for the safe passage of the floodwaters through the project site and to provide hydraulic calculations to prove that their design would do so. At this meeting, the Department discussed in great detail why there were concerns about flooding in the proposed conditions. The Department also made it very clear, that the applicant should be conservative in their proposal and calculations to provide adequate protection from floodwaters for future residents of the townhouse development. At the conclusion of the meeting, the Department set a March 31, 2006 deadline for revisions.

On March 21, 2006, the applicant submitted revised plans and calculations in an attempt to address the concerns outlined by the Department. Utilizing the topography on the adjoining site, the applicant was able to estimate that 413 cfs could flow toward the project site in the flood hazard design flood. In the latest proposal, the applicant has proposed a concrete flume between the townhouses and the upstream property line which would be oriented perpendicular to flow for 75 feet before the flume would make a 90-degree turn and then run an additional 380 feet directly adjacent to the adjoining property line. The applicant has submitted a HEC RAS hydraulic computer run with 2 cross sections to determine the capacity of the flume. However, the submitted computer run does not address how the 413 cfs of floodwaters will be able to spill into the flume and then make two 90-degree turns in the flume in order to flow through the project site.

Specifically, the Department is concerned the floodwaters flowing into this flume will be directed at the opposite wall of the flume, then have to make a 90 degree turn to flow through the 75 foot length of flume before having to make another 90 degree turn to flow through the remainder of the flume. This situation would result in a significant loss of energy thereby slowing down the velocity of the water and significantly impacting the elevation of floodwaters in and around the 75 foot section of the flume that will be perpendicular to floodwaters as they enter the project site. Furthermore, the applicant has coded a trapezoidal flume into the computer run which has a larger cross sectional flow area than the rectangular flume proposed on the submitted drawings. This error further overestimates the capacity of the flume to pass floodwaters. There is a significant potential that floodwaters may rapidly fill up the perpendicular section of the flume and then flow across the flume and impact the side wall of one of the townhouses. Floodwaters may also flow across the driveway to that unit and flow down the roadway and parking areas in the townhouse development and even potentially flood the lowest floor of the townhouse units themselves.

The applicant has calculated a flow velocity of a 8.90 ft/sec at the downstream end of the flume. However no soil erosion control measures have been proposed at the outlet of the flume. Therefore, the Department is very concerned that water leaving the downstream end of the flume will cause significant erosion including destruction of trees and other vegetation, as it flows towards the bank of the River. Furthermore, this erosion may also impact the adjoining property since the proposed flume will run directly adjacent to the property line separating the applicant's site and the adjoining property. Also, it appears that it would almost be impossible for the applicant to construct the flume without disturbing the adjoining property since the entire flume will be constructed along the property line. The applicant has not submitted written consent from the adjoining