2.4. Water Budget

Detailed water budget information is documented in Chapter 2.3 of the *Tule Subbasin Setting* (**Appendix A-2**) and referenced by section number throughout this section of the GSP. These budgets are derived from the Tule Subbasin Groundwater Flow Model, covering the period from Water Year (WY) 1987 through WY 2024.

This section summarizes inflows and outflows components for the Subbasin and the TBID Plan Area. The water budgets for the Subbasin and TBID Plan Area are divided into a surface water system water budget and a groundwater system water budget. Water budget tables are highly detailed and identify inflow and outflow components by source of water (e.g., evapotranspiration (ET) and deep percolation from Deer Creek). Water budget results for the Subbasin are presented in Tables 2-2 and 2-3 in the *Tule Subbasin Setting*. The TBID water budget results are included in this document and presented in **Tables 2-8** through **2-11**, with a schematic of the different inflow and outflow components for the TBID water budget presented in **Figure 2-40.**

2.4.1. Surface Water Budget

The surface water budget for the Subbasin is described in *Chapter 2.3.1* of the *Tule Subbasin Setting*. Inflows to the surface water system include precipitation, applied imported surface water (irrigation), discharge from wells, and surface water inflows. Surface water budget for the Subbasin is presented in Table 2-2a in the *Tule Subbasin Setting,* and for the TBID Plan Area is presented in **Table 2-8**. Surface water outflow includes recharge from precipitation, streambed infiltration, surface water outflows, canal losses, deep percolation of applied water, and evapotranspiration (ET). Surface water outflows for the Subbasin are presented in Table 2-2b in the *Tule Subbasin Setting* for the Subbasin, and in **Table 2-9** for the TBID Plan Area. The surface water outflows are color-coded to show different components that are included in the estimate for native yield.

> **Blue:** Groundwater inflows to be included in the native yield estimate
>
> **Magenta:** Groundwater inflows to be excluded from the native yield estimate
>
> **Yellow:** Surface water or groundwater outflows not included in the native yield estimate.

2.4.1.1 Surface Water Inflows

Surface water inflows for the TBID Plan Area are presented in **Table 2-8**.

2.4.1.1.1 Precipitation

The methodology used to determine annual average precipitation in the Subbasin is described in *Chapter 2.3.1.1.1* of the *Tule* Subbasin *Setting*. Annual precipitation values for the Subbasin were estimated based on the long-term average annual isohyetal map and using the annual precipitation data from the Porterville Station.

Across the Subbasin, the total annual precipitation ranged from 147,000 AF to 761,000 AF with an average of 361,000 AFY. The total annual precipitation within the TBID Plan Area ranged from 3,900 AF to 25,200 AF between WY1987 and WY2024, with an average of 12,000 AFY.

2.4.1.1.2 Stream Inflows

Stream inflows into the Subbasin include inflows from the Tule River, Deer Creek, and the White River. To the north of the TBID Plan Area is the Tule River. Flows in the Tule River are controlled through releases from Lake Success, which are documented in the Tule River Association (TRA) annual reports. During the historical water budget period, flows released from Lake Success ranged from 8,820 to 439,125 AF with an average value of 120,100 AFY. Deer Creek flows through the TBID Plan Area. Inflows from Deer Creek into the Subbasin are measured at Fountain Springs by the USGS. Over the historical water budget period, values have ranged from 2,000 to 88,000 AF with an average of 18,400 AFY. The White River, located south of the TBID Plan Area, is based on the USGS stream gage station near Ducor. The estimated inflow into Subbasin from the White River ranged from 250 to 37,000 AF with an average of 6,000 AFY.

Deer Creek first crosses the Tule East GSA before entering the TBID Plan Area. Flows into the TBID Plan Area are estimated based on the calculated infiltration, evaporation, and diversions that occur prior to entering the TBID Plan Area. Annual inflows into the TBID Plan Area ranged from 2,000 to 88,400 AF with an average of 18,200 AFY.

2.4.1.1.3 Imported Water

Surface water is imported into the Subbasin and TBID Plan Area via the FKC. Data from the USBR Central Valley Operation Annual Reports and monthly tables (USBR, 2025) were compiled to calculate the average amount of imported surface water, as described in Chapter 2.3.1.1.3 of the *Tule Subbasin Setting.* TBID holds a long-term contract for 29,000 AFY of Class 1 water from the Friant Division. Water from the FKC is diverted at the Terra Bella Pumping Plant located near Milepost 104. TBID does not hold a Class 2 water contract.

For the entire Subbasin, surface water deliveries ranged from 18,900 to 587,400 AF with an average of 352,900 AFY. Within the TBID Plan Area, surface water deliveries ranged from 12,000 AF to 23,200 AF with an average of 18,200 AFY.

2.4.1.1.4 Discharge to Crops from Wells

Chapter 2.3.1.1.4 of the *Tule Subbasin Setting* describes the water applied to crops from wells as the total applied water minus imported surface water delivered and diverted streamflow. Estimates of crop ET were used to estimate total crop demand, with an assumed irrigation efficiency of 79 percent.

Across the Subbasin, the average groundwater pumping over the historical period was 651,000 AFY. Within the TBID Plan Area, the simulated groundwater pumping ranged from 0 AF to 19,100 AF with an average of 9,300 AFY. The volume of groundwater pumping is an overestimate based on feedback from TBID. Groundwater pumping within the TBID Plan Area is typically on the order of 2,000 AFY or less (S. Geivet, Personal Communication, April 14, 2025). Analysis of the historical progression of crop mix, crop coefficients, and resultant applied water for the primary crop grown in the TBID Plan Area over the historical water budget period (citrus) indicates a long-term decline in the applied water to citrus on an acre-foot per acre basis. This decline, primarily driven by a downward trend in crop water coefficient, is unexplained in the *Tule Subbasin Setting*. And the magnitude of the reduction in crop coefficient conveys an overestimation of applied water for agriculture. As a result of the apparent overestimation of water demand through much of the historical water budget period, the water budget estimates for groundwater supply appear to be overestimated. Implementation of well metering in the future will reduce uncertainty and provide an accurate determination of groundwater pumping.

