



MEMORANDUM

TO: Mayor and Council

FROM: Michael L. Personett, Interim Director, Watershed Protection
Kimberly McNeeley, Interim Director, Parks & Recreation

DATE: May 7, 2018

SUBJECT: Slope Failure Lower Shoal Creek

MLP
[Signature]

The purpose of this memo is to further describe a slope failure that occurred along Shoal Creek on Friday, May 4, 2018, the actions that are currently underway by multiple city departments, as well as next steps to address the situation, both near-term and long-term.

On Friday, May 4, 2018, following the severe weather that moved through the Austin area, a slope failure occurred on the west bluff overlooking Shoal Creek adjacent to the 2500 block of North Lamar Blvd. There were no injuries to persons or pets along the hike and bike trail. The trail was immediately cordoned off from 24th Street to Shoal Creek Boulevard. There have been no reports of injury from private homeowners atop the bluff in the 2400 block of Wooldridge Drive, although the backyards of several homes overlooking the bluff were visibly impacted. City of Austin parkland and approximately 300 feet of the hike and bike trail along Shoal Creek were damaged by this slope failure. A boulder wall, constructed by the Watershed Protection Department (WPD) in 1999 to stabilize the channel bank, was also severely damaged. Of immediate concern is the large quantity of soil, rock and debris in the creek channel from the slope failure. This could pose a problem with conveyance of flood flows within the creek.

There appears to be a history of slope failures in this area, with the most recent having occurred in 1998. The bluff above Shoal Creek is comprised of Buda Limestone overlying an unstable Del Rio Clay formation. Fractures can develop in the limestone and large masses slide off, riding on top of the clay. The fracturing is the result of movement in the clay beneath the limestone. Similar historical failures have been noted by geologists along the bluff just north of last Friday's slope failure. While the specific cause of this slope failure is unknown at this point, the heavy rains that occurred prior to the failure may have played a role. Mass movement of soil like this is typically a combination of geology, water and topography (steep slopes). Please note that the hike and bike trail improvements were very likely not a contributing factor in the cause of this massive slope failure, but were impacted by it. No recent stream stabilization work has occurred in the impacted stream reach.

Personnel from WPD, Parks and Recreation (PARC), the Public Works Department (PWD), and Austin Water (AW) have been onsite over the weekend and on Monday to inspect the impacted area and initiate our assessments of conditions and possible actions to address immediate concerns. This includes WPD stream restoration engineers, geologists, field operations, and safety personnel, as well as engineers from AW and PARC senior management. The Development Services Department has also been notified, including the City's Building Official, to assist with permitting of emergency actions and to address any safety concerns with potentially affected residential structures.

Below are the actions that are being taken to more fully assess conditions and to evaluate mitigation measures:

- As noted, the trail has been closed and PARC is considering options to reroute pedestrian and bike traffic;
- AW is conducting a TV inspection of the wastewater line to determine if there has been structural damage;
- WPD is conducting aerial video reconnaissance of the site to better assess the extent of the slope failure;
- WPD engineers will obtain new survey data and perform modeling to determine the degree to which the flood conveyance capacity of the creek channel has been impacted;
- WPD engineers and field operations personnel are assessing measures that might be employed to mitigate obstruction of flood flows (e.g., removal of materials from the channel and vegetation from the floodplain) and provide temporary stabilization;
- The WPD Safety Office is assessing potential work hazards and will develop a safety plan prior to any work commencing at the site;
- A forensic geotechnical analysis will be conducted to determine cause and extent of slope failure and likelihood of further soil movement; and
- Staff are working with affected private property owners to assess damage to their properties and potential near and long-term solutions.

Over the next several days we should have enough data and analyses to further define key next steps, particularly any measures that can be implemented immediately to stabilize the situation. We will keep you informed as our work progresses. If you or your staff have any questions, please contact Mike Kelly, P.E., Managing Engineer with WPD at (512) 974-6592 or at mike.kelly@austintexas.gov.

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