

MEMO

To: Stephanie Moreno, GCRC
From: Eric Donaldson, P.G.
Date: September 13, 2019 rev. 10/24/19

Subject: Silver Creek Linear Park Wetland Study, proposed revised gaging program

I visited the Silver Creek Linear Park site yesterday to evaluate water gage placement based on feedback received from CDFW. Based on my visit, I have come up with a revised water level gaging plan to evaluate the interactions between Upper Silver Creek and the seasonal wetland features on the right bank at Silver Creek Linear Park. This proposal does not address easement issues but presents a better scenario to evaluate hydrologic interactions between the creek and the wetlands. Please note that the outline in the figure is a Valley Water easement, not a fee title property. If we decide we would like to evaluate the wetland/channel downstream of the main season wetland pan, I would suggest we add another paired set of channel and wetland water level gages. If Valley Water will allow us to do the gaging within their easement but does not want us to include wetland area within their easement in our study, I suggest we remove the two downstream gages and add a second in-channel gage.

Below I present a summary discussion of the gage locations:

Proposed upstream in-channel water level gage: This gage location, within the south channel (Mainstem Upper Silver Creek), approximately 3-10 feet downstream of the flow-split between the north and south channels will capture water levels in Silver Creek. In addition, we will be able to detect and when water levels in the south channel are sufficiently high enough to flow into the north channel and estimate how much flow is draining to the wetland. Proposed site surveys will focus on characterizing the local topography as it relates to project gages. This gage will improve our understanding of water levels as they correlate to the Valley Water Upper Silver Creek gage at Yerba Buena Road. My initial impression is that the flow split is geomorphically unsustainable in its current configuration, and if re-configuration emerges as the preferred option, data collected here will the technical team look at potential design alternatives that will optimize the wetland sustainability (e.g. lowering the berm). I did not walk every section of channel, but at this point, I prefer this location to the concrete feature midway through the reach. Since we are not gaging flow - only stage - at the site, we do not need to have a hardened weir. Rather, it would be more explanatory, in my view, to have a gage in a naturalized section of the channel in a representative cross-section. We would field-fit the gage, once approved, as is our customary practice.

Proposed upstream wetland water level gage: This gage will allow us to see how the upper wetland is correlated to hydrologic inputs and outputs (Flow through the flow split, and over the

berm, rainfall, etc.). These data are necessary to drive our proposed hydroperiod model and will be used in tandem with available rainfall and evapotranspiration data to understand the water balance of the wetland, including potential losses or gains to groundwater.

Proposed downstream wetland water level gage: This gage will allow us to evaluate the patterns of ponding in this area, which is separate from the upper wetland, relative to channel flow inputs, inputs from the upstream wetland, rainfall, as well as outputs.

Proposed downstream in-channel water level gage: This gage would allow us to look at the interaction between the lower section of channel and the lower wetland. This station would also be helpful for looking at design alternatives for the lower area, down the line.

Please note: I saw a Valley Water stilling in the channel about 75 feet upstream from the access bridge that crosses the creek. It might be worth asking Valley Water for background information on it that might relate to the proposed study.

I do not see issues with this gaging in this configuration, with respect to our current budget. If you have any questions, GCRCD indicated they could set up another conference call to provide clarification.

Enclosures: Proposed monitoring map

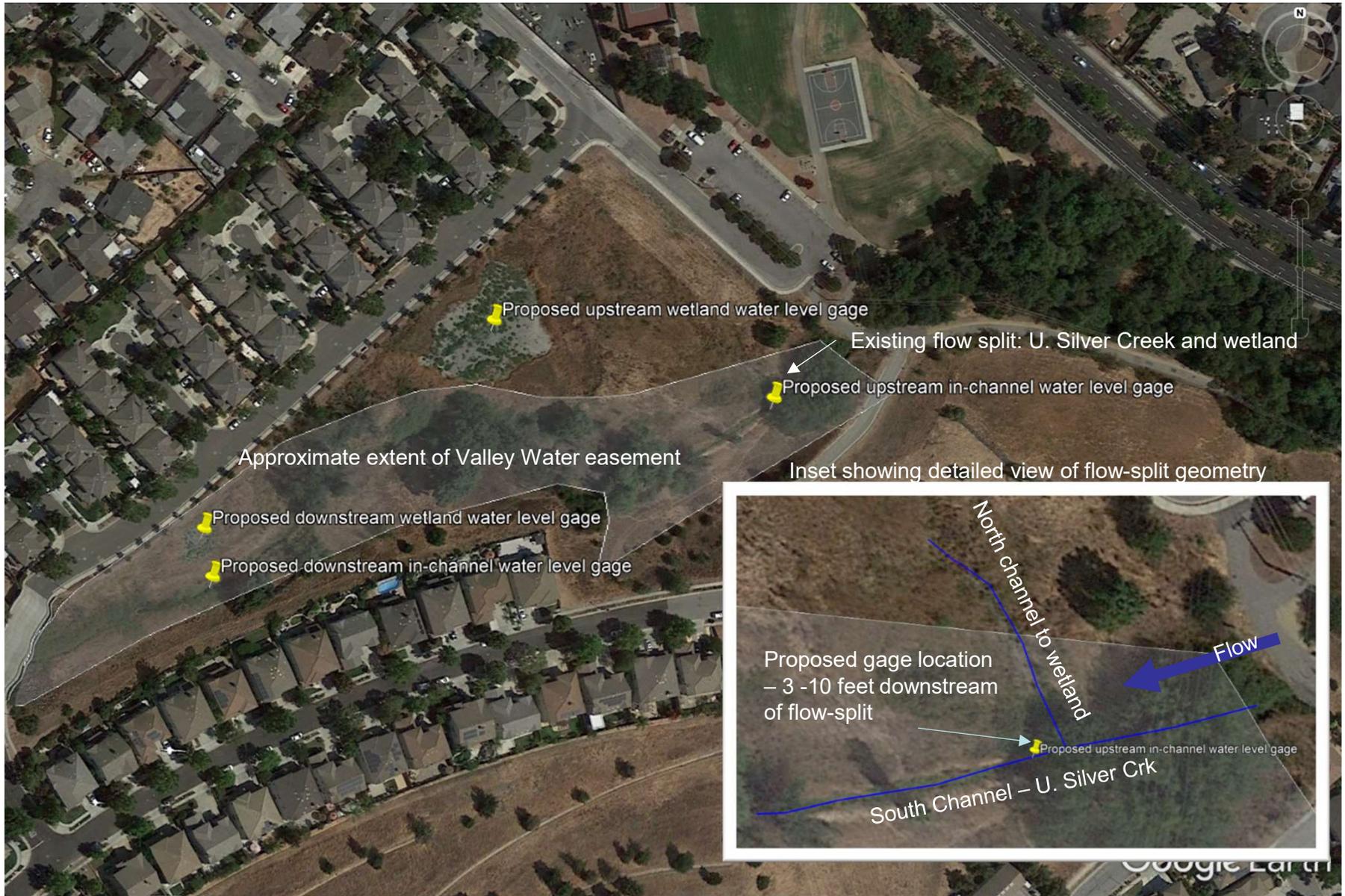


Figure 1. Proposed updates to water level gaging program including gaging stations within the Valley Water easement, Silver Creek Linear Park, San Jose, California.