



Santa Clara Valley Water District

File No.: 18-0262

Agenda Date: 4/24/2018

Item No.: 5.2.

BOARD AGENDA MEMORANDUM

SUBJECT:

Update on Capture of Stormflow in the Uvas-Llagas Watershed (Responding to Board Member Request R-18-0005).

RECOMMENDATION:

Receive update and provide direction to staff.

SUMMARY:

This memorandum is a response to board member request R-18-0005 from the February 27, 2018 Board meeting. The Board requested information regarding options to capture storm water in the Uvas and Llagas watersheds to increase water supply. The following discussion provides a brief background on the existing infrastructure in these watersheds and analyses regarding expanding the ability to capture additional water.

The District operates two reservoirs in the Uvas-Llagas Watershed that impound local rainfall for water supply:

- Uvas Reservoir, built in 1957 on Uvas creek, has a capacity of 9,835 acre-feet (AF) and water rights for up to 24,400 AF each year.
- Chesbro Reservoir, built in 1955 on Llagas Creek, has a capacity of 7,945 AF and a water right of 7,200 AF per year.

These reservoirs were designed to take advantage of Californian climate - filled by winter rains with summer water releases to recharge the groundwater basin. In drought years, the reservoirs may have limited inflow; while in wet years, upland runoff can result in rapid fill and spill of excess flows over the spillways to downstream creeks then to the Pajaro River and out to Monterey Bay.

Historically, Uvas Reservoir spills more often than Chesbro due to its location in a watershed. Table 1 below shows recent spill events. To take advantage of this productive watershed, the Uvas/ Llagas transfer pipeline was constructed in 1955 to transfer water from Uvas Reservoir to Llagas Creek, just below Chesbro Reservoir for groundwater recharge. The pipeline is operated under the terms of a Lake or Streambed Alteration Agreement (LSAA or "permit") issued by the California Department of Fish and Wildlife. The permit allows transfers when Uvas is above a defined storage amount and not at the expense of any of the desired seasonal habitat flows in Uvas Creek.

TABLE 1 Data from Raw Water Ops yearly calculations

	Uvas Spill Volume (ac- ft)	Chesbro Spi Volume (ac- ft)
2004	3,564	0
2005	11,264	2,522
2006	21,547	483
2007	0	0
2008	0	0
2009	0	0
2010	3,109	0
2011	30,584	362
2012	2,387	0
2013	3,236	0
2014	0	0
2015	0	0
2016	11,130	0
2017	103,068	5,671
Average	13,564	646

Flooding can also be an issue in the watershed. Downstream of Uvas Reservoir, two locations flood relatively frequently at very low spillway flows - the Thousand Trails RV park just downstream of the dam and the Miller Avenue low flow crossing. At higher flows, like in 2017, Uvas Creek floods unincorporated areas in Santa Clara County downstream of U.S. Highway 101, mostly agricultural land and the US-101 highway bridge which has a significant impact to transportation.

Downstream of Chesbro Reservoir, Llagas Creek flows through Morgan Hill, San Martin, Gilroy, and unincorporated Santa Clara County areas. Most areas along the creek are agricultural lands. A majority of this creek is slated to be improved within the next few years. Combined with the previously improved Lower Llagas reaches, Llagas creek will have a 10 to 20-year flood protection.

Since the 1950s, studies of expanded storm water capture in the Uvas Watershed have indicated that a larger reservoir may have been more cost effective at the time of construction. It appears that the nearly 10,000 Acre-Feet (AF) capacity of the existing reservoir was based on the financial capacity of the South Santa Clara Valley Water Conservation District when it built the reservoir in the 1950s. However, studies in the 1970s concluded that Central Valley Project water would be more economical than developing additional local supplies, including supplies from an expanded Uvas Reservoir. Subsequent studies have found that a reservoir expansion and/or pipeline from the

reservoir to the Santa Clara Conduit or recharge facilities could increase water supply yields by as much as 12,000 Acre-Feet per Year (AFY) depending on the reservoir size and operations. However, none of the studies recommended moving forward with the project at the time because other projects better met planning objectives.

An important consideration for recent reservoir expansion analyses is the requirement to support the instream flow needs for fish and wildlife habitat below the dams. Both Uvas and Chesbro reservoirs are operated under the terms of LSAs issued by the California Department of Fish and Wildlife to meet California Fish and Game Code requirements. These permits require reservoir releases and minimal habitat flows to ensure that rare and endangered species such as the South-Central California Coast Steelhead, are supported consistent with the federal Endangered Species Act (ESA) Recovery Plan. This plan calls for additional water releases to improve access to spawning and rearing habitats, and instream habitat conditions as the principal recovery actions needed to increase local steelhead populations.

The District Water Supply Master Plan Update (2018) analyses incorporated current operating requirements for Uvas Reservoir that are designed to balance fishery and water supply needs. These analyses indicate lower water yields to achieve this balance. Given the current operating requirements, other projects can more effectively and efficiently meet water supply reliability objectives than expansion of Uvas Reservoir and/or the Uvas Pipeline. To this end, on September 19, 2017, the Board approved proceeding with planning on a “No Regrets” package of water supply and storm water projects. One of the projects is agricultural land recharge, which would retain storm flows on agricultural land for groundwater recharge in the Llagas Groundwater basin. No specific parcels have yet been identified for the project.

FINANCIAL IMPACT:

There is no financial impact associated with this item.

CEQA:

This is an informational item and no action is recommended at this time; thus, it does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

ATTACHMENTS:

None.

UNCLASSIFIED MANAGER:

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