

**La Brea Fire
Emergency Watershed Response Plan
Santa Barbara County Operational Area
Operations Section**



**Santa Barbara County Public Works Department
October 2009**

Background

The La Brea Fire started August 8, 2009 in the back country of Santa Barbara County, the fifth major fire in the County since 2007. The fire burned almost 90,000 acres of watershed in the Los Padres National Forest, most of which is the Sisquoc River Watershed. A smaller portion of the fire perimeter is tributary to the Cuyama River which flows into Twitchell Reservoir. The fire perimeter is shown below in Figure 1.

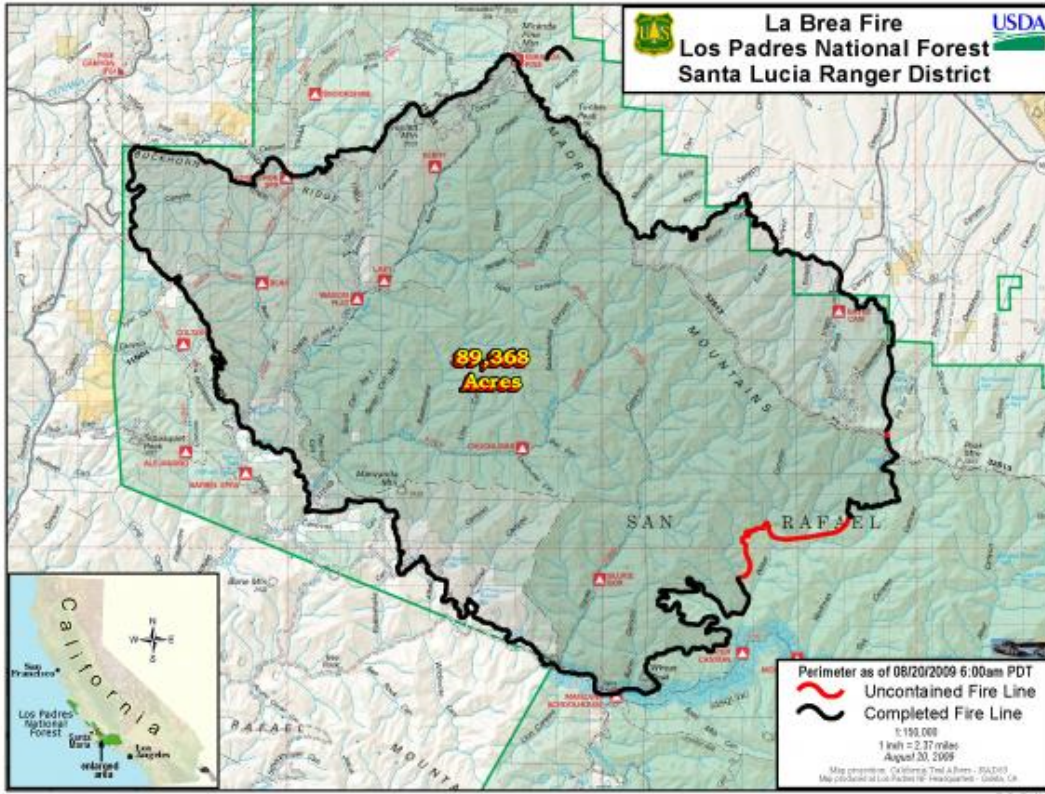


Figure 1 – La Brea Fire Map

The La Brea Fire falls on the heels of the Zaca Fire in late 2007. The Zaca Fire burned approximately 78,000 acres of the Sisquoc River Watershed. Figure 2 below shows the watershed area burned from the La Brea and Zaca Fires.

