

9 MANAGEMENT ACTIONS AND PROJECTS

9.1 Introduction

The GSAs agree herein to work together in protecting the groundwater resource and in complying with SGMA, and further agree that this GSP makes no determination of water rights. GSP management actions undertaken to achieve sustainability under SGMA shall not result in or be construed as a forfeiture of or limitation on groundwater rights under common law.

This chapter describes the management actions that will be developed and implemented in the Subbasin to attain sustainability in accordance with §354.42 and §354.44 of the SGMA regulations. Management actions described herein are non-structural programs or policies that are intended to reduce or optimize local groundwater use. Consistent with SGMA regulations §354.44, this chapter also describes projects in process and conceptual projects involving new or improved infrastructure to make new water supplies available to the Subbasin that may be implemented by willing project participants to offset pumping and lessen the degree to which the management actions would be needed. The concept projects referenced are based on previous publicly vetted feasibility studies¹. The need for management actions (and projects if implemented) is based on the following Subbasin conditions that were described in previous chapters.

- Groundwater levels are declining in many parts of the Subbasin, indicating that the amount of groundwater pumping is more than the natural recharge (Chapter 5)
- Water budgets (Chapter 6) indicate that amount of groundwater in storage will continue to decline in the future at an estimated rate of nearly 14,000 acre-feet per year (AFY), which assumes no net increase in pumping demand on the basin. If there is a net increase in demand due to e.g., the development of currently undeveloped properties in a way that requires the use of additional groundwater, the deficit would be greater.

To stop persistent declines in groundwater levels, achieve the sustainability goal before 2040, and avoid undesirable results as required by SMGA regulations, reducing groundwater pumping will be needed. Reductions in pumping will be required in amounts and locations which will prevent groundwater level declines that would result in undesirable results. A reduction in groundwater pumping will occur as a result of management actions, except where a new water supply becomes available and is used in lieu of pumping groundwater.

¹ Paso Robles Groundwater Basin Supplemental Supply Options Feasibility Study, January 2017

SGMA regulations §354.44 require that each management action and conceptual project described in the GSP include a discussion about:

- Relevant measurable objectives it would address
- The expected benefits of the action
- The circumstances under which management actions or projects will be implemented
- How the public will be noticed
- Relevant regulatory and permitting considerations
- Implementation schedules
- Legal authority required to take the actions
- Estimated costs

The groundwater management actions are intended to stabilize groundwater elevations, avoid undesirable results, and address all other sustainability indicators described in Chapter 8. Management actions to directly reduce groundwater pumping will be implemented where necessary. If groundwater levels are stabilized and/or sustained, many of the associated undesirable results described in Chapter 8 will be avoided.

The management actions (and projects if implemented) identified in this GSP will achieve groundwater sustainability by avoiding Subbasin-specific undesirable results.

***De Minimis* Groundwater Users**

While the number of *de minimis* groundwater users in the basin is significant, they are not currently regulated under this GSP. Growth of *de minimis* groundwater extractors could warrant regulated use in this GSP in the future. Growth will be monitored and reevaluated periodically.

9.2 Implementation Approach and Criteria for Management Actions

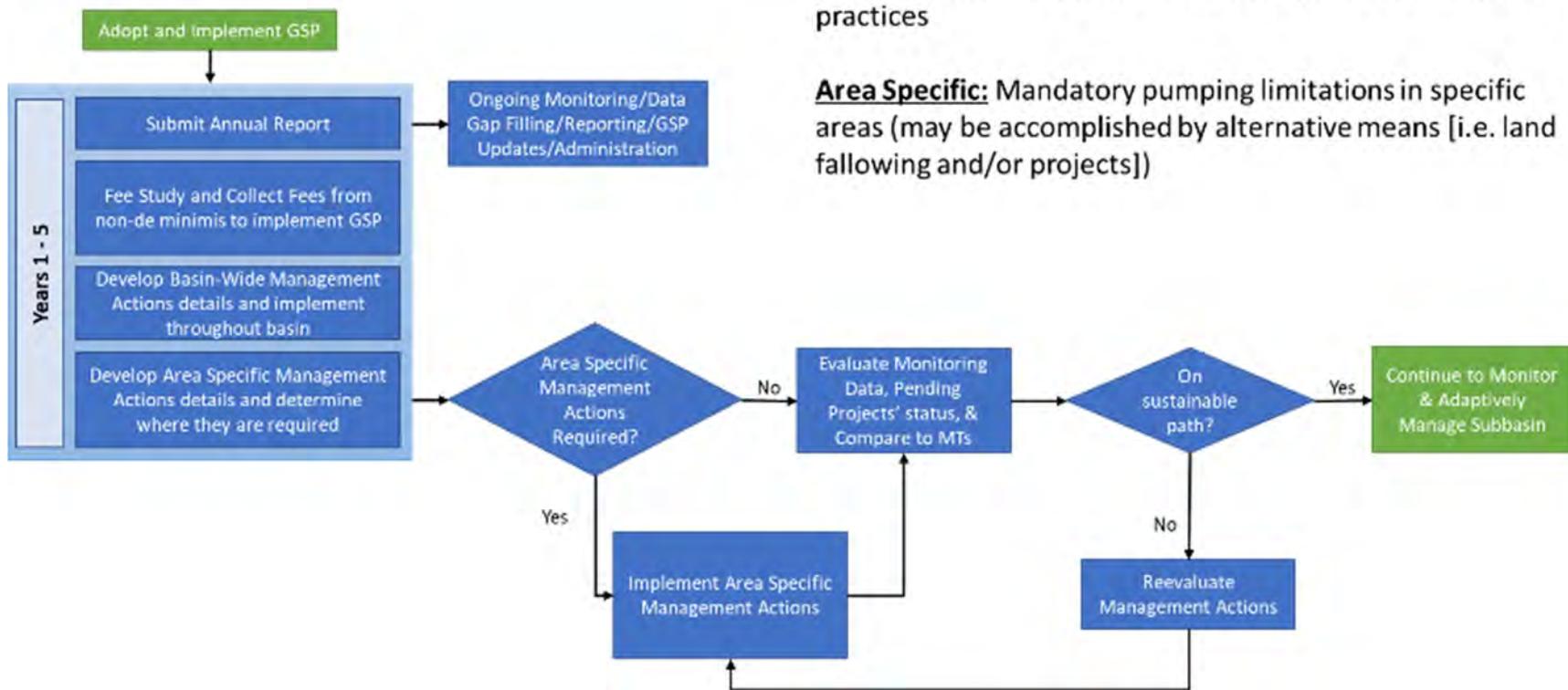
Using authorities outlined in Sections 10725 to 10726.9 of the California Water Code, the GSAs would ensure the maximum degree of local control and flexibility consistent with this GSP to commence management actions. Because the amount of groundwater pumping in the Subbasin is more than the estimated sustainable yield of about 61,000 AFY (see Chapter 6 and Appendix E)² and groundwater levels are persistently declining in certain areas, the GSAs will begin to implement management actions as early as possible after GSP adoption. The

² Chapter 6 and Appendix E describe the process used to estimate sustainable yield. Sustainable yield is estimated based on the groundwater budget. The updated GSP model was used to develop the water budget and sustainable yield. Appendix E provides information on why the estimate of sustainable yield in the GSP differs from previous estimates.

effect of the management actions will be reviewed annually, and additional management actions will be implemented as necessary to avoid undesirable results. Management actions fall into two categories, basin-wide and area specific, as described in more detail in the subsequent sections. Appendix L describes other programs that individual GSAs, pumpers and/or other entities may choose to fund and implement if they have the authority to do so.

In general, basin-wide management actions will apply to all Subbasin areas and reflect basic GSP implementation requirements such as monitoring, reporting and outreach, including necessary studies and early planning work, monitoring and filling data gaps with additional monitoring sites, annual reports and GSP updates, and promoting voluntary limitations in groundwater pumping aimed at both keeping groundwater levels stable and avoiding undesirable results.

Area specific management actions will also be implemented in areas experiencing persistent declines after the development of an appropriate regulation. Because developing and adopting the regulation will require substantial negotiations between the GSAs, public hearings, environmental review (CEQA) and legal risks that need to be addressed, efforts to define and gain approvals for the scope and detail associated with a regulation for area specific management actions will begin soon after GSP adoption. There is a strong need for adequate information to justify area specific management actions and considering that information will be a critical part of initial GSP implementation. Regulations adopted by GSAs related to identifying the specific areas for pumping limitations would need to be substantially identical to assure a consistent methodology for identifying those areas across the Subbasin. Individual pumpers in those areas will then need to choose how to comply with the necessary pumping limitations in those areas.



Basin-Wide: De Minimis self-cert program, Non-De Minimis metering/monitoring and basin-wide water use efficiency practices

Area Specific: Mandatory pumping limitations in specific areas (may be accomplished by alternative means [i.e. land fallowing and/or projects])

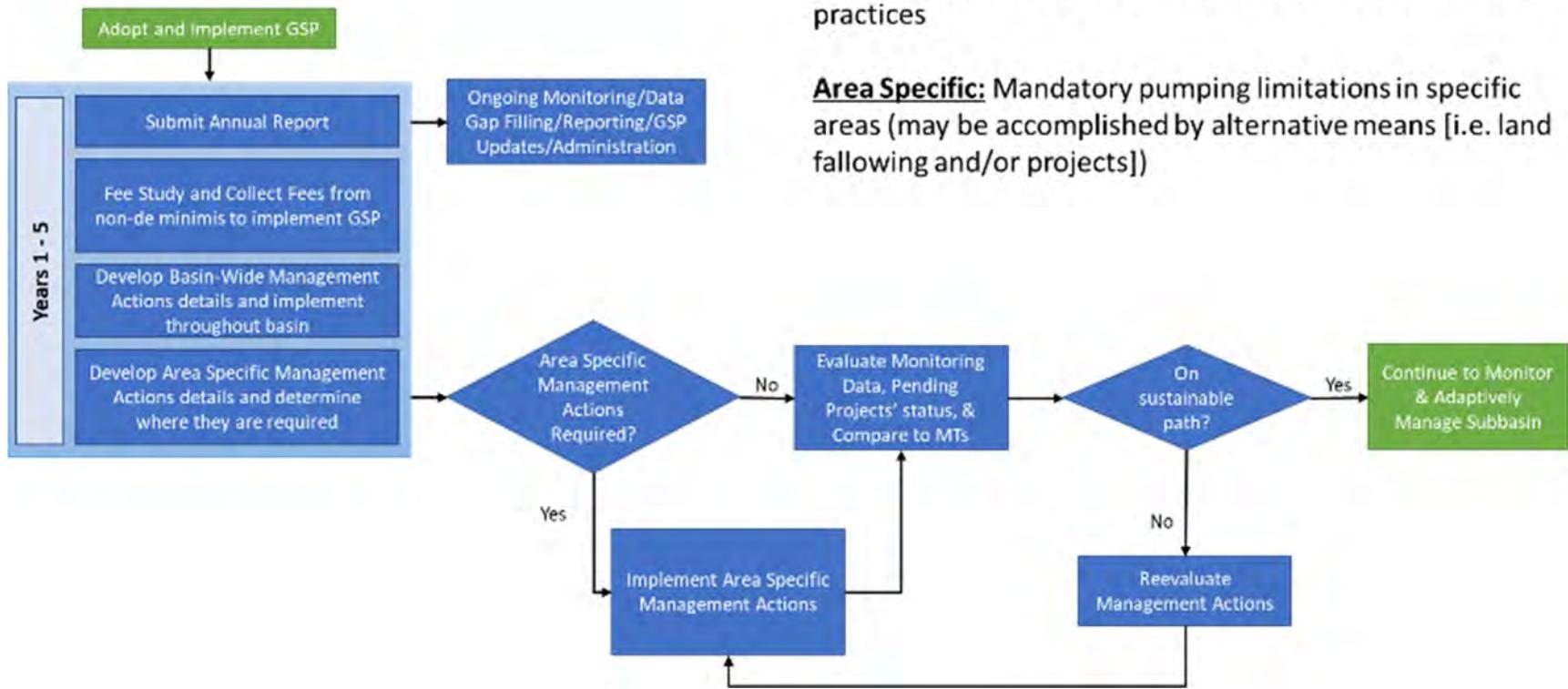


Figure 0-1 shows a flowchart of the conceptual GSP implementation approach. Public meetings and hearings will be held during the process of determining when and where in the Subbasin management actions are needed. A proportional and equitable approach to funding implementation of the GSP and any optional actions will be developed in accordance with all State laws and applicable public process requirements. During these meetings and hearings, input from the public, interested stakeholders, and groundwater pumpers will be considered and incorporated into the decision-making process.

At a time in the future when the effects of management actions have stabilized groundwater levels, the GSAs will reassess the need for continuing these actions. At a minimum, the reassessment process would be done as part of the 5-year review and report to the regulatory agencies.

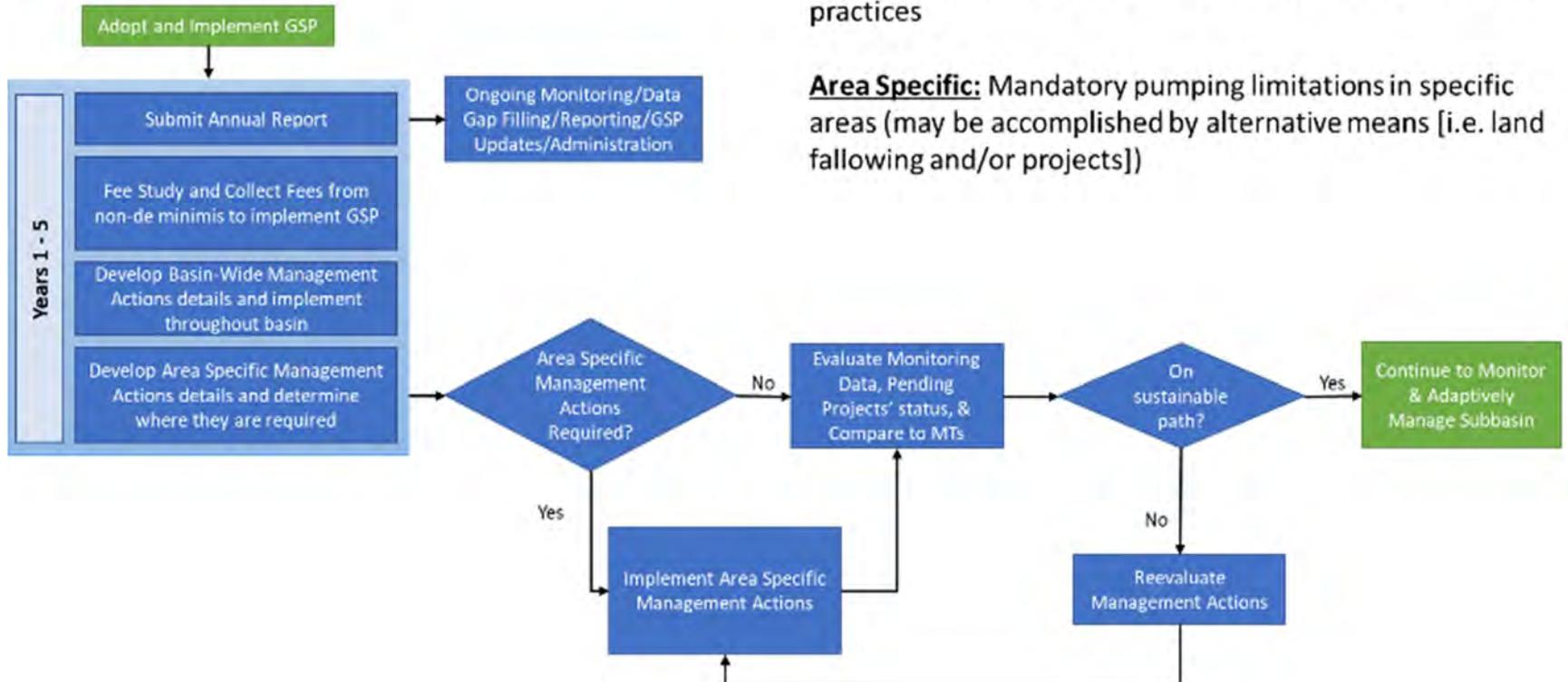


Figure 0-1: Conceptual Implementation Approach for Management Actions and Projects

9.3 Basin-Wide Management Actions

The following subsections outline the various basin-wide management actions. Basin-wide management actions will be implemented using input from stakeholders and in a data-driven process.