2.4.1.1.5 Municipal Deliveries from Wells

Chapter 2.3.1.1.5 of the *Tule Subbasin Setting* describes the methodology used to determine the average annual groundwater production for municipal use within the Subbasin for the historical period. Groundwater pumping for municipal supply is conducted by the City of Porterville and other local communities, including Terra Bella. The average municipal pumping across the Subbasin over the historical period was 19,600 AFY. For the TBID Plan Area, the average pumping was 900 AFY.

2.4.1.2 Surface Water Outflows

Surface water outflows for the TBID Plan Area are presented in **Table 2-9**.

2.4.1.2.1 Areal Recharge from Precipitation

Areal recharge from precipitation on the Subbasin valley floor was estimated using the methodology developed by Williamson et al. (1989). As part of a regional hydrogeological study of the California Central Valley, Williamson et al. developed a monthly soil-moisture budget for the Sacramento and San Joaquin Valleys based on a 50-year period of record (1922–1971). This budget accounts for potential evapotranspiration, assumed plant root depth, soil moisture-holding capacity, and precipitation.

In this model, monthly precipitation that exceeds both potential evapotranspiration and soil-moisture storage is categorized as net infiltration to the groundwater system. These results were simplified into a linear regression model, known as the Williamson Method, to estimate net infiltration from annual precipitation:

$$PPT_{ex} = (0.64)\ PPT - 6.2$$

Where:

PPT_{ex} = Excess Annual Precipitation (net infiltration/recharge) in feet/yr.

PPT = Total Annual Precipitation in feet/yr.

For the Subbasin, groundwater recharge from precipitation ranged from 0 to 241,000 AF with an average of 33,000 AFY. For the TBID Plan Area, the areal recharge from precipitation ranged between 0 and 9,000 AF, with an average of 1,500 AFY.

2.4.1.2.2 Streambed Infiltration

As discussed in 2.4.1.2 of this GSP, the three primary surface water bodies in the Subbasin are the Tule River, Deerk Creek, and the White River. Streambed infiltration from each of these surface water bodies is discussed in full detail in Chapter 2.3.1.2.2 of the *Tule Subbasin Setting.* Average recharge from the Tule River was 19,700. Average recharge from Deer Creek over the historical water budget period is 11,500 AF. Average recharge from the White River was 5,800 AF. The average annual streambed infiltration within the TBID Plan Area for the historical period is estimated to be 1,000 AFY, ranging from 100 to 4,500 AF.

2.4.1.2.3 Canal Losses

Chapter 2.3.1.2.3 of the *Tule Subbasin Setting* contains a detailed description and methodology to calculate canal losses for the entire Subbasin. Canal losses are attributed to three sources: water from the natural surface water bodies (Tule River and Deer Creek) diverted to unlined canals, and water losses from imported water from the FKC.

For the entire Subbasin, losses from Tule River water diversion were on average 23,300 AFY, losses from water from Deer Creek were on average 2,500 AFY, and losses from imported water were on average 52,800 AFY. No measurable canal losses are accounted for in the TBID water budget.

2.4.1.2.4 Deep Percolation of Applied Water

The deep percolation of applied water for the entire Subbasin is described in detail in Chapter 2.3.1.2.5 of the *Tule Subbasin Setting*. Sources of water for irrigation include the Tule River, Deer Creek, imported water, recycled water, and groundwater. Sources of deep percolation within the TID Plan Area include imported water and agricultural irrigation from groundwater pumping.

Across the Subbasin, deep percolation from Tule River water is on average 22,000 AFY. Deep percolation from water diverted off of Deer Creek was 1,100 AFY. Deep percolation of imported water was approximately 96,900 AFY. Groundwater pumping contributed the greatest amount of deep percolation with an annual average of 148,200 AFY. Within the TBID Plan Area, sources of deep percolation include imported surface water and groundwater. For imported water, annual values ranged from 1,900 to 10,500 AF with an annual average of 4,000 AFY. Deep percolation of applied groundwater for agricultural use ranged from 0 to 2,600 AF with an average of 1,200 AFY. Deep percolation of applied groundwater from municipal pumping ranged from 400 to 600 with an average of 570 AFY.

2.4.1.2.5 Managed Recharge in Basins

Over the historical water budget period for the entire Subbasin, native Deer Creek water used for artificial recharge was on average 2,300 AFY. Recharge of Deer Creek water occurs in the TBID Plan Area within the western non-contiguous portion of the TBID Plan Area (**Figure 2-17**). Deer Creek recharge ranged from 0 to 7,000 AF with an average of 1,300 AFY.

2.4.1.2.6 Evapotranspiration

Sources of ET for the entire Subbasin are described in detail in Chapter 2.3.1.2.6 of the *Tule Subbasin Setting*. Sources of ET within the TBID Plan Area include precipitation from crops and native vegetation, and agricultural consumptive use, including groundwater pumping and imported surface water.

Evapotranspiration of Precipitation from Crops and Native Vegetation

ET of precipitation is estimated to be equal to total precipitation minus areal recharge and includes estimates for both crops and native vegetation.

Over the historical period, ET from precipitation for the entire Subbasin was on average 328,000 AFY. Within the TBID Plan Area, ET from crops and native vegetation ranged from 3,900 to 16,200 AF with an average of 10,600 AFY.

Agricultural Consumptive Use

Agricultural consumptive use for the entire subbasin includes all sources of irrigation excluding precipitation. The methodology used to estimate agricultural consumptive use within the Subbasin is described in Chapter 2.3.1.2.6 of the *Tule Subbasin Setting*. ET from agricultural consumptive use within the TBID Plan Area is calculated separately for imported water and groundwater (pumping) for the historical period.

For the entire Subbasin, the estimated average annual agricultural consumptive use was 724,000 AFY. Within the TBID Plan Area, ET from agricultural consumptive use of imported water ranged from 5,200 to 16,700 AF with an average of 12,500 AFY. As previously discussed, the estimated ET from groundwater pumping is overestimated. Based on the model results, ET from groundwater pumping ranged from 0 to 18,000 AF with an average of 8,700 AFY.

2.4.1.2.7 Deer Creek Surface Water Outflows

Surface water outflow within the Subbasin for Deer Creek is described in Chapter 2.3.1.2.7 of the *Tule Subbasin Setting*. At the time this document was developed, surface outflow estimates for Deer Creek were not available. During years of above normal precipitation, residual flow in Deer Creek has flowed into the Homeland Canal, which is in the western portion of the Subbasin.