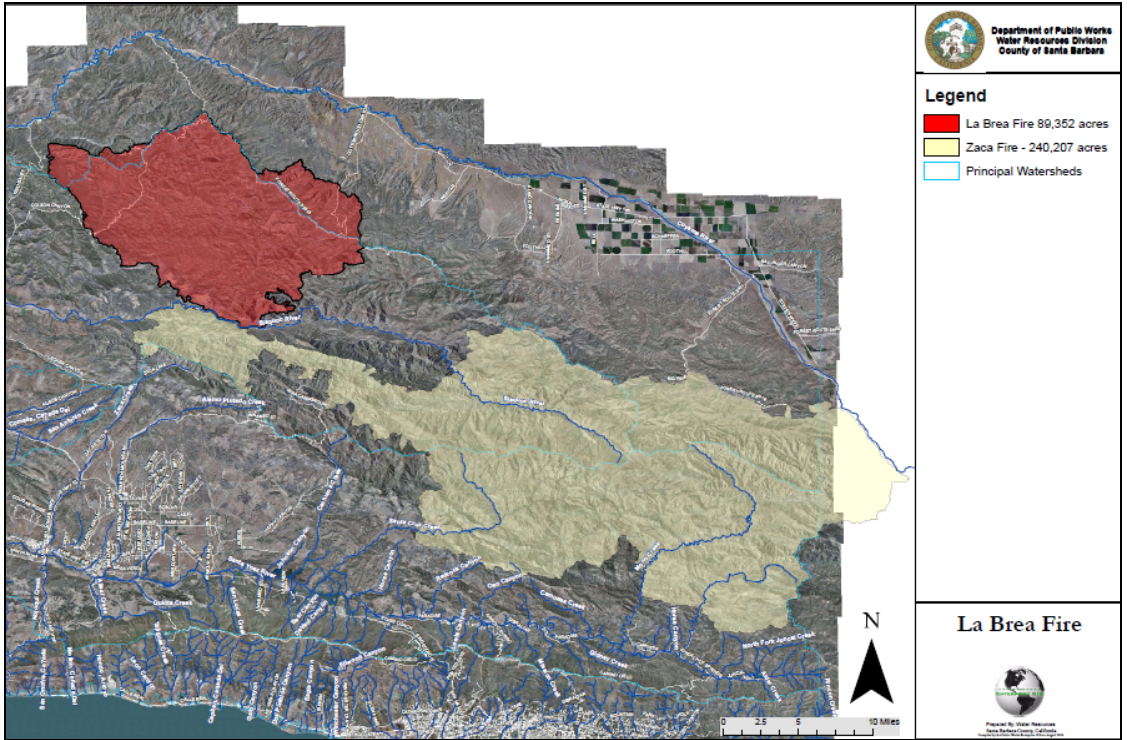


Figure 2 – La Brea and Zaca Fires

With a combined impacted watershed from the Zaca Fire and the La Brea Fire at over 150,000 acres, a new and significant threat to downstream flood flows exists. The Sisquoc River flows directly into the Santa Maria River. There are no dams or reservoirs on the Sisquoc River; Twitchell Reservoir does exist on the Cuyama River above the confluence with the Sisquoc. Following the Zaca Fire, a modest rain event triggered a flow of 11,000 cubic feet per second. While the light rains in the winter of 2007 and 2008 did not cause any serious flood flows, there were numerous flows in the Santa Maria River that would have otherwise not occurred. There were also several storm events that resulted in snow in the Zaca Watershed that further moderated the runoff.

While the Zaca Fire area has experienced regrowth over the past two winters, the fire area still exists as a potential to yield increased runoff from the watershed. The La Brea Fire will yield significantly more runoff this winter and combined with the still present Zaca Fire impacts are cause for concern in the Santa Maria River this winter.



Figure 3 – Santa Maria River Flows – January 5, 2008

Emergency Watershed Response Plan

The Emergency Watershed Response Plan involves three basic elements:

- A. An Advanced Measures Plan (before winter),
- B. An Interagency Coordination Plan, and
- C. A Winter Monitoring and Operations Plan.

A. Advanced Measures

The Zaca Fire in 2007 also burned the Sisquoc River Watershed and several initiatives were undertaken in response to that fire. The La Brea Fire Response Plan builds off of the Zaca Fire Plan. The main issue is the safety of the Santa Maria River Levee.

To address meandering flows from the expected high flows this winter, the Flood Control District proposes the following measures to be complete before winter.

- I. Pilot channel construction in the Santa Maria River.
- II. Stockpile additional emergency rock if necessary.
- III. Locate equipment staging areas.

