



UNIFIED FIRE AUTHORITY

Little Cottonwood Canyon Landslides

Thursday 08Aug2019 20:24hrs

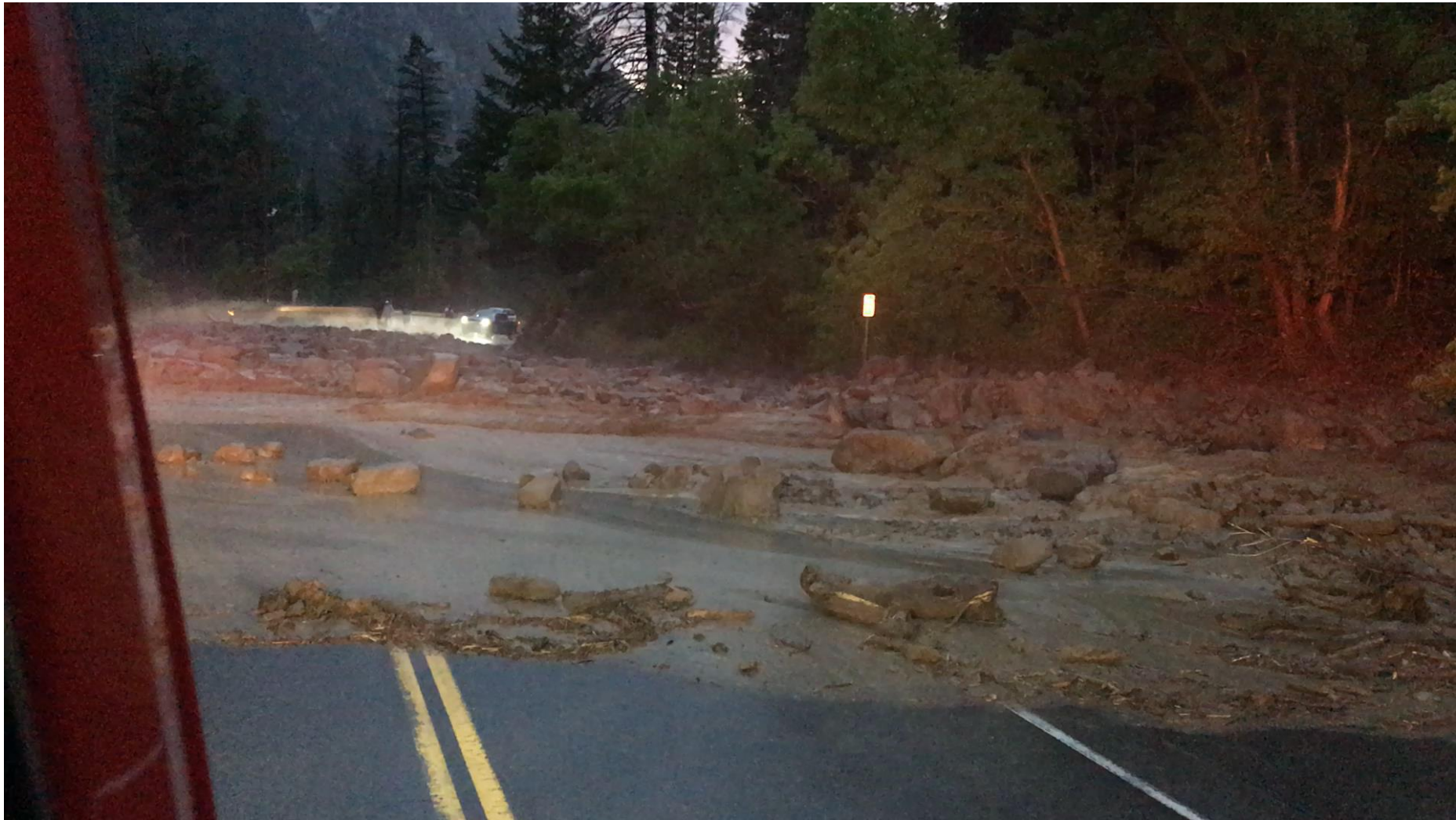
Unified Fire Authority Case # 0016144

ME113 Response and AAR

BC 11 W. Russell

Captain M. West

EM113 arrival after turning traffic uphill to go to
Snowbird Entry 1 and between storm cells