Surface water outflows from the TBID Plan Area were estimated based on the surface water inflows minus diversions and deep percolation. Surface water outflow through Deer Creek ranged from 1,600 to 87,200 AF with an average of 17,100 AFY.

2.4.2. Groundwater Budget

As shown in **Table 2-10**, the groundwater budget for the Tule Subbasin tracks all water entering and leaving the system. This balance is defined by the core equation:

$$Inflow - Outflow = \pm \Delta S$$

Inflows for the groundwater budget consist of areal recharge from precipitation, streambed infiltration, managed infiltration of water in basins for the purpose of groundwater storage, canal losses, return flows of applied irrigation water, and subsurface inflows. Groundwater outflows include all groundwater pumping (agricultural) and subsurface outflows. The subsurface inflow and outflow components in the groundwater budget are excluded when determining whether the water budget is balanced, and therefore, groundwater pumping is directly compared to all in-GSA recharge components.

Following the format of the surface water budget tables, the groundwater budget (**Table 2-10**) distinguishes between different water sources using specific colors:

Blue: Groundwater inflows to be included in the native yield estimate

Magenta: Groundwater inflows to be excluded from the native yield estimate

Yellow: Surface water or groundwater outflows not included in the native yield estimate.

A chart describing the average annual values for each inflow and outflow component of the groundwater budget is presented in **Figure 2-41.** Average inflows were 44,800 AFY, while the average outflows were 46,600 AFY. The average change in storage from WY1987 to WY2024 was a decline of -1,800 AFY. When excluding subsurface inflows and outflows, the average change in storage was a decline of 500 AFY.

2.4.2.1 Groundwater Inflows

Most of the groundwater inflow components are equal to the items described in **Section 2.4.1.2**, Surface Water Outflows. The only additional component to groundwater inflow is subsurface inflows.

2.4.2.1.1 Area Recharge from Precipitation

Areal recharge for the Subbasin is described in Chapter 2.3.2.1.1 of the *Tule Subbasin Setting*. Additional details are provided in **Section 2.4.1.2.1**, Areal Recharge from Precipitation**,** of this GSP. For TBID, the areal recharge from precipitation ranged between 0 and 9,000 AF, with an average of 1,500 AFY.

2.4.2.1.2 Streambed Infiltration

Streambed infiltration for Deer Creek across the Subbasin is discussed in Chapter 2.3.2.1.3 of the *Tule Subbasin Setting*. Additional details are provided in **Section 2.4.1.2.2,** Streambed Infiltration**,** of this GSP. For the TBID Plan Area during the historical period, streambed infiltration from Deer Creek was an average of 1,000 AFY, ranging from 100 to 4,500 AF.

2.4.2.1.3 Canal Losses

Canal losses for imported water across the Subbasin are discussed in Chapter 2.3.1.2.3 of the *Tule Subbasin Setting*. Additional details are provided in **Section 2.4.1.2.3,** Canal Losses, of this GSP. No measurable canal losses are accounted for in the TBID water budget.

2.4.2.1.4 Return Flows from Applied Water

Return flows are from both applied surface water and groundwater. Groundwater recharge from applied groundwater is discussed in Chapter 2.3.2.1.7 of the *Tule Subbasin Setting*. For imported water within the TBID Plan Area, annual values ranged from 1,900 to 10,500 AF with an annual average of 4,000 AFY. Deep percolation of applied groundwater for agricultural use ranged from 0 to 2,600 AF with an average of 1,200 AFY. Deep percolation of applied groundwater from municipal pumping ranged from 400 to 600 with an average of 570 AFY. More details on return flows are provided in **Section 2.4.1.2.4**, Deep Percolation of Applied Water, of this GSP.

2.4.2.1.5 Managed Recharge in Basin

Over the historical water budget period for the entire Subbasin, native Deer Creek water used for artificial recharge was on average 2,300 AFY. Recharge of Deer Creek water occurs in the TBID Plan Area within the western non-contiguous portion of the TBID Plan Area (**Figure 2-17**). Deer Creek recharge ranged from 0 to 7,000 AF with an average of 1,300 AFY.

2.4.2.1.6 Subsurface Inflows

Chapter 2.3.2.1.9 of the *Tule Subbasin Setting* describes subsurface inflow for the entire Subbasin. Average inflows into the Subbasin from the adjacent subbasin were, on average, 75,000 AFY. This does not account for flows between GSA Plan Areas within the Subbasin. For TBID, subsurface inflow from other GSA Plan Areas ranged between 24,400 and 39,300 AF with an average of 30,100 AFY. As discussed in **Section 2.3**, Groundwater Conditions, of this GSP and presented in Figures **2-20a** through **2-23b**, groundwater flow is generally east to west or northeast to southwest, which would suggest that most of the water flowing out from the TBID Plan Area is to the west, where a cone of depression is located within the Subbasin.

2.4.2.1.7 Mountain Block Recharge

Mountain block recharge is the infiltration of precipitation and snowmelt into bedrock along the eastern boundary of the Subbasin. Over the historical period for the entire Subbasin along the eastern boundary, mountain front recharge was approximately 33,000 AF. Within the TBID Plan Area, the average mountain block recharge was 5,100 AFY.

2.4.2.2 Groundwater Outflows

2.4.2.2.1 Agricultural Groundwater Pumping

Chapter 2.3.2.3.2 of the *Tule Subbasin Setting* describes agricultural groundwater pumping throughout the entire Subbasin. Groundwater pumping for the entire subbasin was on average 651,000 AFY. Within the TBID Plan Area, agricultural groundwater pumping for the historical period ranged from 0 AF to 19,100 AF, with an average of 9,300 AFY. For municipal pumping, groundwater ranged between 700 and 1,000 AF with an average of 900 AFY.

As previously stated, the groundwater pumping simulated in the flow model is an overestimate, and actual groundwater pumping is approximately 2,000 AFY.

2.4.2.2.2 Subsurface Outflows

Subsurface outflows for the Subbasin are described in Chapter 2.3.2.3.4 of the *Tule Subbasin Setting*. For the entire Subbasin, the average subsurface outflow was approximately 82,000 AFY. This does not account for flow between GSA Plan Areas within the Subbasin. Within the TBID Plan Area, subsurface outflows into adjacent GSA Plan Areas ranged from 23,900 to 56,300 AF, with an average of 36,300 AFY, which is greater than the average inflows of 33,400 AFY.

