C of the First Amended Programmatic Agreement among FEMA, SHPO, OES, and the Advisory Council on Historic Preservation.

FEMA informed the State Historic Preservation Officer (SHPO) of its determination in a letter dated June 4, 2007 and received concurrence in a letter dated July 12, 2007 (See Appendix B). Therefore, with implementation of the appropriate minimization and avoidance measures described in Section 4.5 of the SEA, this project complies with Section 106 of the National Historic Preservation Act.

### **3.6 SOCIOECONOMICS AND PUBLIC SAFETY**

The project area is located on the Cal Poly campus, north of San Luis Obispo. According to the 2000 census, the population of San Luis Obispo County is 246,681, the median age is 37.3, 49.6 percent of the population is male, 86.5 percent of the population considers itself one race and white, and 17.4 percent considers itself one race and Latino or Hispanic (US Census 2000).

### 3.6.1 Environmental justice

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, was signed on February 11, 1994. The EO directs federal agencies to make achieving environmental justice part of their missions by identifying and addressing, as appropriate, disproportionately high adverse human health, environmental, economic, and social effects of its programs, policies, and activities on minority and low-income populations.

Socioeconomic and demographic data for residents in the project vicinity were studied to determine if a disproportionate number (defined as greater than 50 percent) of minority or low-income persons have the potential to be affected by the proposed alternatives. Because the project is located in a part of the Cal Poly campus with very few residents, the proposed project will have no adverse impact on minority or low-income persons.

### 3.6.2 Public safety

The existing building has a crack in the foundation and is structurally unsound. Currently, it is a public safety threat to Cal Poly students and staff that use the building or the adjacent area. The proposed project will restore the building to a stable condition and eliminate this threat. Therefore, with the implementation of the appropriate minimization and avoidance measures described in Section 4.6 of the SEA, this project will positively improve public safety in the project area.

## 3.7 NOISE

The action area is generally quiet, consisting primarily of noises typical of an agricultural district, such as farm equipment and human voices. The existing site of the farm storage building is located next to a field used for educational purposes and approximately 20 yards from a road. The new site of the farm storage building is located next to Cal Poly's dairy processing facility and two residential units reserved for students and staff affiliated with the dairy processing facility. The access road to this site is used only by those people headed to the dairy processing facility or the residences.

Noise-sensitive receptors within and near the existing site include people working in the adjacent field or pedestrians using the road. Noise-sensitive receptors within and near the new site include people working at the dairy processing facility or residents of the adjacent residential units. Noise associated with implementation of the proposed action includes the operation of equipment such as forklifts, backhoes, bulldozers, loaders, excavators, boom trucks, and tractor-trailers, which generate noise levels ranging from about 70 to 95 dB at 50 feet from the source.

Noise associated with project activities would not occur for more than a period of six months, which is the time required build a new farm storage building. With implementation of the minimization and avoidance measures described in Section 4.7 of the SEA, impacts to noise-sensitive receptors would be minimal.

### 3.8 CUMULATIVE IMPACTS

Cumulative impact is the impact on the environment which results from the incremental impact of the proposed action when added to other past, present, and reasonable future actions regardless of the person or group that undertakes the other actions. FEMA knows of no other projects planned in the vicinity of the proposed project sites. Cumulative impacts are not expected to occur as a result of the proposed action.

## 4. MINIMIZATION AND AVOIDANCE MEASURES

The following minimization and avoidance measures applicable for the proposed action have been extracted from the PEA Section 4, or from measures developed for this SEA based on site specific impacts.

### 4.1 GEOLOGY, SOILS AND SEISMICITY

To avoid adverse impacts to geology, soils, and seismicity, Cal Poly would be responsible for implementing construction BMPs to minimize soil loss from the demolition and construction. Examples of BMPs include the following measures: developing and implementing an erosion and sedimentation control plan, installing and maintaining silt fences or hay bales, mulching cleared areas, revegetating with native species when construction is completed, covering soil that is stockpiled on-site, and constructing a sediment barrier around stockpiles to prevent sediment loss.

### 4.2 AIR QUALITY

Cal Poly would be responsible for implementing the following BMPs to reduce potential short-term air quality impacts from construction activities:

- Watering disturbed areas;
- Scheduling the location of the staging areas to minimize fugitive dust;
- Keeping construction vehicles tuned properly;
- Requiring all trucks to cover their loads;
- Sweeping adjacent streets and roads if visible soil is carried over to these areas from the construction site; and
- During high-wind periods, curtailing activities to the degree necessary to prevent fugitive dust from construction operations from being a nuisance or hazard on- or off-site.

All construction activities would comply with all San Luis Obispo APCD rules and standards.

### 4.3 WATER RESOURCES

To avoid and minimize any adverse impacts to water resources, Cal Poly would be responsible for implementing construction BMPs that would prevent soils from eroding and resulting in sedimentation in the project vicinity. Examples of BMPs include the following

measures: developing and implementing an erosion and sedimentation control plan, installing and maintaining silt fences or hay bales, mulching cleared areas, re-vegetating with native species when construction is completed, covering soil that is stockpiled on-site, and constructing a sediment barrier around stockpiles to prevent sediment loss.

#### **4.4 BIOLOGICAL RESOURCES**

In order to avoid impacts to all federally listed species, including the CRLF and the steelhead, Cal Poly would be responsible for implementing the minimization and avoidance measures described in the NLAA letter report mailed to NMFS on May 11, 2007 (See Appendix B).

