ATASCADERO BASIN
Groundwater
Sustainability Agency

Executive Committee Meeting Agenda

Meeting Date: Wednesday, October 7, 2020

Meeting Time: 4:30 p.m.

Meeting Location: Virtual Meeting
Connect via web to attend:
https://zoom.us/j/96818841271?pwd=b25ac1FvN0puNHVZbkR4Z1dPd3I3dz09: Meeting ID: 968 1884 1271: Password: 724527
or
Dial by your location: +1 669 900 9128

1. Call to Order

2. Roll Call

3. Pledge of Allegiance

4. Order of Business
Executive Committee members may request to change the order of business.

5. Introductions

6. General Public Comments
The Executive Committee invites members of the public to address the committee on any subject that is within the purview of the committee and that is not on today's agenda. Comments shall be limited to three minutes.

7. Consent Agenda
The following items are considered routine and non-controversial by staff and may be approved by one motion if no member of the Executive Committee wishes an item removed. If discussion is desired, the item may be removed from the Consent Agenda by an Executive Committee member and will be considered separately. Questions or clarification may be made by the Executive Committee members without removal from the Consent Agenda. Individual items on the Consent Agenda are approved by the same vote that approves the Consent Agenda, unless an item is pulled for separate consideration. Members of the public may comment on the Consent Agenda items.

   a. Minutes – July 1, 2020

8. Old Business:
    a. GSP Section 6, Water Budget

9. New Business:
    a. GSP Section 8, Sustainable Management Criteria questionnaire
    b. Request for Future Items
    c. Next Meeting: January 6, 2021, 4:30 p.m.

10. Informational Items
    a. DWR Prop 1 Grant Progress Report

11. Adjournment

ATASCADERO BASIN
Groundwater
Sustainability Agency

TO: Executive Committee

FROM: GSA Staff/ John Neil, Atascadero Mutual Water Company

DATE: October 7, 2020

SUBJECT: Agenda Item 7.a, Minutes from July 1, 2020 Meeting

The Executive Committee (Committee) of the Atascadero Basin Groundwater Sustainability Agency (GSA) held a meeting on Wednesday, July 1, 2020, at 4:30 p.m. via streaming video conference call due to the Covid-19 pandemic.

Roll Call: Vice-Chairperson Grigger Jones called the meeting to order at 4:30 p.m. Present at the Committee meeting were Voting Members Jones, Navid Fardanesh, John Hamon, Roberta Fonzi, and Rob Rossi. A quorum (minimum of 4 voting representatives) of the Committee was established. Voting Member Debbie Arnold and Non-voting Member Tom Mora were absent.

Participating Staff and Consultants:
Atascadero Mutual Water Company – John Neil
City of Paso Robles – Dick McKinley
County of San Luis Obispo – Angela Ford
Templeton Community Services District – Jeff Briltz
GEI Consultants – Mike Cornelius and Lydia Holland
GSI Water Solutions – Paul Sorensen and Nate Page
Others in attendances: Mike McGinnis (DWR), Jim Patterson, Maria Pascoal, Josh Heptig, and John Hollenbeck

Order of Business: The Committee Members reviewed the order of the meeting's agenda and confirmed to conduct the meeting as presented in the agenda. Member Fonzi announced she will need to leave shortly after 5:00 p.m.

General Public Comments: Vice-Chairperson Jones opened public comment and, seeing none, closed public comment.

Consent Agenda:
Agenda 7.a: October 2, 2019, Meeting Minutes – The Committee reviewed the minutes from the October 2, 2019, meeting. No changes were noted. Member Fonzi motioned to approve the minutes with a second by Member Rossi.
Voice vote of Voting Members: Ayes – All. Nays – none. Motion carried.

Old Business Agenda:

None

New Business Agenda:

Agenda 9.a: Election of Officers – Article 5 of the Memorandum of Agreement (MOA) specifies the annual election of Executive Committee officers, including Chair, Vice Chair, Secretary and Treasurer. The following election activity occurred:

- Member Fonzi moved for Member Jones to serve as Chairperson. Member Hamon seconded the motion. A voice vote was unanimous for approval. Chairperson Jones took the gavel and continued the oversite of the meeting.
- Member Rossi moved for Member Hamon to serve as Vice Chairperson. Member Fonzi seconded the motion. A voice vote was unanimous for approval.
- Member Hamon moved for Member Rossi to serve as Secretary. Member Jones seconded the motion. A voice vote was unanimous for approval.
- Member Hamon moved for Member Fonzi to serve as Treasurer. Member Rossi seconded the motion. A voice vote was unanimous for approval.

The meeting continued with the following officers seated to serve the Executive Committee through February 2021:

- Chairperson – Robert "Grigger" Jones
- Vice Chairperson – John Hamon
- Secretary – Rob Rossi
- Treasurer – Roberta Fonzi

Agenda 9.b: GSP Section 6, Water Budget (Historic and Current Periods) – John Neil, General Manager with the Atascadero Mutual Water Company, introduced the agenda item, and turned the presentation over to GSI Water Solutions, presented by Nate Page and Paul Sorensen. The years 1981 to 2011 were identified as the water budget's historical period of record, and the current period of record is ears 2012 to 2016. The current period matches the groundwater modeling done for the Paso Robles basin, which at the time included the Atascadero Basin. GSI presented histograms for the annual water budget (inflows and outflows) for the historical and current periods and a chart of historical cumulation of groundwater in storage. Staff identified that the water budget forecast for future time periods will be analyzed as the assumptions for groundwater demands are developed. The change in groundwater storage and annual basin yield for the historical time period is 1,900 acre-feet per year (AFY) and 16,900 AFY, respectively. The same information for the current time period is -3,100 AFY and 9,600 AFY, which reflects the impact of the drought. The predictions for the future will be presented to the Committee at our next meeting.

Mr. Neil identified that staff was seeking the Committee's concurrence with the period of record for historical and current water budget analyses. Member Fonzi moved to utilize the period of records presented by GSI for the water budget analyses, and the motion was seconded by Member Rossi. Ayes – All. Nays – none. Motion carried.

Agenda 9.c: GSP Section 7, Monitoring Network (Public Comment Draft) – Neil introduced the topic and identified the need for the Committee's consideration to release Section 7 for public review and comment. Neil then turned the presentation over to GSI.

The monitoring networks that are required for the Atascadero Basin are related to the following:

- Groundwater level monitoring
- Groundwater storage monitoring
- Groundwater quality monitoring
- Land subsidence monitoring
- Interconnected surface water monitoring

Twenty-six existing wells to monitor groundwater levels have been identified: 12 in the alluvial layer of the Salinas River, and 14 in the Paso Robles Formation. GSI has identified three areas of data gaps. Member Rossi identified potential well monitoring availability at a winery on Highway 46 west, and Dick McKinley noted that the developer of the Gateway Project is conditioned to install a monitoring well for the GSA's use. GSI identified that a subset of the groundwater level monitoring wells have been identified as the Representative Monitoring Sites (RMS) that will serve for evaluating levels relative to the sustainability management criteria that will be developed and presented in Section 8. Member Fonzi identified the importance of identifying within the plan how the RMS wells were chosen and why those specific wells are representative of the level monitoring over the basin.

Groundwater storage is calculated by development of groundwater contours that are derived from 128 wells, many which are confidential landowner information and their locations cannot be presented on exhibits within the plan.

Groundwater quality information is from reported information from dozens of public, domestic, agricultural and environmental monitoring wells. GSI reported very good distribution of well information for the basin, and that there is not a data gap for evaluating water quality. Member Fardanesh asked if the GSA receives well maintenance information, and GSI responded no, that information is not shared by the well owners.

Land subsidence information is obtained from the InSAR satellite information that is publicly available.

The interconnected surface water monitoring network includes nine alluvial wells and five Paso Robles Formation wells. The data gaps identified are (1) temporal relative to the frequency of monitoring, and (2) stream gaging information.

Member Fardanesh moved that the draft Section 7 be released for public review and comment, and Member Hamon seconded the motion. Ayes – All. Nays – none. Motion carried. Member Fonzi left the meeting following this vote.

Agenda 9.d: GSP Section 8, Sustainable Management Criteria (Introduction). GEI Consultants presented this item. Groundwater conditions as of January 1, 2015, the day the SGMA law was enacted, is also the date that benchmarks groundwater conditions of levels, storage, quality, etc., thus establishing the minimum threshold conditions of the five sustainability objectives that can protect the basin from undesirable conditions. The focus on the section of sustainable management criteria will be collaborating with all basin stakeholders to establish the measurable objectives and interim milestones to gauge the performance of the GSP. Member Jones commented on the importance for stakeholder engagement and involvement in the management criteria. Mr. Neil noted that stakeholders will be made aware of the relationship between sustainability objectives and cost implications to achieve them. Member Fardanesh commented that sustainability goals will need to have operational flexibility based on the precipitation conditions (wet or drought). GEI confirmed that the schedule for completing the plan is the second quarter of 2021 in a response to a question from Member Hamon.

Agenda 9.d: Request for Future Items – The Committee did not offer any suggestions for future agenda items. Member Fardanesh asked how much public interaction has occurred on the web portal: GEI replied seven comments to-date. Mr. Neil identified that a workshop is likely to be scheduled for discussions regarding Section 8 of the plan.

Adjournment:

Next Meeting: The Committee noted that the next EC meeting will be held on October 7, 2020, at 4:30 p.m. The meeting location will be determined later and identified on the posted meeting agenda.

Adjournment: There being no further business to discuss, Member Jones moved to adjourn the meeting, seconded by Member Rossi: Chairperson Jones closed the meeting at 5:37 p.m.

Submitted by: ______________________________
Committee Member Rossi, Secretary

ATASCADERO BASIN
Groundwater
Sustainability Agency

TO: Executive Committee

FROM: GSA Staff/ John Neil, Atascadero Mutual Water Company

DATE: October 7, 2020

SUBJECT: Agenda Item 8.a, GSP Section 6, Water Budgets

RECOMMENDED ACTION:

Authorize staff to post Section 6, Water Budgets, of the Atascadero Basin Groundwater Sustainability Plan on the Communications Portal for a 45-day public comment period.

DISCUSSION:

SGMA regulations require that a groundwater sustainability plan (GSP) include a water budget. The budget must include a minimum of a 20-year historic budget. SGMA also requires the budget to include future projections of groundwater use in the basin.

At its meeting on July 1, 2020, the Executive Committee directed staff to prepare the water budget for the Atascadero Basin (Section 6 of the GSP) assuming the historic budget would cover the period 1981–2011, and the current budget would cover the period 2012–2016. These same periods were used for the hydro-geologic modeling of the Paso Robles Basin. Using these periods for the Atascadero Basin will aid in any coordination efforts between the two basins and will help reduce modeling expenses.

Staff noted that that the period covered by the current groundwater budget was one of extreme drought in California. Local rainfall records show that the period 2012-2016 had the driest 2-year, 4-year, and 5-year periods of the past 105 years. SGMA anticipates that groundwater pumping in excess of basin inflow may occur in these periods of extended drought.

Future water demands for the period 2020-2042 were estimated for this first version of the water budget using the data sources and assumptions listed below. These demands will be adjusted as new data become available through GSP updates and basin monitoring.

- AMWC – 2015 Urban Water Master Plan
- Paso Robles – 2015 Urban Water Master Plan
- TCSD – 2019 update of the Water Supply Buffer Model
- Nacimiento Water Project (NWP) deliveries will offset some groundwater pumping by NWP participants in the basin
- 1% annual water demand increase by agricultural, rural domestic and commercial pumpers
- Department of Water Resources climate change factors were incorporated into the future water budget

Using the data sources and assumptions listed above, it is projected that the basin will remain in balance through 2034. Beyond 2034, pumping may slightly exceed recharge. Imported water from the NWP supply augments the natural basin recharge and provides the municipal purveyors a water resource management tool that will allow for effective management of the basin for the foreseeable future.

FISCAL IMPACT:

Fifty percent of the cost to develop the GSP, including preparation of the water budget, will be funded through a Proposition 1 grant awarded to the GSA by the Department or Water Resources, with the remaining costs being a local match.

ATTACHMENTS:

A. Draft GSP Section 6, Water Budgets

DRAFT

Atascadero Basin Groundwater Sustainability Agency

Atascadero Basin Groundwater Sustainability Plan

Section 6 – Water Budgets

September 19, 2020

ATASCADERO BASIN
Groundwater
Sustainability Agency

Prepared by:
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SECTION 6: **WATER BUDGETS**

This chapter summarizes the estimated water budgets for the Atascadero Area Groundwater Sub-basin of the Salinas Valley Basin (Basin), including information required by the Sustainable Groundwater Management Act (SGMA) Regulations and information that is important for developing an effective Groundwater Sustainability Plan (GSP) to achieve sustainability. In accordance with the SGMA Regulations §354.18, the GSP should include a water budget for the basin that provides an accounting and assessment of the total annual volume of surface water and groundwater entering and leaving the basin, including historical, current, and projected water budget conditions, and the change in the volume of water stored. The regulations require that the water budgets be reported in graphical and tabular formats, where applicable.

6.1 Overview of Water Budget Development

This section is subdivided into three sections: (1) historical water budgets, (2) current water budgets, and (3) future water budgets. Within each section, a surface water budget and groundwater budget are presented. Water budgets were developed using computer models of the Basin hydrogeologic conditions. Before presenting the water budgets, a brief overview of the models is presented. Appendix 6A provides additional information about the models and compares previously reported water budgets to the water budgets developed for this GSP.

The water budgets reported herein are for the Basin defined in Section 1.2 and depicted on Figure 1-1.

The safe yield of a groundwater basin is the volume of pumping that can be extracted from the basin on a long-term basis without creating a chronic and continued lowering of groundwater levels and groundwater in storage volumes. The safe yield is not a fixed constant value, but is a dynamic value that fluctuates over time as the balance of the groundwater inputs and outputs change; thus, the calculated safe yield of the Basin will be estimated and likely modified with each future update of the GSP.

Safe yield is not the same as sustainable yield. Sustainable yield is defined in SGMA as "the maximum quantity of water, calculated over a base period representative of long-term conditions in the basin and including any temporary surplus that can be withdrawn annually from a groundwater supply without causing an undesirable result." An undesirable result is one or more of the following effects on the six sustainability indicators:

- Chronic lowering of groundwater levels in the aquifer(s)
- Significant and unreasonable reduction of groundwater in storage
- Significant and unreasonable degradation of water quality
- Sea water intrusion
- Significant and unreasonable land subsidence that interferes with surface land uses
- Depletion of interconnected surface water that has significant and unreasonable adverse impacts on beneficial uses of surface water

Defining the safe yield of a groundwater basin provides a starting point for later establishing sustainable yield by considering each of the six sustainability indicators listed above.

