CHAPTER 5
PROJECTS AND MANAGEMENT ACTIONS

5.1 INTRODUCTION TO PROJECTS AND MANAGEMENT ACTIONS

Projects and management actions have been developed to meet the sustainability goal, measurable objectives, and undesirable results identified for the Pleasant Valley Basin (PVB) in Chapter 3, Sustainable Management Criteria, of this Groundwater Sustainability Plan (GSP). Groundwater elevations in the PVB that contribute to seawater intrusion in the aquifers of the Upper Aquifer System and Lower Aquifer System of the Oxnard Subbasin, as well as chronic lowering of groundwater levels and associated loss of storage have been identified as the undesirable results that have the potential to impact beneficial uses of groundwater in the PVB.

One project in the PVB was approved for incorporation in the predictive numerical model simulations of future conditions in the PVB and Oxnard Subbasin. The project described below was suggested by stakeholders, selected for inclusion in the GSP through a process by the Operations Committee of the Fox Canyon Groundwater Management Agency (FCGMA) Board of Directors (Board), and approved for inclusion in the GSP by the FCGMA Board. The criteria for including a project in the GSP included the following:

- Sufficient project information is available for evaluation and modeling.
- Project increases sustainable yield, or reduces groundwater demand.
- Project implementation is planned within 20 years,
- Project meets GSP Emergency Regulations Section 354.44 criteria.
- There is an agency proponent for the project.
- Funding for the project is identified.

In the PVB, the projects that were determined by the Operations Committee to meet these criteria were incorporated into the future model scenarios to the extent possible (see Section 2.4.5, Projected Water Budget and Sustainable Yield). The inclusion of these projects does not constitute a commitment by the FCGMA Board to undertake them, but rather signals that these projects were sufficiently detailed to be included in groundwater modeling efforts that examined the quantitative impacts of the projects on groundwater elevations and the sustainable yield of the PVB and the adjacent Oxnard Subbasin. As currently envisioned, the projects in this GSP would be implemented by the project proponent or sponsoring agency. However, FCGMA may opt to implement projects in the future, as necessary to achieve sustainability in the PVB. Additionally, it should be noted that any future projects undertaken in the PVB will need to be approved and permitted by all relevant regulatory agencies. These agencies may include, but are not limited to, the Regional Water Quality Control Board and the State Water Resources Control Board.

In addition to the project discussed below, the FCGMA Board has the authority to implement management actions to ensure that the PVB and the adjacent Oxnard Subbasin do not experience undesirable results. The primary management action that can be implemented by the FCGMA Board is restrictions on groundwater production. This authority was granted to the FCGMA Board in the enabling legislation that formed FCGMA, and this action has been undertaken in the past to eliminate overdraft.

As discussed in Chapter 2, Basin Setting, groundwater modeling was used to evaluate projected water budget conditions and potential impacts to beneficial uses and users of groundwater in the basin. Without the type of projects described below, substantially greater reductions in groundwater production will be needed to meet the sustainability goal for the basin, which would lead to significant economic disruption and prevent groundwater in the basin from being put to beneficial use to the fullest extent possible. It is anticipated, and recommended, that FCGMA will evaluate, model, and conduct feasibility studies of other projects for achieving sustainable groundwater management for the 5-year update to this GSP to optimize basin management and minimize extraction restrictions.

5.2 PROJECT NO. 1 – TEMPORARY AGRICULTURAL LAND FALLOWING PROJECT

5.2.1 Description of Project No. 1

Temporary fallowing is a quick way to reduce demand with no capital costs or infrastructure needed. Because it is inexpensive, it is envisioned that it could be implemented early while other long-term solutions are being investigated and implemented. The Temporary Agricultural Land Fallowing Project would use replenishment fees to lease and temporarily fallow agricultural land (FCGMA 2018). This would result in decreased groundwater production on the parcels or ranches that are fallowed, and an overall reduction in groundwater demand in the PVB. Parcels or ranches in areas susceptible to contributing to seawater intrusion in the adjacent Oxnard Basin would be the focus of this project (FCGMA 2018).

5.2.2 Relationship of Project No. 1 to Sustainability Criteria

Temporary fallowing of agricultural land was included in future groundwater modeling scenarios to examine the impact that the project will have on the sustainability criteria (see Section 2.4.5). The future model scenarios incorporated additional projects in the adjacent Oxnard Subbasin, and did not quantify the impact from any individual project included in the model. Rather, the potential effect of this project in the context of all of the projects is presented below.

Relationship to Minimum Thresholds

As modeled, the Temporary Agricultural Land Fallowing Project reduced production from the PVB by approximately 2,230 acre-feet per year (AFY; see Section 2.4.5). The project as proposed would generate a reduction in pumping of approximately 2,400 AFY. The difference between the proposed project reduction and the model reduction is related to considerations of existing contracts for the delivery of surface water from the Santa Clara River.