Basin-wide management actions include:

- Monitoring, reporting and outreach
- Promoting best water use practices
- Promoting stormwater capture
- Promoting voluntary fallowing of irrigated crop land

Sections required by SGMA regulations §354.44 follow the description of each management action below. Grant funding has been sought through the SGMA Round 1 Implementation Grant for implementation of the management actions listed above. Each management action was scored and ranked using a set of scoring criteria. The scores of individual management actions, as well as management action descriptions and justifications are included as a table in Appendix X.

9.3.1 Monitoring, Reporting and Outreach

Monitoring, reporting and outreach reflects the core functions that the GSAs need to provide to comply with SGMA regulations. The GSAs will direct the monitoring programs outlined in Chapter 7 to track Subbasin conditions related to the five applicable sustainability indicators. Data from the monitoring programs will be routinely evaluated to ensure progress is being made toward sustainability or to identify whether undesirable results are occurring. Data will be maintained in the Data Management System (DMS). Data from the monitoring program will be used by the GSAs to guide decisions on management actions and to prepare annual reports to Subbasin stakeholders and DWR and by individual entities to guide decisions on projects. SGMA regulations require that the reports comply with DWR forms and submittal requirements that will be published by DWR, and that all transmittals are signed by an authorized party. Data will be organized and available to the public to document Subbasin conditions relative to Sustainability Management Criteria (Chapter 8).

9.3.1.1 *De Minimis* Self Certification

A system for *de minimis* basin extractors to self-certify that they extract, for domestic purposes, two acre-feet or less per year will be developed in order to differentiate extractors for the purposes of implementing the GSP.

9.3.1.2 Non-*De Minimis* Metering and Reporting Program

This GSP calls for a program that will require all non-*de minimis* extractors to report extractions annually and use a water-measuring method satisfactory to the GSAs in accordance with Water Code Section 10725.8. It is anticipated that the GSAs will develop and adopt a regulation to implement this program, which is expected to include a system for reporting and accounting for land fallowing, stormwater capture projects, or other activities that individual pumpers implement. The information collected will be used to account for pumping that would have otherwise occurred, for analyzing projected Subbasin conditions and completing annual reports and five-year GSP assessment reports.

9.3.1.3 Annual Reports (SGMA Regulation §356.2)

Annual reports will be submitted to DWR starting on April 1, 2020. The purpose of the report is to provide monitoring and total groundwater use data to DWR, compare monitoring data to the sustainable management criteria, to report on management actions and projects implemented to achieve sustainability, and to promote best water use practices, stormwater capture and voluntary irrigated land fallowing. Annual reports will be available to Subbasin stakeholders.

9.3.1.4 5-Year GSP Updates and Amendments (SGMA Regulation §356.2)

In accordance with SGMA regulatory requirements (§356.4), five-year GSP assessment reports will be provided to DWR starting in 2025. The GSAs shall evaluate the GSP at least every five years to assess whether it is achieving the sustainability goal in the Subbasin. The assessment will include a description of significant new information that has been made available since GSP adoption or amendment and whether the new information or understanding warrants changes to any aspect of the plan.

Although not required by SGMA regulations, the GSAs anticipate that an amendment to the GSP will be prepared within the first five years to integrate new information. Updates may include incorporating additional monitoring data, updating the sustainable management criteria, documenting any projects that are being implemented and facilitating adaptive management of management actions.

9.3.1.5 Data Gaps

SGMA regulations require identification of data gaps and a plan for filling them (§ 354.38). Monitoring data will be collected and reported for each of the five sustainability indicators that are relevant to the Subbasin: chronic lowering of groundwater levels, reduction in groundwater storage, degraded water quality, land subsidence, and depletion of interconnected surface water. As noted in Chapter 7, the approach for establishing the

monitoring networks was to leverage existing monitoring programs and, where data gaps existed, incorporate additional monitoring locations that have been made available by cooperating entities or that have been established by the GSAs. Appendix L identifies the plan for addressing data gaps in each monitoring network and the computer model of the Subbasin.

9.3.1.6 Relevant Measurable Objectives

Monitoring, Reporting, and Outreach would help achieve measurable objectives by keeping basin users informed about Subbasin conditions and the need to avoid undesirable results.

9.3.1.7 Expected Benefits and Evaluation of Benefits

The primary benefit from Monitoring, Reporting and Outreach is increasing hydrogeologic understanding of basin conditions and how management affects those conditions. Outreach, public education and associated changes in behavior improve the chances of achieving sustainability. Because it is unknown how much behavior will change as a result of Monitoring, Reporting and Outreach, it is difficult to quantify the expected benefits at this time.

Reductions in groundwater pumping will be measured directly through the metering and reporting program and recorded in the Data Management System (DMS). Changes in groundwater elevation will be measured with the groundwater level monitoring program. Subsidence will be measured using InSAR data. Changes in groundwater storage will be estimated using changes in groundwater levels (via proxy). Information about the monitoring programs is provided in Chapter 7. Isolating the effect of Monitoring, Reporting and Outreach on groundwater levels will be challenging because they are only one of several management actions that may be implemented concurrently in the Subbasin.

9.3.1.8 Circumstances for Implementation

Monitoring, Reporting and Outreach will begin upon adoption of the GSP. No other triggers are necessary or required.

9.3.1.9 Public Noticing

Public meetings will be held to inform the groundwater pumpers and other stakeholders about Subbasin conditions and the need for behavior changes. Groundwater pumpers and interested stakeholders will have the opportunity at these meetings to provide input and comments on how the Monitoring, Reporting and Outreach are being implemented in the Subbasin. Information on Monitoring, Reporting and Outreach will also be provided through annual GSP reports and links to relevant information on GSA websites.

9.3.1.10 Permitting and Regulatory Process

It is anticipated that the GSAs will adopt a regulation governing the metering and reporting program.

9.3.1.11 Implementation Schedule

Monitoring, Reporting and Outreach efforts will begin upon GSP adoption.

9.3.1.12 Legal Authority

The legal authority to conduct Monitoring, Reporting and Outreach is included in SGMA. For example, Water Code § 10725.8 authorizes GSAs to require through their GSPs that the use of every groundwater extraction facility (except those operated by *de minimis* extractors) be measured.

9.3.1.13 Estimated Cost

The total estimated cost for Monitoring, Reporting, and Outreach is \$1,150,000.

9.3.2 Promoting Best Water Use Practices

This GSP calls for the GSAs to encourage pumpers to implement the most effective water use efficiency methods applicable, often referred to as Best Management Practices (BMPs). It is anticipated that industry leaders would facilitate workshops or other programs designed to communicate what the latest best water use practices are for their industry. Effective BMPs could result in:

- Efficient irrigation practices.
- A better accounting of annual precipitation and its contribution to soil moisture in all irrigation decisions and delay commencing irrigation until soil moisture levels require replenishment.
- Optimization of irrigation needs for frost control if sprinklers are used.
- More optimal irrigation practices by monitoring crop water use with soil and plant monitoring devices and tie monitoring data to evapotranspiration (ET) estimates.
- Conversion from high water demand crops to lower water demand crops.

Many growers already use BMPs, but improvements can be made. A goal of promoting BMPs is to broaden their use to more growers in the Subbasin. *De minimis* groundwater users will be encouraged to use BMPs as well. Promoting BMPs will include broad outreach to groundwater pumpers in the Subbasin to emphasize the importance of utilizing BMPs and

understanding their positive benefits for mitigating declining groundwater levels and forestalling mandated limitations in groundwater extraction on their property.

9.3.2.1 Relevant Measurable Objectives

BMPs would help achieve the groundwater elevation, groundwater storage, and land subsidence measurable objectives.

9.3.2.2 Expected Benefits and Evaluation of Benefits

The primary benefit from initiating BMPs is mitigating the decline, or raising, groundwater elevations. An ancillary benefit from stable or rising groundwater levels may include avoiding pumping induced subsidence. Because it is unknown how much pumping will be reduced from promoting BMPs, it is difficult to quantify the expected benefits at this time.

Reductions in groundwater pumping will be measured directly through the metering and reporting program and recorded in the Data Management System (DMS). Changes in groundwater elevation will be measured with the groundwater level monitoring program. Subsidence will be measured with the InSAR network. Changes in groundwater storage will be estimated using the groundwater level proxy. Information about the monitoring programs is provided in Chapter 7. Isolating the effect of BMPs on groundwater levels will be challenging because they are only one of several management actions that may be implemented concurrently in the Subbasin.

9.3.2.3 Circumstances for Implementation

BMPs and related outreach will be promoted soon after adoption of the GSP. No other triggers are necessary or required.

9.3.2.4 Public Noticing

Public meetings will be held to inform the groundwater pumpers and other stakeholders about Subbasin conditions and the need for BMPs. Groundwater pumpers and interested stakeholders will have the opportunity at these meetings to provide input and comments on how the BMPs are being implemented in the Subbasin. The BMPs will also be promoted through annual GSP reports and links to relevant information on GSA websites.

9.3.2.5 Permitting and Regulatory Process

No permitting or regulatory process is needed for promoting BMPs.

9.3.2.6 Implementation Schedule

The GSAs envision that BMPs will be promoted within a year of GSP adoption.

9.3.2.7 Legal Authority

No legal authority is needed to promote BMPs.

9.3.2.8 Estimated Cost

The estimated cost for promoting BMPs and understanding the extent to which they are being implemented in the Subbasin is included in the cost of the metering and reporting program and developing annual reports.

9.3.3 Promote Stormwater Capture

Stormwater and dry weather runoff capture projects, including Low Impact Development (LID) standards for new or retrofitted construction, will be promoted as priority projects to be implemented as described in the San Luis Obispo County Stormwater Resource Plan (SWRP). The SWRP outlines an implementation strategy to ensure valuable, high-priority projects with multiple benefits. While the benefits are not easily quantified, the State is very supportive of such efforts. Stormwater capture projects in several areas of the Basin, including reaches of the Huer Huero, San Juan and Estrella drainages are likely to be pursued.

This management action covers two types of stormwater capture activities. The first stormwater capture activity involves retaining and recharging onsite runoff. Examples of this type of activity include LID and on-farm recharge of local runoff. The second stormwater capture activity involves recharge of unallocated storm flows. These actions require temporary diversions of storm flows from streams, and transport of those flows to recharge locations. State programs and grants (e.g., FLOOD-MAR, Proposition 68) and local entities (e.g., Resource Conservation Districts) can be utilized as resources to move forward on stormwater capture and percolation efforts.

9.3.3.1 Relevant Measurable Objectives

Stormwater capture would benefit the groundwater elevation, groundwater storage, and land subsidence measurable objectives.

9.3.3.2 Expected Benefits and Evaluation of Benefits

The primary benefit from promoting stormwater capture is to mitigate the decline of, or possibly raise, groundwater elevations through additional recharge. An ancillary benefit from stable or rising groundwater elevations may include avoiding pumping induced subsidence. Because the amount of recharge that could be accomplished from the program is unknown at this time, it is difficult to quantify the expected benefits.

Changes in groundwater elevation will be measured with the groundwater level monitoring program. Subsidence will be measured with the InSAR network. Changes in groundwater storage will be estimated using the groundwater level proxy. Information about the monitoring programs is provided in Chapter 7. Isolating the effect of the stormwater capture on groundwater levels will be challenging because it will be only one of several management actions that may be implemented concurrently in the Subbasin.

9.3.3.3 Circumstances for Implementation

Stormwater capture will be promoted as soon as possible after adoption of the GSP.

9.3.3.4 Public Noticing

Public meetings will be held to inform the groundwater pumpers and other stakeholders about Subbasin conditions and the need for stormwater capture. Groundwater pumpers and interested stakeholders will have the opportunity at these meetings to provide input and comments on how stormwater capture projects are being implemented in the Subbasin. Stormwater capture will also be promoted through annual GSP reports and links to relevant information on GSA websites.

9.3.3.5 Permitting and Regulatory Process

Recharge of stormwater by retaining and recharging onsite runoff does not require permits. Recharge of unallocated storm flows is currently subject to the SWRCB's existing temporary permit for groundwater recharge program. The SWRCB is currently developing five-year permits for capturing high flow events. Recharge of unallocated storm flows will be subject to the terms of these five-year permits if and when they are enacted. Stormwater capture may also be subject to CEQA permitting. A regulation will need to be adopted by the GSAs to account for projects that recharge unallocated storm flows as a part of the metering and reporting program. Regulations are subject to CEQA.

9.3.3.6 Implementation Schedule

The GSAs envision that stormwater capture will be promoted within two years of GSP adoption.

9.3.3.7 Legal Authority

Other than acquiring required permits and the right to divert stormwater, there are no other legal authorities required to implement stormwater capture.

9.3.3.8 Estimated Cost

The estimated cost for promoting stormwater capture and understanding the extent to which it is being implemented in the Subbasin is included in the cost of the metering and reporting program and developing annual reports.

9.3.4 Promote Voluntary Fallowing of Agricultural Land

This GSP calls for the GSAs to promote voluntary fallowing of crop land to reduce overall groundwater demand. For example, the GSAs could develop a Subbasin-wide accounting system that tracks landowners who decide to voluntarily fallow their land and cease groundwater pumping or otherwise refrain from using groundwater. If given the opportunity to create a “place holder” for their ability to pump under regulations adopted by the GSAs, some property owners currently irrigating crops or that might want to irrigate in the future may choose to forego the expense of farming and extracting water if those rights can be accounted for and protected. A regulation would need to be adopted by the GSAs for the metering and reporting program, and the program could include provisions related to land fallowing.

9.3.4.1 Relevant Measurable Objectives

The voluntary fallowing of irrigated land would benefit the groundwater elevation, groundwater storage, and land subsidence measurable objectives.

9.3.4.2 Expected Benefits and Evaluation of Benefits

The primary benefit of voluntary fallowing would be mitigating the decline of groundwater elevations by reducing pumping. An ancillary benefit from stable or rising groundwater elevations may include avoiding pumping induced subsidence. Because it is unknown how many landowners will willingly fallow their land, it is difficult to quantify the expected benefits at this time.

Reductions in groundwater pumping will be measured directly through the metering and reporting program and recorded in the DMS. Changes in groundwater elevation will be measured with the groundwater level monitoring program. Subsidence will be measured with the InSAR network. Changes in groundwater storage will be estimated using the groundwater level proxy. Information about the monitoring programs is provided in Chapter 7. Isolating the effect of voluntary fallowing on sustainability metrics will be challenging because it will be only one of several management actions that may be implemented concurrently in the Subbasin.

9.3.4.3 Circumstances for Implementation

The GSAs envision that voluntary fallowing of land will be promoted as soon as possible after GSP adoption.

9.3.4.4 Public Noticing

Public meetings will be held to inform the groundwater pumpers and other stakeholders about Subbasin conditions and the need for voluntary fallowing. Landowners, groundwater pumpers and interested stakeholders will have the opportunity at these meetings to provide input and comments on how voluntary fallowing is being implemented in the Subbasin. Voluntary fallowing will also be promoted through annual GSP reports and links to relevant information on GSA websites.