#### **4.5 CULTURAL RESOURCES**

If unanticipated resources are discovered during construction, Cal Poly would stop project activities in the vicinity of the discovery, take all reasonable measures to avoid or minimize harm to the property, and notify OES and FEMA as soon as practicable so that FEMA can re-initiate consultation with the SHPO, in accordance with the First Amended Programmatic Agreement among FEMA, SHPO, OES, and the Advisory Council on Historic Preservation. If the discovery appears to contain human remains, Cal Poly would also contact the San Luis Obispo County Coroner immediately. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she would contact the NAHC by telephone within 24 hours.

#### **4.6 SOCIOECONOMICS AND PUBLIC SAFETY**

Cal Poly would be responsible for implementation of the following measures to protect the health and safety of the community around the project area during the proposed action:

- The work areas and other public hazards would be barricaded and properly marked.
- Vehicles traveling through the area would maintain legal and safe speeds.

#### **4.7 NOISE**

Cal Poly would be responsible for implementation of the following measures to reduce noise levels associated with construction equipment:

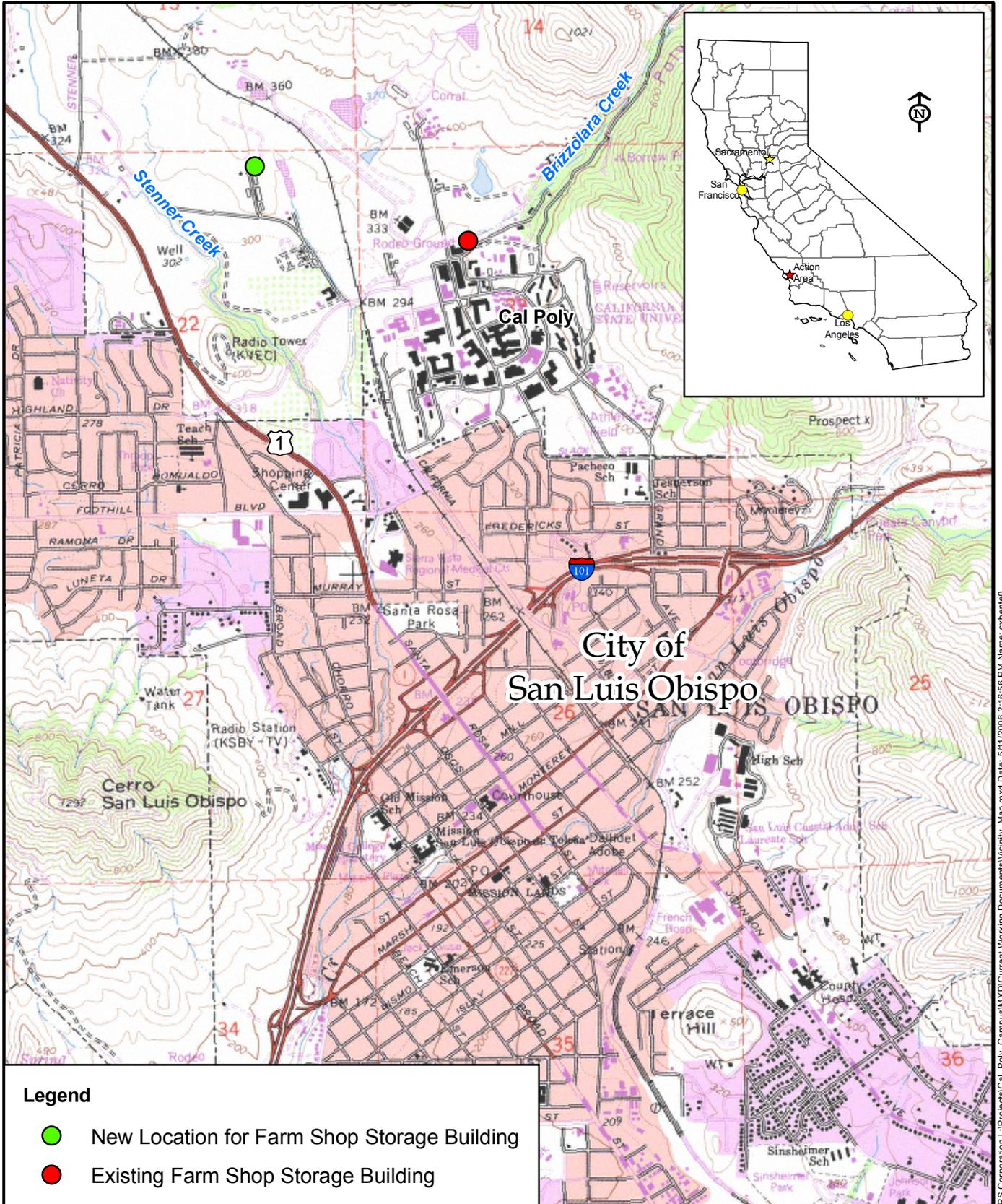
- Project activity would not be conducted between 7:00 p.m. and 7:00 a.m. on weekdays,
- Project activity would not be conducted between 9:00 p.m. and 6:00 a.m. on Saturdays,
- No project related activity would be allowed on Sundays or Federal holidays, and
- All noise-producing project equipment and vehicles using internal combustion engines would be equipped with properly operating mufflers and air inlet silencers, where appropriate, that meet or exceed original factory specification.