2.4.3. Current Water Budget

The current water budget for the TBID Plan Area is presented in the historical water budget tables as the most recent water year (**Table 2-8** through **Table 2-10)**. In WY 2024, the total groundwater inflow into the TBID Plan Area was approximately 44,800 AF, and the total groundwater outflow was 46,400 AF. Change in storage was a decrease of approximately 9,600 AF.

2.4.4. Projected Water Budget

To achieve long-term sustainability, a projected water budget was developed for the Tule Subbasin, incorporating the specific projects and management actions proposed by each of the GSAs. The projected water budget is for the time period 2025 through 2070. Using a groundwater flow model for the 45-year projection period, the subbasin aimed to:

- Verify Sustainability: Assess whether planned actions successfully meet sustainability goals.
- Analyze GSA Interactions: Evaluate how groundwater levels in one GSA are affected by the actions of neighboring GSAs.
- Determine Sustainable Yield: Estimate the maximum amount of water that can be withdrawn annually without causing undesirable results.
- Climate Change Integration

The model accounts for future climate variability by adjusting baseline hydrology and water deliveries. These adjustments—derived from the DWR's CalSim-II model and recommendations from the Climate Change Technical Advisory Group (DWR 2015)—affect three primary water sources:

1. Tule River flows
2. Friant-Kern Canal deliveries
3. State Water Project (California Aqueduct) deliveries

Climate-related adjustments to hydrology and surface water deliveries were applied over two distinct planning horizons:

- 2030 Central Tendency: Provides near-term projections of climate impacts on hydrology, centered on the year 2030.

- 2070 Central Tendency: Provides long-term projections of potential climate impacts, centered on the year 2070. These adjustments were applied to the model projection for the period from 2050 to 2070.
- Imported Water Supply Adjustments

For supplies arriving via the Friant-Kern Canal, Thomas Harder & Co utilized delivery schedules from the Friant Water Authority (2018). These projections account for two major factors:

1. San Joaquin River Restoration Project (SJRRP): Projected deliveries include adjustments associated with this restoration effort.
2. Implementation Timeline**:** Adjustments for climate change and the SJRRP begin in 2025.
    - Changes are applied incrementally between 2025 and 2030.
    - The full suite of adjustments reaches 100% implementation by 2030.

The projected groundwater budget for the TBID Plan Area is presented in **Table 2-11.**

2.4.5. Sustainable Yield

TBID was previously a member of the ETGSA, which developed a groundwater accounting system to track groundwater use and implement a groundwater allocation program. This ETGSA program allowed for pumping in excess of the sustainable yield through 2035 (**Table 2-12**). These percentages allow for pumping in excess of the sustainable yield and are referred to as transitional pumping credits. In an effort to achieve sustainable conditions and address subsidence, as of WY2025, TBID has foregone all transitional pumping credits, limiting pumping to the sustainable yield, ten years sooner than what was originally agreed to by the ETGSA and the rest of the Tule Subbasin.

Table 2-12. Percentage of Historical Annual Avg. Use Allowed Above Sustainable Limit

2021-2025	2026-2030	2031-2035	2035-2040
90%	80%	30%	0%

Source: 4Creeks, 2024

The sustainable yield for WY2025 within the TBID Plan Area is 0.99 AF per acre. The historical average pumping for TBID is 10,600 AFY or 0.76 AFY per acre. Although the ETGSA planned on having a glide path to achieve the sustainable yield allocation by 2035, TBID elected, through Resolution No. 2024-09-01, to disregard the glide path and achieve the sustainable yield pumping allocation in WY2025. This action also eliminated the ability of landowners within the TBID Plan Area to use transitional pumping credits in future years.

Table 2-8. TBID Surface Water Inflow (acre-feet)

Water Year	Precipitation	Stream Inflow			Imported Water							Recycled Water	Discharge from Wells		Total In
		Tule River	Deer Creek	White River	Saucelito ID	Terra Bella ID	Porterville ID	Tea Pot Dome WD	City of Porterville	Hope WD	Ducor ID		Agricultural	Municipal	
1987	14,900	44,100	NA	NA	NA	NA	15,300	NA	NA	NA	NA	NA	18,000	100	92,400
1988	13,100	16,600	NA	NA	NA	NA	13,100	NA	NA	NA	NA	NA	23,100	100	66,000
1989	10,500	25,600	NA	NA	NA	NA	13,100	NA	NA	NA	NA	NA	28,400	100	77,700
1990	12,400	8,900	NA	NA	NA	NA	11,500	NA	NA	NA	NA	NA	28,000	100	60,900
1991	15,500	25,000	NA	NA	NA	NA	11,300	NA	NA	NA	NA	NA	21,000	100	72,900
1992	10,900	11,300	NA	NA	NA	NA	15,600	NA	NA	NA	NA	NA	27,500	100	65,400
1993	17,900	61,700	NA	NA	NA	NA	12,300	NA	NA	NA	NA	NA	16,800	100	108,800
1994	11,600	33,400	NA	NA	NA	NA	12,900	NA	NA	NA	NA	NA	27,500	100	85,500
1995	23,400	151,000	NA	NA	NA	NA	9,500	NA	NA	NA	NA	NA	12,500	100	196,500
1996	12,400	111,000	NA	NA	NA	NA	13,800	NA	NA	NA	NA	NA	20,000	100	157,300
1997	17,000	258,500	NA	NA	NA	NA	13,400	NA	NA	NA	NA	NA	17,400	100	306,400
1998	28,100	295,200	NA	NA	NA	NA	10,200	NA	NA	NA	NA	NA	9,400	100	343,000
1999	13,200	75,200	NA	NA	NA	NA	16,100	NA	NA	NA	NA	NA	19,200	100	123,800
2000	13,700	69,100	NA	NA	NA	NA	15,500	NA	NA	NA	NA	NA	28,800	100	127,200
2001	10,800	30,900	NA	NA	NA	NA	15,400	NA	NA	NA	NA	NA	23,300	100	80,500
2002	10,500	37,500	NA	NA	NA	NA	13,600	NA	NA	NA	NA	NA	31,100	100	92,800
2003	13,100	83,800	NA	NA	NA	NA	14,600	NA	NA	NA	NA	NA	26,400	100	138,000
2004	9,500	27,400	NA	NA	NA	NA	14,700	NA	NA	NA	NA	NA	34,800	100	86,500
2005	18,900	98,000	NA	NA	NA	NA	14,700	NA	NA	NA	NA	NA	15,300	100	147,000
2006	18,400	136,100	NA	NA	NA	NA	13,300	NA	NA	NA	NA	NA	15,500	100	183,400
2007	7,300	22,200	NA	NA	NA	NA	9,800	NA	NA	NA	NA	NA	34,500	100	73,900
2008	10,500	46,300	NA	NA	NA	NA	13,000	NA	NA	NA	NA	NA	30,900	100	100,800
2009	8,600	32,000	NA	NA	NA	NA	18,000	NA	NA	NA	NA	NA	19,200	100	77,900
2010	14,700	89,200	NA	NA	NA	NA	14,300	NA	NA	NA	NA	NA	10,900	100	129,200
2011	22,200	200,400	NA	NA	NA	NA	9,400	NA	NA	NA	NA	NA	15,800	100	247,900
2012	15,900	62,800	NA	NA	NA	NA	9,300	NA	NA	NA	NA	NA	18,300	100	106,400
2013	5,600	16,100	NA	NA	NA	NA	10,300	NA	NA	NA	NA	NA	30,700	100	62,800
2014	5,700	700	NA	NA	NA	NA	200	NA	NA	NA	NA	NA	37,700	100	44,400
2015	9,100	300	NA	NA	NA	NA	100	NA	NA	NA	NA	NA	32,400	100	42,000
2016	14,900	40,000	NA	NA	NA	NA	13,300	NA	NA	NA	NA	NA	16,300	100	84,600
2017	17,500	197,200	NA	NA	NA	NA	21,700	NA	NA	NA	NA	NA	24,200	100	260,700