The numerical groundwater model simulation of the Future Baseline With Projects Scenario, which incorporates potential future projects including the Temporary Agricultural Land Fallowing Project, results in higher groundwater elevations than the Future Baseline Scenario, which does not incorporate projects (see Section 2.4, Water Budget). This suggests that the projects will assist with water level recovery in the PVB, a necessary first step to avoid exceedance of the minimum thresholds. Although implementation of the projects increases water levels in the PVB, these projects alone did not provide sufficient supplemental water or redistribution of groundwater production to meet the minimum thresholds.

Relationship to Measurable Objectives

The relationship of the Temporary Agricultural Land Fallowing Project to the measurable objectives is similar to its relationship to the minimum thresholds. By increasing water levels and fallowing agricultural land, the Temporary Agricultural Land Fallowing Project will help the PVB meet the measurable objective water levels defined in Chapter 3.

5.2.3 Expected Benefits of Project No. 1

The Temporary Agricultural Land Fallowing Project will benefit the PVB by lessening pumping reductions for agricultural users of the PVB whose lands remain in production, while providing compensation for agricultural users who choose to fallow parcels of land. This project would complement a water market that is currently being developed for the Oxnard Subbasin and may be expanded into the PVB by providing an alternative method for landowners to monetize pumping allocations (FCGMA 2018).

5.2.4 Timetable for Implementation of Project No. 1

Temporary fallowing is a quick way to reduce demand with no capital costs or infrastructure needed. Because it is inexpensive, it is envisioned that it could be implemented early while other long-term solutions are being investigated and implemented. The project is currently in the planning phase but does not require construction of new facilities and is unlikely to require permitting. California Environmental Quality Act compliance has not yet been initiated, but the project proponents anticipate that a negative declaration or a mitigated negative declaration may

be sufficient (FCGMA 2018). The project could be implemented when FCGMA is able to collect replenishment fees and willing lessors are found to participate.

5.2.5 Metrics for Evaluation of Project No. 1

The metric for evaluation of the Temporary Agricultural Land Fallowing Program will be the volume of groundwater that is not produced from wells that supply the fallowed acreage. FCGMA has required groundwater production reporting since 1983. Groundwater production rates from before the project is implemented will be compared to groundwater production rates when the parcel or ranch has been fallowed. The historical production rates and associated base period for calculating those rates will be determined in the future if the project is implemented.

5.2.6 Economic Factors and Funding Sources for Project No. 1

The funding source for this project is anticipated to be replenishment fees collected by FCGMA. The cost of the water is estimated to be $1,200 to $1,800 per acre-foot.

Any action taken by the FCGMA Board, acting as the GSA for the portion of the PVB in its jurisdiction, to impose or increase a fee shall be taken by ordinance or resolution. Should the FCGMA Board decide to fund a project through imposition of a replenishment fee, the FCGMA will hold at least one public meeting, at which oral or written presentations may be made. Notice of the meeting will include an explanation of the fee to be considered and the notice shall be provided by publication pursuant to Section 6066 of the California Government Code.[1] At least 20 days prior to the meeting, the GSA will make the data on which the proposed fee is based available to the public.

5.3 MANAGEMENT ACTION NO. 1 – REDUCTION IN GROUNDWATER PRODUCTION

5.3.1 Description of Management Action No. 1

The primary management action proposed under this GSP is a Reduction in Groundwater Production from the PVB. FCGMA has had the authority to monitor and regulate groundwater production in the PVB since 1983. The FCGMA Board has used its authority to reduce groundwater production from the PVB in the past, and will continue to exert its authority over groundwater production as the Groundwater Sustainability Agency for the PVB.

[1] Publication of notice pursuant to Section 6066 of the California Government Code "shall be once a week for two successive weeks. Two publications in a newspaper, published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates are sufficient."

The estimated long-term rate of groundwater production in the older alluvium that will prevent net seawater intrusion in the Upper Aquifer System of the adjacent Oxnard Subbasin after 2040 is approximately 4,300 AFY (see Section 2.4.5). The estimated long-term rate of groundwater production in the Lower Aquifer System that will prevent net seawater intrusion after 2040 is approximately 7,300 AFY (see Section 2.4.5). The uncertainty in the combined production from the older alluvium and the Lower Aquifer System is approximately ±1,000 AFY. Reductions in groundwater production were modeled as a linear decrease from the 2015–2017 production rates, and the modeled reductions in the PVB were higher than the estimated sustainable yield calculated based on all of the model scenarios (see Section 2.4.5). The exact reductions that will be implemented in the PVB over the next 5 years will be determined by the FCGMA Board based on the data collected and analyzed for this GSP. These reductions will be evaluated based on the potential paths to reaching sustainability discussed in Chapter 3.