I. Pilot Channels

Pilot channel work has been used effectively since 2006 to divert the force of flood waters away from the Santa Maria River Levee. While the Corps of Engineers is planning to begin construction of repairs to the levee, that work will take 1-2 years to complete. Until that time, the upper areas of the Santa Maria River Levee are still at great risk.

Following the Zaca Fire in 2007, pilot channel work was completed in the Santa Maria River. Work to extend and widen earlier pilot channels completed between Suey Road and US 101, and a new pilot channel downstream near Guadalupe was completed.

This fall, Flood Control proposes to re-establish and bolster the pilot channel from Suey Road to US 101, maintain the pilot channel in Guadalupe, and propose new pilot channel work downstream of Bonita School Road. Additional pilot channel work between US 101 and Bonita School Road will be evaluate and pursued if deemed appropriate. Pilot channel construction from 2007 is shown in Figure 4 below.



Figure 4 – Pilot Channel Construction at Suey Road, Santa Maria River

Pilot channel work completed after the Zaca Fire proved extremely effective at directing flood flows away from vulnerable sections of the levee. Figure 3 above shows flood flows following the Zaca Fire. The peak flow occurred during the night and thus the photo shows the flow receding.

The Corps of Engineers is scheduled to begin work on the Santa Maria River this fall. Within the scope of the first phase of the work is the reach between Suey Road and US 101. County staff will work with the Corps to do all that can be done to accelerate the strengthening of the levee in this area. As construction crews will be working in the area, work on the pilot channel in the area will involve cooperation with the Corps contractor.

II. Emergency Rock Stockpiles

Two rock stockpile sites currently exist along the levee; a third was in place until recently. This stockpile was removed to make room for the Corps of Engineer's contractor for the levee repair project.

Re-establishing this rock stockpile site will be evaluated when the Corps selects their contractor. Other options may be available. Figure 5 below shows the existing stockpile sites.



Figure 5 – Existing and Removed Rock Stockpile Sites – Santa Maria River Levee

III. Equipment Staging

In previous winters, equipment has been staged at the levee to expedite deployment to the levee if needed. Equipment was located on the closed City Landfill near Suey Crossing. This staging area will be utilized again this winter.

There is no treatment proposed in the fire area itself, any such actions are the responsibility of the United States Forest Services (USFS). A Burn Area Emergency Response Report (BAER) will be completed and the USFS will take whatever action is approved.

B. Interagency Coordination

Several agencies have interests in the Santa Maria River and its vicinity. As such, there needs to be close coordination and communication between agencies. Agencies that would be coordinated with include (but not limited to):

- The County Public Works Department (Flood Control and Transportation)
- The US Army Corps of Engineers
- State of California Department of Water Resources (DWR)
- The City of Santa Maria
- The City of Guadalupe
- Caltrans
- Santa Maria Valley Water Conservation District
- Other County Departments
- National Weather Service

The respective roles of each agency is discussed below, a master contact list will be generated with contact names and numbers including 24-hour contact numbers.

County Public Works Department

Flood Control District

The Flood Control District will monitor storm events and river stages. Flood Control will coordinate mobilization of levee patrols and emergency response as necessary. Flood Control will also communicate with the Corps of Engineers on levee status and assistance needs.

Transportation

The Transportation Division has three river crossings over the Santa Maria / Sisquoc River system. Bonita School Road is a low water crossing that is subject to closure during higher flows and can wash out. Garey Bridge is conventional bridge and is expected to serve in all conditions and Tepusquet Crossing which is currently under construction in which a conventional bridge will replace a summer crossing.

Transportation also has staff and equipment to assist in emergency situations.

US Army Corps of Engineers

The Corps is an important partner in any emergency situation. The Corps has provided emergency assistance in years past during major flood events. The

Corps also serves an environmental regulatory function. Should emergency work be needed, the regulatory section will be contacted for permit needs. Lastly, the Corps Construction Division will be mobilized for the construction of Levee improvements. All emergency response actions will be coordinated through them, with the potential benefit of a Contractor being mobilized at the site which can be an additional resource if needed.

The Corps also assumes control of releases from Twitchell Reservoir when the lake elevation fills the water storage pool and enters the flood control pool.

