

REC 16 EMERGENCY SERVICES EVALUATION

1.0 EXECUTIVE SUMMARY

The emergency services evaluation study identifies and characterizes available emergency services and those emergency service providers that respond to emergencies in the Big Creek Basin. Emergency service responders were consulted and asked to provide detailed information regarding their capabilities and service areas. The capabilities of the emergency response providers within the Big Creek Basin are summarized in terms of manpower, equipment and response times.

This report also summarizes available historical emergency response data within the Big Creek Basin, based on service area data provided by the response agencies and emergency service providers. While efforts were made to obtain five years of historical emergency response data from each service provider, data for many providers were not available. The study results discuss data from the Sierra National Forest, California Department of Forestry and Fire Protection, and Emergency Medical Service (EMS) responders in Fresno and Madera counties. Data was not available from the law enforcement agencies.

Historical emergency responses were first evaluated by reviewing the service area response data to determine which responses were located within the Big Creek Basin. The results of this evaluation indicate that of the total responses in the service area, the actual percentage of responses attributable to incidents in the Big Creek Basin are 3% for the Forest Service, 22% for the California Department of Forestry–Fresno County, 2% for the California Department of Forestry-Madera County, and 7% for EMS providers in Fresno and Madera Counties combined.

Response data was further evaluated by sorting the available responses by service provider and response type into seven geographical regions in the Big Creek Basin as follows: (1) Shaver Lake and nearby communities; (2) Huntington Lake and nearby communities; (3) community of Big Creek; (4) Balsam Meadow Forebay; (5) Florence Lake; (6) High Sierra Area along Kaiser Pass Road including Lake Thomas A. Edison; and (7) Mammoth Pool Reservoir. This evaluation of historical emergency response data indicates that emergency response incidents are generally higher in areas where residential communities are located, such as areas surrounding Shaver Lake and Huntington Lake. The data indicates that the majority of responses are for medical aid or law enforcement.

2.0 STUDY OBJECTIVES

- Characterize the existing emergency services (police, fire, search and rescue, and paramedic/ambulance) supporting the Big Creek ALP Project facilities and other requestors of emergency services in the Big Creek Basin.

- Document, if possible, the recent history of emergency responses to Big Creek ALP Project facilities and to other requestors of emergency services in the larger Big Creek Basin.
- Evaluate the need; if any, for enhanced emergency services as a result of modified Project operations and maintenance or recreational enhancements associated with Project protection, mitigation or enhancement measures (PM&E measures).
- Review SCE's Public Safety Plans.

3.0 STUDY IMPLEMENTATION

3.1 STUDY ELEMENTS COMPLETED

- Identified and characterized emergency service facilities (fire station, ambulance stations, etc.) supporting the Project facilities and Project-induced recreational activities.
- Developed a GIS database of emergency service facilities.
- Documented and summarized available recent history of emergency responses at Project facilities and adjacent areas. These activities would include local sheriff/California Highway Patrol/CDFG enforcement, search and rescue teams, local volunteer/SNF/CDF fire department responses, and paramedics.
- Reviewed and summarized SCE Emergency Action Plans.

3.2 OUTSTANDING STUDY ELEMENTS

- Evaluate the need, if any, for improved emergency services as a result of recreational enhancements from project PM&E measures, and identify the parties potentially responsible for funding emergency services improvement.

4.0 STUDY METHODOLOGY

This emergency services evaluation involved consultation with emergency service providers to identify regional facilities, service boundaries, and resources located in the Big Creek Basin. These emergency service providers included: USDA Forest Service (USDA-FS), Fresno County Sheriffs Department, Madera County Sheriffs Department, California Department of Forestry and Fire Protection (CDF), local volunteer fire departments, California Highway Patrol (CHP), and paramedic/ambulance service providers (EMS). Since the Big Creek Basin is located in Fresno and Madera counties, representatives from the above listed agencies from both counties were contacted.

Locations or facilities studied in this evaluation include SCE Project facilities, nearby recreation facilities, and residential and commercial areas within the Big Creek Basin. Records of emergency responses at and near Project facilities and nearby recreation areas for the past five years were requested through consultation with service providers.

Consultation with emergency service providers identified facilities, service boundaries, and emergency service resources (i.e., stations and equipment) located in the Big Creek Basin. Each agency/service provider was requested to provide information on station locations, service area/boundaries, equipment and staffing at stations, average response time to Big Creek Basin reservoirs, historical emergency response data for incidents in the Big Creek Basin for five years in terms of: total yearly number of responses, emergency type, number of responders, response time, and emergency location.

To facilitate analysis of the emergency response data provided by the responders, the Big Creek Basin was divided into seven geographic regions. Each of these included in the geographic characterization of emergency responses are defined as follows:

1. Shaver Lake Region – The Shaver Lake Region is bounded by residential areas to the west, Dinkey Creek Road to the south, and Perimeter Road along the north and east.
2. Huntington Lake Region – The Huntington Lake Region is bounded by Highway 168 (Hwy 168) to the south, approximately a mile of Kaiser Pass Rd. to the east, recreation facilities north of Huntington Lake, and a mile of Huntington Lake Road to the west.
3. Big Creek Region – This area includes the town of Big Creek and SCE facilities adjacent to the town.
4. Balsam Meadows Region – This area includes the parking lot/snow park and the immediate area around Balsam Meadows Forebay.
5. Florence Lake Region – This region includes Florence Lake and the immediate area around Florence Lake.
6. Other High Mountain Region – This region consists of areas east of Kaiser Pass including Lake Thomas A. Edison, Portal Forebay and other high mountain areas along Kaiser Pass Road.
7. Mammoth Pool Region – The Mammoth Pool Region includes the immediate area around the reservoir, recreation facilities, and Mammoth Pool Road.