5.3.2 Relationship of Management Action No. 1 to Sustainability Criteria

Reduction in Groundwater Production in the PVB has a measurable impact on groundwater elevations. Groundwater elevations, in turn, are a measure of groundwater in storage in the PVB, and influence seawater intrusion in the adjacent Oxnard Subbasin. The effect of reduced groundwater production on groundwater level elevations was simulated using a numerical groundwater model (see Section 2.4.5). The results of the model and the relationship between Reduction in Groundwater Production and the sustainability criteria is discussed in this section.

Relationship to Minimum Thresholds

In the absence of additional projects, purchase of imported water, and shifting groundwater production locations, Reduction in Groundwater Production in the PVB is a critical component of achieving sustainability. When groundwater production was reduced from the 2015–2017 average production rates, simulated future groundwater elevations in the PVB recovered to elevations that remained above the minimum threshold after 2040 (see Section 2.4.5). The long-term production rate necessary to maintain groundwater elevations above the minimum threshold depended on several factors, including the simulated future climate, the quantity of surface water available to recharge the PVB, and the number of projects undertaken. Therefore, the numerical groundwater simulation results suggest a range of potential reductions in groundwater production that will maintain groundwater elevations above the minimum thresholds. This range is anticipated to change as additional data are collected and additional projects are implemented over the next 5 years. Therefore, any reductions implemented by the FCGMA Board over the initial 5-year period after the GSP is adopted will be evaluated and may be changed as warranted by future conditions in the PVB and the adjacent Oxnard Subbasin.

Relationship to Measurable Objectives

The relationship between Reduction in Groundwater Production and the measurable objectives is similar to the relationship between Reduction in Groundwater Production and the minimum thresholds. Numerical groundwater model simulations suggest a range of potential groundwater production rates that would result in groundwater elevations that are higher than the measurable objective half of the time and lower than the measurable objective half of the time (see Section 3.5, Measurable Objectives). As discussed previously, this range is anticipated to change as additional data are collected and additional projects are implemented over the next 5 years. Therefore, any reductions implemented by the FCGMA Board over the initial 5-year period after the GSP is adopted will be evaluated and may be changed as warranted by future conditions in the PVB and the adjacent Oxnard Subbasin.

5.3.3 Expected Benefits of Management Action No. 1

The primary benefit related to reduction in groundwater production is recovery of groundwater elevations that have historically contributed to seawater intrusion in the Oxnard Subbasin. Reductions in groundwater production can be used to close any differential between groundwater elevations that can be obtained through implementation of projects and the groundwater elevations necessary to meet the sustainability goals for the PVB.

5.3.4 Timetable for Implementation of Management Action No. 1

The FCGMA Board already has the authority to reduce groundwater production in the PVB. Therefore, reductions can be implemented within months of GSP adoption, once the proposed reductions have gone through the FCGMA Board approval process.

5.3.5 Metrics for Evaluation of Management Action No. 1

The metric for evaluation of Reduction in Groundwater Production will be groundwater elevations in the older alluvium and the Lower Aquifer System. As groundwater elevations recover, additional projects are developed, and basin management is optimized, groundwater production rates will continue to be evaluated and adjusted accordingly.

5.3.6 Economic Factors and Funding Sources for Management Action No. 1

Program administration, investigations, inspections, compliance assistance, and enforcement of the Reduction in Groundwater Production management action will utilize pumping fees imposed by FCGMA. Economic factors that will affect Reduction in Groundwater Production include impacts to the users of groundwater in the PVB. Potential economic impacts to stakeholders will be considered in the decision process for selecting future groundwater production rates and reductions necessary to meet the sustainability goals for the PVB.

5.3.7 Management Action No. 1 Uncertainty

There is uncertainty regarding the exact reduction in groundwater production required to achieve the sustainability goals for the PVB and the adjacent Oxnard Subbasin. Uncertainty in the hydrogeologic conceptual model and the numerical groundwater model is discussed in Chapter 2 of this GSP. Uncertainty in the minimum thresholds and measurable objectives is discussed in Chapter 3. Chapters 2 and 3 also discuss uncertainty associated with the future location of groundwater production and impacts of projects that will optimize management of the PVB and the adjacent Oxnard Subbasin.

Because of the existing uncertainty associated with future conditions in the PVB, a plan for exact reductions and groundwater elevation triggers for those reductions has not been developed as part of this GSP. Instead, FCGMA will work to develop and refine this plan over next 20 years, as the level of uncertainty is reduced. FCGMA recognizes that a specific long-term plan that incorporates stakeholder feedback and the need for flexibility in groundwater management will have to be adopted by 2040 to provide users of groundwater in the PVB with the tools necessary to plan for sustainable groundwater production into the future.

5.4 REFERENCES CITED

FCGMA. 2018. “Full Agenda Package: Special Board Meeting of August 29, 2018.” Meeting agenda, minutes, and preliminary project descriptions for GSPs currently in progress. August 29, 2018. Accessed May 10, 2019. https://ventura.granicus.com/MetaViewer.php?view_id=45&clip_id=5067&meta_id=661400.

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