Section 354.18 of the SGMA Regulations requires development of water budgets for both groundwater and surface water that provide an accounting of the total volume of water entering and leaving the basin. To satisfy the requirements of the regulations, a surface water budget was prepared for the Atascadero Basin and an integrated groundwater budget was developed for each water budget period for the combined inflows and outflows for the two principal aquifers – Alluvial Aquifer (including the Salinas River alluvial aquifer and associated tributaries; see Section 4) and Paso Robles Formation Aquifer. Groundwater is pumped from both aquifers for beneficial use.

Figure 6-1 presents a general schematic diagram of the hydrologic cycle. The water budgets include the components of the hydrologic cycle.

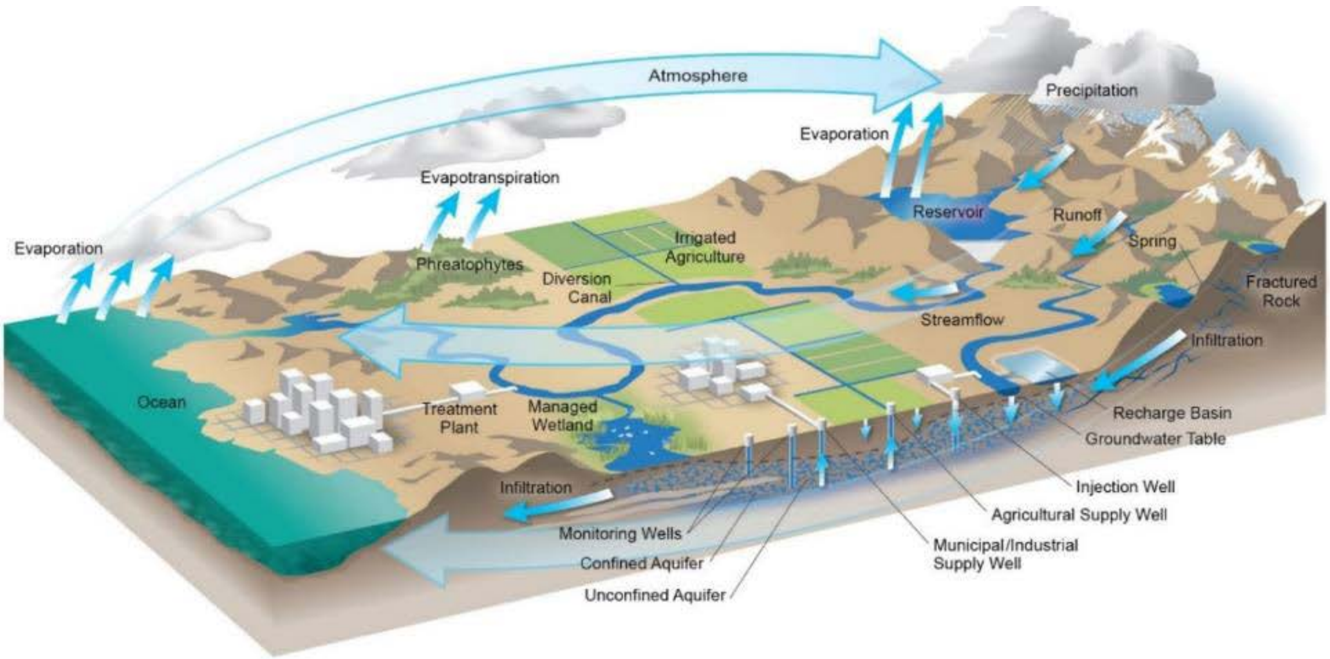

Figure 6-1. Hydrologic Cycle (Source: DWR, 2016a)

A few components of the water budget can be measured, like streamflow at a gaging station or groundwater pumping from a metered well. Other components of the water budget are estimated, like recharge from precipitation or unmetered groundwater pumping. The water budget is an inventory and accounting of total surface water and groundwater inflows (recharge) and outflows (discharge) from the Basin, including:

Surface Water Inflows:

- Runoff of precipitation and reservoir releases into streams and rivers that enter the Basin from the surrounding watershed
- Imported surface water (e.g. Nacimiento Water Project)

Surface Water Outflows:

- Streamflow exiting the Basin
- Percolation of streamflow to the groundwater system
- Evaporation

Groundwater Inflows:

- Recharge from precipitation
- Subsurface groundwater inflow
- Irrigation return flow (water not consumed by crops/landscaping)
- Percolation of surface water from streams
- Percolation of treated wastewater from disposal ponds

- Percolation of imported surface water (e.g. Nacimiento Water Project)

Groundwater Outflows:

- Evapotranspiration
- Groundwater pumping
- Subsurface outflows to the adjoining, downgradient groundwater basins
- Groundwater discharge to surface water

The difference between inflows and outflows is equal to the change in storage.

6.2 Water Budget Data Sources and Basin Model

Water budgets for the Basin were estimated using an integrated system of three hydrologic models (collectively designated herein as the "basin model"), including:

1. A watershed model
2. A soil water balance model
3. A groundwater flow model

The groundwater model was originally developed by Fugro (2005). The watershed and soil water balance models were developed and integrated with an updated version of the groundwater model by Geoscience Support Services, Inc. (GSSI) (GSSI, 2014 and 2016). These models were developed for San Luis Obispo County Flood Control and Water Conservation District (SLOFCWCD). The domain of these models encompasses an area that includes both the Paso Robles Subbasin and the Basin as well as a portion of the Salinas Valley – Upper Valley Aquifer Subbasin north of the Monterey County line[1]. The original models are documented in the following reports:

- Final Report, Paso Robles Groundwater Basin Study Phase II, Numerical Model Development, Calibration, and Application: Fugro, February 2005
- Paso Robles Groundwater Basin Model Update: Geoscience Support Services, Inc., December 2014
- Refinement of the Paso Robles Groundwater Basin Model and Results of Supplemental Water Supply Options Predictive Analysis: Geoscience Support Services, Inc., December 2016.

The GSSI 2016 version of the basin model was updated by Montgomery & Associates (M&A; 2020) for the Paso Robles Subbasin GSP. Because the model domain of the basin model encompasses the entirety of the original Fugro 2002 basin, the basin model simulates groundwater flow conditions and water budgets for both the Paso Robles Subbasin and the Atascadero Subbasin.

The M&A (2020) basin model update included updating the GSSI 2016 basin model by incorporating hydrologic data for the period 2012 through 2016 into the models. Appendix 6A includes a brief summary of the model update process, including:

- A summary of data sources used for the update (Table 6A-1)
- A summary of modifications made to the basin model to address computational refinements, data processing issues, and conceptual application of the model codes

[1] The domain of the Fugro 2005 model and subsequent model updates completed by GSSI (2014 and 2016) were designed to encompass the area defined as the Paso Robles Groundwater Basin by Fugro in 2002. The 2002 Fugro study defined the lateral and vertical extent of the Paso Robles Groundwater Basin, which included a portion north of the Monterey County line and identification of the Atascadero Subbasin (Basin) as a hydrogeologically distinct portion of the basin. The basin extents defined by Fugro (2002) varies slightly from the basin extents defined in the current DWR Bulletin 118 (DWR 2016b).

The updated versions of the basin models are referred to herein collectively as the "GSP model". The GSP model has been utilized for both the Atascadero Basin GSP and the Paso Robles Subbasin GSP as the model domain covers large portions of both subbasins.

Numerous sources of raw data were used to update the basin models for the GSP. Examples of raw data include metered pumping and deliveries from the Atascadero Mutual Water Company (AMWC), Templeton Community Services District (TCSD), and the city of Paso Robles, precipitation data obtained from weather stations in the Basin, and crop acreage from the office of the San Luis Obispo County Agricultural Commissioner, among many others. Data sources are listed in Table 6A-1. Raw data were compiled, processed, and used to develop model input files. Model results were used to develop estimates of the individual inflow and outflow components of the surface water and groundwater budgets. Thus, all the estimated flow components herein were extracted from the GSP model.

6.2.1 Model Assumptions and Uncertainty

The GSP model is based on available hydrogeologic and land use data from the past several decades, previous studies of Basin hydrogeologic conditions, and earlier versions of the basin models. The GSP model gives insight into how the complex hydrologic processes are operating in the Basin. During previous studies, available data and a peer-review process were used to calibrate the basin model to Basin hydrogeologic conditions. Results of the previous calibration process demonstrated that the model-simulated groundwater and surface water flow conditions were similar to observed conditions. The GSP model was not recalibrated. However, after updating it for this GSP, calibration of the model was reviewed and found to be similar to the previous model. The groundwater flow model module of the GSP model does not cover the northwestern upland portion of the Atascadero Basin (as defined by DWR Bulletin 118) so groundwater processes have not been modeled in this area, yet, the watershed model does include this area so contributing surface and subsurface flows from this upland area have been incorporated into the GSP model; therefore, use of the GSP model was considered appropriate for development of the Atascadero Basin GSP.

Projections made with the GSP model have uncertainty due to limitations in available data and assumptions made to develop the models. Model uncertainty has been considered when developing and using the reported GSP water budgets for developing sustainability management actions and projects (Section 9).

New data will be collected and/or refined throughout the early implementation of this GSP (after adoption by the GSA). The information will be used to recalibrate and potentially expand the domain of the GSP model, and perhaps develop a stand-alone, Atascadero Basin-specific groundwater flow model rather than continued utilization of the coupled Paso Robles Subbasin/Atascadero Basin model. New hydrologic data and a calibrated model will be used to simulate impacts from proposed sustainability management actions, and possible water resource improvement projects, to monitor that progress toward the sustainability goal is being achieved.

6.3 Historical Water Budget

The SGMA Regulations require that the historical surface water and groundwater budget be based on at least the most recent 10 years of data. The period 1981 to 2011 was selected as the time period for the historical water budget (referred to as the historical base period) because it is long enough to capture typical climate variations, it corresponds to the period simulated in the basin model, and it ends at about the time the latest drought period began. Estimates and assumptions of the surface water and groundwater inflows and outflows, and changes in storage for the historical base period are provided below.

6.3.1 Historical Surface Water Budget

The SGMA Regulations (§354.18) require development of a surface water budget for the GSP. The surface water budget quantifies important sources of surface water and evaluates their historical and future reliability. The water budget Best Management Practice (BMP) document states that surface water sources should be identified as one of the following (DWR, 2016a):

- Central Valley Project
- State Water Project
- Colorado River Project
- Local imported supplies
- Local supplies

The Basin relies on two of these surface water source types: local imported supplies and local supplies.

6.3.1.1 Historical Local Imported Supplies

As described in Section 4.7.1, the Nacimiento Water Project (NWP) regional raw water transmission facility delivers water from Lake Nacimiento to communities in San Luis Obispo County, including AMWC, TCSD, and the city of Paso Robles. TCSD has an allocation of 406 acre-feet per year (AFY) of NWP water and began taking deliveries in 2011. A total of 74 acre-feet (AF) was taken by TCSD in 2011, and constitutes the only NWP deliveries in the historical period. AMWC and the city of Paso Robles began taking deliveries in 2012 and 2013, respectively (these deliveries will be discussed further in Section 6.4 - Current Water Budget). Within the Basin, all three municipal purveyors utilize their imported NWP water to recharge the Basin via percolation ponds or direct discharge located in the Alluvium adjacent to the Salinas River[2]. Table 6-1 summarizes the annual average, minimum, and maximum values for the imported NWP water during the historical base period.

6.3.1.2 Historical Local Supplies

Local surface water supplies include surface water flows that enter the Basin from precipitation runoff within the watershed and Salinas River inflow to the Basin (including releases from the Salinas Reservoir). Table 6-1 summarizes the annual average, minimum, and maximum values for these inflows.

Table 6-1. Estimated Historical (1981-2011) Annual Surface Water Inflows to Basin

Surface Water Inflow Component	Average	Minimum[2]	Maximum[2]
Inflow to Basin including the Salinas River and Tributaries[1]	90,600	1,400	407,800
Imported (Nacimiento Water Project)	2	0	74
Total	90,600		

notes:

All values in acre-feet

[1] - Tributaries include Santa Margarita Creek, Paloma Creek, Atascadero Creek, Graves Creek, and Paso Robles Creek

[2] – Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

[2] The city of Paso Robles utilizes their NWP allocation in two ways: treatment in a package water treatment plant, and applying directly to the ground surface on the alluvial gravels of the Salinas River floodplain in the north end of the Basin. The treated portion of NWP water is used outside of the Basin and is therefore not considered.

The estimated average annual total inflow from these sources over the historical base period is about 90,600 AF. The largest component of this average inflow is releases and flow in the Salinas River. The large difference between the minimum and maximum inflows reflects the difference between dry and wet years in the Basin.

6.3.1.3 Historical Surface Water Outflows

The estimated annual average total surface water outflow leaving the Basin as flow in the Salinas River, and percolation into the groundwater system over the historical base period is summarized in Table 6-2.

Table 6-2. Estimated Historical (1981-2011) Annual Surface Water Outflows from Basin

Surface Water Outflow Component	Average	Minimum[1]	Maximum[1]
Salinas River Outflow from Basin	83,500	300	380,600
Streamflow Percolation	7,100	1,100	27,200
Nacimiento Water Project Percolation	2	0	74
Total	90,600		

notes:
All values in acre-feet
[1] – Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

The estimated average annual total outflow from these sources over the historical base period is about 90,600 AF. The largest component of this average outflow is the Salinas River. The large difference between the minimum and maximum outflows reflects the difference between dry and wet years in the Basin.

6.3.1.4 Historical Surface Water Budget

Figure 6-2 summarizes the historical surface water budget for the Basin.