The regions were focused around major Big Creek Basin lakes (Shaver, Huntington, Florence and Mammoth Lakes), moderate forebays (Balsam Meadow Forebay), communities (Big Creek) and all other areas east of Kaiser Pass (Other High Sierra Areas). Emergency response data was subsequently sorted by these seven regions, location within region, responding agencies or service, and type of emergency response.

A concerted effort was made to contact and request historical response data from each emergency response agency through multiple phone calls and office visits. Agencies

provided information on their service areas and response procedures. However, five years of historical data were often not available from the agencies. Several agencies did not have the manpower resources to compile the records nor were they able to provide access to their files, due to security reasons. Therefore, data presented in the results is the most complete available.

A review and evaluation of SCE's Public Safety Plans (PSP) and Emergency Action Plans (EAP) was also conducted. SCE develops and updates, as needed, both PSP and EAP for each dam facility in compliance with the Federal Energy Regulatory Commission (FERC) Division of Dam Safety and Inspections, Guidelines for Public Safety at Hydropower Projects, (18 Code of Federal Regulations [CFR] Part 12). The PSP documents installation of warning and safety devices is in compliance with 18 CFR §12.42. Both EAP's and PSP's for Project facilities were reviewed for this study.

5.0 STUDY RESULTS AND ANALYSIS

5.1 EMERGENCY SERVICES SETTING

Characterizing and delineating emergency service responsibilities in the Big Creek Basin presents challenges because many of the emergency response agencies have overlapping response area boundaries. While the Project facilities are located within boundaries of the Sierra National Forest, the USDA-FS is often not the first agency to receive an emergency call or to respond to emergencies within forest boundaries.

There are three main categories of emergency services: fire, law enforcement, and medical. Agencies that respond to each emergency service category range from federal, state, county and local. While most agencies respond to and are trained for a main category of emergency, many carry out multiple and sometimes overlapping functions in cooperation with other agencies. For example, fire departments respond to fire emergencies and often medical emergencies as well. The County Sheriffs Department's main responsibility is law enforcement however, they also coordinate and direct search and rescue efforts. The overlap in functions provides flexibility for agencies to assist each other either in breadth by numbers or in depth by capability.

For each emergency type there are typically primary and secondary responders that are identified depending on various factors, such as which agency receives the call first or which has personnel and equipment nearest to the emergency. Many locations in the Big Creek Basin fall into a "gray area," where a single primary responsible agency cannot clearly be determined. Emergency service agencies operating in the Big Creek Basin often have Cooperative Services Agreements and/or Memoranda of Understanding that formalize mutual assistance and support in emergencies. These agreements allow one emergency service agency to call upon others participating in the agreement to provide additional resources when more resources are needed to respond to an emergency or the location is closer to another agency's resources.

Each Project reservoir/facility and nearby recreation facilities are served by all emergency service agencies, which include USDA Forest Service (USDA-FS), Fresno

County Sheriffs Department, Madera County Sheriffs Department, California Department of Forestry and Fire Protection (CDF), local volunteer fire departments, California Highway Patrol (CHP), and paramedic/ambulance service providers (EMS). The emergency responders have personnel and equipment at various locations in the Big Creek Basin.

SCE has an agreement with the County of Fresno Sheriff's Department to maintain a location described as the "Relief Dam Tender's Cottage at Huntington Lake" to provide seasonal emergency response support for summer recreationists in the Huntington Lake area. Table REC 16-1 summarizes the emergency response stations in the Big Creek Basin and the general service areas supported by these stations. The USDA-FS has four fire stations, two in each county to respond to fire emergencies in the forest. These are supplemented by CDF fire stations distributed in each county. CHP service in the Basin is generally focused along Hwy 168 in Fresno County and Minarets Road in Madera County. County Sheriffs patrol are dispatched from substations at Auberry, the Minarets Work Center (in the summer months), and at Bass Lake. EMS system providers have staff and ambulances at Oakhurst and Shaver, which are primary responders to medical needs in the Basin. Additional ambulances are located at Coarsegold and Auberry. Figures REC 16-1, REC 16-2, and REC 16-3 illustrate the station locations of the primary emergency service providers in the Big Creek Basin.

5.2 FIRE RESPONSE CAPABILITIES

Land uses in the Big Creek Basin range from undeveloped tracts of wilderness such as the Ansel Adams Wilderness, to highly developed residential/resort areas near Huntington and Shaver Lakes. Fire emergencies include wildland fires and structural fires. The USDA-FS, CDF, and local volunteer fire departments together respond to all fire emergencies in the Basin through a combination of primary response duties and mutual aid agreements. Local volunteer fire departments are primarily charged with saving life and property from fires, while CDF and USDA-FS are primarily charged with handling wildlands fires. Since some structural fires in the area have the potential to spread to adjacent vegetation and wildlands, it is common that CDF would respond to structural fires together with the local volunteer fire department(s).

There are four types of fire engines that are used to fight the various types of fires that occur within the Basin. These include:

- Type I engines that pump water from a hydrant at 1,000 gallons-per-minute (gpm), carry a 20 foot extension ladder, and require a minimum of 4 persons to operate.
- Type II engines that pump water from a hydrant at 500 gpm and require a minimum of 3 persons to operate.
- Type III engines that pump water at 120 gpm from a water tank they carry with a minimum 300 gallon capacity, and require a minimum of 3 persons to operate.
- Type IV engines that pump water at 50 gpm from a 200 gallon water tank they carry on a 4 WD truck and require 3 persons to operate.