9.3.4.5 Permitting and Regulatory Process

Regulations are subject to CEQA.

9.3.4.6 Implementation Schedule

The GSAs envision that voluntary fallowing will be promoted within two years of GSP adoption.

9.3.4.7 Legal Authority

California Water Code §10726.2(c) provides GSAs the authorities to provide for a program of voluntary land fallowing.

9.3.4.8 Estimated Cost

The estimated cost for promoting and accounting for land fallowing is included in the cost of the metering and reporting program and developing annual reports.

9.4 Area Specific Management Actions

Implementation of area specific management actions may be necessary to address areas of persistent groundwater level decline (

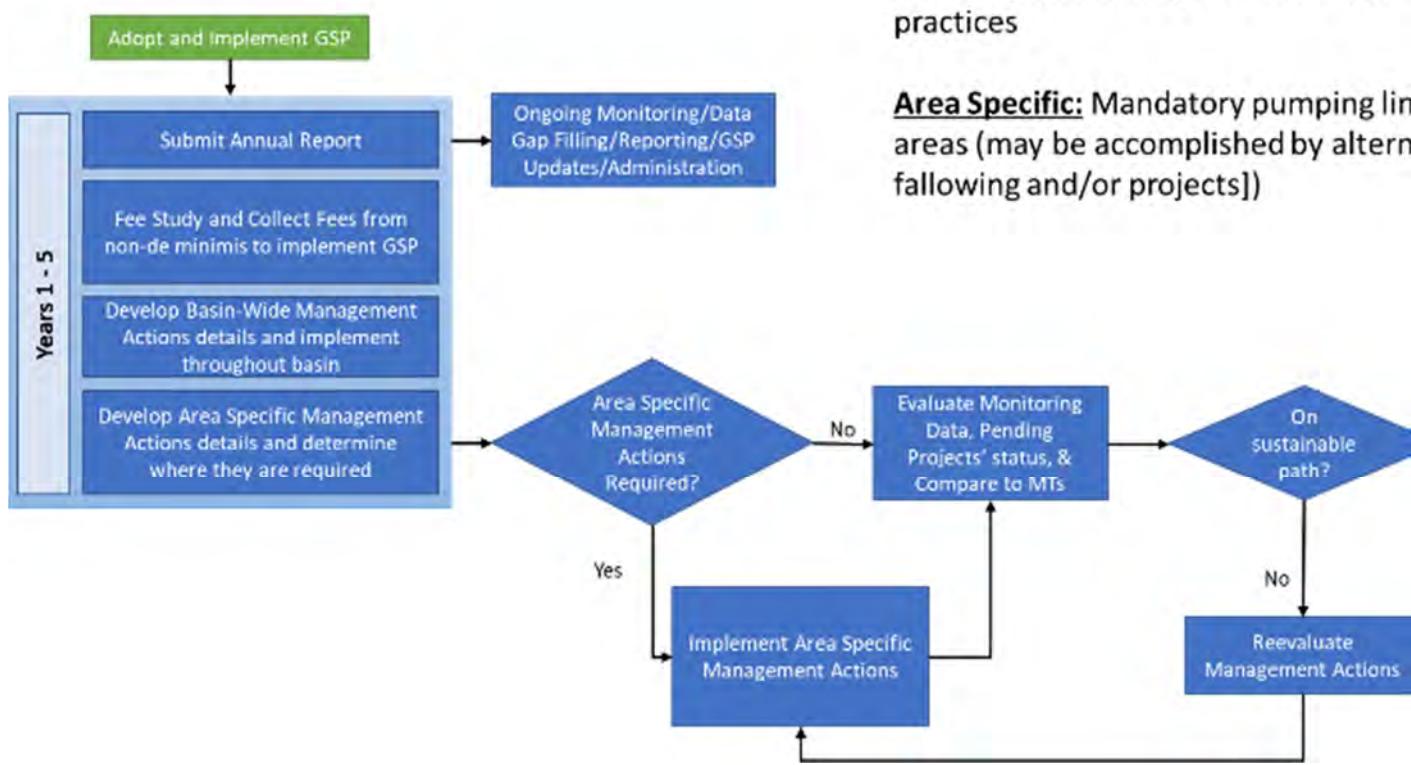


Figure 0-1). Through a regulatory program, GSAs will conduct extensive data analysis to delineate where pumping needs to be limited to stabilize levels. With this information, affected pumpers will need to decide how to achieve these limitations. This may include land fallowing/retirement or paying for projects and/or programs that can be effectively implemented proportional to the recognized volume of groundwater necessary to avoid undesirable results in each area of the Subbasin. Sections required by SGMA regulations §354.44 follow the description of each management action below.

9.4.1 Mandatory pumping limitations in specific areas

The GSAs will establish a regulatory program to identify and enforce required pumping limitation as necessary to arrest persistent groundwater level declines in specific areas. The amount of mandatory pumping limitations is uncertain and will depend on the effectiveness and timeliness of voluntary actions by pumpers and the success of other measures outlined in the GSP. The water budget presented in Chapter 6 suggests that an estimated shortfall of 13,700 AFY will need to be addressed by a combination of increased water supply,

Basin-Wide: De Minimis self-cert program metering/monitoring and basin-wide practices

Area Specific: Mandatory pumping limits in areas (may be accomplished by alternate fallowing and/or projects)

conservation and reduction in pumping in order to achieve sustainability. After GSP adoption, developing the program would likely require the following steps:

1. Establishing a methodology for determining baseline pumping in specific areas considering:
 - a. Groundwater level trends in areas of decline and estimated available volume of water in those areas
 - b. Land uses and corresponding irrigation requirements
2. Establishing a methodology to determine whose use must be limited and by how much considering, though not limited to, water rights and evaluation of anticipated benefits from projects bringing in supplemental water or other relevant actions individual pumpers take.
3. A timeline for limitations on pumping (“ramp down”) in specific areas as required to avoid undesirable results
4. Approving a formal regulation to enact the program

Determination of baseline pumping in specific areas will need to be established and guidance developed by DWR in response to legislative directives for consistent implementation of the Water Conservation Act of 2009, as is used in Urban Water Management Plans, may be helpful. Baseline pumping would be ramped down to meet water use targets in specific areas until it is projected that groundwater levels will stabilize. Analyses will be updated periodically as new data are developed. The ramp down schedule would be developed during program development; the rate of ramp down would depend on when the program starts, and projections of how long lower pumping rates are required in specific areas in order to avoid undesirable results. The specific ramp down amounts and timing would be reassessed periodically by the GSAs as needed to achieve sustainability. These adjustments would occur when additional data and analyses are available.

9.4.1.1 Relevant Measurable Objectives

Mandatory limitations to groundwater pumping in specific areas would benefit the groundwater elevation, groundwater storage, and land subsidence measurable objectives in those areas.

9.4.1.2 Expected Benefits and Evaluation of Benefits

The primary benefit from the mandatory pumping limitations is mitigating the decline of groundwater levels through reduced total pumping. An ancillary benefit from stable or increasing groundwater elevations may include avoiding pumping induced subsidence. The

program is designed to ramp down total pumping to the sustainable yield; therefore, the quantifiable goal is to maintain pumping within the sustainable yield.

Limitations on groundwater pumping will be measured directly through the metering and reporting program and recorded in the DMS. Changes in groundwater elevation are an important metric for the mandatory pumping limitation program and will be measured with the groundwater level monitoring program. Subsidence will be measured using InSAR data. Changes in groundwater storage will be estimated using the groundwater level proxy. Information about the monitoring programs is provided in Chapter 7. Isolating the effect of the mandatory pumping limitation program on sustainability metrics will be challenging because it will be only one of several management actions that may be implemented concurrently in the Subbasin. However, as the pumping ramp down is initiated, the correlation between reduced pumping and higher groundwater levels may become more apparent.

9.4.1.3 Circumstances for Implementation

Because there are areas where groundwater levels are persistently declining and undesirable results could occur, the mandatory pumping limitation program will be implemented after the GSAs adopt the regulation governing the program.

9.4.1.4 Public Noticing

Public meetings will be held to inform groundwater pumpers and other stakeholders that the mandatory pumping limitation program is being developed. The mandatory pumping limitation program will be developed in an open and transparent process. Landowners, groundwater pumpers and other stakeholders will have the opportunity at these meetings to provide input and comments on the process and the program elements.

9.4.1.5 Permitting and Regulatory Process

The mandatory pumping limitation program is subject to CEQA. The mandatory pumping limitation program would be developed in accordance with all applicable groundwater laws and respect all groundwater rights.

9.4.1.6 Implementation Schedule

Developing the mandatory pumping limitation program and adopting the regulation would likely take up to five years. Once the regulation is adopted, the program will be implemented.

9.4.1.7 Legal Authority

California Water Code §10726.4 (a)(2) provides GSAs the authorities to control groundwater extractions by regulating, limiting, or suspending extractions from individual groundwater wells or extractions from groundwater wells in the aggregate.

9.4.1.8 Estimated Cost

The cost to develop and implement the mandatory pumping limitation program is estimated to be \$350,000. This does not include the cost of the CEQA permitting or any ongoing program oversight.

9.5 Projects

Projects involve new or improved infrastructure to make new water supplies available to the Subbasin. Best Management Practices and developing projects that will enhance supply will mitigate groundwater level decline. Several potential projects are described in this GSP that may be implemented by willing entities to offset pumping and lessen the degree to which the management actions would be needed. The implementation of projects depends on willing participants and/or successful funding votes.

There are six potential sources of water for projects:

1. Tertiary treated wastewater supplied and sold by City of Paso Robles and the San Miguel CSD to private groundwater extractors to use in lieu of groundwater. This water is commonly referred to as recycled water (RW).
2. State Water Project (SWP) water
3. Nacimiento Water Project (NWP) water
4. Salinas Dam/Santa Margarita Reservoir water
5. Local recycled water
6. Flood flows/stormwater from local rivers and streams

These six water sources are described in more detail in Appendix I. Of these six sources, only RW, SWP, NWP, and Salinas Dam currently have sufficiently reliable volumes of unused water to justify the expense of new infrastructure to be used on a regular basis for supplementing water supplies in the Subbasin. Since there are uncertainties associated with securing agreements to utilize SWP and related infrastructure, descriptions of concept projects associated with the use of this water supply are included in Appendix L. Capturing flood flows/stormwater from streams in permitted projects will be pursued. Specific elements of these projects will be developed in the near future. Use of the Salinas Dam to capture flood flows/stormwater is presently the only conceptual project included in the GSP. In summary,

the initial focus of new supply is on developing RW, NWP, and Salinas Dam projects in the Subbasin. Grant funding has been sought through the SGMA Round 1 Implementation Grant for implementation of the projects listed above. Each project was scored and ranked using a set of scoring criteria. The scores of individual projects, as well as project descriptions and justifications are included as a table in Appendix X.

9.5.1 General Project Provisions

Many of the priority projects listed below are subject to similar requirements. These general provisions that are applicable to all projects include certain permitting and regulatory requirements, public notice requirements, and the legal authority to initiate and complete the projects. This section assumes the development of projects are led by one or more GSAs in order to complete the sections below that are required by SGMA regulations §354.44.

9.5.1.1 Summary of Permitting and Regulatory Processes

Although the provisions of this GSP do not require projects to be subject to a particular set of requirements, projects envisioned in the GSP may require an environmental review process via CEQA and may require an Environmental Impact Report, a Negative Declaration, or a Mitigated Negative Declaration.

There will be a number of local, county and state permits, right of ways, and easements required depending on pipeline alignments, stream crossings, and project type.

Projects must adhere to the Salt/Nutrient Management Plan for the Paso Robles Groundwater Basin (RMC 2015).

9.5.1.2 Public Noticing

All projects are subject to the public noticing requirements per CEQA.

9.5.1.3 Legal Authority Required for Projects and Basis for That Authority within the Agency

California Water Code §10726.2 provides GSAs the authority to purchase, among other things, land, water rights, and privileges. Additionally, an assessment of the legal rights to acquire and use various water sources is included in Appendix I.

9.5.2 Conceptual Projects

Six conceptual projects are included in this GSP and have been identified after many public meetings and studies over the last decade and currently ongoing. All six projects will not necessarily be implemented, but they represent six reasonable projects that could help achieve sustainability throughout the Subbasin. Conceptual projects were developed for different regions in the Subbasin to address localized declines in groundwater elevations. Projects were sized based on the locations of available supplies and pumping demands in different areas of the Subbasin. Actual projects will be highly dependent on the ability of the GSAs and/or individual entities to negotiate with water suppliers and purchase the surface waters described in Appendix I. Four other conceptual projects that are not being developed currently are included in Appendix L for future consideration.

Table 0-1. Conceptual Projects

Project Name	Water Supply	Project Type	Approximate Location	Average Volume (AFY)
City Recycled Water Delivery	RW	Direct Delivery	Near City of Paso Robles	2,200
San Miguel Recycled Water Delivery	RW	Direct Delivery	Near San Miguel	200 ^a
NWP Delivery at Salinas and Estrella River Confluence	NWP	Direct Delivery	Near the confluence of the Salinas and Estrella Rivers	2,800
NWP Delivery North of City of Paso Robles	NWP	Direct Delivery	North of Huer Huero Creek, due west of the airport	1,000
NWP Delivery East of City of Paso Robles	NWP	Direct Delivery	East of the City of Paso Robles	2,000
Expansion of Salinas Dam	Salinas River	River Recharge	Along the Salinas River	1,000

Notes: (a) Average volume amounts may be updated in final GSA based on more recent information
(b) Approximate locations are assumed to establish the benefit calculations required by SGMA

Short descriptions of each concept project are included below, along with a map showing general project locations. Sections required by SGMA regulations §354.44 follow the description of each project. Generalized costs are also included for planning purposes. Components of these projects including facility locations, pipeline routes, recharge mechanisms, and other details may change in future analyses. Therefore, each of the projects listed below should be treated as a generalized project that represents a number of potential detailed projects.

9.5.2.1 Assumptions Used in Developing Projects

Assumptions that were used to develop projects and cost estimates are provided in Appendix J. Assumptions and issues for each project need to be carefully reviewed and

revised during the pre-design phase of each project. Project designs, and therefore costs, could change considerably as more information is gathered.

The cost estimates included below are class 5, order of magnitude estimates. These estimates were made with little to no detailed engineering data. The expected accuracy range for such an estimate is within +50 percent or -30 percent. The cost estimates are based on the engineering assessment of current conditions at the project location. They reflect a professional opinion of costs at this time and are subject to change as project designs mature.

Capital costs include major infrastructure including pipelines, pump stations, customer connections, turnouts and storage tanks. Capital costs also include 30% contingency for plumbing appurtenances, 15% increase for general conditions, 15% for contractor overhead and profit, and 8% for sales tax. Engineering, legal, administrative, and project contingencies was assumed as 30% of the total construction cost and included within the capital cost. Land acquisition at \$30,000/acre was also included within capital costs.

Annual operations and maintenance (O&M) fees include the costs to operate and maintain new project infrastructure. O&M costs also include any pumping costs associated with new infrastructure. O&M costs do not include O&M or pumping costs associated with existing infrastructure, such as existing NWP O&M costs because these are assumed to be part of water purchase costs. Water purchase costs were assumed to include repayment of loans for existing infrastructure; however, these purchase costs will need to be negotiated. The terms of such a negotiation could vary widely.

Capital costs were annualized over thirty years and added with annual O&M costs and water purchase costs to determine an annualized dollar per acre-foot (\$/AF) cost for each project. This \$/AF value might not always represent the \$/AF of basin benefit (\$/AF-benefit).