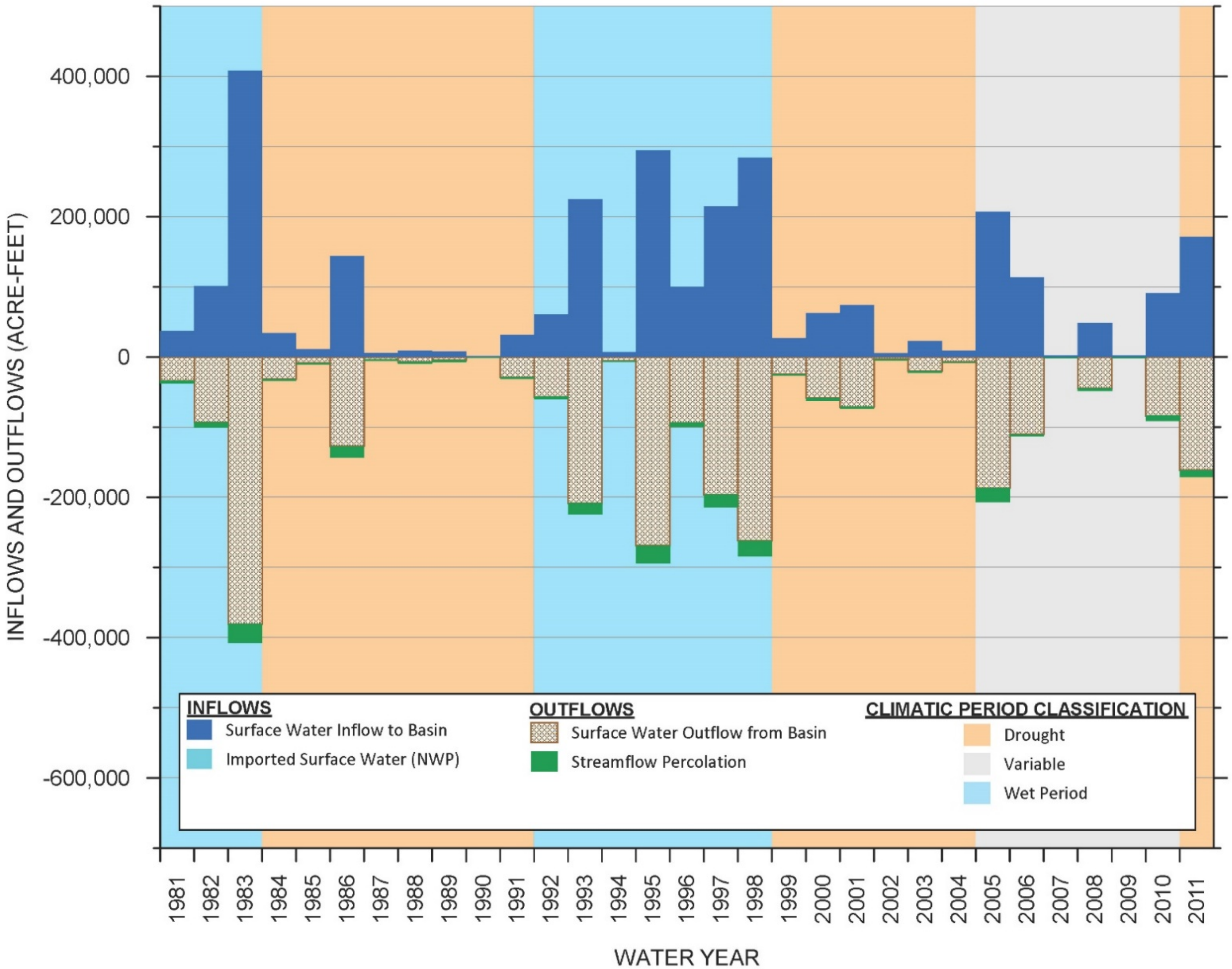

Figure 6-2. Historical (1981-2011) Surface Water Inflows and Outflows

Figure 6-2 shows the strong correlation between precipitation and streamflow in the Basin. In wet periods, shown with a blue background, surface water inflows and outflows are large. In contrast, in dry periods, shown with an orange background, surface water inflows and outflows are small.

6.3.2 Historical Groundwater Budget

Groundwater, including production from both the Alluvial Aquifer (Salinas River underflow) and the Paso Robles Formation Aquifer, supplied virtually all of the water used in the Basin over the historical base period. The historical groundwater budget includes a summary of the estimated groundwater inflows, groundwater outflows, and change in groundwater in storage.

6.3.2.1 Historical Groundwater Inflows

Groundwater inflow components include streamflow percolation, agricultural irrigation return flow, deep percolation of direct precipitation, subsurface inflow into the Basin, imported surface water percolation, wastewater treatment plant pond percolation, and urban irrigation return flow. Estimated annual groundwater inflows for the historical base period are summarized in Table 6-3. Values reported in the table were estimated or derived from the GSP model using data sources reported in Table 6A-1 in Appendix 6A.

Table 6-3. Estimated Historical (1981-2011) Annual Groundwater Inflows to Basin

Groundwater Inflow Component[1]	Average	Minimum[2]	Maximum[2]
Streamflow Percolation	7,100	1,100	27,200
Agricultural Irrigation Return Flow	1,200	500	2,700
Deep Percolation of Direct Precipitation	3,700	100	13,000
Subsurface Inflow into Basin	2,300	0	5,400
Wastewater Pond Percolation	2,000	1,570	2,540
Nacimiento Water Project Percolation	2	0	74
Urban Irrigation Return Flow	1,200	100	2,800
Total	17,500		

notes:

All values in acre-feet

[1] - Percolation from septic systems is not directly accounted for because it is subtracted from the total estimated rural-domestic pumping to simulate a net rural-domestic pumping amount

[2] – Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

For the historical base period, estimated total average groundwater inflow ranged from 5,700 AFY to 49,800 AFY, with an average annual inflow of 17,500 AF. The largest groundwater inflow component is streamflow percolation, which accounts for approximately 41 percent of the total annual average inflow. The large difference between the minimum and maximum inflows from streamflow percolation and direct precipitation reflect the variations in precipitation over the historical base period.

6.3.2.2 Historical Groundwater Outflows

Groundwater outflow components include total groundwater pumping from all water use sectors, subsurface flow out of the Basin, and riparian evapotranspiration. On occasion, the minimum subsurface outflows were negative during the historical base period. Estimated annual groundwater outflows for the historical base period are summarized in Table 6-4.

Table 6-4 Estimated Historical (1981-2011) Annual Groundwater Outflow from Basin

Groundwater Outflow Component	Average	Minimum[1]	Maximum[1]
Total Groundwater Pumping	15,300	11,900	20,400
Subsurface Flow Out of Basin	300	-500	1,400
Riparian Evapotranspiration	500	500	500
Total	16,100		

notes:
All values in acre-feet
[1] – Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

The largest groundwater outflow component from the Basin is groundwater pumping. Estimated annual groundwater pumping by water use sector for the historical base period is summarized in Table 6-5.

Table 6-5 Estimated Historical (1981-2011) Annual Groundwater Pumping by Water Use Sector from Basin

Water Use Sector	Average	Minimum[1]	Maximum[1]
Agricultural	5,500	2,100	12,900
Municipal	8,900	4,900	12,000
Rural Domestic	300	200	500
Small Public Water Systems	600	600	700
Total	15,300		

notes:
All values in acre-feet
[1] – Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

Municipal and agricultural pumping were the largest components of total groundwater pumping, accounting for about 58 percent and 36 percent of total pumping over the historical base period, respectively. In general, agricultural pumping decreased and municipal pumping increased over the historical base period. Rural-domestic, and small commercial pumping account for 2 percent and 4 percent, respectively, of total average annual pumping over the historical base period.

6.3.2.3 Historical Groundwater Budget and Changes in Groundwater Storage

Groundwater inflows and outflows for the historical base period are summarized on Figure 6-3 and tabulated in Appendix 6B. Figure 6-3 shows groundwater inflow and outflow components for every year of the historical period. Inflow components are graphed above the zero line and outflow components are graphed below the zero line. Groundwater outflow by pumping (green bars) includes pumping from all water use sectors (Table 6-5).

Figure 6-4 shows annual and cumulative change in groundwater storage during the historical base period. Annual increases in groundwater storage are graphed above the zero line and annual decreases in groundwater storage are graphed below the zero line. The red line shows the cumulative change in groundwater storage over the historical base period.

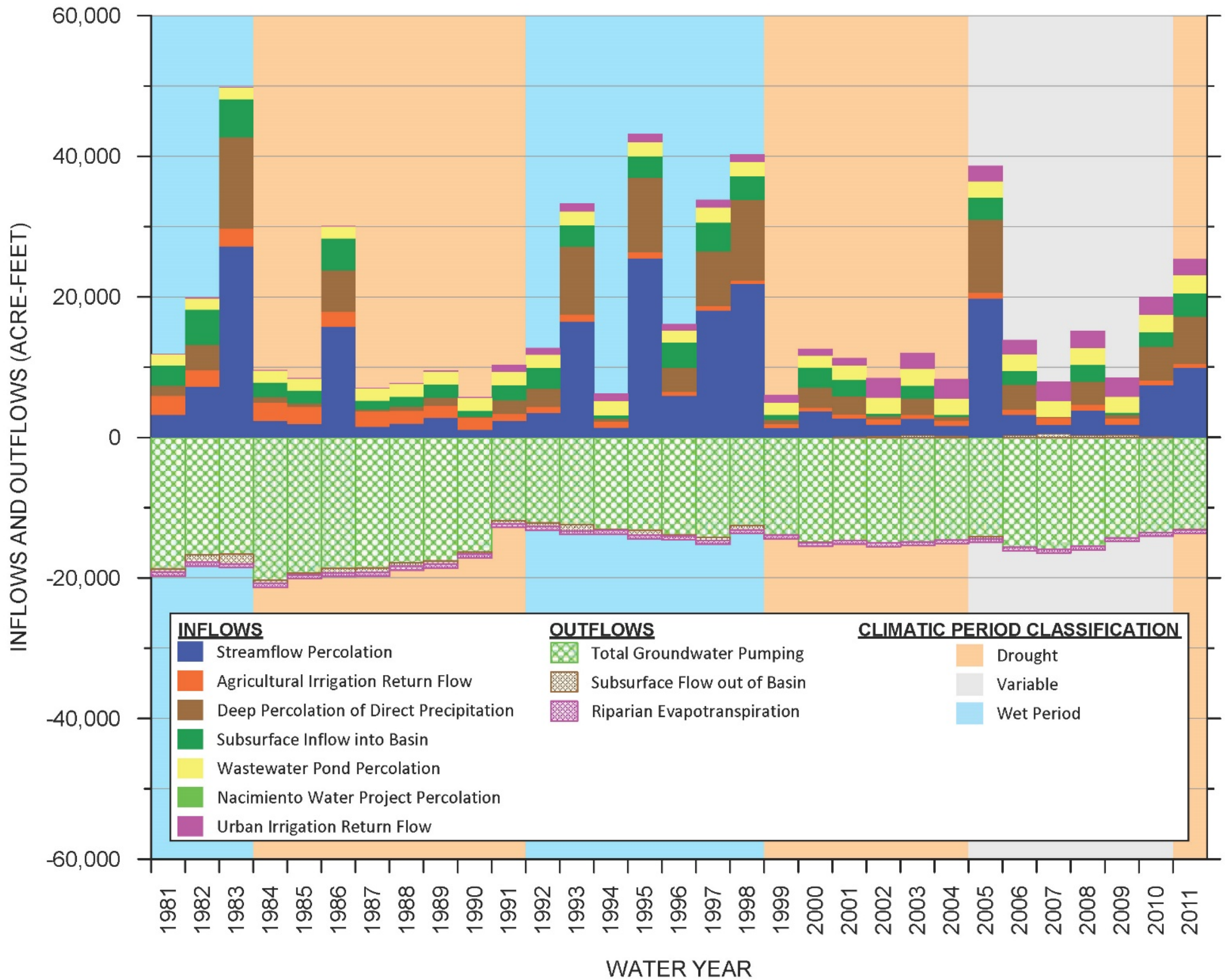

Figure 6-3. Historical (1981-2011) Groundwater Inflows and Outflows

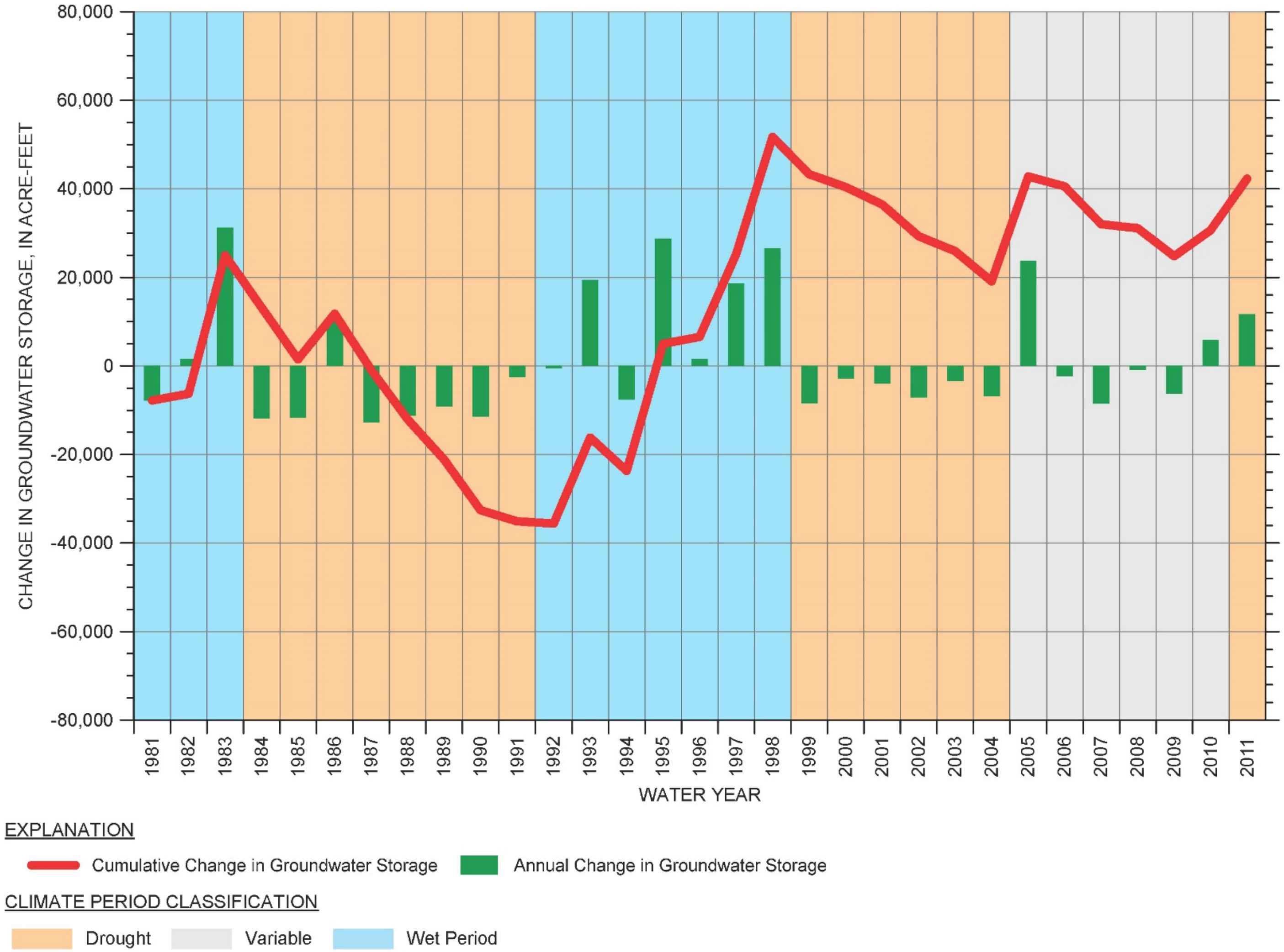

Figure 6-4. Historical (1981-2011) Annual and Cumulative Change in Groundwater Storage

The historical groundwater budget is strongly influenced by the amount of precipitation. During the historical base period, dry conditions prevailed from 1984 through 1991 and 1999 through 2004, as depicted by the orange areas on Figure 6-3 and Figure 6-4. During these dry periods, the amount of recharge and streamflow percolation was relatively low. The net result was a loss of groundwater from storage. In contrast, wet conditions prevailed in the early 1980s and 1992 through 1998, as shown by blue areas on Figure 6-3 and Figure 6-4, and one wet year in 2005. During these wet periods, the amount of recharge and streamflow percolation was relatively high. The net result was a gain of groundwater in storage. The period from 2006 through 2010 had generally alternating years of average precipitation. During this period, the amount of recharge and streamflow percolation was average and the amount of groundwater pumping was relatively high, compared to the prior 15 years. The net result was a loss of groundwater from storage.

