

FOX CANYON GROUNDWATER MANAGEMENT AGENCY



MEMORANDUM

Date: February 2, 2021
To: OPV Stakeholder Group
From: Kim Loeb, Groundwater Manager
Subject: Sustainable Yield of the Oxnard and Pleasant Valley Basins

The Sustainable Groundwater Management Act (SGMA) requires the Oxnard and Pleasant Valley (OPV) Basins to be brought into sustainable groundwater management by 2040. Sustainable groundwater management means avoiding undesirable results related to one or more of the six sustainability indicators:

- Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of groundwater supply
- Significant and unreasonable reduction of groundwater storage
- Significant and unreasonable seawater intrusion
- Significant and unreasonable degraded water quality
- Significant and unreasonable land subsidence
- Depletions of interconnected surface water that have significant and unreasonable impacts on the beneficial uses of the surface water

The Groundwater Sustainability Plans (GSPs) adopted by the Board set minimum thresholds for each aquifer to identify when undesirable results are occurring. The minimum thresholds are groundwater levels measured at key wells across both basins. Measurable objectives are also identified in the GSPs. The measurable objectives are the ideal average water levels that should be maintained to protect against dropping below the minimum thresholds during periods of drought. Seawater intrusion is the controlling sustainability indicator; that is, if groundwater levels are maintained to control seawater intrusion the undesirable results related to other sustainability indicators do not occur. It should be noted that current water levels are below the minimum thresholds at all of the key wells in both the Oxnard and Pleasant Valley Basins.

Sustainable yield is the amount of groundwater that can be extracted from the basin annually without causing undesirable results. The sustainable yield of the OPV Basins was estimated using a numerical groundwater model for the GSPs. For the Oxnard Basin, sustainable yield was estimated for both the Upper Aquifer System (UAS) and the Lower Aquifer System (LAS). Modeling provides estimates that have uncertainties. The uncertainties of the modeled estimates of sustainable yield were quantified for the GSPs. Table 1 presents the GSP estimates of sustainable yield for the basins and the quantified uncertainty of those estimates. The Stakeholder Group discussed sustainable yield at the September 29, 2020, meeting and recommended that the mid-point amount of 50,600 acre-feet per year (AFY) be used as the initial 2040 target.

Table 1 – GSP Estimate of Sustainable Yield

Basin	Sustainable Yield (AFY)
Oxnard – Upper Aquifer System (UAS)	32,000 ± 6,000
Oxnard – Lower Aquifer System (LAS)	7,000 ± 3,600
Oxnard – Total (UAS & LAS)	39,000 ± 9,600
Pleasant Valley	11,600 ± 1,200
Combined OPV Basins	50,600 ± 10,800

AFY: Acre-Feet per Year

Modeling of the sustainable yield included assumptions that a number of projects would be implemented:

- Delivery of 4,600 AFY of recycled water to farmers in the vicinity of Hueneme Road from the Oxnard GREAT Program
- Expansion of the GREAT Program to increase groundwater recharge by 4,500 AFY in the Saticoy Spreading Grounds (note that the City of Oxnard no longer supports this proposed project but indicates that this water could be used in other ways in the basin)
- Approximately 2,700 AFY reduction of pumping through voluntary temporary fallowing

The GSP estimate should be considered the base estimate of sustainable yield. The GSPs clearly articulate that additional projects should be developed and implemented to increase the water supplies and sustainable yield of the basins. While a number of other projects were identified during development of the GSPs, they were conceptual with insufficient specific information available to include them in the initial GSPs.

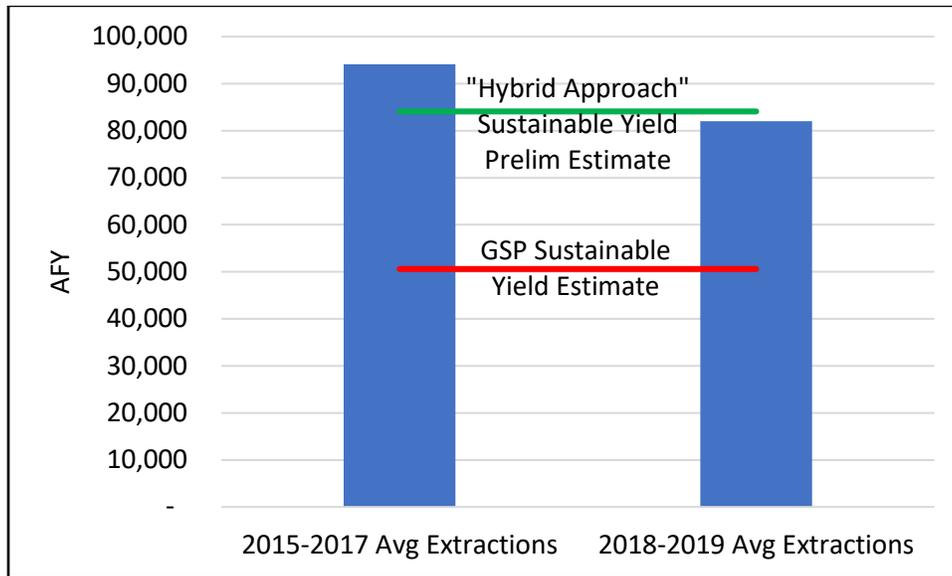
The Projects Committee reviewed all the projects identified during development of the GSPs as well as new project concepts, and recommended a suite of projects to evaluate, which the large Stakeholder Group agreed with. This suite of projects, referred to as the “hybrid approach,” is preliminarily estimated to increase sustainable yield by approximately 33,500 AFY. Refer to the “Project Committee Recommendations” document at FCGMAustainability.org under the OPV Core Stakeholder Group meetings for more info. United Water Conservation District (UWCD) is modeling the hybrid approach suite of projects to better estimate what the increase in sustainable yield might be. It should be noted the full suite of projects would be very expensive (\$100s of millions) to implement. Once UWCD’s initial modeling is completed, then additional feasibility analysis, cost estimation, and cost-benefit evaluation would need to be conducted for recommendation to the FCGMA Board, and stakeholders at large, for further evaluation of funding and implementation.

The following chart shows the average annual extractions in the OPV Basins in 2015 through 2017 and 2018 through 2019. The GSP sustainable yield estimate and the preliminary estimate of sustainable yield under the “hybrid approach” scenario are shown for reference.

Sustainable Yield of the OPV Basins

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Under SGMA, the GSPs must be evaluated at least every five years and amended or revised as appropriate, including incorporating new data and the results of updated numerical model scenarios. Minimum thresholds, measurable objectives, and sustainable yield will be revised in the GSP updates based on feasible projects that are ultimately selected for funding and implementation as well as other updated or new information including closing of data gaps and uncertainty. Stakeholder input will be an important part of the GSP update process. The GSP updates will be adopted by the Board at a public hearing.