Water Year	Precipitation	Stream Inflow			Imported Water							Recycled Water	Discharge from Wells		Total In
		Tule River	Deer Creek	White River	Saucelito ID	Terra Bella ID	Porterville ID	Tea Pot Dome WD	City of Porterville	Hope WD	Ducor ID		Agricultural	Municipal	
2018	8,300	33,400	NA	NA	NA	NA	12,700	NA	NA	NA	NA	NA	32,300	100	86,800
2019	19,300	152,800	NA	NA	NA	NA	60,900	NA	NA	NA	NA	NA	15,300	100	248,400
2020	9,400	29,100	NA	NA	NA	NA	11,500	NA	NA	NA	NA	NA	26,597	100	76,697
2021	4,300	600	NA	NA	NA	NA	3,100	NA	NA	NA	NA	NA	38,482	100	46,582
2022	9,900	13,200	NA	NA	NA	NA	9,700	NA	NA	NA	NA	NA	28,298	100	61,198
2023	22,400	487,100	NA	NA	NA	NA	65,300	NA	NA	NA	NA	NA	17,119	100	592,019
2024	12,200	133,200	NA	NA	NA	NA	34,000	NA	NA	NA	NA	NA	23,425	100	202,925

Table 2-9. TBID Surface Water Outflow (acre-feet)

Water Year	Areal Recharge of Precipitation	Streambed Infiltration			Recharge in Basins				Canal Loss			Deep Percolation of Applied Water					
		Tule River	Deer Creek	White River	Tule River	Deer Creek	Imported Water	Recyled Water	Tule River	Deer Creek	Imported Water	Tule River	Deer Creek	Imported Water	Recycled Water	Agricultural Pumping	Municipal Pumping
		Success to Oettle Bridge Infiltration	Before Trenton Weir Infiltration														
1987	1,800	NA	700	NA	NA	800	0	0	NA	0	0	NA	0	2,200	0	1,700	400
1988	300	NA	500	NA	NA	500	0	0	NA	0	0	NA	0	4,600	0	900	500
1989	0	NA	700	NA	NA	0	0	0	NA	0	0	NA	0	4,200	0	1,100	500
1990	300	NA	400	NA	NA	0	0	0	NA	0	0	NA	0	5,400	0	1,000	500
1991	1,300	NA	600	NA	NA	0	0	0	NA	0	0	NA	0	3,900	0	800	500
1992	0	NA	200	NA	NA	1,100	0	0	NA	0	0	NA	0	3,100	0	1,400	500
1993	3,000	NA	1,000	NA	NA	4,000	0	0	NA	0	0	NA	0	2,200	0	1,900	500
1994	0	NA	400	NA	NA	2,600	0	0	NA	0	0	NA	0	2,700	0	2,600	500
1995	5,600	NA	1,600	NA	NA	3,400	0	0	NA	0	0	NA	0	2,300	0	1,900	500
1996	0	NA	1,000	NA	NA	2,600	0	0	NA	0	0	NA	0	3,300	0	2,100	600
1997	1,900	NA	3,900	NA	NA	1,400	0	0	NA	0	0	NA	0	2,800	0	2,100	600
1998	9,000	NA	1,200	NA	NA	2,000	0	0	NA	0	0	NA	0	1,900	0	2,100	600
1999	500	NA	800	NA	NA	4,200	0	0	NA	0	0	NA	0	2,600	0	2,200	600
2000	800	NA	800	NA	NA	700	0	0	NA	0	0	NA	0	2,800	0	2,000	600
2001	0	NA	500	NA	NA	1,600	0	0	NA	0	0	NA	0	2,700	0	1,700	600
2002	0	NA	700	NA	NA	2,400	0	0	NA	0	0	NA	0	2,900	0	2,200	600
2003	100	NA	1,100	NA	NA	1,000	0	0	NA	0	0	NA	0	2,400	0	2,100	600
2004	0	NA	400	NA	NA	1,700	0	0	NA	0	0	NA	0	3,000	0	2,500	600
2005	2,800	NA	1,200	NA	NA	600	0	0	NA	0	0	NA	0	1,900	0	1,900	600
2006	3,200	NA	1,200	NA	NA	900	0	0	NA	0	0	NA	0	6,700	0	800	600
2007	0	NA	600	NA	NA	100	0	0	NA	0	0	NA	0	4,000	0	2,200	600
2008	0	NA	700	NA	NA	500	0	0	NA	0	0	NA	0	2,300	0	1,700	600
2009	0	NA	300	NA	NA	7,000	0	0	NA	0	0	NA	0	3,200	0	1,000	600
2010	1,400	NA	1,200	NA	NA	3,200	0	0	NA	0	0	NA	0	3,900	0	600	600
2011	5,300	NA	2,200	NA	NA	0	0	0	NA	0	0	NA	0	5,900	0	200	600
2012	1,400	NA	600	NA	NA	4,500	0	0	NA	0	0	NA	0	7,100	0	200	600
2013	0	NA	300	NA	NA	1,300	0	0	NA	0	0	NA	0	3,600	0	200	600
2014	0	NA	200	NA	NA	0	0	0	NA	0	0	NA	0	3,200	0	1,000	600
2015	0	NA	100	NA	NA	0	0	0	NA	0	0	NA	0	3,800	0	900	600
2016	1,800	NA	1,300	NA	NA	100	0	0	NA	0	0	NA	0	6,700	0	100	600
2017	3,200	NA	4,500	NA	NA	0	0	0	NA	0	0	NA	0	7,800	0	400	600
2018	0	NA	800	NA	NA	0	0	0	NA	0	0	NA	0	10,500	0	0	600
2019	4,200	NA	2,600	NA	NA	0	0	0	NA	0	0	NA	0	9,200	0	100	600
2020	0	NA	700	NA	NA	0	0	0	NA	0	0	NA	0	3,200	0	1,200	600e 2-6
2021	0	NA	200	NA	NA	0	0	0	NA	0	0	NA	0	2,600	0	900	600
2022	0	NA	400	NA	NA	0	0	0	NA	0	0	NA	0	3,900	0	800	600
2023	7,200	NA	2,400	NA	NA	0	0	0	NA	0	0	NA	0	3,800	0	700	600
2024	0	NA	1,800	NA	NA	0	0	0	NA	0	0	NA	0	2,700	0	700	600
Average	**1,400**	**NA**	**1,100**	**NA**	**NA**	**1,300**	**0**	**0**	**NA**	**0**	**0**	**NA**	**0**	**4,000**	**0**	**1,200**	**600**