The historical groundwater budget is also influenced by the amount of groundwater pumping. Over the historical base period, the total amount of groundwater pumping decreased in the early 1990's, corresponding with a period when irrigation of alfalfa and pasture acreage declined and irrigated vineyard acreage increased (Fugro, 2002). The transition from alfalfa and pasture to vineyard resulted in a net decrease in groundwater pumping because the irrigation demand per acre of vineyards is significantly less than the per-acre demand for alfalfa and pasture. This decrease in pumping contributed to the increase in groundwater in storage during the 1990s.

Over the 31-year historical base period, a net gain of groundwater storage of about 42,300 AF occurred. The average annual groundwater storage gain was approximately 1,400 AFY.

6.3.2.4 Historical Water Balance of the Basin

The computed long-term increase of groundwater in storage indicates that total groundwater inflow exceeded the total outflow in the Basin from 1981 through 2011. As summarized in Table 6-5, total groundwater pumping averaged approximately 15,300 AFY during the historical base period.

Section 354.18(b)(7) of the SGMA Regulations requires a quantification of sustainable yield for the Basin for the historical base period. Sustainable yield is the maximum quantity of groundwater, calculated over a base period representative of long-term conditions in the Basin and including any temporary surplus that can be withdrawn annually from a groundwater supply without causing an undesirable result. The historical safe yield was estimated by summing the estimated average groundwater storage increase of 1,400 AFY with the estimated total average amount of groundwater pumping of 15,300 AFY for the historical base period. This results in a historical safe yield of about 16,700 AFY. This estimated value reflects historical climate, hydrologic and water resource conditions and provides insight into the amount of groundwater pumping that could be sustained in the Basin to maintain a balance between groundwater inflows and outflows.

6.4 Current Water Budget

The SGMA Regulations require that the current surface water and groundwater budget be based on the most recent hydrology, water supply, water demand, and land use information. For the GSP, the period 2012 to 2016 was selected as the time period for the current water budget. In part, the 2012 to 2016 time period was selected because it corresponds with the current water budget period utilized in the Paso Robles Subbasin GSP and it is believed that not only is this time period representative of basin conditions, but the use of the Paso Robles Subbasin GSP model is the best available information and tool for groundwater sustainability planning purposes in the Atascadero Basin.

The current water budget period corresponds to a drought period when annual precipitation averaged about 60 percent of the historical average and streamflow percolation averaged about 19 percent of the historical average. As a result, the current water budget period represents an extreme drought condition in the Basin and is not representative of long-term Basin conditions needed for sustainability planning purposes. Estimates of the surface water and groundwater inflow and outflow, and changes in storage for the current water budget period are provided below.

6.4.1 Current Surface Water Budget

The current surface water budget quantifies important sources of surface water. Similar to the historical surface water budget, the current surface water budget includes two surface water source types: local imported supplies and local supplies.

6.4.1.1 Current Local Imported Supplies

Imported surface water from the NWP was utilized by AMWC, TCSD, and the city of Paso Robles to recharge the Basin via percolation in the Alluvium adjacent to the Salinas River during the current water budget period. In addition to TCSD, which began taking NWP water during the historical based period (see Section 6.3.1.1), AMWC and the city of Paso Robles began taking deliveries of NWP water in 2012 and 2013, respectively. Utilization of NWP water peaked in 2015 at 4,792 AF during the height of the latest drought, providing recharge to the Basin. Table 6-6 summarizes the annual average, minimum, and maximum values for the imported NWP water during the current water budget period.

6.4.1.2 Current Local Supplies

Local surface water supplies include surface water flows that enter the Basin from precipitation runoff within the watershed and Salinas River inflow to the Basin (including releases from the Salinas Reservoir), Table 6-6 summarizes the annual average, minimum, and maximum values for these inflows.

Table 6-6. Estimated Current (2012-2016) Annual Surface Water Inflows to Basin

Surface Water Inflow Component	Average	Minimum[2]	Maximum[2]
Inflow to Basin including the Salinas River and Tributaries[1]	5,600	1,300	9,000
Imported (Nacimiento Water Project)	2,158	731	4,792
Total	7,800		

notes:

All values in acre-feet

[1] - Tributaries include Santa Margarita Creek, Paloma Creek, Atascadero Creek, Graves Creek, and Paso Robles Creek

[2] – Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

The estimated average total inflow from both precipitation runoff and reservoir releases over the current water budget period was approximately 7,800 AFY, or about 9 percent of the average annual 90,600 AFY inflow during the historical base period. The substantial reduction in surface water inflows reflects the drought conditions that prevailed during the current water budget period.

6.4.1.3 Current Surface Water Outflows

The estimated annual average, minimum, and maximum surface water outflow leaving the Basin as flow in the Salinas River and percolation into the groundwater system over the current base period is summarized in Table 6-7. Reductions in surface water outflow for the current water budget period were similar to those reported above for the surface water inflows.

Table 6-7. Estimated Current (2012-2016) Annual Surface Water Outflows from Basin

Surface Water Outflow Component	Average	Minimum[1]	Maximum[1]
Salinas River Outflow from Basin	4,200	100	7,600
Streamflow Percolation	1,400	1,200	1,500
Nacimiento Water Project Percolation	2,158	731	4,792
Total	7,800		

notes:
All values in acre-feet
[1] – Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

6.4.1.4 Current Surface Water Budget

Figure 6-5 summarizes the current surface water budget for the Basin. Figure 6-5 shows the effects of the drought conditions that prevailed during the period 2012 through 2016. During this period, precipitation was well below average, which resulted in very little surface water flow.

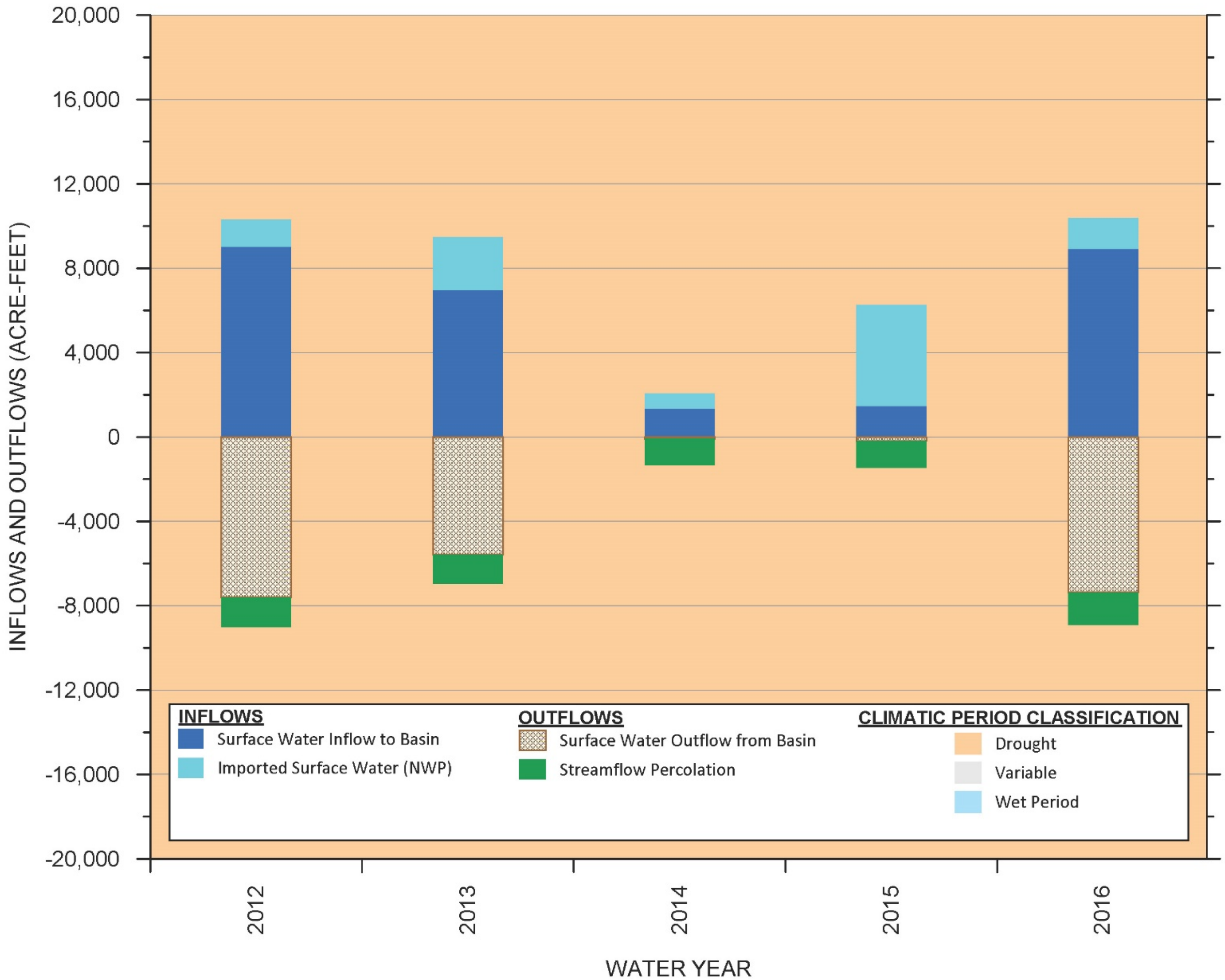

Figure 6-5. Current (2012 – 2016) Surface Water Inflows and Outflows

6.4.2 Current Groundwater Budget

Groundwater supplied most of the water used in the basin during the current water budget period. The current water budget includes a summary of the estimated groundwater inflows, groundwater outflows, and change in groundwater in storage.

6.4.2.1 Current Groundwater Inflows

Groundwater inflow components include streamflow percolation, agricultural irrigation return flows, deep percolation of direct precipitation, subsurface inflow into the Basin, imported surface water percolation, wastewater pond percolation, and urban irrigation return flow. Estimated annual groundwater inflows for the current water budget period are summarized in Table 6-8.

Table 6-8. Estimated Current (2012-2016) Annual Groundwater Inflows to Basin

Groundwater Inflow Component[1]	Average	Minimum[2]	Maximum[2]
Streamflow Percolation	1,400	1,200	1,500
Agricultural Irrigation Return Flow	1,000	700	1,200
Deep Percolation of Direct Precipitation	600	300	1,400
Subsurface Inflow into Basin	400	0	1,200
Wastewater Pond Percolation	2,520	2,460	2,570
Nacimiento Water Project Percolation	2,158	731	4,792
Urban Irrigation Return Flow	2,700	2,400	2,900
Total	10,800		

notes:

All values in acre-feet

[1] - Percolation from septic systems is not directly accounted for because it is subtracted from the total estimated rural-domestic pumping to simulate a net rural-domestic pumping amount

[2] – Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

For the current water budget period, estimated total average groundwater inflow ranged from 8,900 AFY to 13,000 AFY, with an average inflow of 10,800 AFY. Notable observations from the summary of groundwater inflows for the current water budget period included:

- Average total inflow during the current water budget period was about 62 percent of the historical base period.
- Unlike the historical base period, when the largest inflow component was streamflow percolation, the largest groundwater inflow component for the current water budget is agricultural and urban irrigation return flows, which together account for approximately 34 percent of the total average inflow.
- The relatively small difference between the minimum and maximum inflows reflects the drought condition that prevailed during the current water budget period, when precipitation and runoff were continuously low.
- Total annual average streamflow percolation in the current water budget period was approximately 20 percent of the streamflow percolation in the historical base period. This reflects the very low streamflows during the drought. The low streamflows had a significant impact on the groundwater

basin because streamflow percolation was the most significant source of groundwater recharge during the historical period.

- Total annual average recharge from direct precipitation for the current water budget period was about 16 percent of the recharge from direct precipitation for the historical base period.

6.4.2.2 Current Groundwater Outflows

Groundwater outflow components include total groundwater pumping from all water use sectors and riparian evapotranspiration. Estimated annual groundwater outflows for the current water budget period are summarized in Table 6-9.

Table 6-9. Estimated Current (2012-2016) Annual Groundwater Outflow from Basin

Groundwater Outflow Component	Average	Minimum[1]	Maximum[1]
Total Groundwater Pumping	12,900	11,400	14,500
Subsurface Flow Out of Basin	-200	-300	-100
Riparian Evapotranspiration	500	500	500
Total	13,200		

notes:
All values in acre-feet
[1] – Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

For the current water budget period, estimated total average groundwater outflows ranged from 11,800 AFY to 14,700 AFY, with an average annual outflow of 13,200 AF. A notable observation from a comparison of the historical (Table 6-4) and current groundwater outflows is:

- Total annual average groundwater pumping was about 16 percent lower during the current water budget period.