## 5. REFERENCES

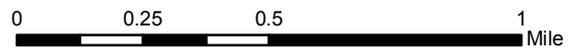
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**Appendix A – Vicinity Map**



Source: USGS 7.5-Minute Quadrangle DRG



California Polytechnic State University  
Farm Shop Storage  
Building Relocation

15708017

Vicinity Map

Figure  
1

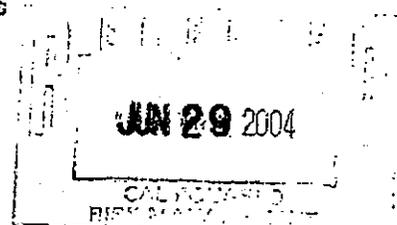
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**Appendix B – Letters from Consulting Agencies**

- Figure 1 USACE Letter
- Figure 2 USFWS No Effect Confirmation Letter
- Figure 3 NMFS NLAA Letter Report
- Figure 4 NMFS Concurrence Letter
- Figure 5 SHPO Concurrence Letter



DEPARTMENT OF THE ARMY  
LOS ANGELES DISTRICT, CORPS OF ENGINEERS  
VENTURA FIELD OFFICE  
2151 ALESSANDRO DRIVE, SUITE 110  
VENTURA, CALIFORNIA 93001



RFPI V TO  
ATTENTION OF:

June 23, 2004

Office of the Chief  
Regulatory Branch

California State Polytechnic University  
Attention: Kim Busby  
Environmental Health & Safety 80-105  
San Luis Obispo, California 93407

Dear Ms. Busby:

Reference is made to a site visit on June 3, 2004 attended by Lisa Mangione and Heather Wylie of my staff to discuss permit issues associated with repair options for the farm storage barn building 09-B that was damaged by the San Simeon Earthquake on December 22, 2003. The foundation of this barn extends approximately to centerline of Brizzolari Creek on the California State Polytechnic University (Cal Poly) campus in San Luis Obispo, San Luis Obispo County, California.

Based on discussions between Cal Poly, Federal Emergency Management Agency (FEMA) and California Department of Fish and Game (DFG) representatives during the site visit, Cal Poly is currently evaluating whether to 1) repair the damaged structure in-kind or 2) demolish and remove the portion of the building that has collapsed into the creek, repair the remaining portion of the building at the top of the creek bank, and restore the bank of the creek channel to a natural condition. Ultimately Cal Poly intends to completely relocate the storage building to an upland location when funding is available.

As we discussed during our site visit, Corps authorization is required for the discharge of dredged or fill material into waters of the U.S, including wetlands, pursuant to Section 404 of the clean Water Act of 1972. Both project alternatives 1 and 2 as described above would result in a discharge of fill material into Brizzolari Creek and would therefore require a Corps permit.

Due to potential long-term impacts to the South-Central California Coast Evolutionarily Significant unit of the federally threatened steelhead trout, it appears alternative 1 may have a greater than minimal impact on the aquatic environment and therefore require processing of a standard individual permit. In order to receive Corps authorization for such discharges, a permit applicant must clearly demonstrate that the proposed discharge is unavoidable and the least environmentally damaging practicable alternative. Failure to do so as required under the U.S. Environmental Protection Agency's (EPA) 404 (b)(1) Guidelines (40 CFR 230) will result in permit denial. Generally, the practicable alternative that involves the least amount of filled "waters" would be considered the least damaging. Since the farm storage building reconstruction is not water dependent, less damaging practicable alternatives that avoid or at least minimize impacts to jurisdictional waters must be evaluated. Practicable alternatives are those that may be feasible when logistics, available technology, and cost factors are considered.

-2-

Practicable alternatives are not unreasonable costly, but may produce less return on investment than is desired by the permit applicant. Such alternatives are considered available if they are owned by the applicant or if they can be obtained, utilized, expanded, or managed during the planning and permitting phases of the proposed project.

Alternative 2 appears to be practicable and less environmentally damaging than alternative 1. Additionally, due to the reduction in potential impacts to steelhead and the potential for restoration of riparian habitat, alternative 1 would likely qualify for authorization under the Corps' nationwide permit program.

We appreciate the opportunity to assist you early in the project planning process by providing information regarding Corps permit requirements. If you have any questions, please contact Heather Wylie of my staff at (805) 585-2140. This project has been assigned Corps file number 200401279-HW. Please reference this number in all future correspondence regarding the project.

Sincerely,



David J. Castanon  
Chief, North Coast Section  
Regulatory Branch

U.S. Department of Homeland Security  
1111 Broadway, Suite 1200  
Oakland, CA 94607-4052



**FEMA**

June 19, 2007

Steve Kirkland  
U.S. Fish and Wildlife Service  
2493 Portola Road, Suite B  
Ventura, CA 93003

Re: Farm Shop Storage Building Relocation Project, California Polytechnic State University,  
FEMA-1505-DR-CA, PW #242

Dear Mr. Kirkland:

The California Polytechnic State University (Cal Poly) has applied, through the State of California Governor's Office of Emergency Services (OES), to the Federal Emergency Management Agency (FEMA) for funding under the Public Assistance Program to relocate the disaster-damaged farm shop storage building located on the Cal Poly campus in San Luis Obispo County, California.