LCC History and Environment

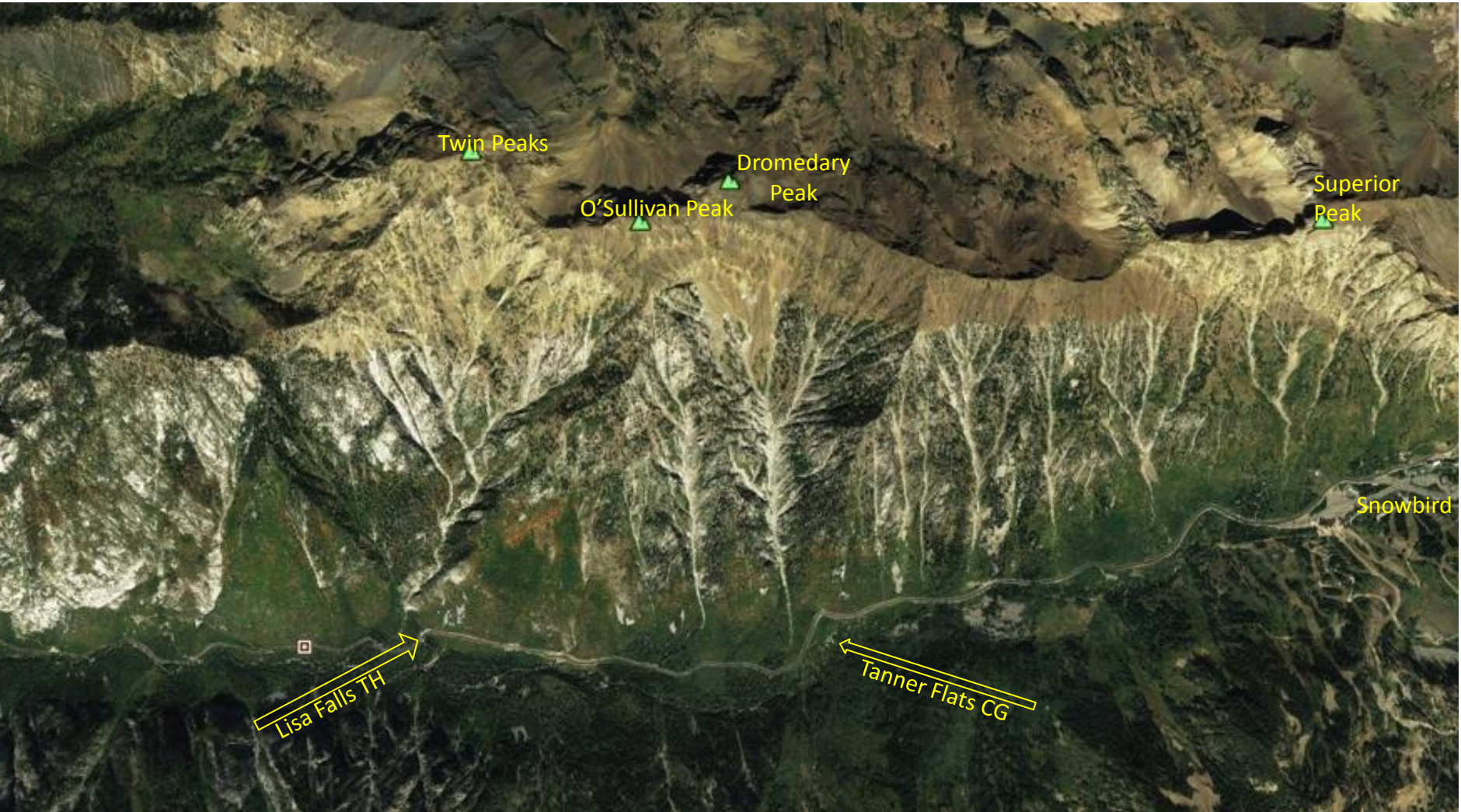
LCC is a steep canyon (8000 ft. in 9 miles) in Salt Lake County that has multiple uses including two ski resorts and supporting infrastructure, large and small houses, National Forest with two campgrounds and two large businesses. Every year 500 avalanches crash down the slopes of LCC. Most of these are deliberately trigger by UDOT to ensure safe passage for all those who visit and use the canyon. (last landslide of this magnitude was in 1996)



- Many environmental and terrain factors cause the weather to be unusual and intense at times. On about 06 August, 2019 there was an isolated local rain shower that resulted in 2.1" of rain being deposited in the canyon and surrounding mountains. This caused the mountainsides to become "super saturated and destabilized". When the intense rain showers of 08 August, occurred, depositing another 0.8" of rain in 45 minutes the upper areas of natural existing slide paths broke loose.