Type I and II engines are typically used to fight fires in urban areas, where fire hydrants are available. Type I and II engines can also carry specialized equipment based on the needs of its service area such as self-contained breathing apparatus, and paramedic equipment. Type III and IV engines are designed to fight wildland fires and are higher clearance vehicles equipped with off road tires, and carry a supply of water and foam to locations, where hydrants are not available. Water tenders are vehicles that haul water to support fire engines in remote areas, where hydrants are not available and their typical tank capacities range from 1,500 to 3,000 gallons. The types of fire fighting equipment located at each station are included in the following descriptions of the fire response capabilities of each agency.

5.2.1 U.S. FOREST SERVICE (USDA-FS) CAPABILITY

The USDA-FS is the primary responder to wildland fires on USDA-FS lands. A mutual aid agreement exists between USDA-FS, Fresno and Madera Counties, and CDF to assist when additional resources are needed. This allows the USDA-FS to assist with structure fires if there is danger that a fire might spread to vegetation and wildland areas. In return, other fire agencies can assist on wildland fires if more resources are needed.

The USDA-FS has four fire stations in the Big Creek Basin (Table REC 16-2). The Big Creek and Mountain Rest stations are located in Fresno County and the North Fork and Clearwater stations are located in Madera County. Each station has one or two fire engines capable of traversing unpaved roads along with other support vehicles and equipment.

Average response times from USDA-FS fire stations to various locations in the Big Creek Basin are as follows:

- Balsam Meadows Area – 25 minutes
- Shaver Lake Area – 20 minutes
- Huntington Lake Area – 20 minutes
- Florence Lake and Other High Mountain Areas– 2 hours
- Mammoth Pool Reservoir Area– 1.25 hours
- Redinger Lake – 25 minutes

5.2.2 CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION (CDF) CAPABILITY

CDF responds to fire emergencies in the Big Creek Basin from two units: the Fresno-Kings and the Madera-Mariposa Units. CDF has the primary responsibility to respond to wildland fires on state lands. However, CDF supports the USDA-FS, through mutual aid agreements, with fighting fires on USDA-FS lands. Within the Big Creek Basin, CDF and county fire agencies typically act together on most incidents. In general, CDF primarily focuses on wildland fires, while county agencies primarily respond to structural fires. A Cooperative Fire Protection Agreement between Madera County, Fresno County, and CDF allow the counties to request CDF resources to assist with structure

fires when additional resources are needed and/or the location of CDF resources are closer to the emergency.

The Fresno-Kings Emergency Command Center (ECC) located at the Air Attack Base at the Fresno Air Terminal dispatches CDF resources at the Shaver Lake station (Figure REC 16-1). The ECC dispatches local volunteer fire departments at Big Creek, Shaver Lake, and Huntington Lake (Table REC 16-3). The ECC stated that they dispatch an average of 16,000 emergency calls throughout the two counties (Fresno and Kings) annually.

The Madera-Mariposa Ranger Unit is responsible for the protection of state lands in Madera and Mariposa Counties. The Mariposa-Madera Unit ECC dispatches local volunteer fire departments from Bass Lake and Rancheria/North Fork, as well as the Mariposa-Madera Unit CDF resources (Table REC 16-3).

Average response times from the Fresno County CDF fire station to various Big Creek Basin regions are as follows:

- Balsam Meadows Region – 15 minutes
- Shaver Lake Region – 5 minutes
- Huntington Lake Region – 20 minutes
- Florence Lake and Other High Mountain Region – 2 hours
- Mammoth Pool Reservoir Region – 1.25 hours
- Redinger Lake Region – 20 minutes

Average response times from the Madera County CDF fire stations to various Big Creek Basin regions are as follows:

- Balsam Meadows Region – not available (N/A)
- Shaver Lake Region – 1 hour
- Huntington Lake Region – N/A
- Florence Lake and Other High Mountain Region– N/A
- Mammoth Pool Reservoir Region – 40 minutes
- Redinger Lake Region– N/A

5.2.3 VOLUNTEER FIRE RESPONSES RESOURCES

Volunteer fire companies in unincorporated areas of Fresno and Madera Counties have a mutual aid contract with CDF. Volunteer fire companies are dispatched through CDF command centers and respond to the same calls as CDF stations unless resources are already in service. The county volunteer companies generally respond to structural fires. Other emergencies to which they respond include medical emergencies and motor vehicle accidents. Incident response depends on incident type, needed resources, resource availability, and the nearest station to the incident. In situations where volunteer companies are understaffed or closed, CDF stations take over the responsibility for emergency calls in that area.

A total of five volunteer fire companies can respond to fire emergencies that may occur in the Basin (Figure REC 16-1). Big Creek Company 61, Huntington Lake Company 62, and Shaver Lake Company 60 are located in Fresno County. Bass Lake Company 14 and North Fork Company 11 are located in Madera County. Equipment available at each company is listed in Table REC 16-4.

Average response times from the nearest local volunteer company fire stations to areas in their respective service area in the Big Creek Basin are as follows:

- Balsam Meadows Region – 15 minutes
- Shaver Lake Region – 5 minutes
- Huntington Lake Region – 5 minutes
- Florence Lake and Other High Mountain Region – 2 hours
- Mammoth Pool Reservoir Region – 1.25 hours
- Redinger Lake Region – 25 minutes

5.3 LAW ENFORCEMENT RESPONSE CAPABILITIES

Law enforcement in the Basin is provided by several agencies including the CHP, Fresno County Sheriffs, Madera County Sheriffs, USDA-FS and CDFG. The USDA-FS patrols and enforces safety at recreation areas and on USDA-FS lands. The CDFG wardens enforce the hunting and fishing regulations.