Following the Zaca Fire in 2007, the Corps developed an Emergency Action Plan for response coordination during the winter. This plan is proposed to be continued to be used into this winter.

State Department of Water Resources

DWR is in the contact chain with the Corps. The State Joint Flood Operations Center is frequently in contact with local officials regarding flood conditions and potential flooding. DWR also is in the approval chain for emergency assistance from the Corps.

City of Santa Maria

The City of Santa Maria maintains Suey Crossing over the river. In addition, the City's landfill is also adjacent to the river. The City landfill has equipment nearby for possible assistance. The City will be informed of river status and any potential dangers.

City of Guadalupe

The City of Guadalupe is mostly above the river except for a lower portion of the City along Pioneer Street. Should any known dangers arise the City will be contacted.

Caltrans

Caltrans maintains US 101 and State Highway 1 each of which crosses the Santa Maria River.

Santa Maria Valley Water Conservation District

The Santa Maria Valley Water Conservation District operates Twitchell Reservoir up to approximately lake elevation 623 at which point operation of the reservoir is under the control of the Corps of Engineers. Any releases from Twitchell will be coordinated with downstream conditions.

Other County Departments

Other County Departments can be engaged in flood flow conditions such as Fire and Sheriff, County CEO Office, the County PIO, and other departments.

In addition, Flood Control often receives levee patrol support from other Departments such as Planning & Development, Ag Commissioner, and Parks.

National Weather Service

The National Weather Service provides near term and long range weather forecasts. Near term Quantitative Precipitation Forecasts (QPF) allows the modeling of the watershed to determine potential flows. Flood forecasting along with storm timing will help the scheduling of levee patrols through the winter.

C. Winter Monitoring and Operations

The final aspect of this plan is the monitoring and operational phase during the winter. During the winter, each storm event will be handled through: 1) pre-storm weather forecasting; 2) during storm monitoring; and 3) event driven emergency actions and post storm follow up.

Pre-Storm Forecasts

As mentioned in the Interagency Coordination section, the County will be coordinating with the National Weather Service to gain predictions of coming storms, their timing, and severity. Pre-event modeling will be run to determine the extent of flows expected. In addition, watershed wetness will be monitored and considered in this work.

Storm Monitoring

In cooperation with the USGS, the County has a network of rainfall and stream gauges throughout the County including the Sisquoc River Watershed. Automated rainfall gauges report by radio to the County's main office and the information is available to staff at the office and remotely. In addition, the USGS has remote stream gauges that are available online as well. Figure 6 below shows the data received remotely on the morning of January 5, 2008. This information allowed the mobilization of levee patrols and ongoing monitoring. The rapid rate of flow increase showed a flood wave flowing down the Sisquoc River.

