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Sterling Kippel

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TO: Sterling Kippel

FROM: Ken Zimmer
Postfire Engineering and Drainage Needs Program Section

EATON FIRE BURNED AREA BRIEF

The Eaton Fire started on January 7, 2025, and was fully contained on January 31, 2025. The fire burned 14,021 acres in and around the San Gabriel Mountains including the community of Altadena within Unincorporated Los Angeles County, and the Cities of Pasadena, Sierra Madre, and Arcadia shown on Attachment B.

This brief discusses potential debris flow impacts to Los Angeles County Flood Control District (FCD) facilities and residences within or below the burned area. The impacts are primarily driven by increased stormwater runoff and sediment transport due to the loss of vegetation, decreased soil stability, and altered watershed behavior following the fire.

Summary of Potential Sediment Impact

The Eaton Fire was within Debris Production Areas 1 and 7 and is subdivided into 85 different subareas (Attachment C). During a design storm event (50-year frequency rainfall), debris from the burned canyons and hillsides may impact approximately 133 properties (Attachment D), several debris basins/debris retaining inlets, rail and timber structures, and flood control channels under the purview of the FCD and the Cities of Pasadena, Sierra Madre, and Arcadia. Several roads and debris retaining facilities maintained by the above cities and/or the FCD may also be subject to flooding and debris flows.

Detailed descriptions of potential sediment impacts are contained in Attachment A.

Attachments/Links

All the attachments can be found on the internet at:

Mudflow Protection Information - LA County Public Works

Attachment A – Description of Burn and Potential Sediment Impact
Attachment B – Fire History Map
Attachment C – Burned Area Map
Attachment D – Debris Flow Hazard Maps
Attachment E – Impacted Debris Basin Map
Attachment F – Impacted Rail and Timber Structure Map
Attachment G – Eaton Fire Reservoir Debris Calculation Map

Debris Flow Hazard Maps

The debris flow hazard maps (Phase 1, 2, and 3) identify the critical locations of potential debris flow impacts below the burned area for various storm magnitudes. These maps are prepared when potential debris flows pose a major impact to homes, roadways, flood control facilities, or other public infrastructure. These maps and Burned Area Brief can be accessed through the internet at: Mudflow Protection Information - LA County Public Works. Stormwater Engineering Division (SWED) will post debris flow forecasts through the County's GovDelivery platform and post on the internet for each forecasted significant storm event until substantial recovery of the burned watersheds.

Coordination

Following the fire event, SWED's personnel conducted multiple postfire field reconnaissance surveys to verify the extent of the burn perimeter and evaluate potential impacts to Los Angeles County infrastructure and residential properties situated downslope of fire-affected canyons and hillsides. These assessments were carried out in collaboration with Geotechnical and Materials Engineering, Road Maintenance, Stormwater Maintenance, Stormwater Planning, Waterworks, and Building and Safety Divisions. Our coordination efforts also extended to our State's Watershed Emergency Response Team, National Resources Conservation Service, and the United States Forest Service's Burned Area Emergency Response Team.

As part of this coordinated effort, Geotechnical and Materials Engineering Division performed on-site evaluations of selected properties to identify postfire geologic hazards,

including debris flow potential, slope instability, and related risks. In support of hazard mitigation, SWED also worked in partnership with Stormwater Maintenance, Stormwater Planning, Road Maintenance, and Operational Services Divisions to oversee the installation of K-rails and the strategic deployment of sandbags to help protect at-risk infrastructure and properties from postfire debris flows and localized flooding. Public Works' engineers also directed volunteers from Team Rubicon to place sandbags to mitigate the debris flow for those properties with potential impacts.

The vulnerable properties lists and maps were shared with appropriate agencies, including the Los Angeles County Sheriff's Department, County Fire Department, Office of Emergency Management, and the Cities of Pasadena, Sierra Madre, and Arcadia to support coordinated response and hazard mitigation efforts. SWED also provided engineering assessments and advice to help reduce risks to life, property, and critical infrastructure. These efforts are intended to enhance the safety of communities affected by postfire hazards.

If you have any questions regarding this fire report, please contact Michael Miranda at Extension 6164.

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Attach.

cc: Emergency Management Group (Eazell)
Stormwater Maintenance (Holland)
Stormwater Engineering (Zimmer)