5.3.1 CALIFORNIA HIGHWAY PATROL CAPABILITY

The CHP jurisdiction includes all state highways and county roads in the Big Creek Basin including Hwy 168, Jose Basin Road, Italian Bar Road, and Minarets Road. The CHP does not maintain an operation base within the Basin. Officers patrol the Basin during the day and early evening and remain on-call from their homes through the night. CHP officers are on duty twenty-four hours a day, either on-patrol or on-call.

5.3.2 COUNTY SHERIFF DEPARTMENTS CAPABILITY

The Fresno and Madera Counties Sheriffs Departments have jurisdiction and patrol unincorporated areas of their respective counties.

Fresno County Sheriffs Department Capability

The Fresno County Sheriffs Department's jurisdiction includes the Fresno County portion of the Basin and maintains a substation in Auberry manned with 5 deputies (Figure REC 16-2). SCE has an agreement with the County of Fresno Sheriff's Department to maintain a location described as the "Relief Dam Tender's Cottage at Huntington Lake" to provide seasonal emergency response support for summer recreationists in the Huntington Lake area. Typically, 2 of the 5 deputies from Auberry are on-patrol. Deputies regularly patrol areas in the Basin west of Kaiser Pass including Huntington Lake, Shaver Lake, and areas southwest of Shaver Lake, due to the higher density of residents and recreationists. Regular patrols are not conducted in areas east

of Kaiser Pass, because of the low density of people and distance between the recreation facilities (Engellenner pers. comm. 2003). The USDA-FS, rather than County Sheriffs Department, responds to calls from the backcountry east of Kaiser Pass. Response times provided by the Sheriffs accounts vary greatly, depending on the location of available deputies at the time of the call in relation to the incident location. Since deputies are always on patrol during their shift, it is possible they can be far from the incident location.

Range of response times to regions in the Big Creek Basin are as follows:

- Balsam Meadows Region – 15 minutes to 1 hour
- Shaver Lake Region – 5 to 35 minutes
- Huntington Lake Region – 3 minutes to 1 hour
- Florence Lake and Other High Mountain Region – at least 2 hours

Madera County Sheriffs Department Capability

The Madera County Sheriffs Department has 12 deputies, 2 supervisors, and 1 commander located at the Oakhurst substation and is responsible for law enforcement in the Madera County portion of the Big Creek Basin. The Madera County Sheriff's Department also maintains a substation at Bass Lake, which serves the Mammoth Pool area (Figure REC 16-2). Three deputies are typically stationed at the Bass Lake substation. These officers patrol the areas around Bass Lake and Mammoth Pool. In addition, this substation is used to coordinate search and rescue efforts in the Mammoth Pool Region and the Ansel Adams Wilderness east of Mammoth Pool.

During the summer months, a deputy is stationed at the USDA-FS Minarets Work Center, approximately 4.5 miles north of Mammoth Pool. This deputy is responsible for providing law enforcement to this portion of the County, thereby reducing the response time within the region. The deputy stays at the USDA-FS work center during weeknights and patrols areas along the Minarets Road during the day. Response time to the Mammoth Pool Region varies depending on the deputy's location and the emergency location when a call is received. (Lt. Gothier pers. comm. 2003). The Bass Lake substation responds to calls from the Mammoth Pool Region when the deputy at Minarets Work Center is off duty and on weekends. The deputy stationed at the Minarets Work Center works cooperatively with USDA-FS staff in response to incidents.

5.3.3 USDA-FS CAPABILITY

The USDA-FS rangers are first responders for law enforcement on USDA-FS lands and recreation facilities. The rangers also respond to search and rescue needs, as required. Ranger stations are located at Shaver Lake, Huntington Lake, and the High Sierra Station east of Kaiser Pass. The range in response time to high mountain facilities depends on the incident location in relation to the High Sierra Station. Traffic on Kaiser Pass Road, incidents in roadless areas, and rough terrain contribute to the response time length.

When staff are not on patrol within the vicinity of the incident, all law enforcement agencies have similar average response times to the Big Creek Basin in their jurisdiction.

- Balsam Meadows Region – 15 minutes
- Shaver Lake Region – 5 minutes
- Huntington Lake Region – 20 minutes
- Florence Lake and Other High Mountain Region – 15 minutes to 1 hour
- Mammoth Pool Reservoir Region – 1.25 hours
- Redinger Lake Region - 20 minutes

5.4 MEDICAL RESPONSE CAPABILITIES

5.4.1 SEARCH AND RESCUE CAPABILITY

County Sheriffs Departments are the primary agencies that organize, coordinate, and implement search and rescue operations. Both Fresno and Madera County Sheriffs Departments coordinate a volunteer search and rescue group. All volunteers are trained in search and rescue techniques for a wide variety of situations. Other equipment available to support search and rescue activities include air ambulances stationed at Fresno Air Terminal and the CHP air rescue helicopter stationed in Fresno. While the County Sheriffs coordinate and direct the search and rescue efforts, several other agencies and groups typically participate, such as specially trained volunteer search and rescue units, EMS, and helicopter units, depending on the scale of effort needed.

Search and rescue group response times vary. Factors that contribute to this variability include the number of people, the specialized equipment needed, and travel time required to reach the search and rescue location. In general, the response time can range between 20 minutes and 2 hours. Response time by air from the Fresno Air Terminal to the Big Creek Basin is approximately 20 minutes.

5.4.2 PARAMEDIC/AMBULANCE CAPABILITY

The Emergency Medical Services system includes ambulance and life support services that provide emergency care and transport to area medical facilities. EMS providers have identified stations where equipment and staff are located. However, the operating areas of the ambulance units are dynamic and are determined by how many units are committed at any one time.

