

June 4, 2008

TO: Rod H. Kubomoto

THANKS RHC

FROM: Patricia Wood *P.W.*
Facilities Section

**SANTA ANITA FIRE
BURNED AREA REPORT
FILE NO. 2-11.40**

The Santa Anita Fire started on April 26, 2008, and was contained on May 1, 2008. The fire burned approximately 584 acres, of which 346 acres were in the City of Sierra Madre. Although the burn area extended into the Angeles National Forest boundary, this report focuses on impacts to the Cities of Arcadia and Sierra Madre, where potential health and safety impacts are the greatest.

Recommendations

1. By copy of this report, notify Flood Maintenance Division (FMD) of the potential impacts to Auburn, Carter, Lannan, Sierra Madre, and Sturtevant Debris Basins below the burned area. FMD should perform post fire cleanouts of Auburn, Lannan, and Sturtevant Debris Basins, and monitor all the basins and Sierra Madre Channel for possible sediment deposition/plugging during storms and clean them as necessary. The monitoring and as-needed cleanouts should continue for the next four to five years until the watershed has significantly recovered from the burn.
2. Authorize us to send a copy of the Burned Area Report to the Cities of Arcadia and Sierra Madre to provide confirmation of the potential impacts to its facilities.

Attachments

- A. Burned Area Map
- B. Description of Burn and Potential Sediment Impact
- C. Mudflow Phase Maps:
Attachment C-1, Phase 1 Map
Attachment C-2, Phase 2 Map
Attachment C-3, Phase 3 Map
- D. List of Residents either Contacted or Received Mudflow Protective Advice

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Summary of Potential Sediment Impact

The burned area, which is located in Debris Production Area (DPA) 1, is subdivided into a total of sixteen subarea watersheds (see Attachment A for the Burned Area Map). During a design storm event (50-year rainfall frequency), sediment flows from the burned canyons may impact Auburn, Carter, Lannan, Sierra Madre, and Sturtevant Debris Basins, which are maintained by Public Works. Several roads maintained by the Cities of Arcadia and Sierra Madre may also be subject to flooding and mudflow.

More than 100 residences downstream of the fire can potentially be impacted by mudflow during storms. Water Resources Division (WRD) staff are assessing the area and are providing Mudflow Protective Advice to residents they encounter. WRD staff are leaving offers of Mudflow Protective Advice at the doors of homes with absent residents. Each offer includes a note to call WRD staff to schedule, if desired, further evaluation of mudflow impact on the resident's property.

Detailed descriptions of each subarea are contained in Attachment B.

Mudflow Phase Maps

The phase maps for the fire are found in Attachment C. The phase maps (Phases 1, 2, and 3) identify the critical locations of potential mudflow impacts below the burned area for varying storm magnitudes. Generally, these maps are prepared when potential mudflows pose a major threat to homes, roadways, flood control facilities or other public infrastructure. These maps and the Burned Area Report, when approved, can be accessed through the Internet at <http://www.dpw.lacounty.gov/WRD/FIRE/>. The phase maps will be given to FMD and affected emergency response agencies. WRD will post debris and mudflow potential forecasts on the Internet at the aforementioned site for each forecasted significant storm event throughout the storm season.

Coordination

On May 1, 2008, WRD staff, accompanied by the City of Sierra Madre's Director of Public Works, Bruce Inman, and City Manager, Elaine Aguilar, conducted a field reconnaissance of the burned area looking for residences and/or County facilities that could be potentially impacted by flooding/debris flows during storms. WRD staff also conferred with the City of Arcadia's Street Superintendent, David Thompson, regarding potential mudflow impacts on the City's streets and adjacent residences. Copies of the postfire Mudflow Protective Advice forms or offers of advice that are being given to the residents are being provided to the Cities. The list of residences provided or offered

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advice to date is found in Attachment D. WRD is still in the process of identifying and contacting potentially impacted residences. The list will be updated to when WRD completes its identification and contact with all potentially impacted residences.

Based on these field reviews, the City of Sierra Madre is developing a plan for mudflow protection measures for its streets. WRD is looking into temporary mudflow protection structures at various locations in the City of Sierra Madre. WRD is also looking into the possibility of permanently enlarging Sturtevant Debris Basin.