9.5.2.2 Preferred Project 1: City Recycled Water Delivery

This project will use up to 2,200 AFY of disinfected tertiary effluent for in-lieu recharge in the central portion of the basin near and inside the City of Paso Robles. Water that is not used for recycled water purposes will be discharged to Huer Huero Creek with the potential for additional recharge benefits. The general layout of this project and relevant monitoring wells are shown on Figure 0-2. Infrastructure includes upgraded wastewater treatment plant and pump station, 5.8 miles of pipeline, a storage tank, numerous turnouts, and a discharge to Huer Huero Creek. Additionally, a conceptual pipeline to the north of the main line will deliver recycled water to a larger geographical area. The cost to upgrade the wastewater treatment plant is also not included in the cost estimate, since the upgrades were required per the NPDES permit regardless of use for recycled water. Since this project is already in the predesign phase, the predesign project cost estimate is provided for this GSP.

9.5.2.2.1 Relevant Measurable Objectives

The measurable objectives benefiting from this groundwater project include:

- Groundwater elevation measurable objectives in the central portion of the Subbasin
- The groundwater storage measurable objective
- Land subsidence measurable objectives in the central portion of the Subbasin

9.5.2.2.2 Expected Benefits and Evaluation of Benefits

The primary benefit from the Paso Robles RW project is higher groundwater elevations in the Central portion of the Subbasin due to in-lieu recharge from the direct use of the RW and recharge through Huer Huero Creek. Ancillary benefits of shallower groundwater elevations may include an increase in groundwater storage, improved groundwater quality from recharge of high-quality water, and avoiding pumping induced subsidence. The GSP model was used to quantify the expected benefit from this project. Figure 0-3 shows the expected groundwater level benefit predicted by the GSP model after 10 years of project operation. Figure 0-3 expresses the benefit as feet of groundwater. The groundwater level benefit shown on Figure 0-3 is a measure of how much higher groundwater elevations are expected to be with the project rather than without the project.

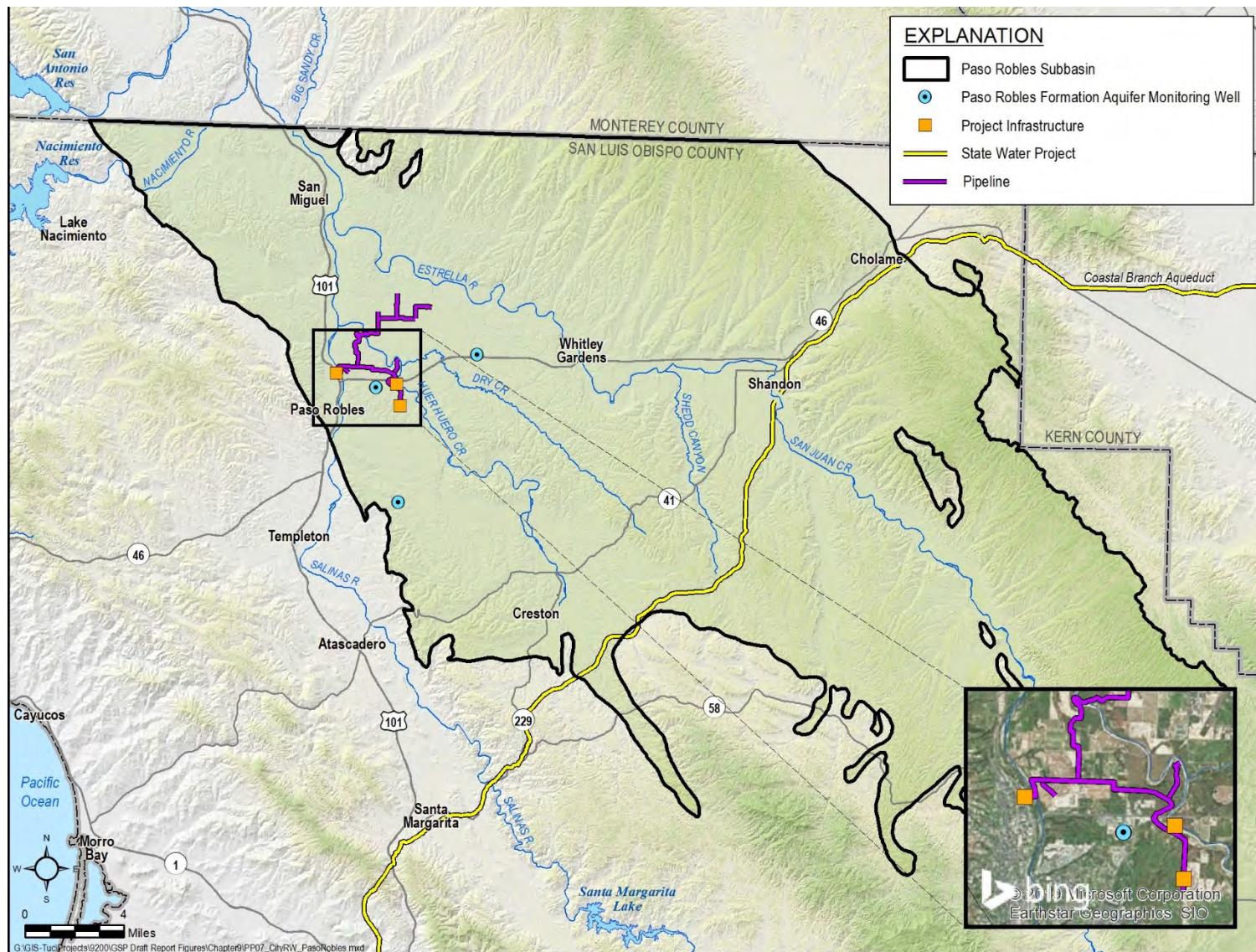


Figure 0-2. Paso Robles RW Project Layout

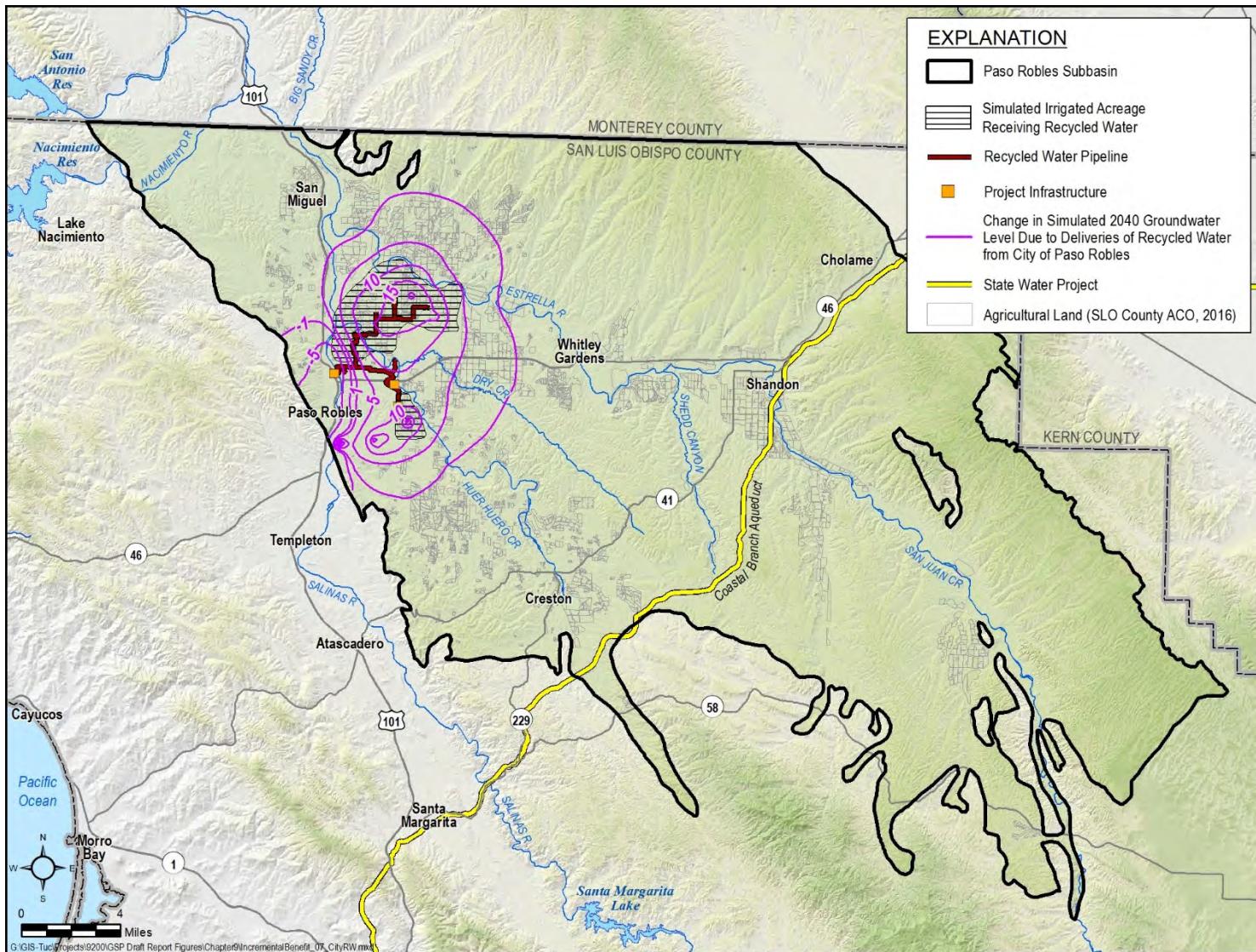


Figure 0-3. Groundwater Level Benefit of Paso Robles RW Project in Central Subbasin

Changes in groundwater elevation will be measured with the groundwater level monitoring program detailed in Chapter 7. Subsidence will be measured with the InSAR network detailed in Chapter 7. A direct correlation between the Paso Robles RW project and changes in groundwater levels may not be possible because this is only one among many management actions and projects that might be implemented in the Subbasin.

9.5.2.2.3 Circumstances for Implementation

This project is already being implemented by the City of Paso Robles. The monitoring wells 26S/12E-26E07, 26S/13E-16N01, and 27S/12E-13N01 will likely be positively impacted by this project.

9.5.2.2.4 Implementation Schedule

The project is underway. The phase design is expected to be complete by 2019 and construction complete by 2021. The implementation schedule is presented on Figure 0-4.



Figure 0-4. Implementation Schedule for Paso Robles RW in Central Subbasin

9.5.2.2.5 Estimated Cost

The estimated total project cost for this project is \$22M. The cost and financing for the project is being determined by the City of Paso Robles. Annual O&M costs are not provided in this GSP. The cost (\$/AF) of this water will be set by the City of Paso Robles and is not included in this GSP.

9.5.2.3 Preferred Project 2: San Miguel CSD Recycled Water Delivery

The San Miguel RW project is currently in the planning and preliminary design phases; therefore, the project concepts presented herein are preliminary.

This project is a planned project that involves the upgrade of San Miguel Community Services District (CSD) wastewater treatment plant to meet California Code of Regulations (CCR) Title 22 criteria for disinfected secondary recycled water for irrigation use by vineyards. Potential customers include a group of agricultural customers on the east side of the Salinas River, and a group of agricultural customers northwest of the wastewater treatment plant. The project might include the utilization of process discharge from a nearby processing facility for additional water recycling. The project could provide between 200 and 450 AFY of additional water supplies. The general layout of this project and relevant monitoring wells are shown on Figure 0-5. The infrastructure shown here includes a treatment plant upgrade, a recycled water pumping station and pipeline infrastructure to provide for delivering water to customers. The actual project size and infrastructure will be determined based on project feasibility and negotiations with suppliers and customers. For more information on technical assumptions and cost assumptions, refer to Appendix J.

9.5.2.3.1 Relevant Measurable Objectives

The measurable objectives benefiting from this groundwater project include:

- Groundwater elevation measurable objectives in the northern portion of the Subbasin
- The groundwater storage measurable objective
- Land subsidence measurable objectives in the northern portion of the Subbasin

9.5.2.3.2 Expected Benefits and Evaluation of Benefits

The primary benefit from RW use for irrigation is higher groundwater elevations in the northern portion of the Subbasin due to in-lieu recharge from the direct use of the RW. Ancillary benefits may include an increase in groundwater storage and avoiding pumping induced subsidence. The GSP model was used to quantify the expected benefit from this project. Figure 0-6 shows the expected groundwater level benefit predicted by the GSP model after 10 years of project operation. Figure 0-6 expresses the benefit as feet of groundwater. The groundwater level benefit shown on Figure 0-6 is a measure of how much higher groundwater elevations are expected to be with the project rather than without the project.