In Fresno County, EMS units are stationed at Shaver Lake and Auberry (Figure REC 16-3). Each station is staffed with one ambulance unit and two technicians, 24 hours a day and 7 days per week. The station at Shaver Lake is the first to respond to calls from the Shaver Lake and Huntington Lake regions. If another call comes in while the Shaver Lake unit is out, the Auberry unit will respond. As soon as both units are out on calls, American Ambulance, on contract with the county, would move an ambulance unit

into the Basin from Clovis/Fresno. EMS units that respond to emergencies in the Basin in Fresno County have the following average response times:

- Balsam Meadows Region – 15 minutes
- Shaver Lake Region – 5 to 15 minutes
- Huntington Lake Region – 20 minutes
- Florence Lake and Other High Mountain Regions – 2 hours; 15-20 minutes by helicopter

In Madera County, EMS services are dispatched by the CDF office in Mariposa. EMS units in eastern Madera County that would respond to calls from the Mammoth Pool region are stationed at Oakhurst and Coarsegold (Figure REC 16-3). The Oakhurst unit has 4 ambulance units, but only one unit is staffed by two persons 24 hours a day and 7 days per week. The Coarsegold station has one ambulance unit that is also staffed by two persons 24 hours a day and 7 days per week. When the regularly staffed unit at Oakhurst is out on a call, the Coarsegold unit will move to Oakhurst to be available. If both regularly staffed units at Oakhurst and Coarsegold are out on calls, other trained staff, who usually conduct administrative business at the Oakhurst station would take a second ambulance unit to respond. The Oakhurst unit is typically the first responder to calls from the Mammoth Pool region. The Bass Lake station has one ambulance unit staffed by two persons 24 hours a day and 7 days per week. The Oakhurst unit also fills in for the Bass Lake region, when the Bass Lake unit is out on call. EMS air ambulances stationed at the Fresno Air Terminal can handle life flight needs with a 15-20 minute average response time to the Basin.

EMS units that respond to emergencies in the Basin in Madera County have the following average response times:

- Mammoth Pool Reservoir Region – 1.25 hours
- Redinger Lake/Main Stem San Joaquin - 20 minutes

The nearest emergency/urgent medical centers and hospitals to the Basin are located in Clovis, Fresno, and Oakhurst (Table REC 16-5).

5.4.3 ORGANIZED SEARCH AND RESCUE VOLUNTEER GROUPS

Madera County Search and Rescue Team

The Madera County Search and Rescue Team has 56 volunteers all trained by the Sheriffs Department to Sartec standards (in January 2004). Search and Rescue teams are specialized, and include Mounted, Snowmobile, 4WD and Quad Team, and Technical Team. The Madera County Search and Rescue Team also relies on volunteers from the COPS Program and Sheriffs Explorers program for assistance in foot searches. In addition, the Madera County Sheriffs Department works closely with the USDA-FS, and the Fresno County Sheriffs Department (in regard to the montaine regions of the county (Study Related Areas) (Deputy Baugh, pers. comm. 2004).

Fresno County Search and Rescue Team

The Fresno County Search and Rescue Team has approximately 82 members in the various volunteer units in 2004. These numbers continually fluctuate based on retirements and new members. The Fresno County Search and Rescue Team is comprised of 16 sworn members (1 lieutenant, 3 sergeants, 12 deputy sheriff's), 21 Mountaineers, 12 Snowmobilers, 21 Jeep Unit members, and 28 Horse Posse members. The training for each unit varies depending on the required tasks for each resource. Additionally, they have approximately 25 volunteer members of the Sheriff's Air Squadron who may assist as needed. Not assigned to the Fresno County Search and Rescue Team, but utilized extensively, are two Fresno County Sheriff's Department helicopters and their associated crews. Other Fresno County Search and Rescue Team resource needs are requested and coordinated through the Governor's Office of Emergency Services on a mutual aid basis (Lt. Beazley, pers. comm. 2004).

5.5 HISTORICAL EMERGENCY RESPONSE DATA

Historical emergency response data in the Big Creek Basin from the past five years were requested from eight agencies: USDA-FS, CDF (Fresno and Madera), EMS (Fresno and Madera), CHP, and Sheriffs (Fresno and Madera). Table REC 16-6 summarizes the historical response data provided by the agencies and/or EMS providers. Several agencies did not have the resources in manpower to compile the records nor were they able to provide access to their files, due to security reasons. Therefore, data presented in the results is the most complete available.

Emergency response data was provided by the USDA-FS Sierra National Forest, Fresno and Madera County CDF offices, and by EMS providers in Fresno and Madera Counties. The CHP, Fresno County Sheriff and Madera County Sheriff did not provide response data. The data provided by the agencies varied in format and period of record. After comparing the data sets, 2001 was the only year for which emergency response data was available from each of the agencies that provided information. Evaluation of the data was further complicated in that the agencies and entities provided data by various types of criteria. For example, one agency may define a "response", as attending to a vegetation fire while another agency may not. All the agencies record and define responses differently.

Table REC 16-7 provides a summary total of the number of responses by year for the period of record provided by each agency (USDA-FS, CDF Fresno County, CDF Madera County, and EMS providers). However, due to the inconsistency of the data sets provided by the agencies and EMS responders, regional emergency response trends over time can not be determined. In addition, within an agency the criteria used to categorize an incident often changed over time.

