

MEMO

TO: Marvin E. Carter, Michael O’Haire and David Gunter

FROM: George A. Simons, P.E.

RE: IRFWCD – Clarifications Regarding:
2”/24 hour Discharge Limitation for the 25 Year Storm Event with
Stormwater Management Lakes designed for Stormwater Harvesting

DATE: February 12, 2020 (Revised)
October 31, 2019

CAI requests that the Board of Supervisors formally accept the clarifications noted below. Recently we have been made aware of an increase in use of Stormwater Treatment Lakes being designed as Stormwater Harvesting systems by local consulting engineers to address SJRWMD permitting criteria for projects located within the IRFWCD. The control structures for stormwater lakes typically include an attenuation weir and a control weir. The control weir is constructed at a lower elevation and is designed to slowly bleed down the treatment volume. The attenuation weir is constructed at a higher elevation which is above the treatment volume level, and is designed to limit the discharge to 2” day total (includes discharge through the bleed down).

The SJRWMD criteria for Stormwater Harvesting lakes systems require the elimination of a bleed down weir to recover the treatment volume. Instead the recovery of the treatment volume is assumed to be achieved by using the runoff water for an irrigation water source. Typically the control elevation is 6” to 18” below the attenuation weir.

The IRFWCD requires the flood routing of proposed projects to meet the two (2) inch / day volume limitation (from time hour 0 to time hour 72), during and after a 25 year – 24 hour event design storm (9.2 inch). These storms typically occur during the wet season when the antecedent conditions may be wet and irrigation system use is reduced. This can result in the lakes containing excessive treatment water to be used for irrigation when a storm event occurs.

The clarification needed to be addressed is the design engineer’s assumption of the level of water in the Stormwater Lake at the start of the flood route for the IRFWCD 25 year – 24 hour event design storm (9.2 inch). We have considered the following scenarios for the starting water level in the stormwater lake,

- A. Assume the water level is at the attenuation weir. This is the most conservative however the amount of land needed for lake storage will likely increase and result in higher development costs.
- B. Assume the water level is at the control level based on the recovery of the treatment volume through the typical irrigation demands of the development and/or seepage into the water table.

C. Assume the water level is between the attenuation weir and the control level

CAI recommends that the Board adopt scenario C, with the following permit criteria to clarify the required assumption for the starting water level in the lake,

1. The control level is at the wet season high water table.
2. The water level shall be assumed to be the higher elevation of either of the following
 - a. The level representing 50 percent of the treatment volume in the lake, or
 - b. 6 inches below the attenuation weir.