THE BOTTOM LINE

While extremely serious events such as those experienced in 1914 and 1969 occur fairly infrequently, monsoonal thunderstorms have the capability of creating events similar to the 2007 flood. It is important to note that there are limitations involved in channel maintenance, and development bordering Cornet Creek can still suffer significant damage and over-flow under the right set of circumstances.

PUBLIC EDUCATION – OUTREACH

The town held public meetings following the 2007 flood and completed its hydrology study of the Cornet Creek flood plain. Charts were compiled that illustrated estimates of inundation depths and helped identify high-hazard areas.

San Miguel County Emergency Management has worked with Town authorities in planning an emergency response to a flood event, due to the likelihood that a multitude of agencies would be responding to this type of public safety incident.

Additional information regarding the Cornet Creek Flood Plain Study, mitigation efforts, and maps, will soon be posted to the Town Services Environment link at www. telluride-co.gov.

ARE YOU PREPARED?

Being prepared to respond to this type of flood event requires knowledge and understanding of the potential hazards associated with this threat. Historical events have proven that **the onset of a debris flow can occur very suddenly, with little or no overt notice, to those who are living in the flood plain. Visit www.ready.gov for emergency preparedness information.**

SHELTER IN PLACE OR EVACUATE?

The streets below the headwaters of Cornet Creek were designed to help carry debris flow that overflows the banks of the channel. Attempting to evacuate during an actual event may be extremely hazardous.

It takes less than a foot of fast moving water to float a car, or sweep an adult off their feet, and attempting to cross bodies of water under these circumstances could very easily result in serious injury or death.

Public Safety officials encourage residents who live within the immediate flood plain of Cornet Creek to familiarize themselves with the hazards associated with a flood event. Have a plan in mind when monsoonal weather patterns suggest that conditions are conducive to flash flooding.

If time permits, it may be feasible to evacuate the area if notice of an imminent flood threat can be communicated. If sheltering in place, move to an upstairs floor away from the debris flow.

Be alert to the possibility that a major flood event could sever electrical service, rupture gas lines, and prevent rescue of affected areas for an extended period of time.

EMERGENCY NOTIFICATION

Visit the county emergency management website at www.sanmiguelcounty.org to sign up for the Wireless Emergency Network (WENS) text messaging alert system to receive emergency public safety broadcasts.

Sign up for the reverse 911 – Target Notification System for alerts that correspond to specific geographic locations at the same web site.

[Material from the *Colorado Public Works Journal* and the Town of Telluride's Cornet Creek Flood Mitigation Plan are referenced in this document.][Pamphlet printed Jan 2013]

CORNET CREEK FLOOD & DEBRIS HAZARDS

Dakota Avenue Culvert July 23, 2007

OUR HISTORY: The Town of Telluride was built on the alluvial fan of Cornet Creek in the late 1800's as the discovery of gold lured prospectors to the rugged mountains of the San Juan range. Sitting to the north above the town, Cornet Creek drains approximately 2.4 square miles of watershed from steep mountainous terrain and runs directly through town on its way to the confluence of the San Miguel River.

Torrential rains experienced on July 27, 1914 turned the creek into a deluge of mud, and newspaper accounts estimated that a debris flow of between 8 to 10 feet in height surged down the creek bed. An estimated 20 tons of boulders and debris flowed through the eastern portion of town, knocking homes from their foundations and leaving a quagmire of mud and rock in its wake.

The 1914 flood destroyed an earthen berm that had been constructed to direct flow away from

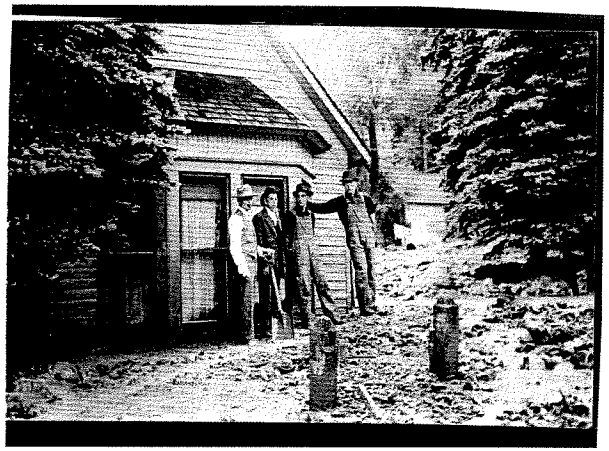
the developed part of town and the majority of the event deposited east of Oak Street. The berm was subsequently repaired.