Table REC 16-8 provides a breakdown on the historical emergency responses by agency and the percentage of responses in the Big Creek Basin. The USDA-FS responded to a total of 7,188 incidents over their available period of record (1998 and 2000-2002) and of that number, 240 responses or 3% were attributable to incidents in

the Big Creek Basin. The CDF Fresno County responded to 2,054 responses over their available period of record (1998 to 2001) and of that number 454 responses or 22% were attributable to incidents in the Big Creek Basin. The CDF Madera County responded to 1,122 responses over their available period of record (1998 to 2002) and of that number 20 responses or 2% were attributable to incidents in the Big Creek Basin. Overall Fresno and Madera County EMS data from 2001 and 2002 totaled 791 incidents in the eastern portion of their County service areas, and of that number 115 responses or 7% were attributable to incidents in the Big Creek Basin.

Table REC 16-9 provides a summary of the USDA-FS emergency responses made to locations within the Big Creek Basin for the period of record (1998 and 2000 through 2002) organized by type of response. The USDA-FS responded to 240 incidents within the Big Creek Basin. Huntington Lake and Mammoth Pool show higher numbers of responses over the data period at 115 and 60, respectively. The USDA-FS also responded to 33 incidents in other high mountain regions. The data indicate USDA-FS personnel respond to law enforcement situations more than other types of emergencies by far, a total of 203 over the data period.

CDF historical emergency response data for approximately five years totaled 426 incidents (Table REC 16-10). This total is lower than the response total in Table REC 16-8 by 48, because the precise location of the 48 incidents could not be identified. These incidents are not included in Table REC 16-10. The data indicate that the majority of CDF responses are for medical assistance needs. Medical assistance responses totaled 320 compared to 58 responses to fires (Table REC 16-10). The majority of medical assistance responses are concentrated at Shaver Lake and Huntington Lake.

EMS emergency response data from Fresno and Madera counties were available for 2001 and 2002 (Table REC 16-11). For these two years, responses totaled 115. Need for medical aid dominated EMS response types (111 responses). These include situations such as trauma, shortness of breath, allergic reactions, chest pains, animal bites, heat/cold exposure, falls, and general illnesses, based on a review of the data. Calls for EMS assistance concentrated in three areas: Shaver Lake, Huntington Lake, and other high mountain regions. EMS participation on search and rescue efforts focuses on emergency care and transport of injured persons to medical facilities. For EMS providers in Fresno and Madera counties, 11 responses or 9.6% of their 115 total emergency responses pertain to search and rescues (Table REC 16-11).

In general, emergency responses are higher in areas where residential communities are located in the vicinity of recreation facilities such as areas surrounding Shaver Lake and Huntington Lake, and the majority of the responses are for medical aid or law enforcement.

5.6 SCE EMERGENCY ACTION PLANS AND PUBLIC SAFETY PLANS

The FERC requires the development and annual review and update of Emergency Action Plans (EAPs) per 18 CFR 12.24 to provide early warning to upstream and downstream inhabitants, property owners, operators of water-related facilities, recreational users, and other persons in the vicinity potentially affected by an emergency at a dam facility. This requirement applies to any licensed Project with a dam taller than 32.8 feet above the streambed, a gross storage capacity of more than 2,000 acre-feet (af), and whose failure, as determined by the FERC Regional Engineer, might endanger human life or cause significant property damage.

FERC provides guidelines on the content of each EAP; instructions to Project operators; detailed plans for notifying potentially affected persons; procedures for controlling the flow of water; plans for training Project operators, attendants, and other responsible personnel to respond properly; and a summary of the study used for determining the upstream and downstream areas that may be affected by sudden release of water.

Licensees must conduct a comprehensive review of their EAPs at least once a year. Updates of EAPs must be filed with the FERC Regional Engineer if: 1) any changes take place to names or titles of any personnel with specified responsibilities in an emergency, or any changes to other critical emergency notification information and/or 2) significant upstream or downstream changes that might affect flow and the extent of the affected area in the event of a Project emergency.

FERC requires independent inspectors to conduct inspections of facilities every five years. Independent inspectors make recommendations based on field observations on any corrective measures necessary, the reasonable time to carry out each corrective measure, and any new or additional monitoring equipment or methods that may be required. The licensee has 60 days after the independent inspector report is filed to submit a proposed corrective plan and schedule. The Licensee can propose to take no action or an alternative action from the independent inspector recommendations, however, a detailed analysis and justification must be provided to the FERC Regional Engineer to review. Independent inspections of SCE facilities were last conducted in 2001.

SCE maintains EAPs for all applicable facilities and last updated them in February 2003. The EAP for each dam or group of dams describes the location, construction history, maximum reservoir elevation, mode of operation, coordination of flows, and a list of facilities and residences potentially affected by a dam failure. The EAP also lists specific SCE personnel and their roles and responsibilities in the event of a dam emergency. The EAP addresses alternative access routes should the primary route to access the area be inundated and discusses the coordinated use of the SCE helicopter with the USDA-FS. Appendices to each EAP provide location specific analysis of a dam break, plans for training, exercising, updating, posting the EAPs, and consultation documentation with emergency response agencies. Each EAP is approved by the FERC after physical inspection of the facilities and review of the document. Up-to-date copies of the completed EAP are distributed to the following list of agencies:

- California Division of Safety of Dams
- California Office of Emergency Services
- Madera County Office of Emergency Services
- Fresno County Sheriff
- Madera County Sheriff
- U.S. Forest Service, Sierra National Forest
- U.S. Bureau of Reclamation, Friant
- California Highway Patrol
- Federal Energy Regulatory Commission
- Fresno County Office of Emergency Services
- Fresno Police Department
- Madera Police Department
- Clovis Police Department

Other Licensee responsibilities include quality control programs for construction and repair work, use of instruments to monitor structural integrity, use of warning and safety devices, appropriate navigational clearance of power and communication lines and gas pipelines, and testing of spillway gates. SCE complies with each item listed. While these are all important, the responsibility most closely associated with this emergency response evaluation is the installation and maintenance of warning and safety devices.