On December 6, 2006, FEMA submitted a California Red-legged Frog (CRLF) Protocol Survey Report to your agency. This document provided detailed descriptions of the proposed action, the survey methods, historic occurrences of CRLF, the habitats surveyed, and the survey results. Based on the results on the CRLF protocol survey report and as described in that document, FEMA concludes that there are no CRLF in the vicinity of the project area. Therefore, FEMA has determined that, with the implementation of the appropriate avoidance and minimization measures, this project will have no adverse effect on CRLF.

Specifically, all work associated with the partial demolition of the existing farm shop storage building, partial reconstruction of the existing farm shop storage building, and creek restoration will be conducted during the dry season. Further, a biological monitor approved by your agency will be present during implementation of these project components to ensure that this project has no effect on CRLF. You confirmed this determination in our verbal communications on June 15 and 18, 2007.

Steve Kirkland  
June 19, 2007  
Page 2

If you have any questions regarding this project, please feel free to contact me at (510) 627-7027 or FEMA's contractor, Ms. Lorena Solórzano-Vincent of URS Corporation, at (510) 874-3114. Thank you in advance for your assistance.

Sincerely,



Alessandro Amaglio  
Environmental Officer

Attachment

cc:

Charles Rabamad, OES  
Dennis Castrillo, OES  
Kimberly Busby, Cal Poly



U.S. Department of Homeland Security  
1111 Broadway, Suite 1200  
Oakland, CA 94607-4052

**FEMA**

May 11, 2007

Rodney McInnis  
National Marine Fisheries Service  
501 West Ocean Boulevard, Suite 4200  
Long Beach, CA 90802

Re: Farm Shop Storage Building Relocation Project, California Polytechnic State University,  
FEMA-1505-DR-CA, PW #242

Dear Mr. McInnis:

The California Polytechnic State University (Cal Poly) has applied to the Federal Emergency Management Agency (FEMA) through the State of California Governor's Office of Emergency Services (OES) for assistance with the relocation of the farm shop storage building (proposed action). FEMA intends to fund the proposed action under the Public Assistance Program.

This letter report represents FEMA's request for informal consultation with the National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act (ESA) for the proposed action. Accordingly, FEMA is submitting this letter report for your review of the proposed action. This letter report describes the proposed action and environmental setting, and analyzes the potential effects of the proposed action on the south central California coast steelhead (*Oncorhynchus mykiss irideus*) Distinct Population Segment (DPS), which is listed as threatened, and its designated critical habitat. As explained in this letter report, the proposed action is not likely to adversely affect the south central California coast steelhead nor its designated critical habitat.

#### **1.0 PURPOSE AND NEED OF THE PROPOSED ACTION**

Cal Poly has requested funding from FEMA to relocate a farm storage building. The new building will also be located within the campus grounds. On December 22, 2003, the San Simeon Earthquake caused damage to the north concrete retaining wall of the farm shop storage building. The retaining wall supports the farm shop slab as well as steel framing, which supports the building roof and north exterior wall. The retaining wall is 74 feet long by 7.5 feet high and 6 inches thick. The foundation is 3 feet wide by 18 inches deep. The retaining wall is located at the bank of Brizzolara Creek (see photos in Attachment A).

FEMA has prepared this letter report to evaluate potential effects of the proposed action on species that are listed and proposed for listing under the ESA that are regulated by NMFS. Potential effects on federal listed species are evaluated in accordance with the legal requirements set forth under Section 7 of the ESA (16 U.S.C. 1536). Criteria used to determine which species were considered for this letter report and potential adverse effects to those species from project activities are presented. In addition, this report proposes measures to avoid and/or minimize take or disturbance to potentially affected species. FEMA is consulting separately with the USFWS for potential adverse effects to species under their jurisdiction.

## **2.0 ACTION AREA**

The action area is located in the Cal Poly campus, San Luis Obispo, California (Figure 1). The action area encompasses the existing farm storage building and the new location for that building (Figure 1).

## **3.0 PROPOSED ACTION**

The action area is located north of the City of San Luis Obispo, San Luis Obispo County, California (Figure 1). The existing farm shop storage building and the proposed relocation site are located with the Cal Poly campus, as shown in Figure 1. The existing farm shop storage building is located adjacent to Brizzolara Creek (see photos in Attachment A).

The proposed action includes the demolition of the existing farm shop storage building, removal of the retaining wall, and restoration of the creek bank. The proposed action would remove approximately 3,000 square feet of the existing storage structure. Removal of the structure would include demolition and disposal (including lead-based paint abatement) of electrical wiring, structural steel, metal siding and roofing, the concrete slab, the retaining wall, and footings. The remaining metal storage structure would have siding attached on the creek side. Demolition of the existing farm shop storage building would take place in the summer when Brizzolara Creek is dry to avoid potential impacts to sensitive species and their habitat.

The proposed relocation site for the farm shop storage building is located approximately one mile away from Brizzolara Creek (Figure 1). The new site is located in a disturbed upland area. Work at the new location would include site grading and compaction; construction of the foundation, slab, and new metal building; and installing electrical systems on approximately 3,000 square feet.

The creek bank at the site of the existing farm shop storage building would be graded to 2:1 and vegetated with native riparian vegetation. Habitat structures and rock weirs would also be incorporated in the restoration of the creek banks.

## **4.0 METHODS**

NISTAC, as a consultant to FEMA, conducted a reconnaissance survey of the action area on September 23, 2005, a site assessment on March 9, 2006, and protocol surveys for amphibians in May, June, and July 2006. The surveys included, among other species-specific tasks, the identification of the vegetation communities in the action area.