FMD staff performed field reviews of Auburn, Carter, Lannan, Sierra Madre, and Sturtevant Debris Basins. The field reviews revealed accumulated sediment in Auburn, Lannan and Sturtevant Debris Basins have reached or are exceeding the 5 percent full levels. With the tributary watersheds to these facilities being more than 20 percent burned, the sediment levels warrant postfire cleanouts prior to the upcoming storm season. Also, although the accumulated sediment behind Sierra Madre Debris Dam is less than 5 percent full, the debris potential of the watershed to the facility exceeds the facility's maximum capacity. There is thus a potential for sediment deposition in Sierra Madre Wash. FMD has been apprised of the potential sediment impact to the debris basins and channel, and the need to monitor them during storms and clean them out as needed.

If you have any questions regarding this fire report, please contact Youssef Chebabi at 458-6154 or Arevik Vardanyan at 458-6115.

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Attach.

cc: Disaster Services (Bui)
Flood Maintenance (Lee, Tang)
Water Resources (Walden, Wood, Files)

ATTACHMENT A

SANTA ANITA FIRE

BURNED AREA MAP

ATTACHMENT B

SANTA ANITA FIRE

**DESCRIPTION OF BURN AND
POTENTIAL SEDIMENT IMPACT**

**ATTACHMENT B
SANTA ANITA FIRE
DESCRIPTION OF BURN AND POTENTIAL SEDIMENT IMPACT**

Fire Name: Santa Anita Fire
Date of Fire: April 26, 2008
Burned Area: 584 acres
Location: North of Foothill Freeway (210) in the City of Sierra Madre. Refer to Thomas Guide Page 537-C7 (2003 Edition). The burned area boundary is plotted on the map contained in Attachment A.

Vegetation Types before Burn

Grass
Sage Scrub
Chamise

Improvements Damaged

No structures or Public Works facilities were lost.

Fire History

The Lannan Fire occurred on September 23 and 24, 1975, and burned the watershed of a check dam on the Yucca Trail. The Bole Fire occurred on September 1969 and burned 27 percent of Sierra Madre Debris Dam's watershed.

Potential Sediment Impact Below/Within Burned Area

The burned area is in a high debris production zone (DPA-1) and subdivided into 16 subarea watersheds.

Sixteen subarea watersheds where locations of homes that could be potentially affected by mudflows are identified as Subareas 1, 2, 3, 3a, 3b, 3c, 3d, 3e, 4, 4a, 4b, 4c, 4d, 4e, 4f, and 5 on the burned area map (see Attachment A).

Subarea 1 has an area of 1,581 acres and is 15 percent burned. During a major storm, an estimated 153,600 cubic yards (cy) of debris (adjusted sediment production due to the burn) may be produced. Sediment flows from the watershed are expected to deposit behind Sierra Madre Debris Dam. The debris dam is a free draining dam with a maximum capacity of 136,000 cy. Flood Maintenance Division (FMD) estimates the basin is currently three percent full of debris. During storms, FMD will need to routinely monitor the dam and inform the City of Sierra Madre when the sediment deposition behind the dam is rising close to the spillway. At that time, the City may choose to impose mandatory evacuation of residents downstream of the dam. Sierra Madre Wash below the dam may experience significant mudflow deposition and will need regular

monitoring during storms and cleaning, when needed, to offset significant reduction in the channel's flow-carrying capacity. FMD should note frequent cleanouts of the channel may impact its concrete invert and necessitate repairs to the invert in the future.

Subarea 2 has an area of 153 acres and is 41 percent burned. During a major storm, an estimated 28,600 cy of debris (adjusted sediment production due to burn) may be produced. Sediment flow from the burned canyon may impact a small segment of Santa Anita Canyon Road, which is maintained by the City of Sierra Madre. Most of the debris will be trapped in Lannan Debris Basin, which has a capacity of 41,000 cy. The City should monitor Santa Anita Canyon Road during storms and remove the debris that deposits on it.

Subarea 3 has an area of 124 acres and is 47 percent burned. During a major event, an estimated 26,000 cy of debris (adjusted sediment production due to burn) may be produced. At the end of Auburn Avenue, a deflector wall protecting a water tank for the City of Sierra Madre appears to need repair and reinforcement to prevent any adverse impact of mudflow to the tank. The wall also diverts the flow from the upstream canyon into a concrete channel leading to Auburn Debris Basin. Auburn Debris Basin has a maximum capacity of 39,000 cy and is currently 11 percent full. Since the watershed is more than 20 percent burned, the accumulated sediment level meets the 5 percent threshold for a postfire cleanout. FMD should clean out the debris basin before the next storm season.