1969 EVENT

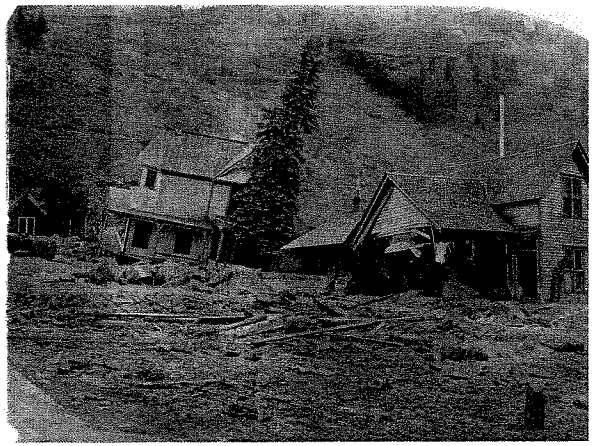
Telluride experienced another significant mud-flow event on August 7, 1969. Newspaper accounts indicated that it had been a wet summer and that mid-afternoon on this date, residents heard "severe rumblings" from the mountains north of town. Not long thereafter, a stream of mud flowed down Cornet Creek, carrying trees, boulders and other debris.

It was estimated that this event deposited over 25,000 cubic yards of sediment along the western side the alluvial fan. Approximately 3 feet of sediment remained after the flood waters had receded.

The earthen berm had held in this instance and the debris flow moved in a southwesterly direction from north Townsend Street. The channel of the creek was subsequently altered to flow in a more southerly direction following the 1969 flood.



N. Fir Street, July 27, 1914



Oak Street, July 27, 1914

There had been some other minor flooding events in the intervening years, but the most recent debris flow responsible for property damages occurred on July 23, 2007. Telluride had been experiencing a wet monsoonal season and late afternoon thunderstorm showers created a debris flow that blocked the Dakota Avenue culvert and several down-stream bridges.

Flood waters jumped the creek banks at that point, proceeding in a southwesterly course, depositing a significant amount of sediment to a small section of the north part of town. One small home was eventually razed due to the damages it sustained by the debris flow.

LOOKING FORWARD

The most significant flood events have been caused by heavy rainfall following a period of prolonged wet weather. As evidenced by history, late July and early August are when the town is most susceptible to flooding and debris flow.

The Town of Telluride contracted for a hydrological study of Cornet Creek just prior to the 2007 flood. The study found that the encroachment of private development along the banks of the creek has significantly increased the potential for flood-induced risk to life and property. The limited carrying capacity of the creek channel makes maintenance more difficult, and increases the likelihood that any significant event will easily overflow the banks of the creek.

The study determined that early warning systems designed to provide public notice of an impending event are not feasible given the geographic nature of the Cornet Creek watershed. Even a "real-time' warning system would likely provide very short notice to downstream residents, due the likely high-velocities of the debris flow.

In town, bridges and culverts commonly restrict flows. The creek through town is flanked by private property, most of which is developed, making enlarging the channel impossible. Blockage of the flow can create areas of aggradation - as much as 3 feet in some areas in only a year. Public Works must therefore routinely remove sediment from the channel, which we do under permits from the Corp of Engineers. The strategy is simple; keep channel capacity adequate to encourage water and sediment to flow through to the San Miguel River.

EVAUCATION SHELTERS

The Telluride High School has been designated as a Red Cross emergency shelter in the event residents – visitors are displaced by this type of incident. Also, the Wilkinson Public Library is a designated Reception Center if you are unable to access the Telluride High School. Additional evacuation locations may be opened as necessary.