The presence of federally listed species in the action area was evaluated based on a review of the existing data and the results of the NISTAC reconnaissance survey of the action area. Sources of

existing data included the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDDB) records for species occurrences within the nine U.S. Geological Survey (USGS) quadrangles surrounding the action area, the NMFS ESA Salmon Listing maps (NMFS 2007), and designated critical habitat for salmonids in California (NMFS 2007). The following USGS quadrangles were searched with the CNDDDB: San Luis Obispo, Morro Bay South, Morro Bay North, Atascadero, Santa Margarita, Lopez Mountain, Arroyo Grande NE, Pismo Beach, and Port San Luis.

As a result of the field and background review, FEMA determined that the action area provides habitat suitable to support one federally listed species regulated by NMFS under the ESA:

- South central California coast steelhead (*Oncorhynchus mykiss irideus*)

## 5.0 ENVIRONMENTAL SETTING

Aquatic habitats in the vicinity of the action area include: three creeks and their tributaries, six irrigation ponds, six wastewater treatment ponds, and three sediment ponds. Upland habitats include nonnative grasslands and developed areas. Of these aquatic habitats, only the two streams (Brizzolara and Stenner creeks) have the potential to provide habitat for the south central California coast steelhead (Figure 1). Therefore, the detailed description of the habitats is limited to these two streams.

### 5.1 Brizzolara Creek

Brizzolara Creek is a tributary to Stenner Creek and both creeks originate in the Los Padre National Forest and are within the San Luis Obispo Creek watershed, which is approximately 84 square miles in size. San Luis Obispo Creek flows into the Pacific Ocean near Avila Beach. The Brizzolara Creek watershed is approximately 1,525 acres in size (2.4 square miles) and represents less than 3 percent of the San Luis Obispo Creek watershed. Brizzolara Creek is fed by springs, seeps and runoff. It is an ephemeral stream that flow during the winter, both only intermittently during most summers. Rangeland (69 %) and forestland (11 %) represent the largest land uses within its watershed.

Brizzolara Creek in the vicinity of the action area supports stands of central coast cottonwood-sycamore riparian forest (Holland 1986). This riparian forest is moderately closed broadleaved and is dominated by coast live oak (*Quercus agrifolia*), California sycamore (*Platanus racemosa*), and Fremont's cottonwood (*Populus fremontii*). The understory includes thickets of arroyo willow (*Salix lasiolepis*) and coyote brush (*Baccharis pilularis*). The understory also had California blackberry (*Rubus ursinus*), hair grass (*Deschampsia* sp.), poison oak (*Toxicodendron diversilobum*), California coffeeberry (*Rhamnus californica*), and a few individuals of castor bean (*Ricinus communis*). This plant community is typically associated with sub-perennial streams with a fairly coarse bedload and seasonally variable depths to the water table (Holland 1986). Other species typically associated with this vegetation community include bigleaf maple (*Acer macrophyllum*), red willow (*Salix laevigata*), and California bay (*Umbellularia californica*). This vegetation community is distributed in canyons and creeks throughout the south coast ranges (Holland 1986).

It has been reported that during flow period upper Brizzolara Creek provides spawning habitat for steelhead. Probably due to its intermittent flow during most summers, fish surveys on the creek have

been quite limited. In the mid-1970s, sampling in upper Brizzolara Creek resulted in the collection of three steelhead ranging from 14 to 24 centimeters in size (Tamagni 1995). The action area associated with the demolition of the existing Farm Shop Storage Building includes a small segment of Brizzolara Creek.

## 5.2 Stenner Creek

As stated previously, Stenner Creek originates on the Los Padre National Forest and is within the San Luis Obispo Creek watershed. Including the Brizzolara Creek watershed, the Stenner Creek watershed is approximately 7,140 acres (11 square miles) and represents slightly more than 13 percent of the San Luis Obispo Creek watershed. Riparian vegetation along the creek is the same type of vegetation as described for Brizzolara Creek. Stenner Creek with its larger watershed is larger than Brizzolara Creek and in most years it flows throughout the year. However, it should be noted that during the summer, flows are usually extremely low and in dry years, the creek ceases to flow.

Between the mid-1970s and the late-1980s, fish surveys were conducted on the creek to determine if steelhead were present in the creek. Although not present at all survey locations, steelhead were present in Stenner Creek during all of the surveys (Connata 1991). During the surveys both young-of-year and juvenile steelhead were reported. Except in the extremely dry years, upper Stenner Creek provides spawning habitat for steelhead and rearing habitat for steelhead is present in both upper and lower reaches of the creek. Stenner Creek is not located within either of the action areas, but is downstream from the Farm Shop Storage Building demolition action area.

## 6.0 FEDERALLY LISTED SPECIES

As a result of the field and background review, NISTAC determined that the creeks in the action area may provide habitat suitable to support the south central California coast steelhead DPS, which is federally listed as threatened under the ESA and is managed under NMFS' jurisdiction.

### 6.1 South Central California Coast Steelhead

Steelhead (*Oncorhynchus mykiss irideus*) have been divided into DPSs. The south central California coast steelhead DPS is listed as threatened under the ESA. Steelhead are rainbow trout with an anadromous life history. Steelhead make spawning runs into rivers and small creeks flowing into the ocean. The south central California coast steelhead DPS encompasses most watersheds in Monterey and San Luis Obispo Counties. This DPS includes all naturally spawned populations of steelhead in streams from the Pajaro River (inclusive) to, but not including the Santa Maria River, California (NOAA 2006). This DPS does not include any artificially propagated steelhead stocks that reside within the historical geographic range of the DPS.