The largest groundwater outflow component from the Basin in the current water budget period is pumping. Estimated annual groundwater pumping by water use sector for the current water budget period is summarized in Table 6-10.

Table 6-10. Estimated Current (2012-2016) Annual Groundwater Pumping by Water Use Sector from Basin

Water Use Sector	Average	Minimum[1]	Maximum[1]
Agricultural	2,600	2,200	3,100
Municipal	9,200	7,800	10,800
Rural Domestic	500	500	500
Small Public Water Systems	600	600	600
Total	12,900		

notes:
All values in acre-feet
[1] – Minimum and maximum values are not totaled because the values for each component may have occurred in different years.

For the current water budget period, estimated total average groundwater pumping ranged from 11,400 AFY to 14,500 AFY, with an average pumping of 12,900 AFY. Municipal pumping was the largest component of total groundwater pumping and accounts for about 72 percent of total pumping during the current water budget period. Agricultural, rural-domestic, and small commercial pumping account for 20 percent, 4 percent, and 5 percent, respectively, of total average pumping during the current water budget period.

Notable observations from a comparison of the historical (Table 6-5) and current total annual average groundwater pumping include:

- Total annual average agricultural groundwater pumping was about 53 percent less during the current water budget period when compared to the historical period (decrease of 2,900 AFY).
- Total annual average municipal groundwater pumping was about 4 percent higher during the current water budget period when compared to the historical period (increase of 340 AFY).

6.4.2.3 Current Groundwater Budget and Change in Groundwater Storage

Groundwater inflows and outflows for the current base period are summarized on Figure 6-6. This graph shows inflow and outflow components for every year of the current water budget period. Inflow components are graphed above the zero line and outflow components are graphed below the zero line. Groundwater outflow by pumping (green crosshatched bars) includes pumping from all water use sectors (Table 6-10).

Figure 6-7 shows annual and cumulative change in groundwater storage during the current water budget period. Annual decreases in groundwater storage are graphed below the zero line. The red line shows the cumulative change in groundwater storage over the historical base period.

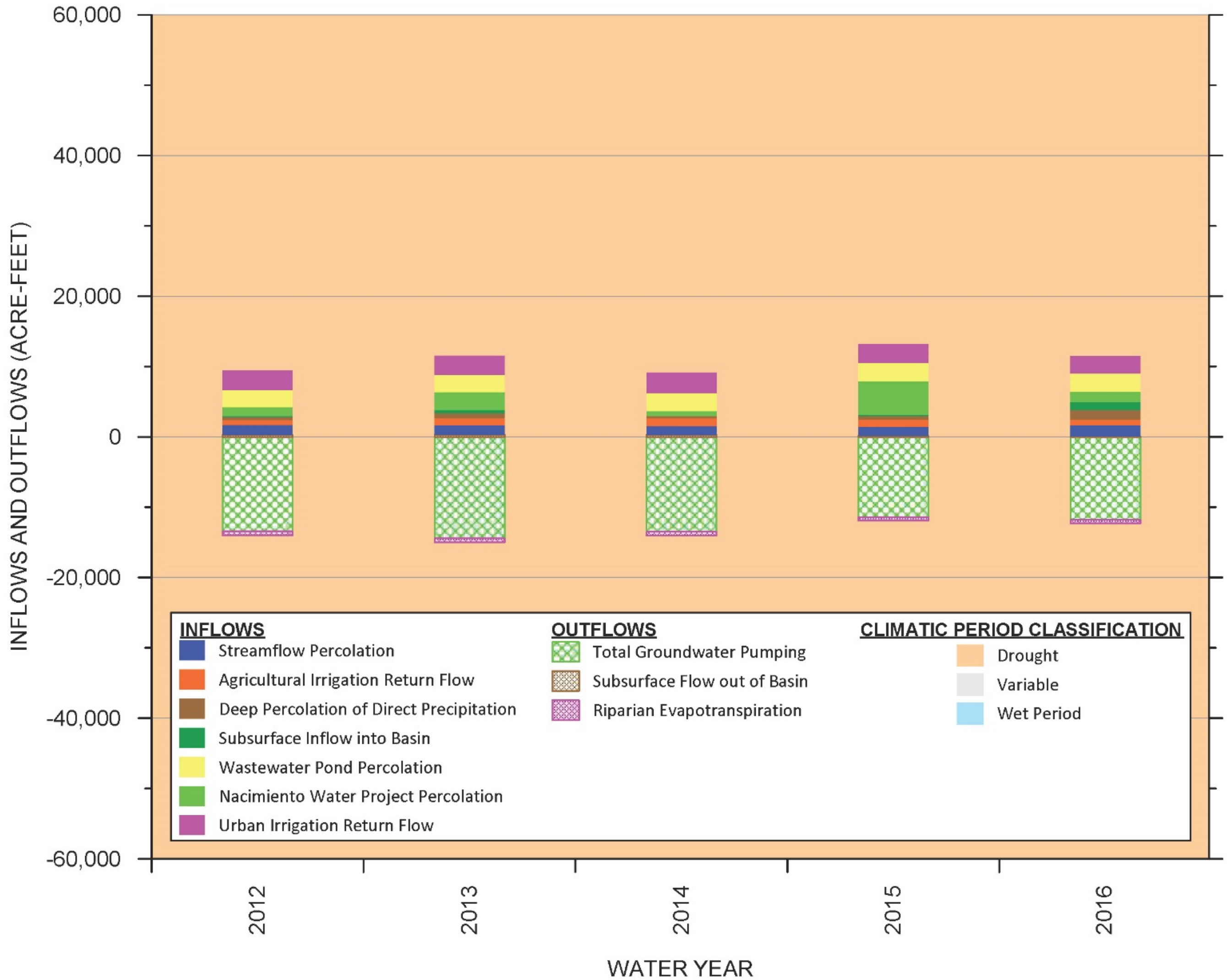

Figure 6-6. Current (2012-2016) Groundwater Inflows and Outflows

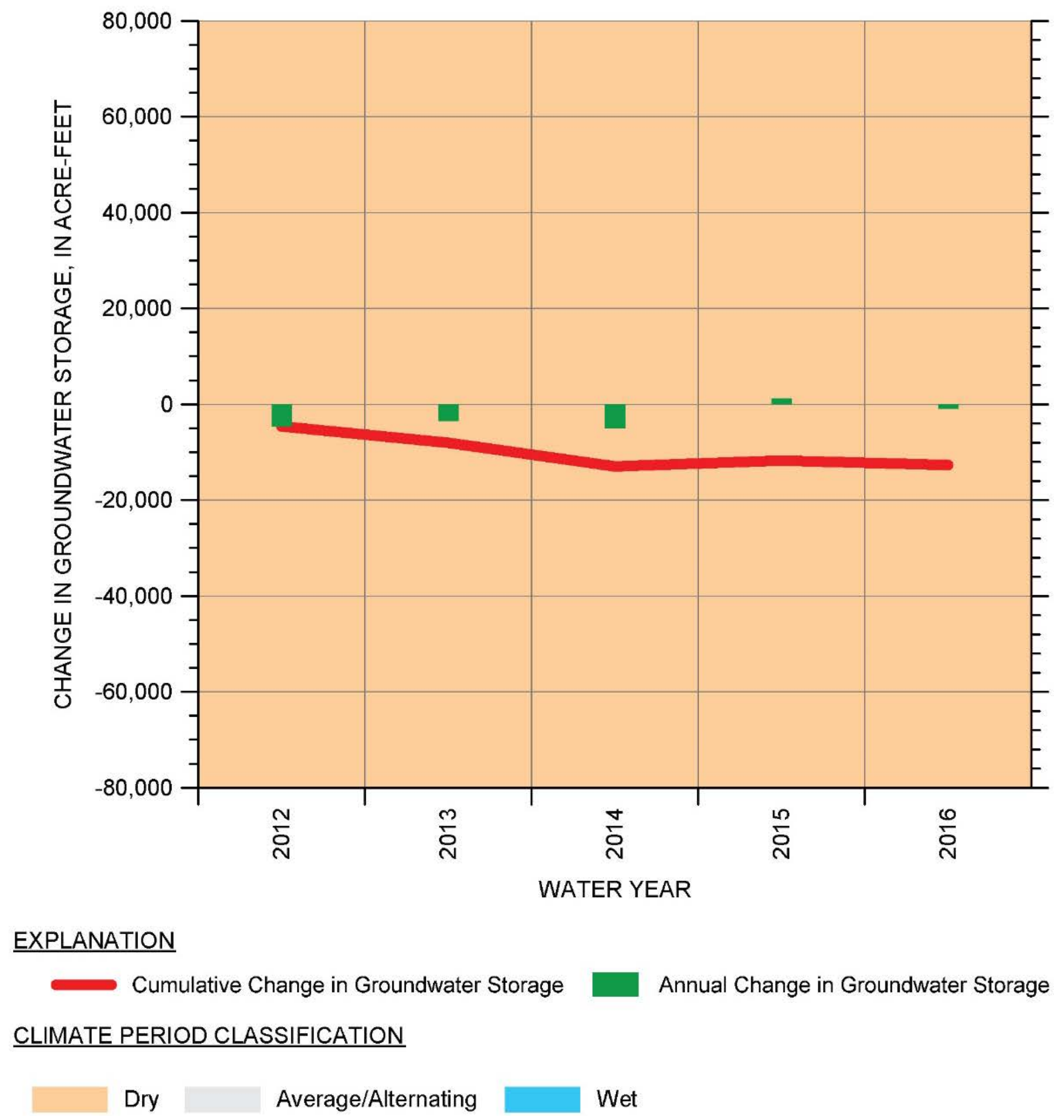

Figure 6-7. Current (2012-2016) Annual and Cumulative Change in Groundwater Storage

The current groundwater budget is strongly influenced by the drought. During the current water budget period, the amounts of streamflow percolation and percolation of direct precipitation were very low and the average amount of total pumping was only slightly less than the historical water budget period. Percolation of imported surface water from the NWP, which had barely come online in the final year of the historical water budget period, played a significant role in mitigating the effects of the recent drought. Over the five-year current water budget period, an estimated net loss of groundwater in storage of about 12,600 AF occurred (Figure 6-7). The annual average groundwater storage loss, or the difference between outflow and inflow to the Basin, was approximately 2,500 AFY.

6.4.2.4 Current Water Balance

The short-term depletion of groundwater in storage indicates that total groundwater outflows exceeded the total inflows over the current water budget period. As summarized in Table 6-9, total groundwater pumping averaged approximately 12,900 AFY during the current period. A quantification of the safe yield for the Basin during the current time period is be estimated by subtracting the average groundwater storage deficit (2,500 AFY) from the total average amount of groundwater pumping (12,900 AFY) to yield about 10,400 AFY. Due to the drought conditions, the current water budget period is not appropriate for long-term sustainability planning.

6.5 Future Water Budget

SGMA Regulations require the development of a future surface water and groundwater budget to estimate future baseline conditions of supply, demand, and aquifer response to GSP implementation. The future water budget provides a baseline against which management actions will be evaluated over the GSP implementation period from 2022 to 2042. Future water budgets were developed using the GSP model.

In accordance with Section 354.18 (c)(3)(A) of the SGMA Regulations, the future water budget should be based on 50 years of historical precipitation, evapotranspiration, and streamflow information. The GSP model includes only 36 years of historical precipitation, evapotranspiration, and streamflow data. Therefore, the future water budget is based on 36 years of historical data rather than 50 years of historical data. It is believed that this time period is representative and is the best available information for groundwater sustainability planning purposes.

6.5.1 Assumptions Used in Future Water Budget Development

Assumptions about future groundwater supplies and demands are described in the following subsections.

Future water budgets were developed using the GSP model. During the update process for the GSP model, all model components (e.g., groundwater pumping) of the entire original 2016 GSSI model area were updated, including components within Monterey County and the Paso Robles Subbasin. However, information provided for the future water budget only pertains to the Atascadero Basin (Figure 1-1), thus do not include areas within Monterey County or the Paso Robles Subbasin.

6.5.1.1 Future Municipal Water Demand and Wastewater Discharge Assumptions

Future municipal water demands and wastewater discharge were estimated for AMWC, TCSD, and the city of Paso Robles based on the following available planning documents:

- Atascadero Mutual Water Company 2015 Urban Water Management Plan (UWMP) (MKN & Associates, 2016),
- Templeton Community Services District Water Supply Buffer Model 2019 Update (TCSD, 2019),
- Paso Robles 2015 Urban Water Management Plan (Todd Groundwater, 2016)

Portions of AMWC's, TCSD's, and the city of Paso Robles' future groundwater demand[3] will be offset by imported NWP water. Total municipal demand in the Basin is projected to increase from about 10,500 AFY in 2020 to about 12,900 AFY in 2042.

Discharge of treated wastewater to the Salinas River provides a source of recharge to the Alluvial Aquifer. Rates of future wastewater discharge were estimated as a percentage of total water demand based on the planning documents listed above for AMWC and TCSD[4]. Wastewater discharge as a percentage of water demand was calculated separately for each water provider. Total wastewater discharge in the Basin is projected to increase from about 2,300 AFY in 2020 to about 3,100 AFY in 2042.

Future municipal water demands and/or wastewater discharge volumes will be adjusted during the implementation of the GSP should they be found to differ from the volumes used in the GSP model.

6.5.1.2 Future Agricultural and other Non-Municipal Water Demand Assumptions

In accordance with Section 354.18 (c)(3)(B) of the SGMA Regulations, the most recently available land use (in this case, crop acreage) and crop coefficient information should be used as the baseline condition for estimating future agricultural irrigation water demand. For the GSP, the most recent crop acreage data was obtained from the office of the San Luis Obispo County Agricultural Commissioner. To account for irrigation efficiency in the future water budget, the reported crop coefficient information from GSSI (GSSI, 2016) was used.

Projections for agricultural irrigation water demand are not available. Agricultural water demand was assumed to increase at a 1 percent annual growth rate. This assumed growth rate is considered a conservative estimate. Total agricultural groundwater demand in the Basin is projected to increase from about 2,800 AFY in 2020 to about 3,400 AFY in 2042.

Projections for rural domestic wells and smaller commercial groundwater users, were also not available. Water demand for these users was assumed to increase at a 1 percent annual growth rate. Total rural domestic and smaller commercial users groundwater demand in the Basin is projected to increase from about 1,300 AFY in 2020 to about 1,600 AFY in 2042.