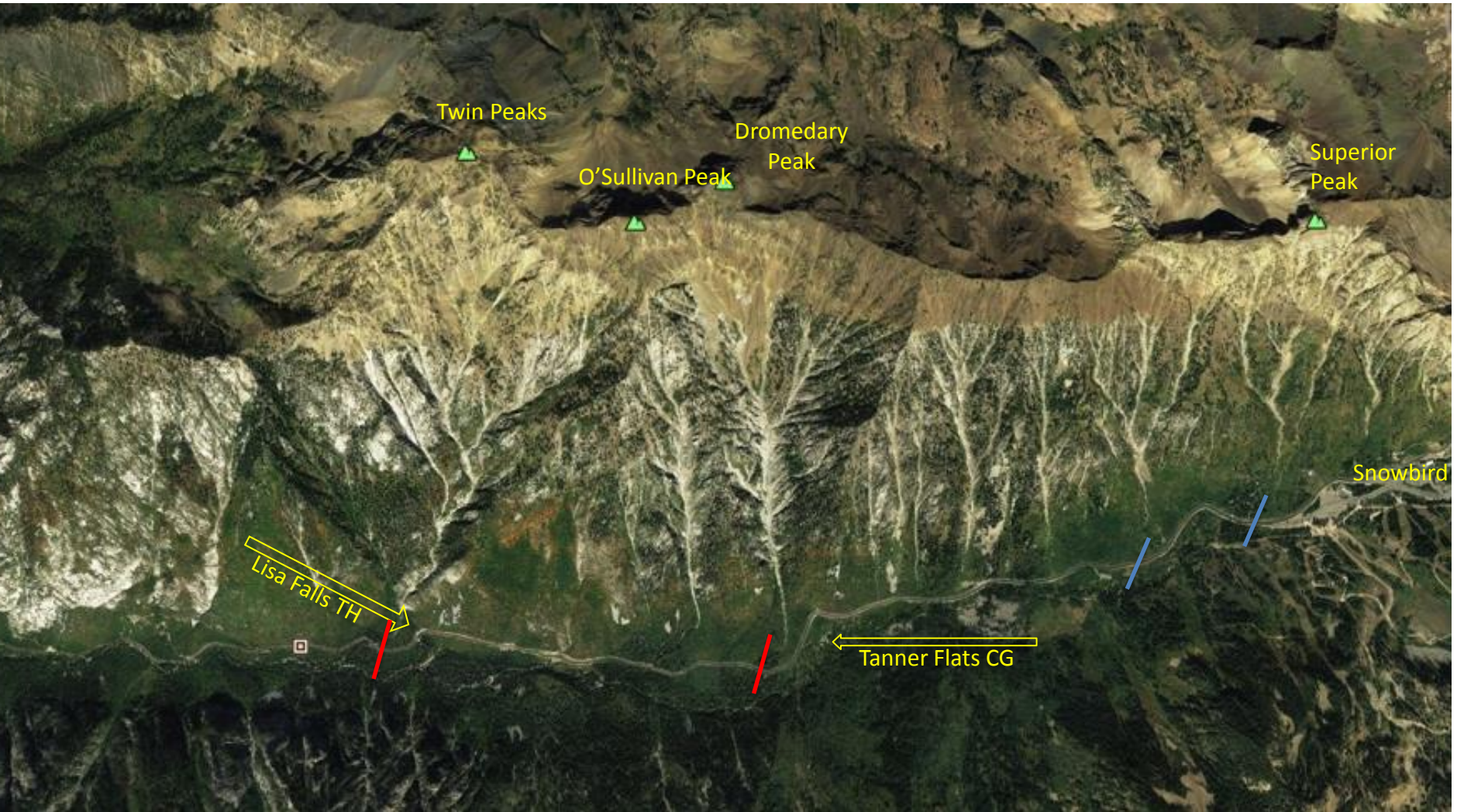


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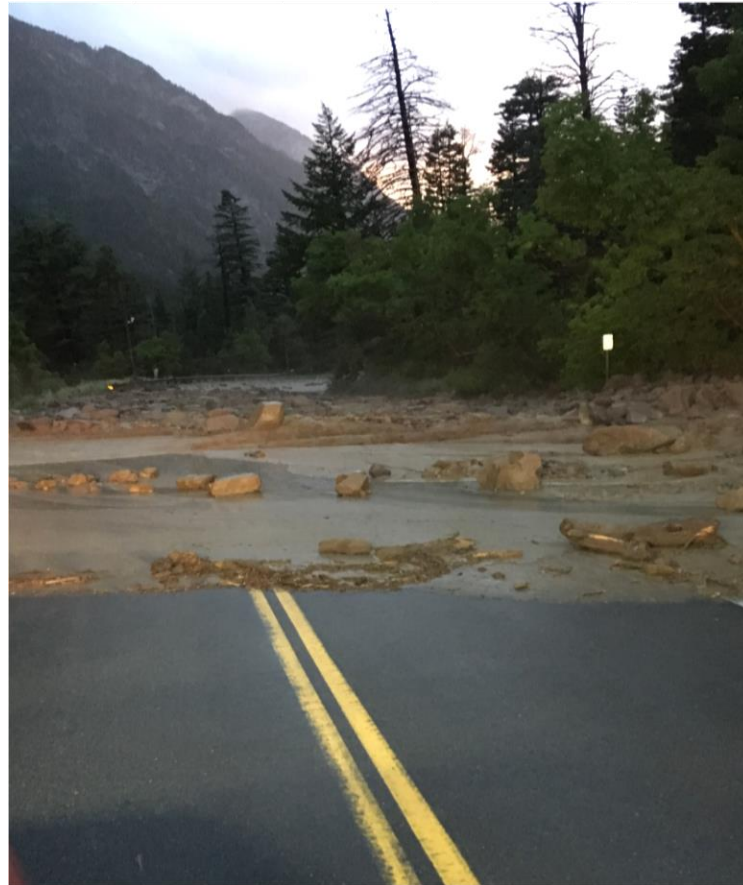


ME113 Arrival and First View at MM8



Hwy 210 mile marker 8 is the “glow” between the white truck and black SUV.

We started to manage competing
priority and challenges



Chronological Order of Events by ME113

- 20:13** Call received from UPD of mudslides in LCC requesting UFA assistance. UPD is trying to close LCC to EB traffic. UPD believed there were at least 15 people stranded between waterfall and debris. (initial dispatch from VECC took 9 min. to dispatch because of other calls in the valley.)
- 20:15** ME113 crew saw dispatch board and started getting ready for their response. The crew decided to take ME113 (not MA113) because of the apparatus high ground clearance, four-wheel drive, swift water and extrication gear was already mostly loaded with some last minute equipment being added by the crew from MA113.
- 20:22** ME113 dispatched by VECC (swift water rescue on Jordan River possibly delayed dispatch by 9 minutes) and went in route with heavy rain occurring during the response.
- 20:23** ME113 passed by Snowbird Entry 1 and observed minor road washout with water, mud and rock up to 5" in diameter scattered flowing across the road. ME113 requested that dispatch send UDOT with snowplows or front end loader to assist in clearing the highway and keep traffic clear.
- 20:24** Just above the White Pine parking lot entrance observed and traveled through another washout with debris as mentioned above.

Chronological Order of Events by ME113 (CONT.)

20:26 Arrived at the major debris field obstructing the highway at mile marker 8, just below Tanner Flat Campground. 6 - 7 vehicles were there and civilians were taking pictures of the slide and trying to decide what to do.