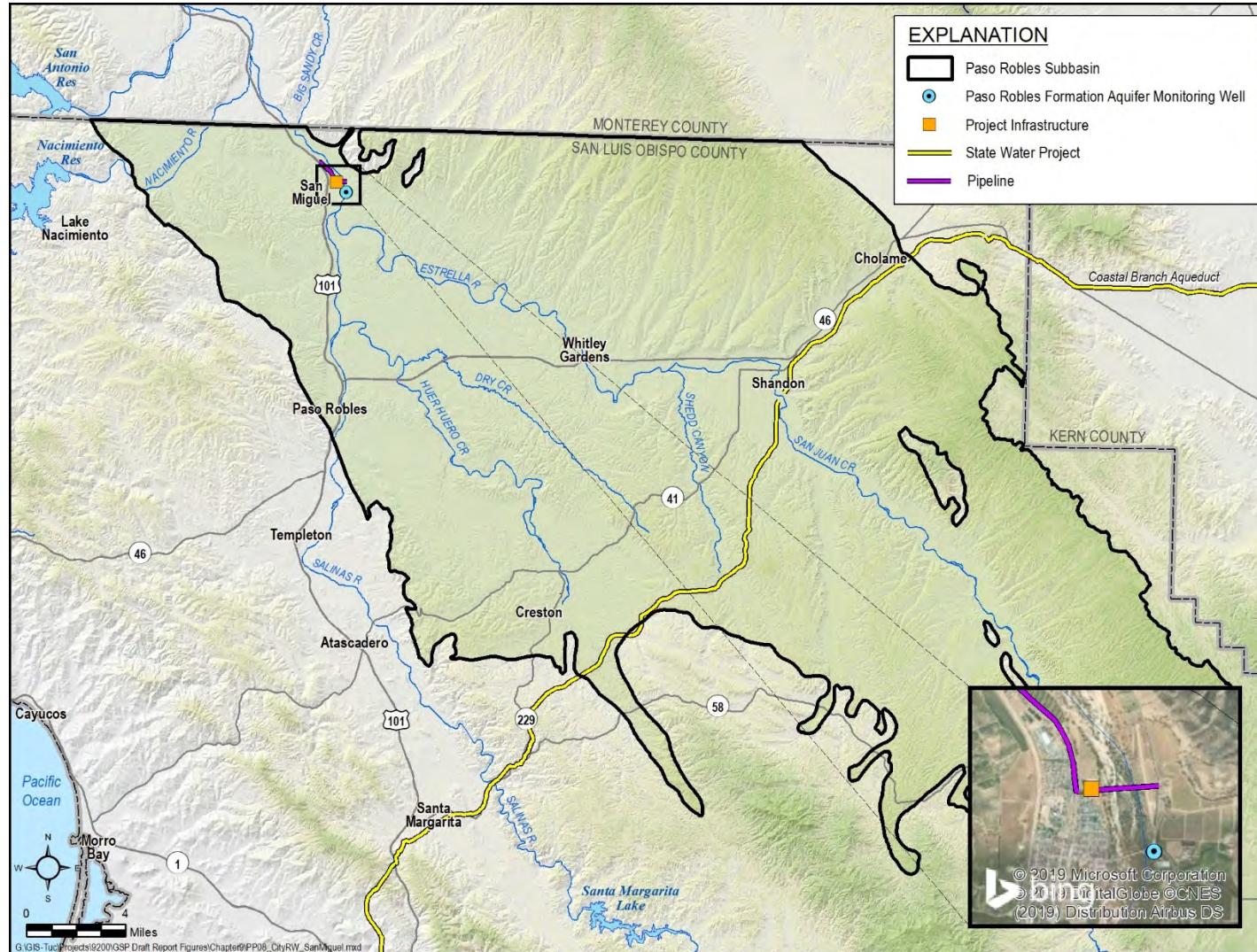


Figure 0-5. Conceptual San Miguel CSD RW Project Layout

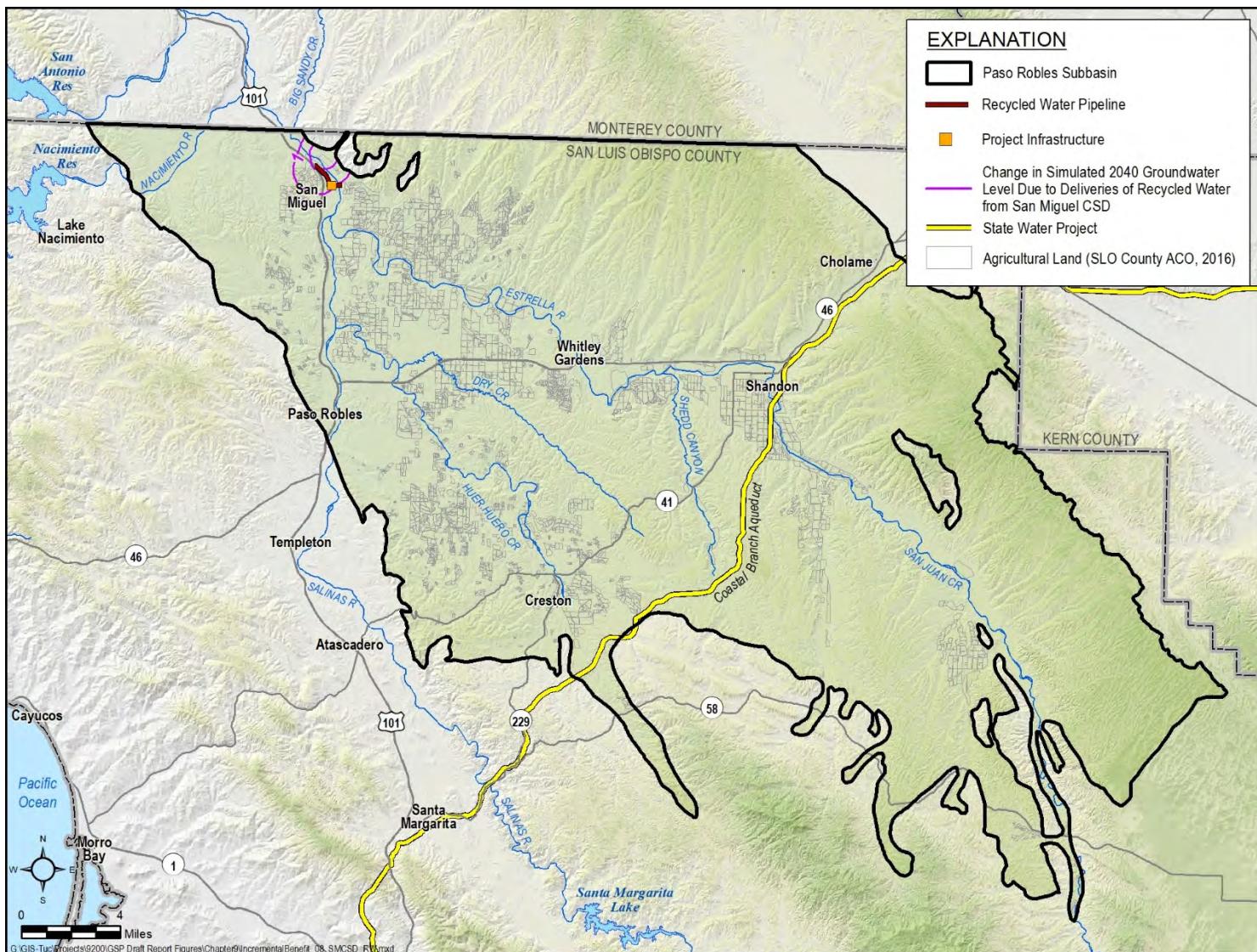


Figure 0-6. Groundwater Level Benefit of San Miguel CSD RW Project

Changes in groundwater elevation will be measured with the groundwater level monitoring program detailed in Chapter 7. Subsidence will be measured with the InSAR network detailed in Chapter 7. A direct correlation between the San Miguel CSD RW Project and changes in groundwater levels may not be possible because this is only one among many management actions and projects that might be implemented in the Subbasin.

9.5.2.3.3 Circumstances for Implementation

Willing parties will plan, design and raise funds to initiate projects. San Miguel CSD Staff has completed the planning phase and is currently in the design development phase of the project. The initial phase of the San Miguel CSD RW Project is currently planned for completion in mid-2021 with subsequent phases to be initiated if, after five years, groundwater levels in the northern portion of the monitoring network continue to decline at unsustainable rates. In particular, continued unsustainable groundwater level declines in monitoring well 25S/12E-16K05 will trigger implementation of this project. Additional triggers will be added as the monitoring well network expands.

This project is a planned project being undertaken by San Miguel CSD and may be implemented regardless of the triggered implementation framework presented herein.

9.5.2.3.4 Implementation Schedule

The implementation schedule is presented on Figure 9-7. The project will take 4 to 6 years to implement. The actual project start date is to be determined on an as-needed basis or by San Miguel CSD.

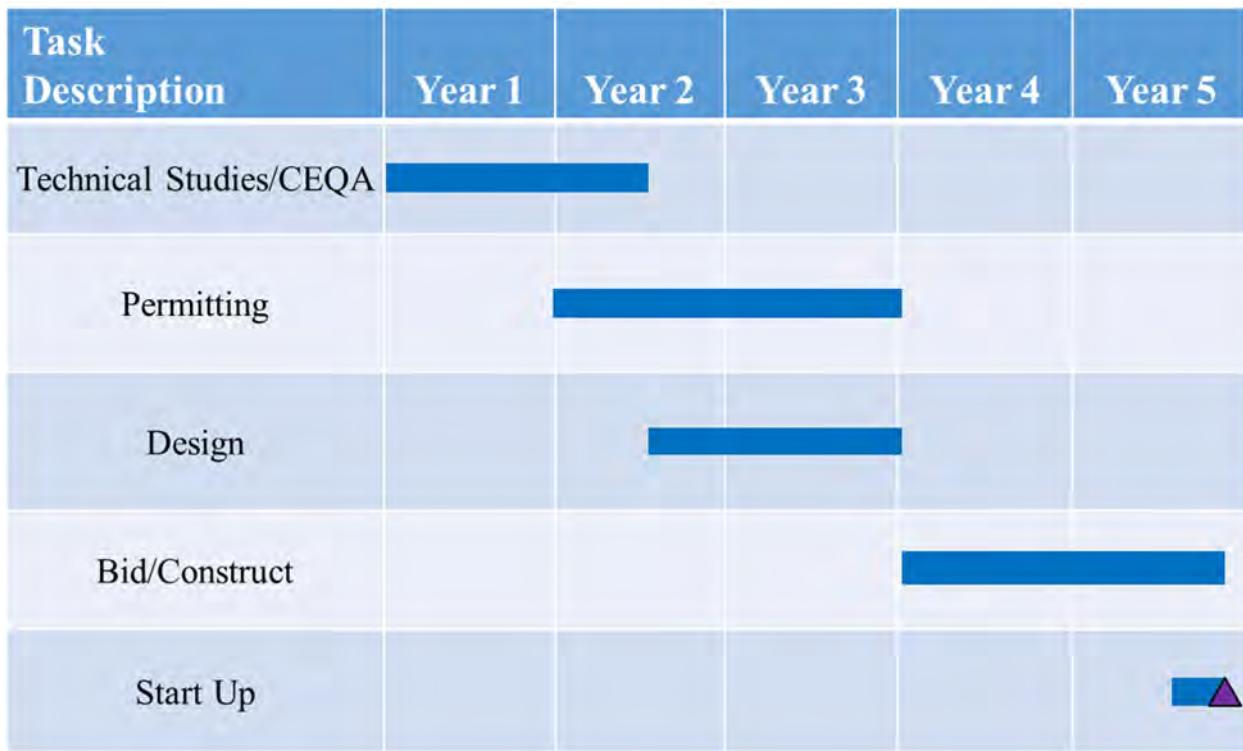


Figure 9-7. Implementation Schedule for San Miguel RW

9.5.2.3.5 *Estimated Cost*

This project is currently in the planning phases, and the San Miguel RW project presented herein might not accurately reflect the most current design concept. The cost of the potential project that is described herein was estimated for the purposes of the GSP. The estimated total project cost for this project is \$15M, not including wastewater treatment plant upgrades. Cost can be covered by the bonding capacity developed through the groundwater conservation program. Annual O&M costs are estimated at \$340,000. O&M costs would be covered by the overproduction surcharges. Based on a 30-year loan at a 5% interest rate, the cost of water for this project would be approximately \$2,900/AF. Additional details regarding how costs were developed are included in Appendix J.

9.5.2.4 Preferred Project 3: NWP Delivery at Salinas and Estrella River Confluence

This conceptual project directly delivers up to 3,500 AFY of NWP water to agricultural water users near the confluence of the Salinas and Estrella Rivers, and an area north of the Estrella River. On average, this project will provide 2,800 AFY of water for use in lieu of groundwater pumping in the region. Before implementing this project, additional outreach and meetings with property owners and interested stakeholders will be conducted to inform them about the project details and acquire necessary approvals.

The general layout of this project and relevant monitoring wells are shown on Figure 9-8. Infrastructure includes a new NWP turnout, 13 miles of pipeline, a 700 horsepower (hp) pump station, and two river crossings: one crossing of the Salinas River and one crossing of the Estrella River. For more information on technical assumptions and cost assumptions, refer to Appendix J.

9.5.2.4.1 Relevant Measurable Objectives

The measurable objectives benefiting from this project include:

- Groundwater elevation measurable objectives in the central portion of the Subbasin
- The groundwater storage measurable objective
- Land subsidence measurable objectives in the central portion of the Subbasin

9.5.2.4.2 Expected Benefits and Evaluation of Benefits

The primary benefit from in-lieu recharge using NWP water is higher groundwater elevations in the central portion of the Subbasin. Ancillary benefits of shallower groundwater elevations may include an increase in groundwater storage and avoiding pumping induced subsidence. The GSP model was used to quantify the expected benefit from this project. Figure 9-9 shows the expected groundwater level benefit predicted by the GSP model after 10 years of project operation. Figure 9-9 expresses the benefit as feet of groundwater. The groundwater level benefit shown on Figure 9-9 is a measure of how much higher groundwater elevations are expected to be with the project rather than without the project.

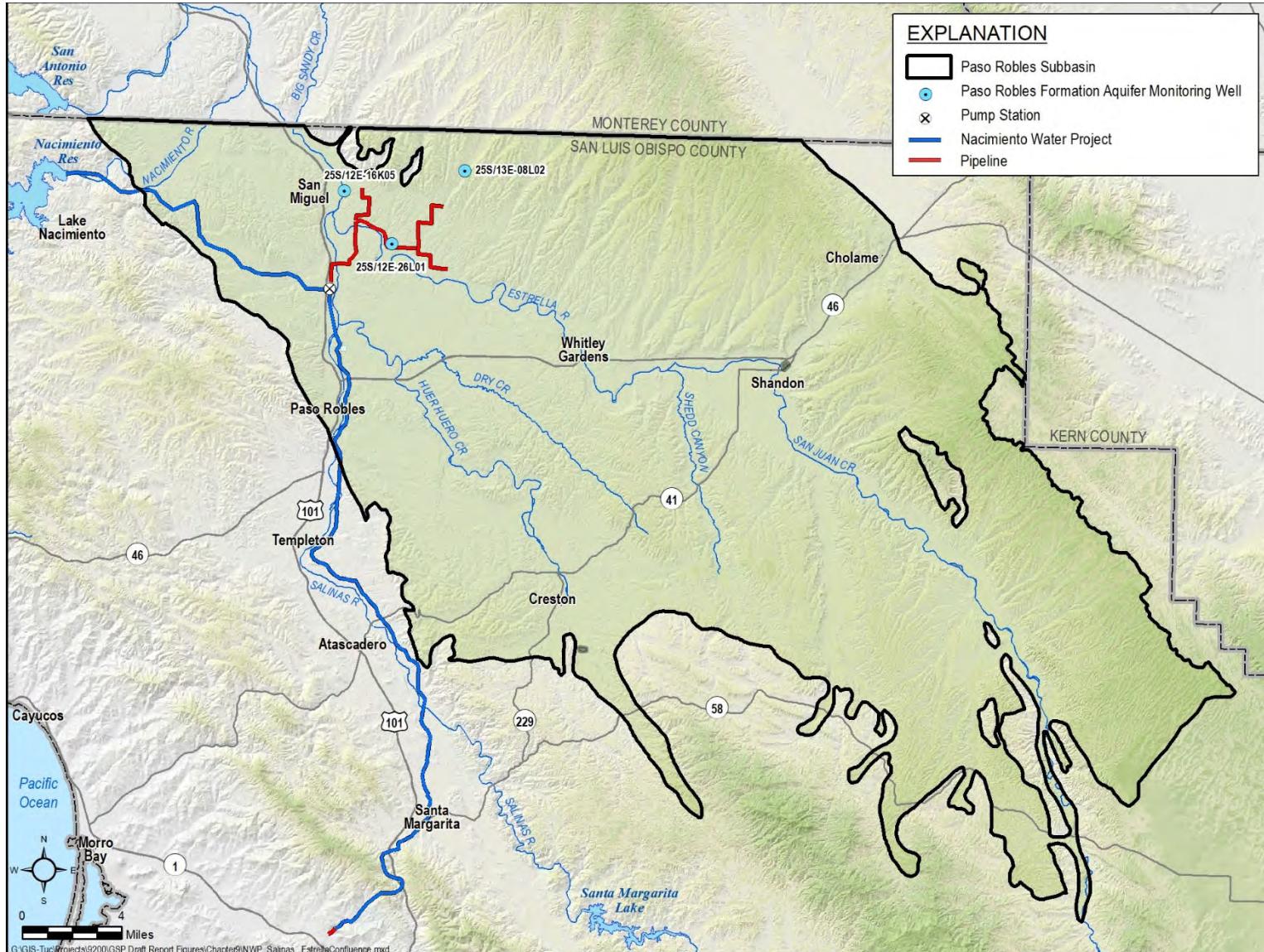


Figure 9-8. Conceptual NWP Delivery at Salinas and Estrella River Confluence Project Layout