Groundwater Inflows to be Included in the Native Yield Estimate

Groundwater Inflows to be Excluded from the Native Yield Estimate

Surface Water or Groundwater Outflows Not Included in Native Yield Estimate

Table 2-9. TBID Surface Water Outflow (continued)

Water Year	Evapotranspiration										Surface Outflow				Total Out
		Tule River		Deer Creek		White River	Imported Water		Recycled Water		Tule River		Deer Creek	White River	
	Precipitation Crops/Native	Agricultural Cons. Use	Stream Channel	Agricultural Cons. Use	Stream Channel	Stream Channel	Agricultural Cons. Use	Ag. Cons. Use from Pumping	Agricultural Cons. Use	Municipal (Landscape ET)	To LTIRD GSA	To FKC	MODIFIED (To ETGSA)	To DEID GSA	
1987	12,100	NA	NA	0	0	NA	9,300	11,800	0	300	NA	NA	7,700	NA	48,800
1988	11,000	NA	NA	0	0	NA	15,700	6,400	0	200	NA	NA	5,600	NA	46,200
1989	8,900	NA	NA	0	0	NA	16,700	7,500	0	300	NA	NA	7,100	NA	47,000
1990	10,400	NA	NA	0	0	NA	16,000	6,700	0	300	NA	NA	4,300	NA	45,300
1991	11,900	NA	NA	0	0	NA	13,100	5,800	0	300	NA	NA	6,700	NA	44,900
1992	9,800	NA	NA	0	0	NA	16,000	9,900	0	300	NA	NA	3,900	NA	46,200
1993	12,800	NA	NA	0	0	NA	14,300	13,300	0	300	NA	NA	14,100	NA	67,400
1994	10,500	NA	NA	0	0	NA	14,400	18,000	0	400	NA	NA	6,400	NA	58,500
1995	14,300	NA	NA	0	0	NA	12,200	12,900	0	400	NA	NA	30,600	NA	85,700
1996	10,700	NA	NA	0	0	NA	16,600	14,700	0	300	NA	NA	22,300	NA	74,200
1997	12,200	NA	NA	0	0	NA	15,700	14,600	0	300	NA	NA	54,900	NA	110,400
1998	16,200	NA	NA	0	0	NA	9,600	14,600	0	300	NA	NA	87,200	NA	144,700
1999	11,400	NA	NA	0	0	NA	13,300	15,100	0	400	NA	NA	17,600	NA	68,700
2000	11,600	NA	NA	0	0	NA	14,700	13,700	0	400	NA	NA	14,400	NA	62,500
2001	9,400	NA	NA	0	0	NA	14,900	11,900	0	400	NA	NA	6,500	NA	50,200
2002	8,900	NA	NA	0	0	NA	15,600	15,200	0	400	NA	NA	9,700	NA	58,600
2003	11,200	NA	NA	0	0	NA	14,300	14,300	0	400	NA	NA	14,600	NA	62,100
2004	8,500	NA	NA	0	0	NA	15,600	17,400	0	400	NA	NA	6,500	NA	56,600
2005	12,700	NA	NA	0	0	NA	11,400	13,300	0	400	NA	NA	21,500	NA	68,300
2006	12,900	NA	NA	0	0	NA	13,200	5,200	0	400	NA	NA	22,700	NA	67,800
2007	7,000	NA	NA	0	0	NA	14,900	15,000	0	400	NA	NA	6,300	NA	51,100
2008	8,500	NA	NA	0	0	NA	13,800	11,600	0	400	NA	NA	7,700	NA	47,800
2009	7,800	NA	NA	0	0	NA	14,400	7,300	0	400	NA	NA	6,300	NA	48,300
2010	11,900	NA	NA	0	0	NA	11,700	4,100	0	400	NA	NA	15,300	NA	54,300
2011	14,100	NA	NA	0	0	NA	8,600	1,500	0	400	NA	NA	42,700	NA	81,500
2012	11,900	NA	NA	0	0	NA	10,900	1,200	0	400	NA	NA	10,700	NA	49,500
2013	5,300	NA	NA	0	0	NA	15,100	1,700	0	400	NA	NA	4,500	NA	33,000
2014	5,400	NA	NA	0	0	NA	7,200	7,100	0	300	NA	NA	2,800	NA	27,800
2015	8,100	NA	NA	0	0	NA	7,000	6,000	0	300	NA	NA	1,900	NA	28,700
2016	12,100	NA	NA	0	0	NA	6,700	400	0	300	NA	NA	13,300	NA	43,400
2017	12,900	NA	NA	0	0	NA	6,900	2,500	0	300	NA	NA	60,500	NA	99,600
2018	7,700	NA	NA	0	0	NA	6,000	0	0	300	NA	NA	8,200	NA	34,100
2019	13,500	NA	NA	0	0	NA	5,200	600	0	300	NA	NA	30,000	NA	66,300
2020	8,300	NA	NA	0	0	NA	13,500	8,000	0	300	NA	NA	13,900	NA	49,700
2021	3,900	NA	NA	0	0	NA	15,400	6,000	0	300	NA	NA	2,800	NA	32,700
2022	9,600	NA	NA	0	0	NA	12,100	5,900	0	300	NA	NA	1,600	NA	35,200
2023	15,200	NA	NA	0	0	NA	10,100	5,100	0	300	NA	NA	42,500	NA	87,900
2024	11,000	NA	NA	0	0	NA	13,900	4,900	0	300	NA	NA	14,700	NA	50,600
Average	**10,500**	**NA**	**NA**	**0**	**0**	**NA**	**12,600**	**8,600**	**0**	**300**	**NA**	**NA**	**17,400**	**NA**	59,100