20:27 ME113 Established "Snowbird Unified Command" with Alta Town Deputy Marshall Rouch who had arrived just after ME113. It was decided to have Deputy Roach gather the civilians from our location and lead them up canyon, picking any other he came across. He would lead them to the safety of the Snowbird parking lot and start an accountability roster of the civilians so UC would have an accurate head count for transportation, lodging, food and evacuation for the duration of the incident. IC requested that Snowbird send down the highway its front-end loader to help clear the debris areas. IC observed civilians below the "mile marker 8" flow path and asked BC 11 to assess below our location and advise on conditions, vehicles and highway condition.

Chronological Order of Events by ME113 (CONT.)

20:27 (cont.) When BC11 could not go far enough up the LCC to give an assessment of the slide or slides and potential victims' or vehicles involved, FF/PM Kluger was sent down canyon to access number of people trapped, vehicles and their position on the highway, and any possible vehicle that may have driven or been pushed off the highway by the slides. Kluger had necessary equipment and communication to keep command advised of his situation. IC was in constant radio and cell phone contact with BC11 and advising him of our plans and progress in executing them. As FF Kluger reached people who were trapped he would have them park their vehicles in a manner to allow for debris removal by UDOT. He then gathered the group together and headed towards the IC location for evacuation to the higher ground in Snowbirds Entry 1 parking lot.

21:00 IC requested that buses or vans be brought the IC's location (mile marker 8) and be ready to receive tired, wet victims. (FF Kluger was able to triage the victims and found no injuries that would prevent self-evacuation or vehicles, which had been buried or pushed off the highway.) The IC felt it would be better to evacuate people up the canyon where the conditions were known rather than down canyon where it was not known how many slides and the condition of the highway.

Chronological Order of Events by ME113 (CONT.)