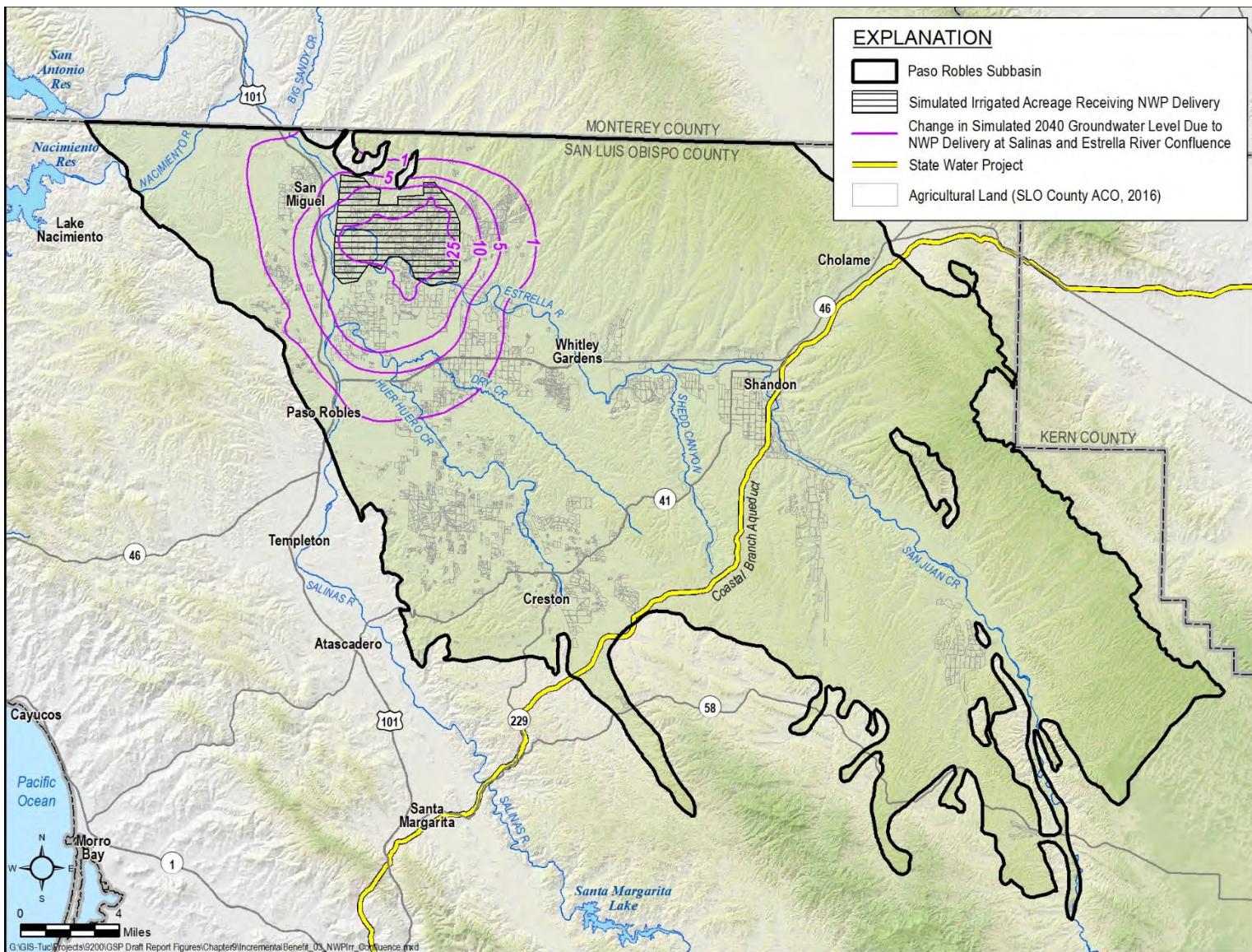


Figure 9-9. Groundwater Level Benefit of NWP Delivery at Salinas and Estrella River Confluence

Changes in groundwater elevation will be measured with the groundwater level monitoring program detailed in Chapter 7. Subsidence will be measured with InSAR data as detailed in Chapter 7. A direct correlation between in-lieu recharge and changes in groundwater levels may not be possible because this is only one among many management actions and projects that may be implemented in the Subbasin.

9.5.2.4.3 Circumstances for Implementation

All projects are implemented based on need, cost benefit studies and willing participants. The project to deliver water for in-lieu recharge near the Salinas and Estrella confluence will be initiated if, after five years, groundwater levels in the northern portion of the monitoring network continue to decline at unsustainable rates and willing participants agree to participate in the project. In particular, continued unsustainable groundwater level declines in monitoring wells 25S/12E-16K05, 25S/12E-26L01, and 25S/13E-08L02 will trigger implementation of this project. Additional triggers will be added as the monitoring well network expands.

9.5.2.4.4 Implementation Schedule

The implementation schedule is presented on Figure 9-10. The project will take 4 to 6 years to implement depending on the time required to negotiate procurement of NWP water.

Conceptually, project implementation would occur in years 6 through 12 after GSP adoption.

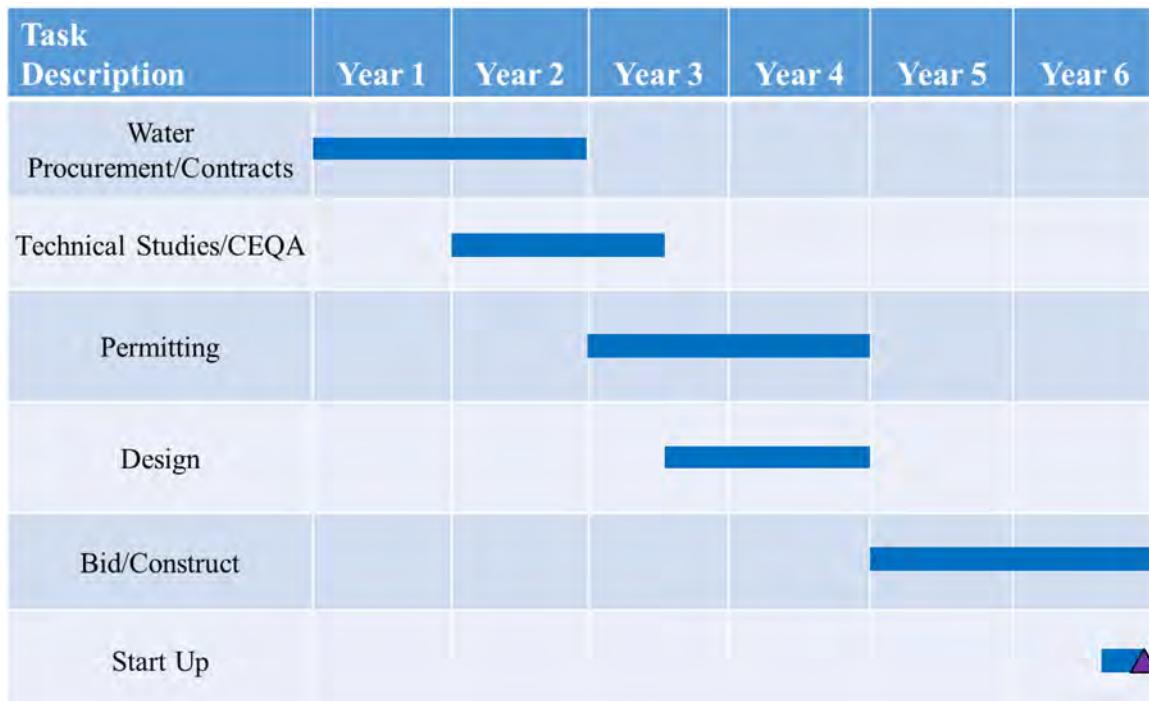


Figure 9-10. Implementation Schedule for NWP Delivery at Salinas and Estrella River Confluence

9.5.2.4.5 Estimated Cost

The estimated total project cost for this project is \$50M. Annual O&M costs are estimated at \$740,000. The average annual cost of NWP purchased water is estimated at \$2.4M based on an average year delivery of 2,800 AFY. However, the unit price would need to be negotiated, and the actual amount of water available will vary year to year thereby affecting the actual annual purchase cost. O&M and water purchase costs would be covered by the overproduction surcharges. Based on a 30-year loan at a 5% interest rate, the cost of water for this project would be approximately \$3,200/AF. Additional details regarding how costs were developed are included in Appendix J.

9.5.2.5 Preferred Project 4: NWP Delivery North of City of Paso Robles

This project provides up to 1,250 AFY of NWP water for direct delivery to agricultural water users north of the Paso Robles airport. On average, this project will provide 1,000 AFY of water for use in lieu of groundwater pumping in the region.

The general layout of this project and relevant monitoring wells are shown on Figure 9-11. Infrastructure includes a new NWP turnout, 5.6 miles of pipeline, a 130 hp pump station, and one river crossing for the Salinas River. For more information on technical assumptions and cost assumptions, refer to Appendix J.

9.5.2.5.1 Relevant Measurable Objectives

The measurable objectives benefiting from this project include:

- Groundwater elevation measurable objectives in the central portion of the Subbasin
- The groundwater storage measurable objective
- Land subsidence measurable objectives in the central portion of the Subbasin

9.5.2.5.2 Expected Benefits and Evaluation of Benefits

The primary benefit from in-lieu recharge using NWP water is higher groundwater elevations in the central portion of the Subbasin. Ancillary benefits of shallower groundwater elevations may include an increase in groundwater storage and avoiding pumping induced subsidence. The GSP model was used to quantify the expected benefit from this project. Figure 9-12 shows the expected groundwater level benefit predicted by the GSP model after 10 years of project operation. Figure 9-12 expresses the benefit as feet of groundwater. The groundwater level benefit shown on Figure 9-12 is a measure of how much higher groundwater elevations are expected to be with the project rather than without the project.

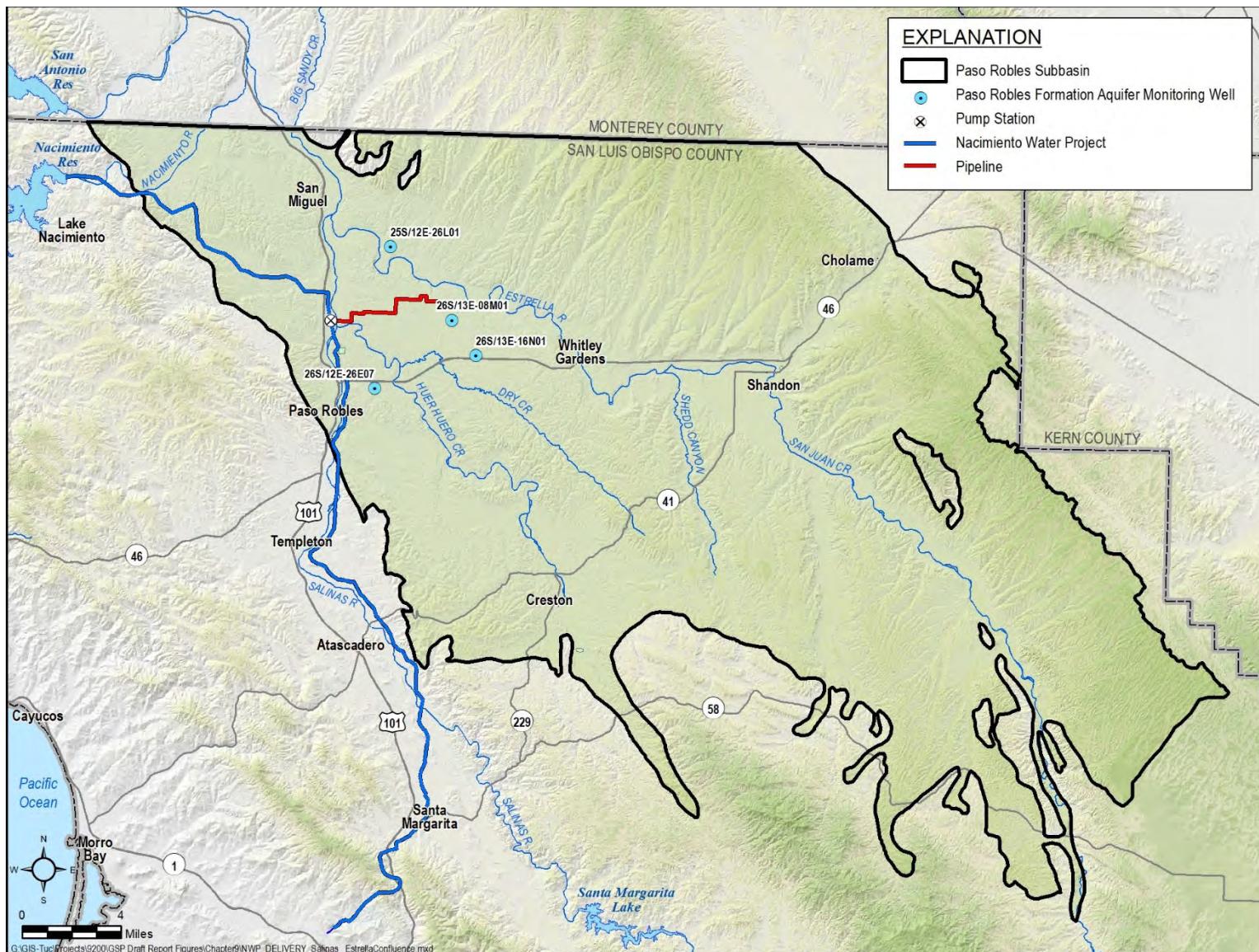


Figure 9-11. Conceptual NWP Delivery North of City of Paso Robles Project Layout

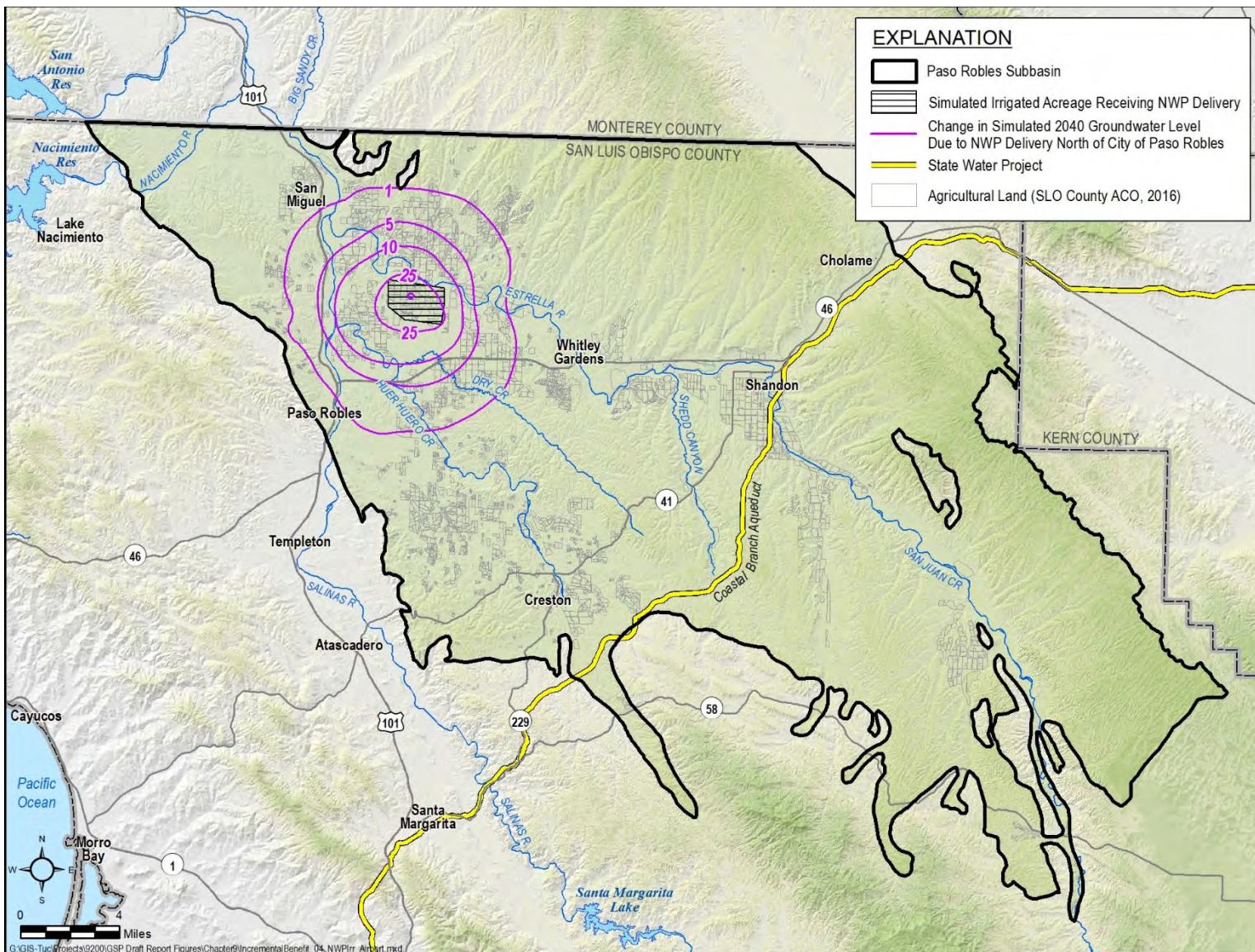


Figure 9-12. Groundwater Level Benefit from NWP Delivery North of City of Paso Robles

Changes in groundwater elevation will be measured with the groundwater level monitoring program detailed in Chapter 7. Subsidence will be measured with the InSAR network detailed in Chapter 7. A direct correlation between in-lieu recharge and changes in groundwater levels may not be possible because this is only one among many management actions and projects that may be implemented in the Subbasin.