Future agricultural and/or other non-municipal water demands will be adjusted during the implementation of the GSP should they be found to differ from the volumes used in the GSP model.

6.5.1.3 Future Climate Assumptions

The SGMA Regulations require incorporating future climate estimates into the future water budget. To meet this requirement, DWR developed an approach for incorporating reasonably expected, spatially gridded changes to monthly precipitation and reference evapotranspiration (ETo) (DWR, 2018). The approach for addressing future climate change developed by DWR was used in the future water budget modeling for the Basin. The changes are presented as separate monthly change factors for both precipitation and ETo, and are intended to be applied to historical time series within the climatological base period through 2011. Specifically, precipitation and ETo change factors were applied to historical climate data for the period 1981 to 2011 for modeling the future water budget.

DWR provides several sets of change factors representing potential climate conditions in 2030 and 2070. DWR recommends using the 2030 change factors to evaluate conditions over the GSP implementation

[3] Note that the city of Paso Robles operates production wells in both the Basin and the Paso Robles Subbasin. Only the portion produced from the Basin is included here.
[4] The city of Paso Robles wastewater discharge occurs outside the Basin (within the Paso Robles Subbasin) and is therefore not included.

period (DWR, 2018). Consistent with DWR recommendations, datasets of monthly 2030 change factors for the Atascadero area were applied to precipitation and ETo data from the historical base period to develop monthly time series of precipitation and ETo, which were then used to simulate future hydrology conditions.

6.5.2 Modifications to Modeling Platform to Simulate Future Conditions

The existing modeling platform was modified to simulate future conditions, and the results of these simulations are used to develop the future water budget

6.5.2.1 Modification to Soil Water Balance Model

The soil water balance model operates on a daily time scale and tracks daily variations in soil water storage for different agricultural areas in the model domain. For consistency with the monthly climate change factors provided by DWR, the daily model was used to develop monthly soil water balance calculations. These calculations compute irrigation demand as the residual crop evapotranspiration demand unsatisfied by effective precipitation.

These calculations use monthly precipitation and ETo, rescaled by the monthly climate change factors provided by DWR, and the same monthly crop coefficients used in the historical water budget analysis. Empirical relationships were developed to account for soil moisture carryover from the winter into the spring based on results from the daily soil water balance model.

Monthly applied irrigation water was determined over the future base period from computed monthly crop demand and the crop-specific irrigation efficiencies. The future agricultural irrigation water demand assumptions described above in Section 6.5.1.2 was incorporated into this analysis. Agricultural irrigation return flow is then computed as the difference between the applied irrigation water and the crop demand. Results were then averaged to provide average monthly rates of applied irrigation water and irrigation return flow that would be expected under future climate conditions.

6.5.2.2 Modifications to the Watershed Model

The watershed model operates on a daily time scale and simulates streamflow and infiltration of direct precipitation. The watershed model was modified to account for climate change by rescaling daily precipitation and ETo with the monthly climate change factors provided by DWR. The watershed model was then re-run using the modified precipitation and ETo values.

Results from the modified historical base period simulation were then averaged to provide average monthly rates of infiltration of direct precipitation and streamflow under future climate conditions.

6.5.2.3 Modifications to the Groundwater Model

The groundwater model operates at a semi-annual time scale, with stress periods representing six-month periods. The groundwater model was extended and modified to simulate the period 2020 to 2042. Starting groundwater levels for the future simulation were set to groundwater levels at the end of Water Year (WY) 2016, extracted from the updated groundwater model.

Future groundwater recharge components were computed using the modified soil water balance model and watershed model, as described above. Future streamflow generated both inside and outside the Basin was computed using the modified watershed model.

Future groundwater recharge and streamflow are specified in the groundwater model as repeating average time-series, based on average monthly calculation of excess irrigation water, recharge of direct precipitation, and streamflow. This approach was adopted to simplify the future water budget and allow reporting of average future conditions accounting for climate change. Future pumping and wastewater return flows are the only inputs to the groundwater model that exhibit a long-term trend over the implementation period.

6.5.3 Projected Future Water Budget

Future surface water and groundwater budgets were projected.

6.5.3.1 Future Surface Water Budget

The future surface water budget includes average inflows from local imported supplies, average inflows from local supplies, average stream outflows, and average stream percolation to groundwater. Table 6-11 and Table 6-12 summarize the average components of the projected surface water budget.

Table 6-11. Projected Future Annual Surface Water Inflows to Basin

Surface Water Inflow Component	Average
Inflow to Basin including the Salinas River and Tributaries[1]	96,400
Imported (Nacimiento Water Project)	2,600
Total	99,000

notes:

All values in acre-feet

[1] - Tributaries include Santa Margarita Creek, Paloma Creek, Atascadero Creek, Graves Creek, and Paso Robles Creek

Table 6-12. Projected Future Annual Surface Water Outflows from Basin

Surface Water Outflow Component	Average
Salinas River Outflow from Basin	92,000
Streamflow Percolation	4,400
Nacimiento Water Project Percolation	2,600
Total	99,000

notes:

All values in acre-feet

6.5.3.2 Future Groundwater Budget

Projected groundwater budget components are computed using the modified groundwater flow model to simulate average conditions over the implementation period. Table 6-13 summarizes projected annual groundwater inflows. In contrast to the historical groundwater budget, which accounted for month-to-month variability, the projected groundwater budget is based on average monthly inflows. Therefore, variability in simulated groundwater budget components is minor, and minimum and maximum values are not included in Table 6-13.

Table 6-13. Projected Future Annual Groundwater Inflows to Basin

Groundwater Inflow Component[1]	Average
Streamflow Percolation	4,400
Agricultural Irrigation Return Flow	900
Deep Percolation of Direct Precipitation	3,700
Subsurface Inflow into Basin	1,600
Wastewater Pond Percolation	2,800
Nacimiento Water Project Percolation	2,600
Urban Irrigation Return Flow	1,900
Total	18,000

notes:

All values in acre-feet

[1] - Percolation from septic systems is not directly accounted for because it is subtracted from the total estimated rural-domestic pumping to simulate a net rural-domestic pumping amount

The total average annual groundwater inflow is 500 AF greater during the future period than during the historical base period. Although, annual stream percolation is projected to be 2,700 AF less during the future period than during the historical base period, the increased imported surface water percolation nearly makes up for it. Lesser increases in urban irrigation return flow and wastewater percolation offset minor reductions in agricultural irrigation return flow and subsurface inflow between the historical base period and the projected future period. Reduction in agricultural irrigation return flow is due partly to changes in historical cropping patterns and partly to improvements in vineyard irrigation efficiency.

Table 6-14 summarizes projected annual groundwater outflows.

Table 6-14. Projected Future Annual Groundwater Outflow from Basin

Groundwater Outflow Component	Average
Total Groundwater Pumping	16,400
Subsurface Flow Out of Basin	200
Riparian Evapotranspiration	600
Total	17,200

notes:

All values in acre-feet

The total average annual groundwater outflow is estimated to be 1,100 AF greater during the future period than during the historical base period. Future total annual groundwater pumping is projected to increase by about 1,100 AF compared to the historical base period.

6.5.3.3 Future Safe Yield

The projected future groundwater budget shows the Basin to be generally in balance, with projected groundwater inflows of about 18,000 AFY and projected groundwater outflows of about 17,200 AFY. The projected future surplus indicates an average annual increase in groundwater in storage of 800 AFY. A calculated annual volume for the projected future safe yield of the Basin was estimated by adding the average groundwater storage surplus of 800 AFY to the total projected future average amount of groundwater pumping of 16,400 AFY, therefore the future safe yield for the Basin is estimated to be approximately 17,200 AFY.

The estimated future safe yield of 17,200 AFY is 500 AFY greater than the estimated safe yield for the historic base period. This close comparison of safe yield values between the two periods indicates that projected future climate change is not expected to have a substantial impact on the safe yield.

The primary reason that the average safe yield increases in the future compared to the historical period, even coupled with the assumed climate change modifiers and increased projected pumping from all users, is the added beneficial component of increased future use of the NWP water. However, as demonstrated by the projected cumulative change in storage curve presented on Figure 6-8, the benefits of increased NWP utilization is expected to be overtaken by the assumed 1 percent annually increasing pumping demands by the year 2034.

The cumulative change of groundwater in storage is projected to remain well above zero by the year 2042, however its downward trend in later years suggests the possibility of a groundwater storage deficit in the distant future (well beyond 2042) without further mitigation measures.

It is likely that the 1 percent annual growth rate assumption for non-municipal pumping is overly conservative. Adjusting this to a lower or a flat growth rate at some future date would be one such potential mitigation measure. Regardless, the imported NWP supply augments the natural basin recharge components and provides the municipal purveyors a water resource management tool that allows for effective management of the Basin for the foreseeable future.

The calculated safe yield of the Basin is a reasonable estimate of the long-term pumping that can be maintained without a long-term lowering of groundwater levels. The sustainable yield of the Basin, which will be estimated after an assessment of the sustainable management criteria and identification of potential undesirable results, will be estimated later. Sustainable yield looks to the presence or absence of undesirable results, not strictly inflows and outflows. The definitive sustainable yield can only be determined once undesirable results have been shown to have not occurred. The sustainable yield estimate may be revised in the future as new data become available during GSP implementation.

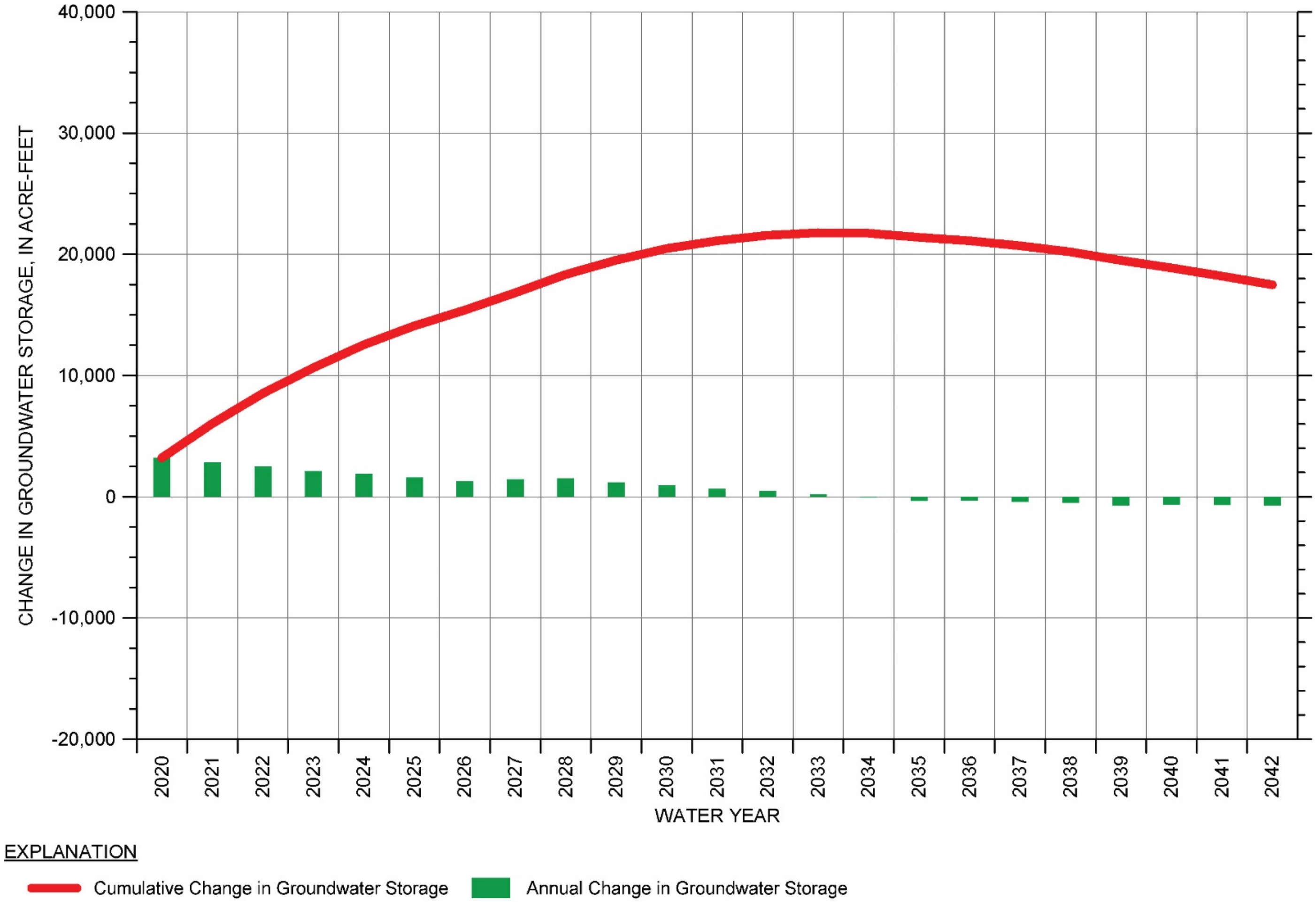

Figure 6-8. Projected Future Cumulative Change in Groundwater Storage

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Montgomery and Associates (M&A) (2020), Paso Robles Subbasin Groundwater Sustainability Plan. Prepared for the Paso Robles Subbasin Cooperative Committee and the Groundwater Sustainability Agencies. November 13, 2019.

Templeton Community Services District (TCSD) (2019), Water Supply Buffer Model 2019 Update.

Todd Groundwater (Todd) (2016), City of Paso Robles 2015 Urban Water Management Plan, Final: July 2016.

