

## MEMO

To: Board of Directors  
From: District Manager  
Subject: Landslide and Debris Flow Hazard Conditions Now Threatening the San Lorenzo Valley, Caused by the CZU Wildfire  
Date: October 21, 2020

### Summary:

This memorandum presents, for the District's Board of Directors and the public, the status of actions being taken by the District and other agencies to evaluate and mitigate landslide and debris flow hazard conditions created by the recent CZU Lightning Complex Wildfire.

### Recommendation:

Review this memorandum and the hyperlinked WERT report, and provide direction as to whether the Board wants to agendaize any of these items for further discussion and possible action.

### Background:

The CZU Lightning Complex Wildfire started as a series of lightning fires on August 16, 2020 across western Santa Cruz and San Mateo Counties. The fire was active for more than a month and burned 86,500 acres with 1,450 structures destroyed and one fatality.

District staff have been working tirelessly since the start of the wildfire to mitigate, assess and repair damage to its public water facilities and other public property. This includes approximately 1,600 acres of watershed land owned by the District that supplies about half of the water supply to the San Lorenzo Valley.

Large areas of watershed land were burned by the CZU Wildfire resulting in landslide and debris flow hazard conditions during the upcoming rainy season. The District has been working as fast as it can with the help of emergency contractors to mitigate hazards, including identification and removal of fire-damaged trees posing hazards on District property.

The District also has been coordinating with numerous other agencies engaged in post-disaster emergency efforts within the San Lorenzo Valley. Such agencies include the County of Santa Cruz, CALFIRE, CalOES, the California Department of Conservation, FEMA, and the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service among others.

Two of these agencies, CALFIRE and the California Department of Conservation, recently released a report entitled “Watershed Emergency Response Team Evaluation: CZU LIGHTNING COMPLEX”. A copy of this WERT report is available here: <https://www.smcgov.org/sites/smcgov.org/files/CZU%20Lightning%20Complex%20WERT%20Final%2010-6-20.pdf>

The District received a copy of the WERT report on October 12, 2020 from the Santa Cruz County Department of Public Works. The first page of the WERT report explains that the mission of WERT is to

*“help[] communities prepare after wildfire by rapidly documenting and communicating post-fire risks to life and property posed by debris flow, flood, and rockfall hazards.*

*“The findings included in this report are not intended to be fully comprehensive or conclusive, but rather to serve as a preliminary tool to assist . . . responsible agencies in the development of more detailed post-fire emergency response plans. It is intended that the agencies . . . will use the information presented in this report as a preliminary guide to complete their own more detailed evaluations, and to develop detailed emergency response plans and mitigations.”*

The WERT report identifies hazards to the District’s territory starting on page 39:

*“Highway 9 Corridor Observations*

*“Based on our field observations, it appears that there is a moderate to high potential for debris flow impacts to life safety and property within and adjacent to the following creeks and streams:*

- *Jamison Creek (VARs 34, 35, 37 through 39);*
- *Foreman Creek (VAR 48);*
- *Clear Creek (VARs 63-67 and 71-73);*
- *unnamed tributary upslope of downtown Boulder Creek (VAR 61);*
- *unnamed tributaries upslope of Acorn Drive (VARs 40, 41, and 42); and*
- *unnamed tributary to Hare Creek (VAR 36)”*

The WERT report further states starting on page 40 (emphasis added):

*“Based on our limited field reconnaissance a properly designed and located deflection structure may reduce the potential for avulsion from the current channel on an unnamed watercourse immediately upslope of Boulder Creek Elementary School and the adjoining residential neighborhood (VAR 61). A figure showing the location of the area is shown in Figure 17.*

*“ . . . The actual debris flow pathways are highly uncertain and were difficult to predict during this rapid evaluation. Deflection structures may prove effective in reducing the chance for avulsion in other areas where the potential for post-fire debris flow and flooding impacts were observed. For these reasons, the report recommends further observations and determinations be made by a State-Certified Professional Geologist (PG) and Professional Engineer (PE).”*

The WERT report makes the following recommendations for the Highway 9 Corridor on pages 41-42:

- *Consider specific recommendations for VARs provided in Appendix B.*
- *Utilize early warning systems tied to prediction of incoming storm events.*
- *Educate the public about post-fire debris flows and how rapidly they move. The public should be informed to be out of the way of potential flow paths before a storm impacts the area.*
- *Areas along the Highway 9 corridor that are identified as post-fire hazard areas (VARs 34, 35-36, 37-39, 40-47, 48, 52, 61-67, and 71-73) should not be occupied during storm warnings.*
- *Provide Boulder Creek residents and commercial business owners with the information included in this report so they may understand their proximity to hazard areas and take appropriate actions.*
- *Perform storm patrols and monitor road drainage infrastructure.*
- *Consider vegetation and debris removal within channels, particularly at watercourse crossings.*
- *Utilize experts in civil, geotechnical, and hydrologic engineering, soil erosion, hydrology and engineering geology to develop site-specific recommendations and mitigation activities.*
- *Consider and evaluate the potential for installing storm water control and deflection structures, including sand bags and/or concrete K-rails, along stream banks and around residences where high flood flows and debris flows are predicted along drainages.*

The District takes all these WERT recommendations extremely seriously. Time is very short before the start of the rainy season.

Through this urgently scheduled Board meeting, the District is continuing its efforts to educate the public including local residents and businesses about the hazards of post-fire debris flows. The District understands that the County is working on a debris flow response plan including evacuation plans for local neighborhoods. Upon its release the District will help push out the information to the public through posting on the District's website and social media.

Other actions taken by the District include pursuing the possibility of installing deflection structures as described in the WERT report. In particular, as shown above the WERT report mentions mitigation measures to prevent possible debris flows from leaving the Harmon Creek channel and flowing through the Boulder Creek Cemetery, Elementary School, and into the town of Boulder Creek. However, the recommendations of the WERT report are not well-defined in terms of a project (or projects) that could be constructed by responsible agencies such as the District within the necessary timeframes.

The District continues to be engaged in ongoing discussions with County representatives with direct post-fire knowledge of the Harmon Creek watershed and the WERT report. The District believes the County could help facilitate a design for a deflection structure given its familiarity with the watershed, and its technical resources such as a professional geologists (PGs) and engineers (PEs), and importantly—the County’s ability to reach out to State and/or federal agencies with emergency construction capabilities well beyond those of the District on its own.

The District has clearly and consistently communicated its willingness to participate in a project or projects in cooperation with other agencies. The scale of the possible emergency is far beyond the resources of the District to prevent or meaningfully mitigate on its own. Limitations on the District’s ability to design and construct mitigation projects on its own include permitting requirements and time frames, lack of internal technical expertise such as professional geologists and engineers and liability concerns of private consultants.

On October 19, 2020 District staff and its engineering consultants met with a team of engineers from the USDA to apply for funding for engineering design services and construction costs for storm water control and deflection structure. Regretfully no feasible project or project alternatives were identified through this consultation.

District staff understands that in response to concerns raised by the District and others, the County recently facilitated a meeting with the CalOES Watershed Task Force to discuss the findings of the WERT report. Today the Watershed Task Force reached out to the District to set up a meeting with the District Manager to discuss debris slide mitigation measures mentioned in the WERT and report whether or not the District should pursue any of these measures. The District has been informed that if a viable project is identified it may be eligible for FEMA grant funding.

The District will continue its efforts to identify whether or not there is any viable mitigation project and to seek County, State, and Federal assistance as necessary. Additionally, the District will continue communicating with the public about the hazards associated with possible landslide and debris flows, and update its internal response plans for the protection of public water facilities in the event of an emergency.