Subarea 3a has an area of 6 acres and is 83 percent burned. During a major storm, an estimated 2,100 cy of debris (adjusted sediment production due to burn) may be produced. A private road at the end of Auburn Avenue may be impacted by mudflow and some homes and alleys along the private road may experience some mudflow. Auburn Avenue and Elm Avenue, which are maintained by the City of Sierra Madre, may experience mudflow that can potentially cause traffic nuisance. Mudflows may reach a storm drain at the intersection of Grand View and Auburn Avenues. This drain (MTD 264) is maintained by Public Works (FMD). During storms, FMD should monitor the drain's catch basins and keep them and the drain clean.

Subarea 3b has an area of 5 acres and is 100 percent burned. During a major storm, an estimated 1,900 cy of debris (adjusted sediment production due to burn) may be produced. A rail and timber structure once existed at the mouth of the canyon of this subarea, which is privately owned. Public Works will seek reconstructing a similar structure before the next storm season, subject to securing the necessary permits from several regulatory agencies and a right of entry permit from the property owner.

Subarea 3c has an area of 12 acres and is 100 percent burned. This area is privately owned and a portion of it is currently under development. During a major storm, an estimated 4,500 cy of debris (adjusted sediment production due to burn) may be produced. Debris and mudflow generated within the subarea will flow and deposit within the area that is currently being developed. The developer constructed one temporary desilting pit with unknown capacity to trap sediment and a portion of one

debris basin. Public Works, working with the City, will seek to have the developer complete the construction of the upper debris basin before the next storm season. Mudflow may reach Baldwin and Carter Avenues, which are maintained by the City of Sierra Madre. During storms, the City should monitor the mudflow within the development area and may want to take measures before the storm season to stop mudflow from reaching Carter Avenue. There are also catch basins at the intersection of Baldwin and Carter Avenues. These catch basins drain into either Floral Channel or Carter Channel, both of which are maintained by Public Works (FMD). During storms, FMD should monitor the drain's catch basins and keep them and the drains clean.

Subarea 3d has an area of 4 acres and is 100 percent burned. The area is privately owned and a portion of it appears to be in the process of being graded. During a major storm, an estimated 1,500 cy of debris (adjusted sediment production due to burn) may be produced. Debris may reach a historical barn located within the path of the mudflow, and mudflows may deposit on the unpaved access road leading to Carter Debris Basin. During storms, the City of Sierra Madre should monitor this area and may want to implement measures before storm season to control any excess mudflow.

Subarea 3e has an area of 17 acres and is 29 percent burned. During a major storm, an estimated 4,000 cy of debris (adjusted sediment production due to burn) may be produced. Two concrete V-ditches in the backyard of one of the residences at Mount Wilson Trail intercept the flow from two defined canyons in this subarea. The two ditches merge into one ditch, which runs along an adjacent residential property and outlets on Mount Wilson Trail near a water tank owned by the City of Sierra Madre. Residents who may be impacted by debris and mudflow during storms are being given Mudflow Protective Advice by WRD staff. The City of Sierra Madre should closely coordinate with the owners of the residences along the concrete V-ditches. The ditches may not have sufficient capacity to handle the potential mudflow and so can potentially impact the residences. WRD staff's discussions with one of the residents indicate that no public agency cleans these ditches, and it is solely maintained by the homeowners.

Subarea 4 has an area of 12 acres and is 75 percent burned. During a major storm, an estimated 4,000 cy of debris (adjusted sediment production due to burn) may be produced. Mudflow from the burned watershed is anticipated to deposit into Sturtevant Debris Basin, which has a capacity of 1,400 cy. The debris basin is maintained by Public Works on an easement from the City of Sierra Madre. Mudflow in excess of the basin's capacity can potentially spill over onto Lotus Lane and Camillo Street, which are maintained by the City of Sierra Madre. WRD staff is providing Mudflow Protective Advice to the owners of the residences potentially impacted by basin overflow. The basin is currently approximately 5 percent full. Since the watershed is more than 20 percent burned, the accumulated sediment level meets the 5 percent threshold for a postfire cleanout. FMD should clean out the debris basin before the next storm season. Public Works will seek to permanently enlarge the debris basin to a 5,500-cy capacity to meet Public Works' debris protection standards, subject to obtaining the necessary permits from the regulatory agencies and the right of way from the City. In the interim, WRD will coordinate with FMD to place temporarily flashboards on the debris posts on

the debris dam's spillway to supplement the capacity of the basin. FMD and City of Sierra Madre should monitor closely the debris basin and the surrounding area during storms and remove deposited debris as needed.