In general, adult steelhead return to rivers and creeks in the region from October to April. Spawning takes place in the rivers from December to April with most spawning activity occurring between January and March. Although juvenile steelhead can spend up to 7 years in freshwater before moving downstream as smolts (Busby et al. 1996), most steelhead remain in freshwater for 1 to 4 years before they out-migrate into the open ocean during spring and early summer (Goals Project 2000). Steelhead can spend up to 3 years in saltwater before returning to freshwater to spawn

(Barnhardt 1986). Since juvenile steelhead remain in the creeks year-round, adequate flows, suitable water temperatures, and an abundant food supply are necessary throughout the year in order to sustain steelhead populations. The most critical period is in the summer and early fall when these conditions become limiting.

Potential spawning areas require gravel bottoms and specific water conditions. Spawning habitat condition is strongly affected by water flow and quality, especially temperature, dissolved oxygen, and silt load, all of which can greatly affect the survival of eggs and larvae (USFWS 2004). Migratory corridors start downstream of the spawning areas and allow the upstream passage of adults and the downstream emigration of out-migrant juveniles. Migratory habitat condition is strongly affected by the presence of barriers, which can include dams, culverts, flood control structures, unscreened or poorly screened diversions, and degraded water quality (USFWS 2004). Both spawning areas and migratory corridors comprise rearing habitat for juveniles, which feed and grow before and during their outmigration. Non-natal, intermittent tributaries also may be used for juvenile rearing. Rearing habitat condition and function may be affected by annual and seasonal flow and temperature characteristics. Specifically, the lower reaches of streams often become less suitable for juvenile rearing during the summer. Rearing habitat condition is strongly affected by habitat complexity, food supply, or presence of predators of juvenile salmonids (USFWS 2004).

Steelhead require cool, clean, well-oxygenated water and appropriate gravel for spawning. The preferred water depth of spawning ranges from about 6 to 24 inches with an optimum around 14 inches. Steelhead spawn utilizing gravel about 0.25 to 5.0 inches in diameter. To some extent the size of gravel that can be used depends on the size of the spawning fish. Spawning and incubation gravels should contain less than 5 percent sand and silt to insure high permeability and oxygen content. While steelhead prefer mostly gravel-sized material for spawning, they would also use mixtures of sand and gravel, or gravel and cobble. Steelhead may spawn in intermittent streams, but juveniles move into perennial streams soon after hatching. Steelhead are generally located where water temperatures range from 50 to 59 degrees Fahrenheit (°F), and their upper sustainable temperature limit is 68°F. Steelhead are iteroparous, that is, an individual may survive spawning, return to the ocean and ascend streams to spawn again. However, it is unusual for steelhead to spawn more than twice, and it is usually the females that survive to spawn again.

Anadromous steelhead have two basic life histories: stream maturing (which enter freshwater with immature gonads) and ocean maturing (which enter freshwater with mature gonads). Stream maturing steelhead, also called summer steelhead, typically enter freshwater in the spring, early summer, or possibly fall. These fish move up to the headwaters of streams, hold and mature in deep pools, and spawn in late fall and winter.

Spawning migrations may be hindered by water velocities of 10 to 13 ft per second (ft/s). Spawning occurs in waters with velocities from 1 ft/s to 3.6 ft/s with an optimum around 2 ft/s. Larger steelhead can spawn at higher stream velocities.

Steelhead prefer main channels as opposed to small tributaries. The spawning season for steelhead extends from late December through April, although they would often move up coastal streams in the fall and then hold in deep pools until the spawning period (McGinnis 1984). Migrating fish require deep holding pools (greater than 9 feet), with cover such as underwater ledges and caverns

(CDFG 1995). Coarse gravel beds in riffle areas are used for egg laying and yolk sac fry habitat once eggs have hatched.

Juvenile steelhead hatch in 19 to 80 days depending on the water temperature. Gravel emergence occurs about 2 to 3 weeks after hatching. Fry often school and occupy quiet water along the banks of a stream. Back eddies, large woody debris, undercut banks, and undercut tree roots supply good fry habitat. Secondary channel pools with good cover are often used. As the fish grow they occupy individual territories and move to deeper and swifter water with coarser habitat. Most juvenile steelhead occupy riffles. Some of the larger fish may occupy runs or pools, particularly in the absence of coho salmon. Fry require water 2 to 14 inches deep, with an optimum around 8 inches. Parr utilize water from 10 inches deep to 20 inches deep with an optimum of 10 inches. Fry and juvenile steelhead prefer a cobble/rubble sized substrate material, which is slightly larger than that preferred for spawning. Large boulder substrate is important in runs and riffles. Surface turbulence and whitewater are used for overhead cover by juvenile steelhead. Summer rearing habitat with cool water pools and extensive cover for older juvenile steelhead is often limiting on California streams. Juvenile steelhead may migrate either upstream or downstream to find suitable habitat.

Juvenile steelhead are opportunistic drift feeders. While in freshwater steelhead subsist on aquatic invertebrates and terrestrial invertebrates that fall into the water. Larger steelhead are piscivorous (fish-eating).