APPENDIX 6B

Tabulated Water Budget Data for the Historical Base Period and the Current Period

Water Budget	Water Year	INFLOW (Acre Feet per Year)								OUTFLOW (Acre Feet per Year)								Difference between inflow and outflow (Acre-feet)	Cumulative Change (Acre-feet)	Estimated Safe Yield (Acre-feet per year)
		Treated Wastewater Discharge	NWP Perc	Perc of Precip	Urban Irrigation Return Flow	Ag Irrigation Return Flow	Stream Infiltration	Sub-surface Inflow	Total Inflow	Municipal Pumping	Ag Irrigation Pumping	Rural Domestic Pumping	Small Commercial Pumping	Total Pumping	Riparian Evapo-transpiration	Outflow to Paso Robles Subbasin	Total Outflow			
Historical Water Budget	1981	1,570	0	1,400	100	2,700	3,200	2,900	11,900	4,900	12,900	200	700	18,700	500	400	19,700	-7,800	-7,800	
	1982	1,600	0	3,600	100	2,300	7,200	5,000	19,900	4,900	10,900	200	600	16,600	500	1,100	18,300	1,500	-6,300	
	1983	1,630	0	13,000	100	2,500	27,200	5,400	49,800	5,100	10,800	300	600	16,800	500	1,400	18,500	31,300	25,000	
	1984	1,660	0	700	100	2,700	2,300	2,100	9,600	6,800	12,600	300	700	20,400	500	400	21,300	-11,800	13,200	
	1985	1,690	0	500	100	2,400	1,900	1,800	8,400	6,900	11,500	300	700	19,400	500	300	20,100	-11,700	1,500	
	1986	1,730	0	6,000	100	2,100	15,700	4,500	30,100	7,400	10,400	300	700	18,800	500	600	19,800	10,300	11,800	
	1987	1,760	0	300	100	2,200	1,500	1,300	7,100	8,100	9,500	300	700	18,600	500	600	19,700	-12,700	-900	
	1988	1,790	0	600	100	1,800	2,000	1,400	7,700	8,400	8,500	300	600	17,800	500	500	18,900	-11,200	-12,000	
	1989	1,820	0	1,100	100	1,700	2,800	1,900	9,500	8,100	8,500	300	700	17,600	500	400	18,600	-9,100	-21,100	
	1990	1,860	0	100	100	1,800	1,100	800	5,700	7,600	7,800	300	700	16,400	500	300	17,200	-11,400	-32,600	
	1991	1,890	0	2,000	1,000	1,000	2,300	2,100	10,300	6,200	4,600	300	700	11,800	500	400	12,800	-2,500	-35,100	
	1992	1,930	0	2,600	900	900	3,400	3,000	12,700	7,000	4,200	300	700	12,200	500	500	13,200	-500	-35,600	
	1993	1,960	0	9,600	1,100	1,000	16,500	3,100	33,300	7,600	3,900	300	700	12,500	500	800	13,800	19,400	-16,100	
	1994	1,990	0	400	1,100	900	1,400	500	6,200	8,600	3,600	300	600	13,100	500	200	13,800	-7,600	-23,700	
	1995	2,030	0	10,600	1,100	800	25,500	3,100	43,100	9,000	3,300	300	600	13,200	500	600	14,400	28,700	5,000	
	1996	1,700	0	3,400	900	600	5,900	3,600	16,100	9,800	3,100	300	700	13,900	500	200	14,600	1,600	6,600	
	1997	2,120	0	7,800	1,100	600	18,100	4,100	33,800	10,500	2,700	300	700	14,200	500	400	15,200	18,600	25,200	
	1998	2,040	0	11,400	1,000	500	21,800	3,400	40,200	9,200	2,400	300	600	12,500	500	600	13,700	26,600	51,800	
	1999	1,770	0	700	1,000	500	1,300	700	6,000	10,300	2,600	400	600	13,900	500	0	14,500	-8,400	43,300	
	2000	1,720	0	2,900	900	500	3,700	2,800	12,600	11,200	2,800	400	600	15,000	500	0	15,500	-2,900	40,400	
	2001	2,080	0	2,600	1,000	600	2,600	2,300	11,200	10,600	3,100	400	600	14,700	500	-100	15,100	-3,900	36,500	
	2002	2,280	0	400	2,800	800	1,600	300	8,200	10,900	3,100	400	600	15,000	500	-200	15,400	-7,100	29,300	
	2003	2,340	0	2,300	2,300	600	2,300	1,900	11,700	11,100	2,800	400	600	14,900	500	-300	15,100	-3,400	26,000	
	2004	2,340	0	500	2,800	800	1,400	300	8,100	10,300	3,300	400	700	14,700	500	-200	14,900	-6,800	19,200	
	2005	2,320	0	10,400	2,200	800	19,800	3,100	38,600	9,900	3,300	400	600	14,200	500	300	15,000	23,700	42,800	
	2006	2,370	0	3,500	2,100	700	2,900	1,900	13,600	11,300	3,300	400	600	15,600	500	-300	15,900	-2,300	40,600	
	2007	2,270	0	100	2,800	1,000	1,200	0	7,400	12,000	2,900	400	700	16,000	500	-500	16,000	-8,500	32,000	
	2008	2,380	0	3,200	2,400	800	3,600	2,400	14,800	11,500	2,900	400	700	15,500	500	-300	15,700	-900	31,100	
	2009	2,280	0	500	2,700	900	1,500	300	8,100	10,400	2,800	400	600	14,200	500	-400	14,400	-6,300	24,800	
	2010	2,450	0	4,800	2,500	700	7,300	2,100	19,800	10,100	2,400	500	600	13,600	500	-100	13,900	5,900	30,700	
	2011	2,540	70	6,700	2,300	600	9,900	3,300	25,300	10,000	2,100	500	600	13,200	500	0	13,700	11,700	42,300	
	Average	2,000	0	3,700	1,200	1,200	7,100	2,300	17,500	8,900	5,500	300	600	15,300	500	300	16,100	1,400		16,700
	Min	1,570	0	100	100	500	1,100	0	5,700	4,900	2,100	200	600	11,900	500	-500	12,800	-12,700		
	Max	2,540	70	13,000	2,800	2,700	27,200	5,400	49,800	12,000	12,900	500	700	20,400	500	1,400	21,300	31,300		
Current Water Budget	2012	2,460	1,270	400	2,800	700	1,400	100	9,200	10,200	2,200	500	600	13,500	500	-300	13,700	-4,600	-4,600	
	2013	2,490	2,530	700	2,700	1,000	1,400	500	11,200	10,800	2,600	500	600	14,500	500	-300	14,700	-3,500	-8,000	
	2014	2,520	730	300	2,900	1,200	1,200	0	8,900	9,300	3,100	500	600	13,500	500	-300	13,800	-4,900	-13,000	
	2015	2,550	4,790	500	2,700	1,100	1,300	200	13,000	7,800	2,500	500	600	11,400	500	-100	11,800	1,200	-11,700	
	2016	2,570	1,460	1,400	2,400	800	1,500	1,200	11,400	8,000	2,600	500	600	11,700	500	-100	12,200	-900	-12,600	
	Average	2,520	2,160	600	2,700	1,000	1,400	400	10,800	9,200	2,600	500	600	12,900	500	-200	13,200	-2,500		10,400
	Min	2,460	730	300	2,400	700	1,200	0	8,900	7,800	2,200	500	600	11,400	500	-300	11,800	-4,900		
	Max	2,570	4,790	1,400	2,900	1,200	1,500	1,200	13,000	10,800	3,100	500	600	14,500	500	-100	14,700	1,200		

Notes: NWP = Nacimiento Water Project, Perc = percolation, Ag = agricultural, PWS = public water system

ATASCADERO BASIN
Groundwater Sustainability Agency

TO: Executive Committee

FROM: GSA Staff/ John Neil, Atascadero Mutual Water Company

DATE: October 7, 2020

SUBJECT: Agenda Item 9.a, Sustainable Management Criteria Stakeholder Survey

RECOMMENDED ACTION:

Authorize staff to post a sustainable management criteria survey on the GSA's website in substantial conformance with Attachment A, and mail a notice to stakeholders informing them of the opportunity to participate in the survey in substantial conformance with Attachment B.

DISCUSSION:

Attachment A is a draft stakeholder survey related to the establishment of sustainable management criteria for the Atascadero Basin. The survey will be made available on the www.atascaderobasin.com website.

Staff recommends sending, via direct mailing, a notice to stakeholders in the Atascadero Basin who do not reside in those areas served by a water purveyor (i.e. city, community services district, mutual water company) informing them of the opportunity to participate in the survey. There are approximately 400 properties that overlie the Atascadero Basin that are not served by a water purveyor.

FISCAL IMPACT:

The DWR considers stakeholder outreach to be a critical component of GSP preparation. Fifty percent of the cost to develop the GSP, including stakeholder engagement, will be funded through a Proposition 1 grant awarded to the GSA by the Department or Water Resources, with the remaining costs being a local match.

ATTACHMENTS:

A. Stakeholder Survey
B. Survey Notice

ATTACHMENT A – SUSTAINABLE MANAGEMENT CRITERIA SURVEY

1. Have you heard about the Sustainable Groundwater Management Act (SGMA) Groundwater Sustainability Plan (GSP) process?
    a. Yes
    b. No

2. Have you been involved in other water supply public processes in the past?
    a. Yes
    b. No

3. Would you like to provide input in the development of a sustainability goal, objectives and thresholds for managing groundwater in the Atascadero Basin?

    a. Yes
    b. No
    c. I'd like to review them once developed

4. Which water sources do you use? (select all that apply)
    a. Private domestic well
    b. Private agricultural well
    c. Public, municipal supply
    d. Small community water system
    e. Stream diversion

5. Which geographic area do you live in or are most interested in from a water use perspective?
    a. Templeton Area
    b. Atascadero Area
    c. South of Atascadero/Garden Farms/Santa Margarita

6. If you pump groundwater, what do you use it for? (check all that apply)
    a. Agriculture
    b. Municipal
    c. Industrial
    d. Residential
    e. Other

7. Please rank the following potential impacts to groundwater based on your level of concern, with 1 representing the impact of greatest concern.
    a. Declining groundwater levels
    b. Deteriorating Water Quality
    c. Reduced stream flows
    d. Land subsidence

8. Have you been impacted by the following?
   a. Declining groundwater levels (yes/no)
   b. Deteriorating Water Quality (yes/no)
   c. Reduced stream flows (yes/no)
   d. Land subsidence (yes/no)

9. Typically, to increase groundwater levels either pumping needs to be reduced or new water supplies from outside the basin need to be developed, both of which have a cost. Knowing this, what do you feel are reasonable groundwater levels twenty years from now?
   a. Higher than current levels
   b. Current levels
   c. Lower than current levels
   d. I don't know

10. If the basin is maintained <u>higher than current levels,</u> additional water must be imported, or pumping must be reduced. Assuming that higher groundwater levels will likely result in higher costs, please complete the following statement. I am comfortable with groundwater levels that would stabilize at levels seen: (select one)
    a. 5 years ago
    b. 10 years ago
    c. 15 years ago
    d. I am not comfortable with groundwater levels higher than today

11. If the basin is maintained at <u>lower than current levels,</u> domestic wells or local streams may be impacted. How much lower, in your opinion, could groundwater levels drop before they are too low and become significant and unreasonable? If you do not believe levels should drop, leave the slider at zero.
    a. Use slider to identify value

12. Which statement best describes your opinion of the health (in terms of stream flow and water quality) of the Salinas River in the Atascadero Basin?
    a. The Salinas River is relatively healthy
    b. The Salinas River's health could be improved if the cost was reasonable
    c. The health of the Salinas Rivers should be improved no matter what the cost

13. Do you feel that the health of Salinas River in the Atascadero Basin is impacted by the following? Please indicate on a scale of 1 (least impact) to 5 (most impact):
    a. Limited releases from Santa Margarita Lake (Salinas Reservoir)
    b. People directly diverting water from the Salinas River in and upstream of the Atascadero Basin
    c. Groundwater wells pumping water from, or preventing water from getting to, the Salinas River or reducing surface water flows once in the river.

14. Which statement best describes your opinion about the amount of groundwater stored in the Atascadero Basin?

    a. I feel that we could get through another 3-year drought with the current amount of groundwater in the Basin
    b. I would like to see a bit more groundwater in the basin to provide additional safety during any 3-year drought
    c. I would like to see significantly more groundwater in the basin to get us through a drought even if it comes at significant costs
    d. I don't know, but would be interested in learning more about the health of our basin from a groundwater storage perspective
    e. I'm not interested

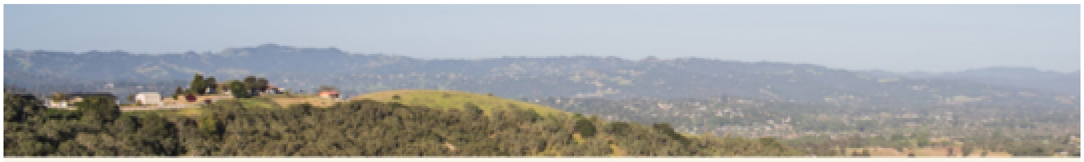
15. Maintaining sustainability in the Atascadero Basin may require some concessions in the future. On a scale of 1 (most acceptable concession) to 5 (least acceptable concession), how would you rate the following concessions that may be necessary to maintain sustainability?
    a. Accept a reasonable but stable lowering of future groundwater levels
    b. Some restrictions on pumping in dry years when groundwater levels might be low
    c. Some reduction of flow in the Salinas River
    d. Restrictions on pumping to maintain creek flows
    e. A requirement to reduce agricultural pumping in all years
    f. Accept that some shallow domestic wells may go dry and need to be deepened

16. From your perspective, check the boxes that apply to the biggest opportunities as a result of the SGMA process:
    a. Assure reliable access of all the existing domestic wells in the basin to reliable groundwater resource
    b. Protects groundwater resource from all exports
    c. Assure economic vitality far into the future
    d. Assure that by protecting groundwater levels that no subsidence will occur
    e. Protecting healthy groundwater levels balanced with annual recharge to protect water quality.
    f. Gives local agencies the power to protect groundwater from practices that might pollute groundwater
    g. Creates a legal and reliable process for groundwater users to work together to protect the groundwater resources they rely upon to live, work and prosper

17. What would be a successful outcome of the SGMA process from your perspective?

18. Please provide any other information, comments, or questions that you have regarding the SGMA process and development of Minimum Thresholds for the Atascadero Basin.

ATTACHMENT B – SURVEY NOTICE



Atascadero Groundwater Basin

The County of San Luis Obispo, cities of Atascadero and Paso Robles, Templeton Community Services District, Atascadero Mutual Water Company, and other entities are collectively developing a Groundwater Sustainability Plan (GSP) in accordance with the Sustainable Groundwater Management Act (SGMA) for the Atascadero Basin.

You are invited to participate in a survey about sustainable groundwater management in the Atascadero Basin.

The survey covers topics such as groundwater levels, impacts of groundwater management, and definitions of success. To take the survey, visit the website **www.AtascaderoBasin.com** and click the **TAKE SURVEY** link.

To receive emails about SGMA activities in the Atascadero Basin, please visit the website **www.AtascaderoBasin.com** and register as an interested party. Registered parties receive:

- Meeting and event notifications
- Periodic newsletter updates
- Reminders when draft sections of the GSP are available for public comment

While you are at the website, don't forget to take the survey by clicking the **TAKE SURVEY** link!