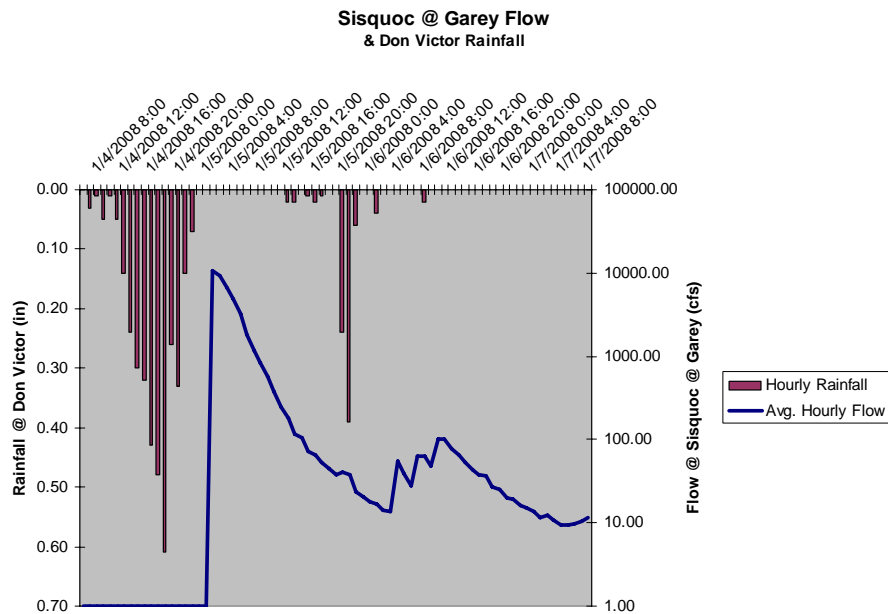
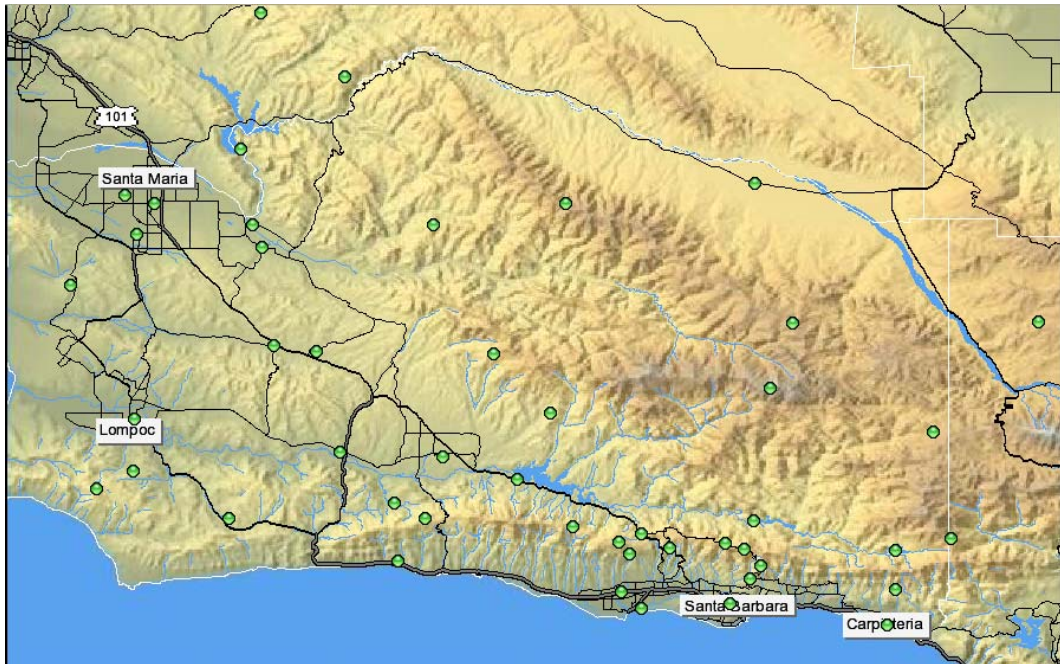


Figure 6 – Stream Flow Gauging from USGS Website

Once it is detected that a significant flow may occur, or will occur, levee patrol teams will be assembled and scheduled. These teams may include maintenance staff to allow rapid action to any problem discovered.

Rainfall data will continue to be monitored and stream gauges monitored to determine the magnitude of the flow. Figure 7 below shows the automated rainfall monitoring system. The green dots are station locations, no data is present in picture (August).



**Figure 7 – County Rainfall Monitoring System, accessible on-line
Emergency Actions**

During active flood flows, the levee will be monitored for problems or developing breaches. Levee patrols will include two person teams, one of which may be an equipment operator for early response. During the flood flows, the County will respond with equipment and materials to discovered problem area. Equipment may be staged (although other equipment may be needed) and rock is currently stockpiled. Rock is also available from various local suppliers. The Corps of Engineers will be notified of flows and active patrol status.

If necessary, as flow recedes, remedial action to bolster the levee strength, or provide training / pilot channels will be implemented. If determined necessary, the State Department of Water Resources and the Corps of Engineers will be contacted for assistance.



Figure 7 – Post Flood Flows, Santa Maria River, January 2008

Note pilot channel clearly visible, arrow points to staging area for equipment and materials.

In combination with other fire response efforts, Flood Control staff will be provided a binder with emergency contact information for local contractors and material suppliers including 24-hour contacts for emergency needs. This binder will have pre-established equipment rates and material costs.

CONTACT INFORMATION - *CONFIDENTIAL*

(OMITTED ON PURPOSE FOR INTERAGENCY USE ONLY)