### **6.1 Designated Critical Habitat**

The action area is included within designated critical habitat for the south central California coast steelhead DPS, which includes the San Luis Obispo Creek Hydrologic Sub-area (NOAA 2005). Brizzolara Creek corresponds to the end point of this hydrologic sub-area.

## **7.0 POTENTIAL IMPACTS**

The proposed action has the potential to adversely affect the south central California coast steelhead through take and disturbance, potential erosion and sedimentation into the creek during construction, but would have beneficial effects such as revegetation along the banks of Brizzolara Creek. These impacts could result in the temporary loss of habitat complexity and degradation of water quality, as discussed below, but with long-term benefits.

### **7.1 Take and Disturbance**

The proposed action could result in disturbance, injury, and/or mortality of steelhead during the demolition of the damaged farm storage building. However, the proposed action would take place during the summer when Brizzolara Creek is dry. In addition, all construction staging areas would be located within areas that are paved or have been previously disturbed. Therefore, no take or disturbance of steelhead is anticipated from project implementation.

### **7.2 Erosion and Sedimentation**

Steelhead could be indirectly affected by erosion and sedimentation during project construction right next to Brizzolara Creek. Water quality is an important factor for maintaining habitat quality for steelhead. As part of the proposed action, erosion control measures would be implemented along the Brizzolara Creek and the proposed action would be build during the summer when the creek is dry.

In addition, all disturbed areas will be revegetated with native species, which will reduce soil erosion post-project.

### **7.3 Beneficial Effects on Habitat**

After project construction, Cal Poly would regrade and revegetate the banks of Brizzolara Creek using native species, such as willows and shrubs. This work would also be conducted during the summer when the creek is dry to prevent any harmful effects on anadromous fish and other aquatic wildlife. Therefore, this component of the proposed action would represent a beneficial effect in the long-term.

## **8.0 AVOIDANCE AND MINIMIZATION MEASURES**

Cal Poly will be responsible for implementing the following measures to avoid and minimize any potential effects on the south central California coast steelhead and/or its designated critical habitat:

- All project activities in or adjacent to Brizzolara Creek will be performed only between June 15 and October 15.
- Disturbance to existing grades and vegetation will be limited to the actual site of the proposed action and necessary access routes. Placement of all roads, staging areas, and other facilities will avoid disturbance to streambank or stream channel habitat as much as possible.
- Erosion control and sediment detention devices (e.g., straw bales or silt fences) will be incorporated into the proposed action design and implemented at the time of construction. These devices will be in place during construction activities, and after if necessary, for the purposes of minimizing fine sediment and sediment/water slurry input to flowing water, and of detaining sediment laden water on-site. These devices will be placed at all locations where the likelihood of sediment input exists. A supply of erosion control materials will be kept on hand to cover small sites that may become bare and to respond to sediment emergencies.
- Cal Poly will inspect the performance of sediment control devices at least once each day during construction to ensure the devices are functioning properly. Should a control measure not function effectively, the control measure will be immediately repaired or replaced. Additional controls would be installed as necessary.
- Sediment will be removed from sediment controls once the sediment has reached 1/3 of the exposed height of the control. Sediment collected in these devices will be disposed of away from the collection site at approved disposal sites.
- All disturbed soils at each site will undergo erosion control treatment during construction and after construction is terminated. Treatment includes temporary seeding and sterile straw mulch. Any disturbed soils on a gradient of over 30 percent will have erosion control blankets installed. Permanent revegetation and tree replanting to replace vegetation removed by construction activities will take place in small openings in the erosion control blanket, with native species.
- Any stockpiles of soil used for fill material during construction will be covered with a tarp or erosion control blanket and silt fences will be installed appropriately to contain soils from moving into area waterways. If the local weather forecast indicates greater than 50 percent chance of rain, the action area will be "rain-proofed" with erosion control measures so that no sediment or turbidity enters the stream.

- All debris, sediment, rubbish, vegetation or other material removed from the channel banks, channel bottom, or sediment basins will be disposed of at an approved disposal site. All petroleum products chemicals, silt, fine soils, and any substance or material deleterious to listed species will not be allowed to pass into, or be placed where it can pass into the stream channel. There will be no side casting of material into any waterway.
- Cal Poly will exercise every reasonable precaution to protect Brizzolara Creek from pollution with fuels, oils, bitumens, calcium chloride, and other harmful materials.
- Construction by-products and pollutants such as petroleum products, chemicals, fresh cement, or deleterious materials will not be allowed to discharging into streams or waters, and will be collected and transported to an authorized disposal area.
- A plan for the emergency clean up of any spills of fuel or other material must be available.
- Equipment will be refueled and serviced at designated construction staging areas. All construction material and fill will be stored and contained in a designated area that is located away from channel areas to prevent transport of materials into adjacent streams. A silt fence will be installed to collect any discharge, and adequate materials for spill cleanup will be maintained on site.
- Construction vehicles and equipment will be maintained to prevent contamination of soil or water (from external grease and oil or from leaking hydraulic fluid, fuel, oil, and grease).
- Good housekeeping practices, use of safer alternative products, such as biodegradable hydraulic fluids, where feasible, and implementation of employee training programs will be utilized. Employees will be trained to prevent or reduce the discharge of pollutants from construction activities to waters and of the appropriate measures to take should a spill occur.
- In the event of a spill, work would stop immediately and NMFS will be notified.
- All natural woody riparian habitat will be avoided or preserved to the maximum extent practicable.
- Cal Poly will revegetate all disturbed areas with native plant species, which includes tree replacement at a ratio of 3:1. Plantings will be done during the optimal season for the species being planted.