SCE maintains Public Safety Plans (PSPs) for each Project, which shows the locations of warning and safety devices installed at each Project facility. Warning devices include informational signage, sirens, buoys and boat barriers across spillway openings, gates, and fences. Table REC 16-12 summarizes safety devices at SCE Project facilities.

6.0 PERSONAL COMMUNICATION

Deputy Baugh. 2004. Madera County Sheriff's Department. Personal Communication with Nathan Atherstone, ENTRIX, Inc.

Engellenner, Bob. 2002 and 2003. Fresno County Sheriff's Department. Personal Communication with Teresa Fung and Brett Rushing, ENTRIX, Inc.

Lt. Beazley. 2004. Fresno County Sheriff's Department. Personal Communication with Nathan Atherstone, ENTRIX, Inc.

Lt. Gothier. 2002 and 2003. Madera County Sheriff's Department, Bass Lake substation. Personal Communication with Teresa Fung and Brett Rushing, ENTRIX, Inc.

TABLES

Table REC 16-1. Emergency Service Responders by the Big Creek Basin Regions.

Agency	Big Creek Basin Regions						
	Shaver Lake	Huntington Lake	Balsam Meadows	Florence Lake	Other High Mountain (Lake Edison/Portal, South Fork San Joaquin)	Redinger Lake/ Main Stem San Joaquin	Mammoth Pool Reservoir
Fire							
USDA-FS							
Big Creek (Station 32)	X	X	X	X	X	X	
Mountain Rest (Station 31)	X	X	X	X	X		
North Fork (Station 51)						X	X
Clearwater (Station 52)							X
CDF							
Fresno-Kings United							
Shaver Lake (Station 4352)	X		X			X	
Mariposa-Madera Unit							
Rancheria/North Fork (Station 4255)						X	X
Bass Lake (Station 4254)						X	X
Volunteer							
Shaver Lake (Company 60)	X						
Big Creek (Company 61)							
Huntington Lake (Company 62)		X	X				
Bass Lake (Company 14)						X	X
North Fork (Company 11)						X	X
Law Enforcement							
CHP							
Fresno Sheriffs Department	X	X	X				X
Auberry	X	X	X	X	X		
Huntington Lake (Summer)		X					
Madera Sheriffs Department							
Minarets Work Center							X
Bass Lake						X	
USDA-FS							
Emergency Medical Services							
Coarsegold						Backup for Oakhurst	Backup for Oakhurst
Oakhurst						X	X
Auberry	Backup for Shaver	Backup for Shaver	Backup for Shaver	Backup for Shaver	Backup for Shaver		
Shaver	X	X	X	X	X		
Sheriff's Department							

Table REC 16-2. USDA-FS Fire Response Resources in the Project Vicinity.

County	Station Location	Equipment
Fresno County	Big Creek (Station 32)	1 Type III Engine 1 Squad (Cover Engine)
	Mountain Rest (Station 31)	2 Type III Engines 1 Squad (Cover Engine)
Madera County	North Fork (Station 51)	2 Type III Engines 2 Squad (Cover Engine) 2 Water Tenders
	Clearwater (Station 52)	1 Type III Engine 1 Squad (Cover Engine)

Table REC 16-3. CDF Fire Response Resources in the Project Vicinity.

County	Station Name/ Location	Equipment
(Fresno-Kings Unit) Fresno County	Shaver Lake (Station 4352)	1 Type III Engine 1 Water Tender
(Mariposa-Madera Unit) Madera County	Rancheria/North Fork (Station 4255)	2 Type III Engines
	Bass Lake (Station 4254)	1 Type III Engine

Table REC 16-4. Volunteer Fire Response Resources in the Project Vicinity.

County	Station Name/ Location	Equipment
Fresno County	Shaver Lake Company 60	1 Structure engine with EMS equipment 1 Type III engine 1 Type I engine 1 Water Tender 1 Squad (Cover Vehicle)
	Big Creek Company 61	1 Type III Engine 1 Water Tender
	Huntington Lake Company 62	Type I Engine 1 Water Tender Search and Rescue Equipment
Madera County	Bass Lake Company 14	1 Type III Engine 1 Water Tender Search & Rescue Equipment Breathing Support Unit
	North Fork Company 11	2 Type I Engines 2 Water Tender 2 Squad (Cover Vehicle)

Table REC 16-5. Emergency Medical Facilities near the Big Creek Basin.

Emergency/Urgent Medical Care Centers	
Oakhurst Community Medical Center 48677 Victoria Lane #102 Oakhurst	Clovis Urgent Care Medical Center 2200 Clovis Ave. Clovis
Lori Ruffner Medical Center 2755 Herdon Ave. Clovis	Concentra Medical Center 2265 N 1 st St. Fresno
Hospitals	
Cedar Vista Hospital 7171 N Cedar Ave. Fresno	Kaiser Permanente 7300 N Fresno St. Fresno
University Medical Center	445 S. Cedar Ave. Fresno, CA 93702
Fresno Community Medical Center	2823 Fresno St. Fresno, CA 93721
Clovis Community Medical Center	2755 Herndon Ave. Clovis, CA 93611
St. Agnes Medical Center	Fresno

Table REC 16-6. Available Historical Emergency Response Data.

Agency	Years of Historical Response Data Obtained	Type of Data Provided	Format of Data
USDA-FS	4 years (1998, 2000 – 2002)	Emergency responses per year	Tabular
CDF Fresno County	4 years (1998 – 2001)	Emergency responses per year	Tabular
CDF Madera County	5 years (1998 – 2002)	Emergency responses per year	Tabular
Emergency Medical Service Fresno County	2 years (2001 – 2002)	Emergency responses per year	Tabular
Emergency Medical Service Madera County	2 years (2001 – 2002)	Emergency responses per year	Tabular
CHP	N/A	N/A	N/A
Fresno County Sheriff	N/A	N/A	N/A
Madera County Sheriff	N/A	N/A	N/A

Table REC 16-7. Number of Service Area Historical Emergency Responses by Agency and Year.