9.5.2.5.3 Circumstances for Implementation

All projects are implemented based on need, cost benefit studies and willing participants. The project to deliver water for in-lieu recharge north of the airport will be initiated if, after five years, groundwater levels in the northern portion of the monitoring network continue to decline at unsustainable rates. In particular, continued unsustainable groundwater level declines in monitoring wells 26S/13E-08M01, 26S/13E-16N01, 25S/12E-26L01, and 26S/12E-26E07 will trigger implementation of this project. Additional triggers will be added as the monitoring well network expands.

9.5.2.5.4 Implementation Schedule

The implementation schedule is presented on Figure 9-13. The project will take 4 to 6 years to implement depending on the time required to negotiate procurement of NWP water. Conceptually, project implementation would occur in years 6 through 12 after GSP adoption.

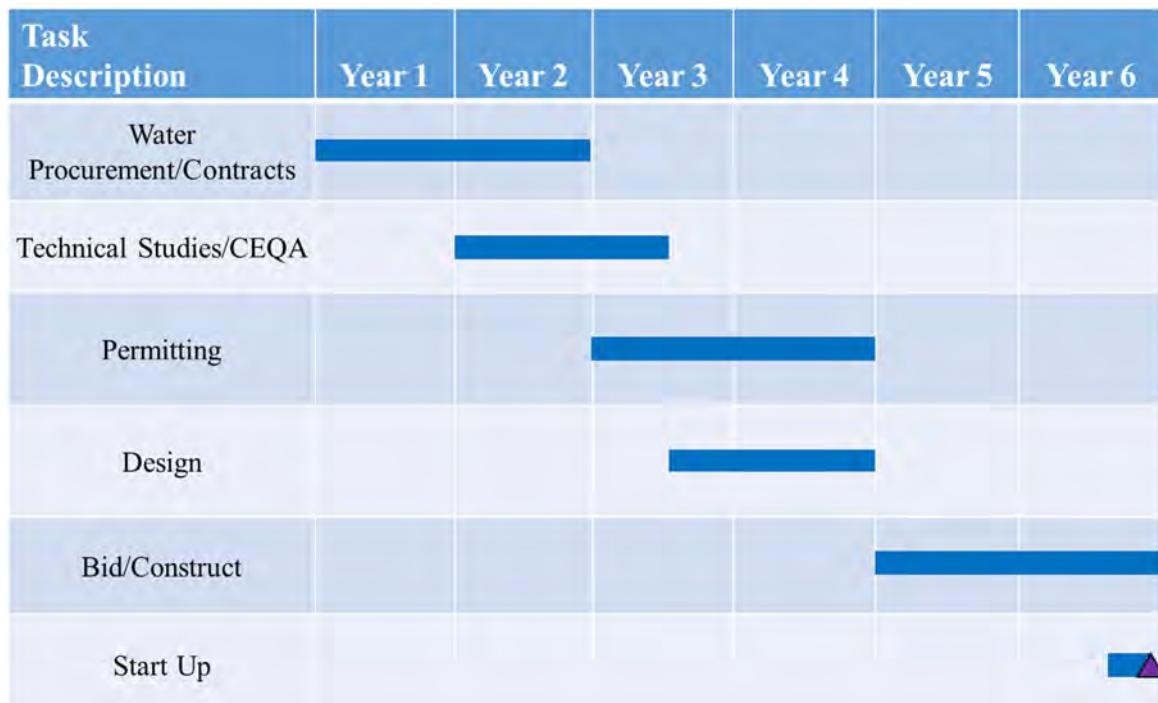


Figure 9-13. Implementation Schedule for NWP Delivery North of City of Paso Robles

9.5.2.5.5 Estimated Cost

The estimated total project cost for this project is \$22M. Annual O&M costs are estimated at \$150,000. The average annual cost of NWP purchased water is estimated at \$1.2M based on an average year delivery of 1,000 AFY. However, the unit price would need to be negotiated, and the actual amount of water available will vary year to year thereby affecting the actual annual purchase cost. O&M and water purchase costs would be covered by the overproduction surcharges. Based on a 30-year loan at a 5% interest rate, the cost of water for this project would be approximately \$2,800/AF. Additional details regarding how costs were developed are included in Appendix J.

9.5.2.6 Preferred Project 5: NWP Delivery East of City of Paso Robles

This project provides up to 2,500 AFY of NWP water to for direct delivery to agricultural water users east of the City of Paso Robles. On average, this project will provide 2,000 AFY of water for use in lieu of groundwater pumping in the region.

The general layout of this project and relevant monitoring wells are shown on Figure 9-14. Infrastructure includes a new NWP turnout, 5.6 miles of pipeline, a 130 hp pump station, and two river crossings one crossing of the Estrella River and one crossing of a tributary to the Estrella River. For more information on technical assumptions and cost assumptions, refer to Appendix J.

9.5.2.6.1 Relevant Measurable Objectives

The measurable objectives benefiting from this project include:

- Groundwater elevation measurable objectives in the central portion of the Subbasin
- The groundwater storage measurable objective
- Land subsidence measurable objectives in the central portion of the Subbasin

9.5.2.6.2 Expected Benefits and Evaluation of Benefits

The primary benefit from in-lieu recharge using NWP water is higher groundwater elevations in the central portion of the Subbasin. Ancillary benefits of shallower groundwater elevations may include an increase in groundwater storage and avoiding pumping induced subsidence. The GSP model was used to quantify the expected benefit from this project. Figure 9-14 shows the expected groundwater level benefit predicted by the GSP model after 10 years of project operation. Figure 9-14 expresses the benefit as feet of groundwater. The groundwater level benefit shown on Figure 9-14 is a measure of how much higher groundwater elevations are expected to be with the project rather than without the project.

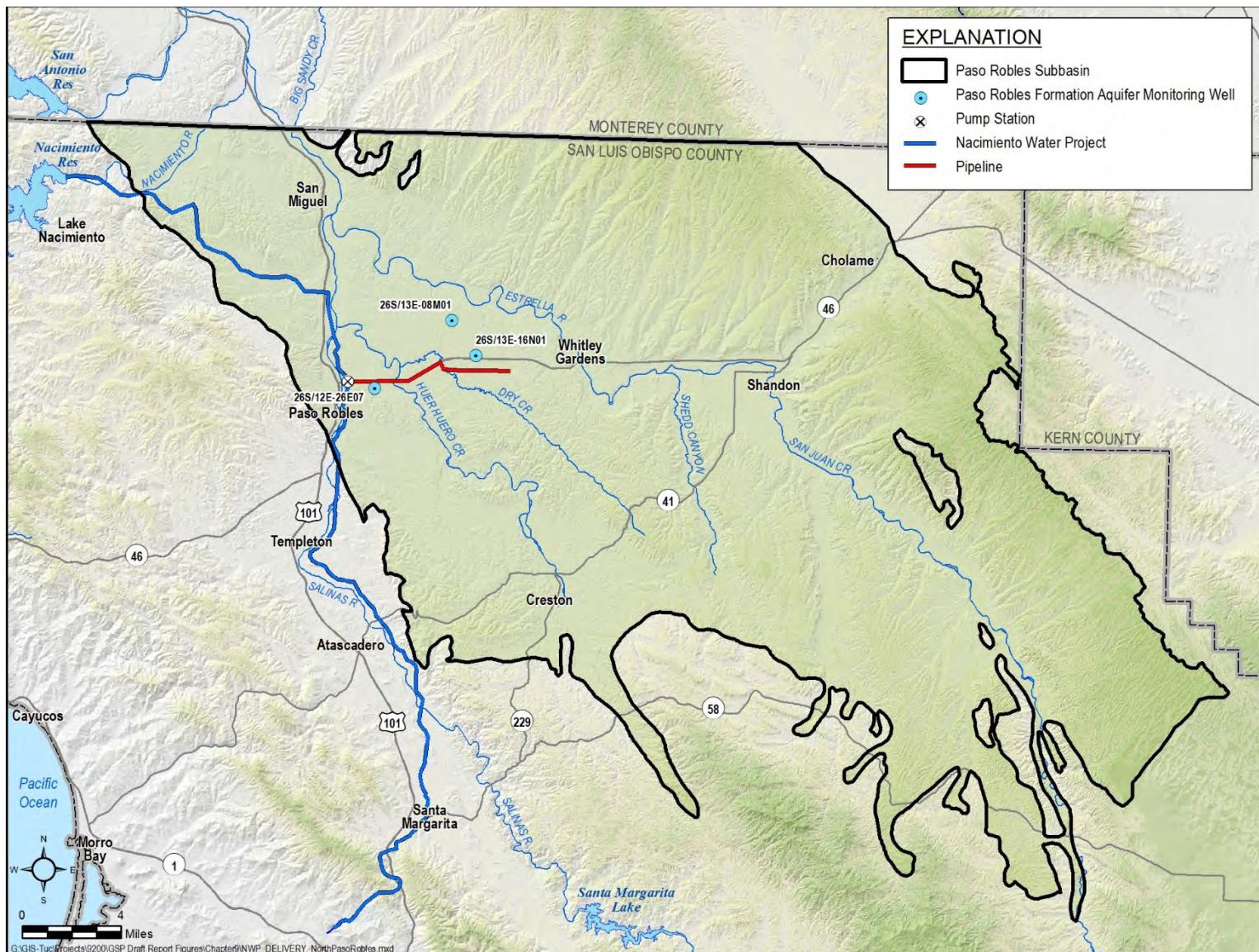


Figure 9-14. Conceptual NWP Delivery East of City of Paso Robles Project Layout

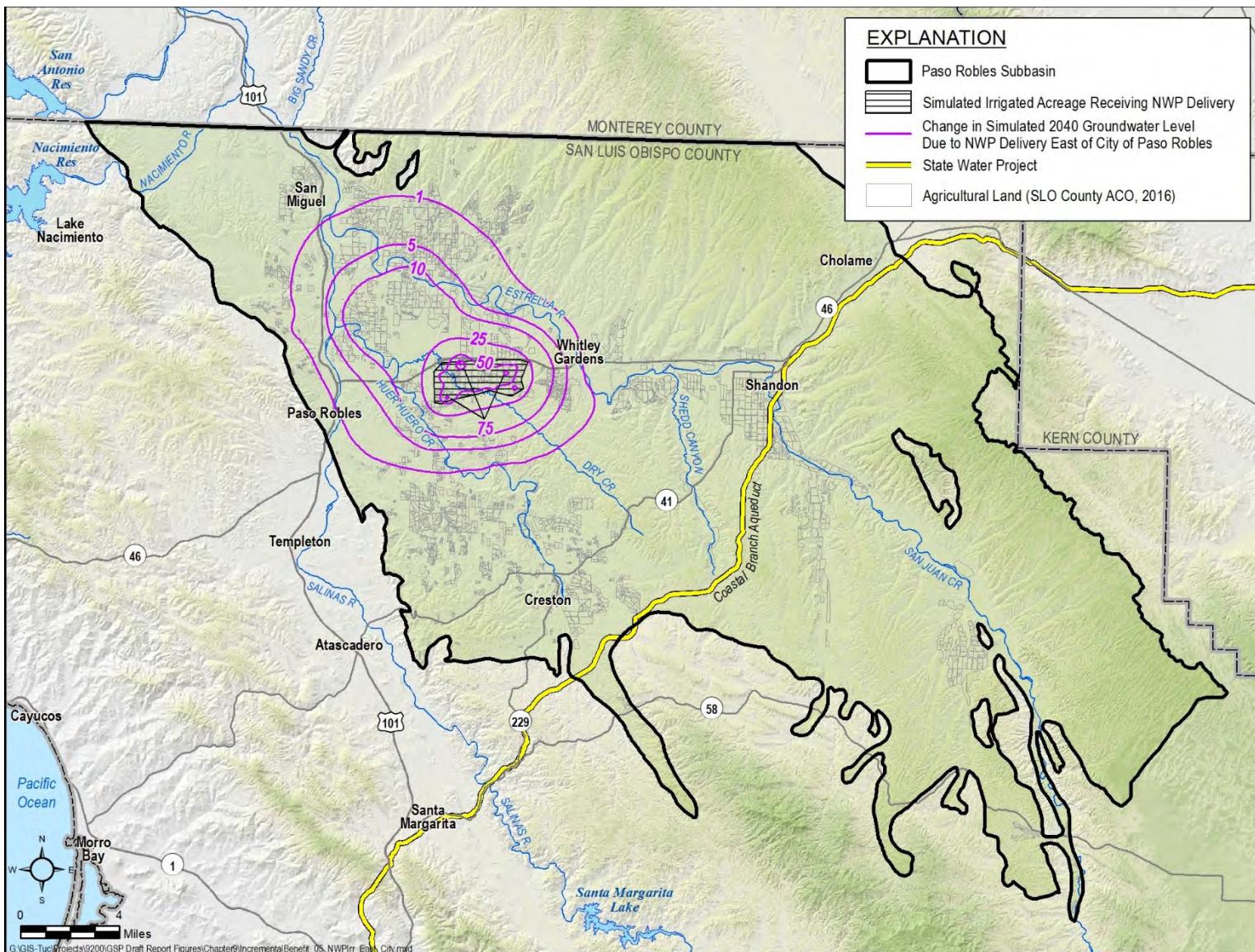


Figure 9-15. Groundwater Level Benefit from NWP Delivery East of City of Paso Robles

Changes in groundwater elevation will be measured with the groundwater level monitoring program detailed in Chapter 7. Subsidence will be measured with the InSAR network detailed in Chapter 7. A direct correlation between in-lieu recharge and changes in groundwater levels may not be possible because this is only one among many management actions and projects that may be implemented in the Subbasin.

9.5.2.6.3 Circumstances for Implementation

All projects are implemented based on need, cost benefit studies and willing participants. The project to deliver water for in-lieu recharge east of the City of Paso Robles will be initiated if, after five years, groundwater levels in the central portion of the monitoring network continue to decline at unsustainable rates. In particular, continued unsustainable groundwater level declines in monitoring wells 26S/13E-16N01, 26S/13E-08M01 and 26S/12E-26E07 will trigger implementation of this project. Additional triggers will be added as the monitoring well network expands.

9.5.2.6.4 Implementation Schedule

The implementation schedule is presented on Figure 0-16. The project will take 4 to 6 years to implement depending on the time required to negotiate procurement of NWP water. Conceptually, project implementation would occur in years 6 through 12 after GSP adoption.