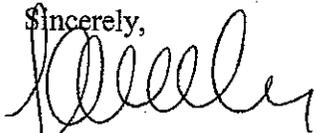
## **9.0 SUMMARY OF DETERMINATION**

With implementation of all the avoidance and minimization measures described in Section 8.0, the proposed action is not likely to adversely affect the south central California coast steelhead and/or its designated critical habitat.

Mr. McInnis  
May 11, 2007  
Page 9

If you should require any additional information regarding the proposed action or FEMA's request, please feel free to contact me at (510) 627-7027 or Ms. Lorena Solórzano-Vincent of NISTAC at (510) 874-3114. Thank you in advance for your assistance.

Sincerely,



Alessandro Amaglio  
Environmental Officer

Attachment

Cc: Dennis Castrillo, OES  
Charles Rabamad, OES  
Kim Busby, California Polytechnic State University

## 10.0 REFERENCES

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UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Southwest Region  
501 West Ocean Boulevard, Suite 4200  
Long Beach, California 90802- 4213

JUN 21 2007

In response refer to:  
2007/0382:MRM

Mr. Alessandro Amaglio  
U.S. Department of Homeland Security  
Federal Emergency Management Agency  
1111 Broadway, Suite 1200  
Oakland, California 94607-4052

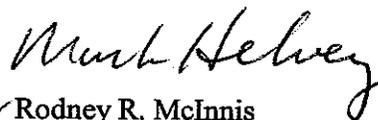
Dear Mr. Amaglio:

NOAA's National Marine Fisheries Service (NMFS) reviewed your May 11, 2007, letter concerning the farm shop storage building relocation project along Brizzolara Creek on the California Polytechnic State University campus in San Luis Obispo. NMFS understands this building was damaged during the San Simeon Earthquake on December 22, 2003. The north retaining wall of this building acts as a stream bank at this location. The proposed action is to remove the damaged building, relocate the structure to an upland location away from any water course, and restore the stream corridor and bank to natural conditions. The project is proposed to take place during the summer when this section of Brizzolara Creek is dry.

NMFS concurs with the Federal Emergency Management Agency's determination that the proposed action is not likely to adversely affect the South Central California Coast Evolutionarily Significant Unit for Federally threatened steelhead (*Oncorhynchus mykiss*) or designated critical habitat. Direct effects of this project on steelhead are not expected as the work will be conducted when the creek is dry and no steelhead are present. This project is also expected to benefit critical habitat by restoring the area to natural riparian conditions.

This concludes the informal section 7 consultation for this proposed action. Consultation must be reinitiated where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and: (1) if new information becomes available revealing effects of the action on listed species in a manner or to an extent not previously considered, (2) if the agency action is subsequently modified in a manner that causes an effect to listed species that was not considered, or (3) if a new species or critical habitat is designated that may be affected by this action. Please call Matt McGoogan at (562) 980-4026 if you have any question concerning this letter or if you require additional information.

Sincerely,

  
for Rodney R. McInnis  
Regional Administrator

cc: Lorena Solorzano-Vincent, FEMA contractor (NISTAC)



**OFFICE OF HISTORIC PRESERVATION  
DEPARTMENT OF PARKS AND RECREATION**

P.O. BOX 942896  
SACRAMENTO, CA 94296-0001  
(916) 653-6624 Fax: (916) 653-9824  
calshpo@ohp.parks.ca.gov  
www.ohp.parks.ca.gov



12 July 2007

Reply To: FEMA070605A

Alessandro Amaglio, AIA  
Environmental Officer  
Federal Emergency Management Administration  
US Department of Homeland Security  
1111 Broadway, Suite 1200  
Oakland, CA 94607-4052

Re: Farm Shop Storage Building, California Polytechnic State University, FEMA-1505-DR-CA,  
PW #242, Task Order, # 45, San Luis Obispo County, CA

Dear Mr. Amaglio:

Thank you for initiating consultation with me pursuant to the *2005 First Amended Programmatic Agreement Among the Federal Emergency Management Agency, The California State Historic Preservation Officer, The California Governor's Office of Emergency Services, and the Advisory Council on Historic Preservation*. FEMA is requesting I concur with the determination of the APE, that the Farm Shop Supply Building is not eligible for inclusion in the National Register of Historic Places (NRHP), and that no historic properties will be affected as described in Stipulation VII, C of the PA.

As I understand it, the undertaking consists of demolition of a portion of the Farm Shop Supply Building (FSSB), removal of the retaining wall, and restoration of the creek bed.

FEMA has determined the APE encompasses the storage building, the plowed open field to the west, and a segment of Brizzolara Creek, as shown in Figure 2b attached to your 4 June letter. Pursuant to Stipulation VII, A of the PA, I concur with the determination of the APE.

I also concur that the FSSB is not eligible for the NRHP.

In accordance with Stipulation VII of the PA, FEMA has conducted the Standard Project Review and determined no historic properties will be affected by this undertaking. I concur with this determination.

Thank you again for considering historic properties in your planning process. If you have any questions or concerns, please contact Amanda Blosser of my staff at (916) 653-9010 or at [ablosser@parks.ca.gov](mailto:ablosser@parks.ca.gov).

Sincerely,

*Susan K Shattox for*

Milford Wayne Donaldson, FAIA  
State Historic Preservation Officer

MWD:ab