Groundwater Inflows to be Included in the Native Yield Estimate

Groundwater Inflows to be Excluded from the Native Yield Estimate

Surface Water or Groundwater Outflows Not Included in Native Yield Estimate

Table 2-10. TBID Historical Groundwater Budget 1986/87 to 2023/24

Water Year	Groundwater Inflows (acre-ft)																				
	Areal Recharge from Precipitation	Tule River				Deer Creek				White River	Imported Water Deliveries			Agricultural Pumping (Groundwater)	Municipal Pumping			Subsurface Inflow		Mountain-Block Recharge	Total In
																Recycled Water					
		Success to Oettle Bridge Infiltration	Recharge in Basins	Canal Loss	Return Flow of Applied Irrigation Water	Infiltration Before Trenton Weir	Canal Loss	Recharge in Basin	Return Flows of Applied Irrigation Water	Infiltration Before DEID	Recharge in Basins	Canal Loss	Return Flows	Irrigated Agriculture (Return Flows of Applied Irrigation Water)	Return Flow of Applied Irrigation Water	Agricultural Return Flow	Artificial Recharge	From Outside Subbasin	From Other GSAs		
1987	1,800	NA	NA	NA	NA	700	0	800	0	NA	0	0	2,200	1,700	400	0	0	0	24,400	5,100	37,000
1988	300	NA	NA	NA	NA	500	0	500	0	NA	0	0	4,600	900	500	0	0	0	25,900	5,100	38,200
1989	0	NA	NA	NA	NA	700	0	0	0	NA	0	0	4,200	1,100	500	0	0	0	26,300	5,100	37,800
1990	300	NA	NA	NA	NA	400	0	0	0	NA	0	0	5,400	1,000	500	0	0	0	27,400	5,100	40,100
1991	1,300	NA	NA	NA	NA	600	0	0	0	NA	0	0	3,900	800	500	0	0	0	28,300	5,100	40,600
1992	0	NA	NA	NA	NA	200	0	1,100	0	NA	0	0	3,100	1,400	500	0	0	0	28,300	5,100	39,700
1993	3,000	NA	NA	NA	NA	1,000	0	4,000	0	NA	0	0	2,200	1,900	500	0	0	0	28,200	5,100	45,900
1994	0	NA	NA	NA	NA	400	0	2,600	0	NA	0	0	2,700	2,600	500	0	0	0	27,500	5,100	41,400
1995	5,600	NA	NA	NA	NA	1,600	0	3,400	0	NA	0	0	2,300	1,900	500	0	0	0	29,500	5,100	49,800
1996	0	NA	NA	NA	NA	1,000	0	2,600	0	NA	0	0	3,300	2,100	600	0	0	0	28,100	5,100	42,800
1997	1,900	NA	NA	NA	NA	3,900	0	1,400	0	NA	0	0	2,800	2,100	600	0	0	0	29,900	5,100	47,600
1998	9,000	NA	NA	NA	NA	1,200	0	2,000	0	NA	0	0	1,900	2,100	600	0	0	0	30,600	5,100	52,400
1999	500	NA	NA	NA	NA	800	0	4,200	0	NA	0	0	2,600	2,200	600	0	0	0	28,300	5,100	44,300
2000	800	NA	NA	NA	NA	800	0	700	0	NA	0	0	2,800	2,000	600	0	0	0	28,100	5,100	40,900
2001	0	NA	NA	NA	NA	500	0	1,600	0	NA	0	0	2,700	1,700	600	0	0	0	28,000	5,100	40,200
2002	0	NA	NA	NA	NA	700	0	2,400	0	NA	0	0	2,900	2,200	600	0	0	0	27,700	5,100	41,600
2003	100	NA	NA	NA	NA	1,100	0	1,000	0	NA	0	0	2,400	2,100	600	0	0	0	27,500	5,100	39,900
2004	0	NA	NA	NA	NA	400	0	1,700	0	NA	0	0	3,000	2,500	600	0	0	0	27,000	5,100	40,400
2005	2,800	NA	NA	NA	NA	1,200	0	600	0	NA	0	0	1,900	1,900	600	0	0	0	27,600	5,100	41,800
2006	3,200	NA	NA	NA	NA	1,200	0	900	0	NA	0	0	6,700	800	600	0	0	0	28,600	5,100	47,200
2007	0	NA	NA	NA	NA	600	0	100	0	NA	0	0	4,000	2,200	600	0	0	0	28,000	5,100	40,600
2008	0	NA	NA	NA	NA	700	0	500	0	NA	0	0	2,300	1,700	600	0	0	0	26,700	5,100	37,500
2009	0	NA	NA	NA	NA	300	0	7,000	0	NA	0	0	3,200	1,000	600	0	0	0	26,400	5,100	43,700
2010	1,400	NA	NA	NA	NA	1,200	0	3,200	0	NA	0	0	3,900	600	600	0	0	0	27,500	5,100	43,400
2011	5,300	NA	NA	NA	NA	2,200	0	0	0	NA	0	0	5,900	200	600	0	0	0	32,200	5,100	51,500
2012	1,400	NA	NA	NA	NA	600	0	4,500	0	NA	0	0	7,100	200	600	0	0	0	32,800	5,100	52,200
2013	0	NA	NA	NA	NA	300	0	1,300	0	NA	0	0	3,600	200	600	0	0	0	31,800	5,100	42,900
2014	0	NA	NA	NA	NA	200	0	0	0	NA	0	0	3,200	1,000	600	0	0	0	30,800	5,100	40,900
2015	0	NA	NA	NA	NA	100	0	0	0	NA	0	0	3,800	900	600	0	0	0	30,000	5,100	40,400
2016	1,800	NA	NA	NA	NA	1,300	0	100	0	NA	0	0	6,700	100	600	0	0	0	31,500	5,100	47,000
2017	3,200	NA	NA	NA	NA	4,500	0	0	0	NA	0	0	7,800	400	600	0	0	0	37,000	5,100	58,700
2018	0	NA	NA	NA	NA	800	0	0	0	NA	0	0	10,500	0	600	0	0	0	35,000	5,100	51,900
2019	4,200	NA	NA	NA	NA	2,600	0	0	0	NA	0	0	9,200	100	600	0	0	0	39,300	5,100	60,900
2020	0	NA	NA	NA	NA	700	0	0	0	NA	0	0	3,200	1,200	600	0	0	0	35,700	5,100	46,500
2021	0	NA	NA	NA	NA	200	0	0	0	NA	0	0	2,600	900	600	0	0	0	35,700	5,100	45,100
2022	0	NA	NA	NA	NA	400	0	0	0	NA	0	0	3,900	800	600	0	0	0	35,700	5,100	46,500
2023	7,200	NA	NA	NA	NA	2,400	0	0	0	NA	0	0	3,800	700	600	0	0	0	35,700	5,100	55,500
2024	0	NA	NA	NA	NA	1,800	0	0	0	NA	0	0	2,700	700	600	0	0	0	35,700	5,100	46,600
Average	**1,500**	**NA**	**NA**	**NA**	**NA**	**1,000**	**0**	**1,300**	**0**	**NA**	**0**	**0**	**4,000**	**1,300**	**600**	**0**	**0**	**0**	**30,100**	**5,100**	**44,800**