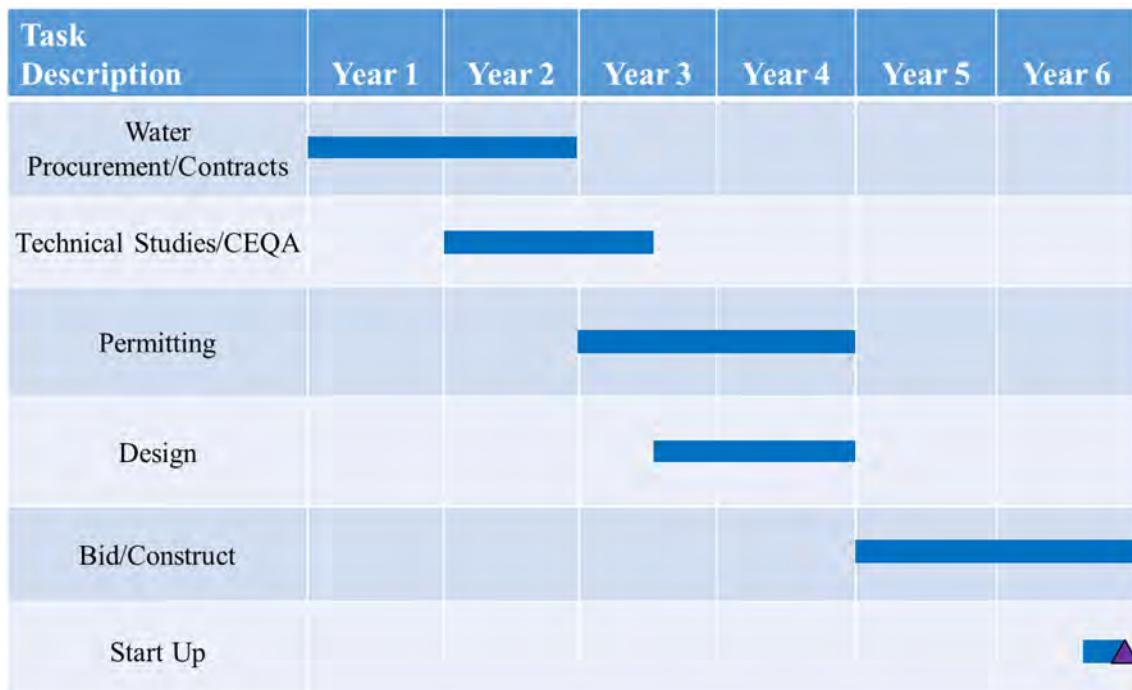


Figure 0-16. Implementation Schedule for NWP Delivery East of City of Paso Robles

9.5.2.6.5 Estimated Cost

The estimated total project cost for this project is \$32M. Annual O&M costs are estimated at \$380,000. The average annual cost of NWP purchased water is estimated at \$2.4M based on an average year delivery of 2,000 AFY. However, the unit price would need to be negotiated, and the actual amount of water available will vary year to year thereby affecting the actual annual purchase cost. O&M and water purchase costs would be covered by the overproduction surcharges. Based on a 30-year loan at a 5% interest rate, the cost of water for this project would be approximately \$2,400/AF. Additional details regarding how costs were developed are included in Appendix J.

9.5.2.7 Preferred Project 6: Expansion of Salinas Dam

SLOCFCWCD operates the Salinas Dam to provide water to the City of San Luis Obispo. The storage capacity of the lake is 23,843 AF; however, the City has existing water rights of 45,000 AF of storage. It is anticipated that funding would be sought to help the cost of retrofitting the dam and expanding the storage capacity by installing gates along the spillway in order to retain flood flow/stormwater for beneficial use. A risk assessment for the Dam is scheduled for the summer of 2019.

There may be opportunities to use the water from the expanded reservoir storage to benefit the Subbasin. One possibility would be to schedule summer releases from the storage to the Salinas River, which would benefit the Subbasin by recharging the basin through the Salinas River. Another way this project might indirectly benefit the Subbasin is if the City of San Luis Obispo were to use more of their Salinas River water allocation, thereby freeing up the NWP water for purchase by the GSAs.

9.5.2.7.1 Relevant Measurable Objectives

The measurable objectives benefiting from this project include:

- Groundwater elevation measurable objectives in the central portion of the Subbasin
- The groundwater storage measurable objective
- Land subsidence measurable objectives in the central portion of the Subbasin

9.5.2.7.2 Expected Benefits and Evaluation of Benefits

The primary benefit from releasing additional water to the Salinas River during the summer is higher groundwater elevations along the Salinas River. Ancillary benefits of shallower groundwater elevations may include an increase in groundwater storage and avoiding pumping induced subsidence. The GSP model was used to quantify the expected benefit from this project. Figure 0-17 shows the expected groundwater level benefit predicted by the GSP

model after 10 years of project operation. Figure 0-17 expresses the benefit as feet of groundwater. The groundwater level benefit shown on Figure 0- is a measure of how much higher groundwater elevations are expected to be with the project rather than without the project.

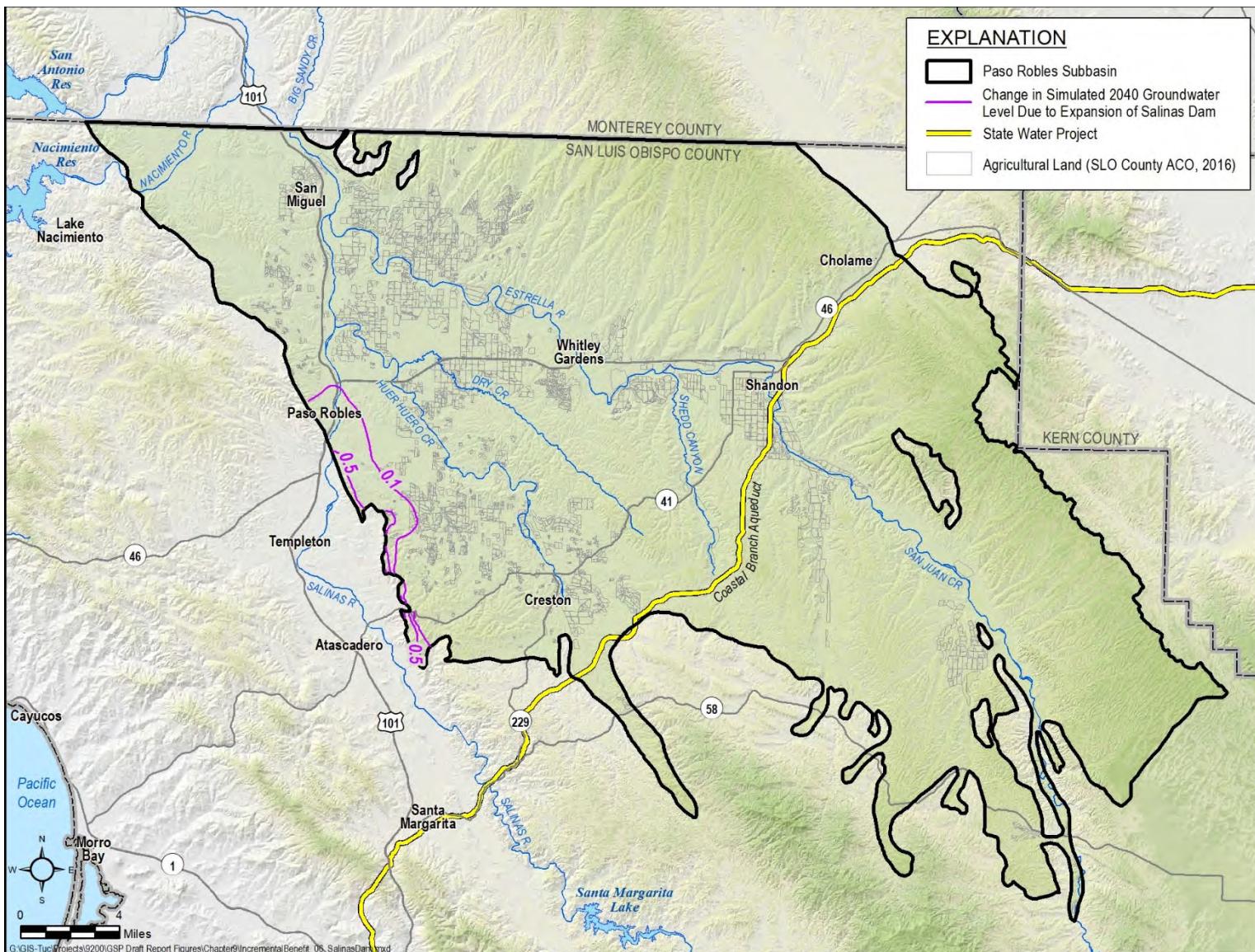


Figure 0-17. Groundwater Level Benefit from Salinas River Summer Releases

9.5.2.7.3 Circumstances for Implementation

All projects are implemented based on need, cost benefit studies and willing participants. The project to release Salinas River water during the summer will be initiated if, after two years, groundwater levels near the Salinas River continue to decline at unsustainable rates. In particular, continued unsustainable groundwater level declines in monitoring wells 25S/12E-16K05, 26S/13E-16N01, 27S/12E-13N01 and 27S/13E-30N01 will trigger implementation of this project. Additional triggers will be added as the monitoring well network expands.

9.5.2.7.4 Implementation Schedule

The implementation schedule is presented on Figure 9-18. The project will take 4 to 5 years to implement. Conceptually, project implementation would occur in years 3 through 8 after GSP adoption.

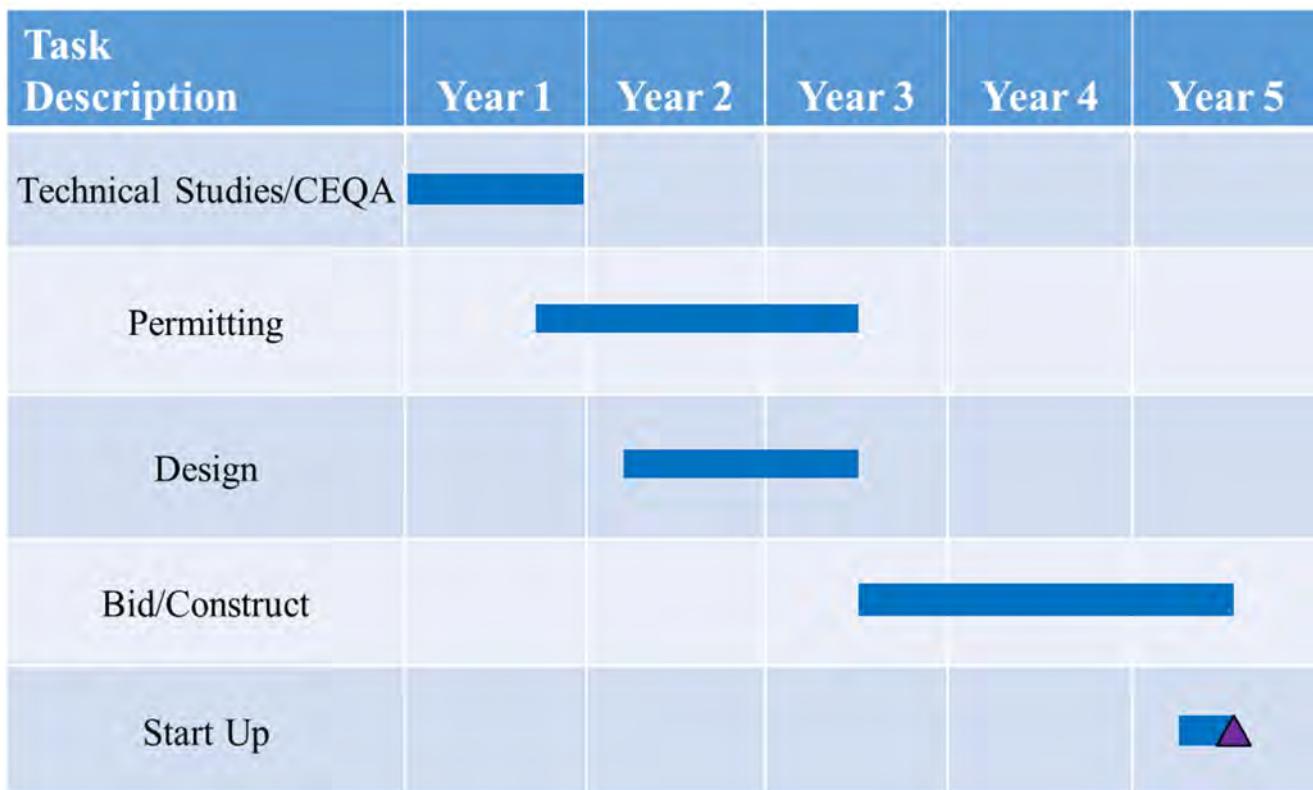


Figure 9-18. Implementation Schedule for Expansion of Salinas Dam

9.5.2.7.5 Estimated Cost

The cost to increase the storage capacity behind the Salinas Dam has been estimated at between \$30M and \$50M. O&M costs have not been estimated at this time. Some of these

costs may be available from federal sources. No additional capital cost would be required to release water to the Salinas River for recharge during the summer months.

9.6 Other Groundwater Management Activities

Although not specifically funded or managed as part of implementing this GSP, a number of associated groundwater management activities will be promoted and encouraged by the GSAs as part of general good groundwater management practices.

9.6.1 Continue Urban and Rural Residential Conservation

Existing water conservation measures should be continued, and new water conservation measures promoted for residential users. Conservation measures may include the use of low flow toilet fixtures, or laundry-to-landscape greywater reuse systems. Conservation projects can reduce demand for groundwater pumping, thereby acting as in-lieu recharge.

9.6.2 Watershed Protection and Management

Watershed restoration and management can reduce stormwater runoff and improving stormwater recharge into the groundwater basin. While not easily quantified and therefore not included as projects in this document, watershed management activities may be worthwhile and benefit the basin.

9.6.3 Retain and Enforce the Existing Water Export Ordinance

This GSP recommends that San Luis Obispo County's existing groundwater export ordinance should be enforced and retained. With limited exception, the ordinance requires a permit for the movement of groundwater across the county or Subbasin line. To obtain a permit, the movement of groundwater cannot negatively impact a nearby overlying groundwater user, result in seawater intrusion, or result in a cone of depression greater than the landowner's property line. This ordinance will continue to protect the county's water supplies.

9.7 Demonstrated Ability to Attain Sustainability

To demonstrate the ability to attain sustainability, a groundwater management scenario that included both projects and management actions was modeled. The scenario included all of the conceptual projects listed in Section 9.5.2. In addition to the conceptual projects, pumping was reduced to bring groundwater elevations to the measurable objectives before 2040 and maintain the same groundwater elevations through 2070.

The GSP model was adapted to simulate the scenario described above over the GSP implementation period from 2020 through 2040. The ability to achieve sustainability was

quantified by comparing 2040 simulated groundwater levels under each of the two scenarios against the Measurable Objective surface – as described in Chapter 8 – for both the Paso Robles formation aquifer and the Alluvial aquifer.

Individual hydrographs comparing the predicted groundwater elevations to the measurable objectives at each representative monitoring site are included in Appendix K.

9.8 Management of Groundwater Extractions and Recharge and Mitigation of Overdraft

This GSP is specifically designed to mitigate the decline in groundwater storage and persistent groundwater level declines in certain areas with a combined program of management actions designed to promote voluntary reductions in pumping and provide authority for mandatory pumping limitations where necessary. Individual GSAs are also proceeding on projects designed to use recycled water, any available Nacimiento Project water and flood flow/stormwater in the Salinas River to use in lieu of pumping groundwater and/or to supplement groundwater supplies.