Questions? Please contact:

John Neil, General Manager
Atascadero Mutual Water Company
(805) 464-5351
jneil@amwc.us

Mailing Address

ATASCADERO BASIN
Groundwater Sustainability Agency

TO: Executive Committee

FROM: GSA Staff/ John Neil, Atascadero Mutual Water Company

DATE: October 7, 2020

SUBJECT: Agenda Item 10.a, Proposition 1 Grant Progress Report

RECOMMENDED ACTION:

Receive report.

DISCUSSION:

The Proposition 1 Grant awarded to the GSA for the preparation of the Groundwater Sustainability Plan requires quarterly progress reports. Progress Report 03 for the period Q2 2020 is attached.

ATTACHMENTS:

A. Progress Report 03, Q2 2020

Sustainable Groundwater Management (SGM) GRANT PROGRAM

ATTACHMENT A

Grantee Name: Atascadero Mutual Water Company
Grant Agreement No.: 46-12646
Progress Report No.: 3
Reporting Period: 4/1/2020 TO 6/30/2020
Prepared: 7/16/2020

Project: Atascadero Basin Groundwater Sustainability Plan

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1. Project or Component Description

Develop a SGMA-complaint Groundwater Sustainability Plan (GSP) for the Atascadero Area Groundwater Subbasin of the Salinas Valley Basin identified as Basin No. 3-004.11 in the Department of Water Resources' Bulletin 118 ("Atascadero Basin").

2. Project Progress

Budget Category (a): Grant Administration

Activity	% complete
Prepared & submitted Grant Amendment 01, approved by DWR	100
Prepared & submitted Invoice 01 to DWR	100
Revised Invoice 01 per DWR comments, provided compiled add'l backup information	100
Prepared & submitted Progress Report 02 to DWR covering 2019 Q2 – 2020 Q1	100
Prepared & submitted Invoice 02 to DWR covering 2019 Q2 – 2020 Q1	100
Prepared & submitted Progress Report 03 to DWR covering 2020 Q2	80
Prepared & submitted Invoice 03 to DWR covering 2020 Q2	80
Impediments to completion of task: There are no anticipated impediments to the future completion of Category A tasks now that Invoice and Progress reports 01 & 02 have been accepted by the DWR. Issues associated with the form of the information required by the DWR have been addressed. The amount of information submitted with Inv 03 and future invoices is far more manageable than that submitted with Invoices 01 & 02.	

Budget Category (b): Stakeholder Engagement

Activity	% complete
GSA Executive Committee meeting, 04/03/2019	100
Developed and distributed stakeholder survey. The survey was mailed to every property owner in the Atascadero Basin who does not obtain water service from one of the GSA participant water purveyors.	100
Distributed Communication and Engagement Plan (C&E Plan) outline	100

Deployed version 1.0 of the Atascadero Basin Groundwater Communication Portal (GCP), which is linked to the www.atascaderobasin.com website. The GCP documents C&E Plan implementation; tracks stakeholders and interested parties, meetings, and; and collects public comments on draft documents. Full GCP Deployment will include reporting module and enhanced agency usability.	100
GSA Executive Committee meeting, 10/02/2019	100
Posted Sections 4 & 5 of the GSP on the www.atascaderobasin.com website for the public comment via the Atascadero Basin Groundwater Communication Portal (GCP), which is linked to the website.	100
Send notice re: cancelation of January 8, 2020 Executive Committee Meeting	100
Cancel April 1, 2020 Executive Committee due to Corona virus: noticed on website and GCP. Notify interested parties' list of meeting cancelation using GCP.	100
Reviewing options for Stakeholder outreach and coordination meeting in response to COVID-19 pandemic	100
Provide progress report to Executive Committee and post on GCP	100
Conduct Working Group meeting for June 24, 2020.	100
Schedule Executive Committee meeting for July 1, 2020. Notify interested parties' list of meeting using GCP. The Executive Committee was planned as a virtual meeting. Notice of the meeting was sent out to the 250 unique interested parties included in the Stakeholder list of the Groundwater Communication Portal.	50
Impediments to completion of task: There were some impediments to the stakeholder outreach task during this period resulting from the COVID-19 pandemic that prevented in-person attendance at workshops and executive committee meetings. Moving forward we will be using virtual public meetings to allow people to participate. At this point, there is sufficient time in the project schedule to absorb the delays caused by the pandemic. We are working out the details of holding meetings via webinar due to the continued social distancing orders that are anticipated.	

Budget Category (c): GSP Development

Activity	% complete
Circulated draft GSP Section 1 (Introduction) for stakeholder review and comment	100
Circulated draft GSP Section 2 (Agency Information) for stakeholder review and comment	100
Prepare draft GSP Section 3 (Description of Plan Area) for Executive Committee review and released for stakeholder review and comment	100
Prepare draft GSP Section 4 (Basin Setting) for working group and Executive Committee review prior to releasing section for stakeholder review and comment	100
Prepare draft GSP Section 5 (Groundwater Conditions) for working group review and Executive Committee review prior to releasing section for stakeholder review and comment	100
Obtain historical water quality data from municipal agencies in basin	50

Developed approach to groundwater dependent ecosystems evaluation	50
Review consultant task orders for the Phase 2 work, which includes preparation of the following sections of the GSP over the next three quarters and execute task orders: 6. Water Budget 7. Monitoring Network 8. Sustainable Management Criteria 9. Projects & Management Actions 10. Implementation Plan	100
Prepare GSP Section 7 and forward administrative draft to working group for review and comment.	100
Prepare historical water budget for GSP Section 6 and forward administrative draft to working group for review and comment.	90
Develop assumptions for preparation of future water budget for GSP Section 6 and forward to working group for review and comment.	60
Develop outline of GSP Section 8 for review/workshop to be held at the July 1, 2020 Executive Committee meeting	60
Impediments to completion of task: There were delays in rolling-out some sections of the GSP due to the inability to hold workshops and public meetings as a result of the COVID-19 pandemic. Progress is still being made on the various sections of the GSP. At this point, there is sufficient time in the project schedule to absorb the delays caused by the pandemic. The project schedule was updated to reflect this delay and was posted on the Portal and sent to interested parties.	

3. Activities for next reporting period:

Insert general statement of what work is expected to be completed during the next invoice period. Or, insert a column in the table below that provides an estimated due date for the deliverables.

Activity	**Estimated Deliverable Date**
Prepare & submit Invoice 04 to DWR	10/15/2020
Prepare & submit Progress Report 04 to DWR	10/15/2020
Prepare final draft of Section 6 (Water Budget)	10/01/2020
Hold Executive Committee meeting via webinar	10/07/2020
Post Section 6 on the communications portal	10/08/2020
Close 45-day public comment period on Section 6	11/22/2020
Hold workshop on Section 8 (Sustainable Management Criteria)	11/15/2020
Prepare final draft of Section 8	12/30/2020
Hold Executive Committee meeting via webinar	01/06/2021
Post Section 8 on communications portal	01/07/2021
Prepare & submit Invoice 05 to DWR	01/15/2020
Prepare & submit Progress Report 05 to DWR	01/15/2021
Close 45-day public comment period on Section 8	02/21/2021
Collect gaging data and begin to populate data management system	On going

Complete groundwater dependent ecosystems initial assessment	Q1 2021
Begin Sections 9 (Projects and Management Actions) and 10 (Implementation Plan)	Q1 & Q2 2021

4. Project Cost Update:

ESTIMATED TOTAL PROJECT COST INCURRED THIS REPORTING PERIOD:	$80,739
ESTIMATED TOTAL PROJECT COST INCURRED TO DATE:	$829,405

5. Other Major Issues:

There are no major issues or hindrances to completing the GSP on time and within budget.

Appendix A

Status of Required Deliverables

	TABLE 1: Deliverable Table for Atascadero Basin Groundwater Sustainability Plan			
Budget Category Item#	**Budget Category Work Items for Review**	**Estimated Due Date**	**% Of Work Complete**	**Date Submitted**
(a)	**Grant Administration**			
	Invoices and associated backup documentation, Inv 04	10/15/2020	30%	Click or tap to enter a date.
	Progress Report 04	10/15/2020	40%	Click or tap to enter a date.
	Draft and Final Grant Completion Report	12/31/2021	0%	Click or tap to enter a date.
(b)	**Stakeholder Engagement**			
	Communication and Engagement Plan	Click or tap to enter a date.	100%	4/3/2019
	Atascadero Groundwater Communication Portal	Click or tap to enter a date.	100%	4/3/2019
(c)	**GSP Development**			
Task 1	Section 1. Introduction to Atascadero Basin GSP	Click or tap to enter a date.	100%	4/3/2019
Task 2.1	Section 2. Agency Information	Click or tap to	100%	4/3/2019

	TABLE 1: Deliverable Table for Atascadero Basin Groundwater Sustainability Plan			
Budget Category Item#	**Budget Category Work Items for Review**	**Estimated Due Date**	**% Of Work Complete**	**Date Submitted**
		enter a date.		
Task 2.2	Section 3. Description of Plan Area	Click or tap to enter a date.	100%	7/10/2019
Task 2.3	Section 4. Hydrogeologic Conceptual Model	Click or tap to enter a date.	100%	10/2/2019
Task 2.4	Section 5. Groundwater Conditions	Click or tap to enter a date.	100%	10/2/2019
Task 2.5	Section 6. Water Budget	10/7/2020	60%	Click or tap to enter a date.
Task 2.6	Section 7. Monitoring Networks	Click or tap to enter a date.	90%	7/1/2020
Task 2.7	Section 8. Sustainable Management Criteria	1/6/2021	60%	Click or tap to enter a date.
Task 2.8	Section 9. Projects and Management Actions	5/1/2021	0%	Click or tap to enter a date.

	TABLE 1: Deliverable Table for Atascadero Basin Groundwater Sustainability Plan			
Budget Category Item#	**Budget Category Work Items for Review**	**Estimated Due Date**	**% Of Work Complete**	**Date Submitted**
Task 2.9	Section 10. Implementation Plan	5/1/2021	0%	Click or tap to enter a date.
Task 2.10	Section 11. Notice and Communications	5/1/2021	60%	Click or tap to enter a date.
Task 2.11	Section 12. Interagency Agreements	7/1/2021	0%	Click or tap to enter a date.
Task 2.12	Section 13. Reference List	7/1/2021	20%	Click or tap to enter a date.
Task 2.13	Draft GSP	9/1/2021	50%	Click or tap to enter a date.
Task 2.14	Final Draft GSP and associated GSP content	11/1/2021	0%	Click or tap to enter a date.

Appendix B

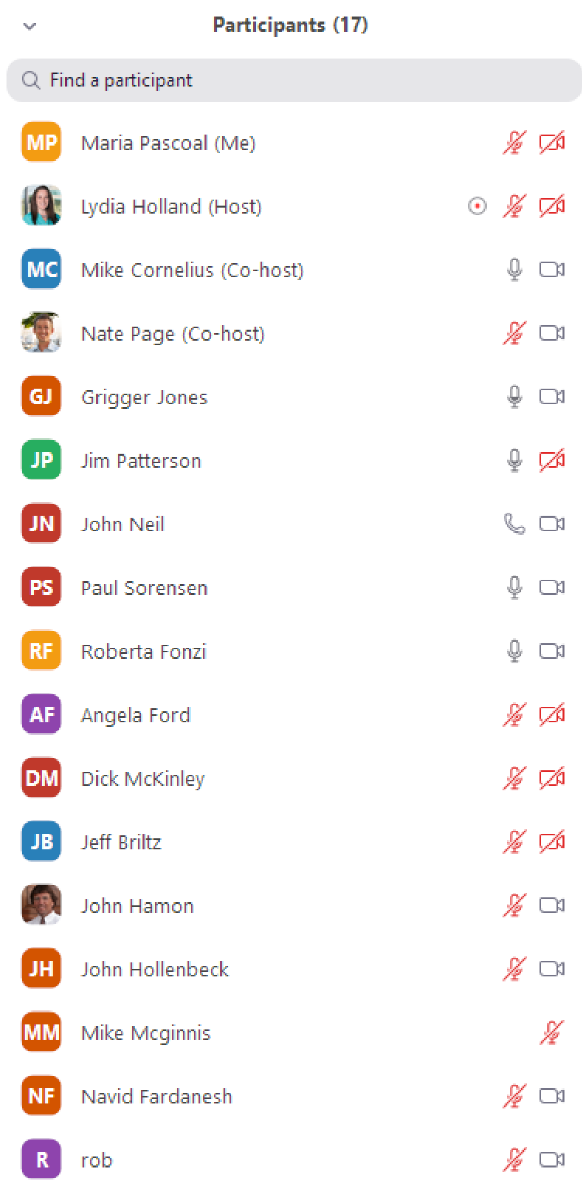
Stakeholder Outreach and Coordination Documentation

Provide a description of all outreach and stakeholder meetings/events conducted for the reporting period. Ensure that the activities described below provides enough justification of the costs included in the invoice (both reimbursement and cost share) especially if the Grant Agreement does not have separate deliverables to justify the costs. Information provided in this Appendix can include, but not be limited to, sign in sheets, agendas, meeting notes, copies of presentation materials, photos of meetings, etc.

July 1 Executive Committee Meeting Announcement from Atascaderobasin.com, Groundwater Communication Portal.

The Executive Committee Meeting Agenda includes the information to join the virtual meeting.

Below is a screenshot of the participants for the July 1, 2020 virtual Executive Committee Meeting



Appendix C

GSP Development Activities

Provide a description of the GSP development activities conducted for the reporting period. Provide enough description to justify the costs included in the associated invoice for both reimbursement and cost share. Describe the decisions made, milestones achieved, etc. Also include any setbacks encountered along the way.

Should attach the presentations for the July 1 Executive Committee for:

Appendix D

Project Photographs

Appendix E

Invoice Projections

PIN #: 3860-PO1-229					
Calendar Year	Quarter 1 Jan 1- March 31	Quarter 2 April 1 - June 30	Quarter 3 July 1- Sept 30	Quarter 4 Oct 1 - Dec 31	Total Grant Funds per Calendar Year
2019	$90,829	$78,826	$60,153	$17,462	$247,270
2020	$23,322	$33,029	$120,000	$160,000	$336,351
2021	$160,000	$65,629	$0	$0	$225,629
				Total Grant Project Award	$809,250