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LIM01.4521  
Tuesday, July 10, 2012

City of Santa Paula  
Janna Minsk  
P.O. Box 569  
Santa Paula, CA 93061

**Subject: Peer Review of Santa Paula Creek Flood Control Project Hydrology, Hydraulics, and Sedimentation Appendix by HDR CDM, December 2011  
Inundation Mapping for 39,400 cfs**

Dear Janna,

We have reviewed the subject report, specifically the inundation mapping section for a 39,400 cfs 100-year storm event in Santa Paula Creek. Below is a summary of how the subject analysis was completed by HDR CDM.

Assumptions used in the analysis:

1. Base flow rate is 39,400 cfs, provided to HDR CDM by Ventura County Watershed Protection District.
2. An allowable sedimentation profile in the bottom of the channel determined by HEC-6T in this report was used with the peak flow rate to determine the amount of water leaving Santa Paula Creek.
3. A water surface elevation at the confluence of Santa Paula Creek and Santa Clara River of 267.9 feet NAVD 88 was used based on the *Memorandum for CESPL-ED-D9*. The report states that multiple water surface elevations were tried up to 273 feet, however there was no change in the water surface elevation upstream of station 10+00, which is downstream of Highway 126.
4. No attempt to identify locations of levees or to evaluate the ability to certify either existing or proposed levees has been included. A levee condition can only be determined once the specific evaluation criteria are identified. In cases where the water in the creek overtops the earthen embankments, it was assumed they would fail to the landside toe elevation and that is the weir elevation. In cases where there is a concrete wall, the top of the wall was used as the weir elevation for overtopping. If this analysis was to be classified as a 'levee condition', the model would need to analyze three separate conditions with the worst case being mapped for FEMA; each side of the Creek failing and both sides failing at the landside toe elevation.
5. The main channel model is broken into two sections, upstream of the Railroad Bridge, and upstream of Highway 126 bridge.
  - a. Flow leaving Creek upstream of Railroad bridge is 6,630 cfs on the City side of the channel (right side) and 1,520 cfs on the left side of the channel.
  - b. Flow leaving Creek between the Highway 126 bridge and the Railroad Bridge is 8,890 cfs on the right side and zero flow on the left side.

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c. A total of 22,360 cfs remains in the Creek to be routed under the Highway 126 bridge.

The analysis in the report for a flow rate of 28,000 cfs was contained within the channel upstream of Highway 126.

6. A flow path through the City on the right side of the Creek was assumed at a general location running east/west along the Highway. Cross sections were taken and obtained from 2005 Lidar Data. Cross Sections were arbitrarily taken at intervals along the flowline. All general cross sections are at the surface elevations and obstructions such as structures were not included in the analysis, but were accounted for in the Manning's 'n' value of 0.063.
7. The total overflow of 15,520 cfs was routed through the City north of Highway 126. All storm drains, culverts, and underpasses through Highway 126, were conservatively assumed to be blocked with debris and will not allow water to pass through in a flood event. The only breakout point for the water to get over the Highway 126 freeway is at a low point west of Peck Road.
8. Flooding depths through the City on the right side of the creek range in depth from 0.10 feet to 9 feet, with 9 feet depth being closest to the freeway.

Please feel free to contact us with any questions.

Sincerely,



Kinsey Hensley, P.E.  
805-654-6977