Subarea 4a has an area of 67 acres and is 67 percent burned. During a major storm, an estimated 20,100 cy of debris (adjusted sediment production due to burn) may be produced. Mudflow from the watershed is anticipated to flow through an orchard on private property and can potentially reach Stonehouse Road and Andrea Lane, potentially impacting residences in the Cities of Sierra Madre and Arcadia. A rail and timber structure was erected inside the private property after the 1975 Lannan Fire. It was removed in the early 1990s after the watershed was fully recovered and at the request of the property owner. Public Works will seek to construct of a similar temporary structure before the next storm season, subject to obtaining the necessary permits from the regulatory agencies and the right of entry from the owner. WRD staff has provided Mudflow Protective Advice to the owners of the residences potentially impacted by mudflow during storms. Stonehouse Road is maintained by the Cities of Sierra Madre and Arcadia. Andrea Lane is maintained by the City of Arcadia. The Cities should routinely monitor this area during storms and remove debris deposits from the streets.

Subarea 4b has an area of 18 acres and is 100 percent burned. The area consists of property owned by the City of Sierra Madre and privately owned parcels. During a major storm, an estimated 6,800 cy of debris (adjusted sediment production due to burn) may be produced. There is a check dam at the mouth of the canyon at the end of Yucca Trail. The check dam is located on private property and is not maintained by Public Works (FMD). Mudflow from the burned watershed can potentially overtop the check dam and spill onto the Yucca Trail and impact residences along Yucca Trail and Woodland Drive. WRD staff has provided Mudflow Protective Advice to the owners of the residences they identified as being potentially impacted by mudflows during storms. The debris behind the check dam should be cleaned out to avail maximum debris storage capacity. Public Works and the City will coordinate to determine who will perform this measure. Public Works will seek to construct a temporary rail and timber structure in front of the check dam before the next storm season, subject to obtaining the necessary permits form the regulatory agencies and right of entry form the property owner.

Subarea 4c has an area of 2 acres and is 100 percent burned. During a major storm, an estimated 750 cy of debris (adjusted sediment production due to burn) may be produced. Mud and debris can potentially flow on the steep Sunrise Hill Lane and reach Camillo Street. Both streets are maintained by the City of Sierra Madre. The City should routinely monitor Sunrise Hill Lane during storms and remove deposited debris.

Subarea 4d has an area of 16 acres and is 100 percent burned. During a major storm, an estimated 6,000 cy of debris (adjusted sediment production due to burn) may be produced. Mudflow generated within this subarea is channeled in a ravine between residences along Brookside Lane, which is maintained by the City of Sierra Madre. The

ravine is funneled into a box culvert beneath Brookside Lane and Woodland Drive and outlets into Sierra Madre Wash, which is maintained by Public Works (FMD). The culvert can potentially be plugged resulting in mudflow making its way on to Brookside Lane and impacting residences. The City maintains the culvert and should routinely monitor the culvert during storms and keep it clear. The City is also seeking to undertake measures to contain the mudflow within a defined path and away from homes. WRD staff is providing Mudflow Protective Advice to the owners of the residences along Brookside Lane that are potentially impacted by mudflow during storms.

Subarea 4e has an area of 19 acres and is 89 percent burned. During a major storm, an estimated 6,800 cy of debris (adjusted sediment production due to burn) may be produced. Mudflow produced in this watershed will impact residences abutting the hillside along Skyland Drive and Sumac Trail, which are maintained by the City of Sierra Madre. WRD staff is providing Mudflow Protective Advice to the residences along Skyland Drive potentially impacted by mudflows during storms.

Subarea 4f has an area of 1 acre and is 30 percent burned. During a major storm, an estimated 200 cy of debris (adjusted sediment production due to burn) may be produced and may impact residences on Alta Vista Drive, which is maintained by the City of Sierra Madre. WRD staff has provided Mudflow Protective Advice to the owners of residences they identified as potentially impacted by mudflows during storms.

Subarea 5 has an area of 73 acres and is 100 percent burned. During a major storm, an estimated 25,700 cy of debris (adjusted sediment production due to burn) may be produced. The potential debris produced within this subarea will be captured by Carter Debris Basin, which has a capacity of 28,000 cy. The debris basin is less than 5 percent full of accumulated sediment. FMD should monitor the debris basin during storms and clean it out when the basin is at or greater than 5 percent full of sediment.

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ATTACHMENT C

SANTA ANITA FIRE

MUDFLOW PHASE MAPS

- PHASE 1 MAP
- PHASE 2 MAP
- PHASE 3 MAP