21:01 At the mile marker 8 location, Engineer Richard Larson had discovered a safe path through the debris field for victim evacuation. Eng. Larson was directed to set up a "high-line" through the debris field and make a hasty bridge (using a roof ladder) over a area of open water flowing across the highway to assist the victim in safely transitioning the slide debris.

21:48 Some victims had made their way to the IC location and were assisted across the debris using the highline rope and bridge by Eng. Larson and the IC at times.

21:50 First 5 victims recovered and advised to wait at ME113 and not to mill about.

22:00 FF Kluger advised heading up canyon with a large group of victims (30-40) his ETA would be approximately 30-40 minutes based on their condition and abilities.

22:05 5 Snowbird vans and drivers arrived and started to load the victims. One van driver (Clarissa) was asked by the IC to start an "accountability roster" with names, number in party, cell phone number and vehicle description with license plate number and state if possible.

22:27 Command notified VECC we had received and placed in vehicles 57 victims with more coming.

Chronological Order of Events by ME113 (CONT.)

- 22:37** FF Kluger was observed at the bottom of the debris field (200-300ft) making his way up with the last 8 of the victims. No victims were below him to the best of his knowledge from what he had seen. A Utah Department of Public Safety helicopter had been requested to do a fly over to slides for assessment of damage and look for any victims/vehicles unaccounted for.
- 23:07** All known victims had been transported to Snowbird for shelter and care. The final count was 75 victims and 30 vehicles had been trapped by the slides in LCC. The accountability roster had been emailed to the EOC, which had been manned by UFA Capt. K. Bevan. The UDPS helicopter had over flown the highway and found no unaccounted for victims, buried or damaged vehicles and was released from the scene. Snowbird Public Safety was instructed by command to place barricades across the road at Tanner's Flat and command was terminated. ME 113 returned to quarters to rehab. equipment and personnel.

Lessons Learned from this event.

- Resources need to be called sooner than later in the canyons. Additional manpower was needed at the command post and for the initial response down the canyon for assessment and triage. The UDPS helicopter could have been called sooner and used to shuttle station 116 crew to provide that needed support.
- FF Kluger was “overwhelmed” by people as he was making his assessment. A second FF with a thermal imager would have been helpful in assessing their surroundings in a diminishing light situation.(his assessment was to check for victims, injuries, capabilities to self- evacuate, vehicle placement on roadway that would interfere with road clearing later and to see if any vehicle had been forced or driven off the highway.) He was busy!
- The spot light on ME113 is inadequate in the canyon environment. Not enough reach or illumination.
- In communicating with victims, shouting was NOT effective given the sound made by the landslide and cascading water. Two portable megaphones should be available for crews to use. (the current apparatus siren configuration does not provide for voice transmission.)

Lessons Learned from this event.

- Other items identified that might be helpful.
 - Small battery power strobe to identify responders, direct flow of victims (multiple colors)
 - Scene tape to show the evacuation path and safety zones.
 - Waterproof or electronic status board that could be shared between “separated command posts” updating conditions/ personal in real time. This type of technology could help the EOC and others understand and anticipate needs, resources before they are asked for and limit lag time. (Alta Fire Jan. 2019)
 - A foldable section of plywood (16”x48” connected together X 3) to act as a “stable” platform on the roof ladder and aid in people crossing it.
 - An “event pallet” preloaded at Logistics with blankets, UDOT bags, chemical lights etc. to save time in the even they are needed. If kept to 200-300 lbs. could be sling loaded to the scene by UDPS helicopter.

Lessons Learned from this event.

- Lower CP with BC Russell's observations
- The road ¼ mile above the A gate became impassable due to the size of boulders in the roadway.
- Contact was made with UPD and a unified command post was established at the mouth of the canyon, which consisted of the Alta Town Marshal, UPD, UDOT and UFA
- Working through VECC 911 calls were prioritized and assessed to ensure that the callers were being attended to and that no calls were not handled by the 113 crew up the canyon
- Contact with Captain Bevan at the SLCo EOC was established and progress reports were relayed from on scene crews to the EOC and then relayed to State of Utah counterparts
- Information about the number of civilians assisted and vehicles were gathered by operations crews at 113 and given to the EOC

Lessons Learned from this event.

- It would be beneficial to establish communications with Special Ops and start to assess the need for specialized personnel and equipment sooner in the event (Canine assets, Wide Area Search Assets)
- Request additional crews early on and ensure they are briefed and ready for deployment to assist the operation crew up the canyon
- Strong command presence by Captain West and the experience and familiarity with the canyon combined with strong positive relationships with partner agencies in Alta and Snowbird were instrumental in the successful mitigation and success of the incident

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