Agency	1998	1999	2000	2001	2002
USDA-FS	1,917	NA	1,954	1,671	1,646
CDF Fresno County	120	132	123	1,679	NA
CDF Madera County	200	205	251	251	215
EMS Fresno/Madera Counties	NA	NA	NA	407	384

Table REC 16-8. Total Historical Emergency Responses by Agency and Geographic Area.

Agency	No. of Years	Total Responses In Service Area Total No.	Responses In the Big Creek Basin Region	
			Total No.	Percentage
USDA-FS	4	7,188	240	3
CDF Fresno Co.	4	2,054	454	22
CDF Madera Co.	5	1,122	20	2
EMS Fresno and Madera Co.	2	791	115	7

Table REC 16-9. USDA-FS Historical Emergency Response Data (4 years, 1998 and 2000 to 2002).

	Fire	Law Enforcement	Medical Aid	Search and Rescue	General Assistance	Total
Balsam Meadows Region	0	4	0	1	0	5
Shaver Lake Region	0	13	0	2	3	18
Mammoth Pool Region	0	54	1	3	2	60
Huntington Lake Region	2	106	1	3	3	115
Florence Lake Region	1	3	2	2	1	9
Other High Mountain Regions	3	23	4	1	2	33
Big Creek Region	0	0	0	0	0	0
Total	6	203	8	12	11	240

Table REC 16-10. California Department of Forestry and Fire Protection (Fresno County) Historical Emergency Response Data¹ (4 years 1999 – 2001).

	Medical Aid/ Vehicle Accident	Fires	Public Service Assistance /Info	Other	Total
Balsam Meadows Region	1	1	1	0	3
Shaver Lake Region	265	47	19	20	351
Mammoth Pool Region	1	2	1	0	4
Huntington Lake Region	33	5	0	5	43
Florence Lake Region	0	0	0	0	0
Other High Mountain Region	20	2	1	1	24
Big Creek Region	0	1	0	0	1
Total	320	58	22	26	426

¹Some response types were combined to facilitate comparison with Forest Service responses. Medical aid/rescues and vehicle accident responses have been combined. Fires include smoke checks, structural fires, and vegetation fires. PSA include public service assistance and requests for information. Other include rare responses such as hazardous material response.

Table REC 16-11. Emergency Medical Service Provider Historical Emergency Response Data (2 years, 2001 - 2002).

	Vehicle Accident	Search and Rescue	Medical Aid	Total
Balsam Meadows Region	0	0	2	2
Shaver Lake Region	5	1	14	20
Mammoth Pool Region	1	0	0	1
Huntington Lake Region	3	4	65	72
Florence Lake Region	0	0	4	4
Other High Mountain Region	4	6	22	32
Big Creek Region	0	0	4	4
Total	13	11	111	115

Table REC 16-12. Big Creek Project Facilities Public Safety Devices.

FERC Project No.	Facility	Sign(s)	Siren(s)/ Alarm(s)	Light(s)	Gate(s) ¹	Locked Door(s) ²	Fence(s) ³	Barbed Wire at 18 Ft Above Ground at Towers	2 Ft Rock Wall on Side of Dam	Ladder Cover	Guard Cable	Hand Rail	Guard Rail	Pipe Rail	Log Boom	Life Preserver	Buoys	Boat Barrier
67	Balsam Forebay	X		X	X		X											
67	Bear Creek Diversion Dam					X							X					
67	Big Creek PH 2A	X			X	X	X									X		
67	Big Creek PH 8	X				X												
67	Dam 5	X		X			X											
67	Eastwood Power Station	X			X	X	X											
67	Eastwood Tailrace	X		X	X		X										X	
67	Florence Dam	X			X		X					X					X	X
67	Jackass Meadows Campground	X	X															
67	Mono Creek Campground	X	X															
67	Mono Creek Diversion Dam	X			X		X											
67	Mono Hot Springs	X	X															
67	Shaver Lake Dam	X		X	X	X	X			X				X			X	
67	Timberwine Substation	X			X		X											
120	Big Creek PH 3	X			X	X	X											
120	Dam 6	X		X	X							X				X		
2017	Big Creek PH 4	X			X	X	X											
2017	Big Creek PH 4 - Glory Hole	X			X		X											
2017	Dam 7 - Redinger Lake	X	X	X	X		X											X
2085	Dalton Creek Diversion Dam						X											
2085	Mammoth Pool Powerhouse	X			X	X	X											
2085	Mammoth Pool Reservoir	X			X	X	X					X	X				X	
2086	Vermilion Valley Dam	X			X	X	X							X	X			
2174	Portal Forebay	X												X				
2174	Portal Powerhouse	X		X	X		X					X						
2175	Bear Cove	X						X										
2175	Big Creek PH 1	X			X		X											
2175	Big Creek PH 2	X			X	X	X									X		
2175	Dam 1	X		X			X		X				X					X
2175	Dam 2	X		X	X		X		X				X					
2175	Dam 3				X		X		X									
2175	Dam 3A						X		X									
2175	Dam 4	X		X	X							X			X	X		X
2175	Home Creek Cove	X									X							
2175	Line Creek Cove	X															X	

¹Includes locked gates.

²Includes locked doors with entry alarm.

³Includes chain link, cable, barbed wire, and mesh fences and also includes barbed wire on top of fence .

FIGURES

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