Groundwater Inflows to be Included in the Native Yield Estimate

Groundwater Inflows to be Excluded from the Native Yield Estimate

Surface Water or Groundwater Outflows Not Included in Native Yield Estimate

Note: 2019/20 to 2023/24: Aquitard change in storage from analysis of InSAR land subsidence. Subsurface Inflow and Outflow equal to 2015/16 to 2018/19 average

Table 2-10. TBID Historical Groundwater Budget 1986/87 to 2023/24 (continued)

Water Year	Groundwater Outflows (acre-ft)					Change in Storage (acre-ft)		
	Groundwater Pumping		Sub-surface Outflow		Total Out	Aquitard Change in Storage	Aquifer Change in Storage	Total Change in Storage
	Municipal	Agriculture	To Outside Subbasin	To Other GSAs				
1987	-700	-12,600	0	-23,900	-37,200	500	-700	-200
1988	-700	-6,700	0	-27,600	-35,000	3,100	100	3,200
1989	-800	-8,000	0	-30,000	-38,800	-300	-700	-1,000
1990	-800	-7,100	0	-32,200	-40,100	700	-700	0
1991	-800	-6,100	0	-33,100	-39,900	700	-100	600
1992	-800	-10,400	0	-31,700	-43,000	-2,500	-800	-3,300
1993	-800	-14,100	0	-33,700	-48,600	-2,900	200	-2,700
1994	-900	-19,100	0	-27,700	-47,600	-3,900	-2,300	-6,300
1995	-900	-13,700	0	-33,000	-47,500	400	1,900	2,300
1996	-900	-15,600	0	-30,200	-46,700	-2,400	-1,500	-3,900
1997	-900	-15,500	0	-31,400	-47,800	-1,500	1,300	-200
1998	-900	-15,500	0	-34,800	-51,300	500	600	1,100
1999	-1,000	-16,000	0	-31,000	-48,000	-2,400	-1,200	-3,600
2000	-1,000	-14,500	0	-27,600	-43,100	-600	-1,500	-2,200
2001	-1,000	-12,500	0	-28,100	-41,600	-500	-900	-1,400
2002	-1,000	-16,000	0	-28,900	-45,900	-2,500	-1,700	-4,300
2003	-1,000	-15,100	0	-27,300	-43,400	-2,000	-1,400	-3,500
2004	-1,000	-18,500	0	-28,400	-47,800	-4,800	-2,700	-7,400
2005	-1,000	-14,000	0	-28,100	-43,100	-1,300	0	-1,300
2006	-1,000	-5,600	0	-32,500	-39,100	4,100	4,000	8,100
2007	-1,000	-15,900	0	-31,100	-48,000	-4,500	-2,900	-7,400
2008	-1,000	-12,200	0	-28,000	-41,200	-1,500	-2,100	-3,700
2009	-1,000	-7,700	0	-32,800	-41,500	300	1,900	2,200
2010	-1,000	-4,400	0	-34,400	-39,800	1,500	2,100	3,600
2011	-1,000	-1,500	0	-42,000	-44,500	4,000	3,000	7,000
2012	-1,000	-1,300	0	-47,400	-49,600	500	2,100	2,600
2013	-1,000	-1,800	0	-42,600	-45,400	-1,600	-900	-2,500
2014	-900	-7,500	0	-37,000	-45,500	-2,300	-2,200	-4,600
2015	-900	-6,300	0	-36,500	-43,700	-1,200	-2,100	-3,200
2016	-900	-500	0	-42,000	-43,400	3,100	600	3,600
2017	-900	-2,700	0	-51,000	-54,700	300	3,700	4,000
2018	-900	0	0	-49,800	-50,700	1,800	-600	1,100
2019	-900	-600	0	-56,300	-57,900	1,200	1,900	3,100
2020	-900	-9,200	0	-49,800	-59,900	-600	-12,800	-13,400
2021	-900	-6,900	0	-49,800	-57,600	-100	-12,400	-12,500
2022	-900	-6,800	0	-49,800	-57,500	-600	-10,400	-11,000
2023	-900	-5,900	0	-49,800	-56,600	-800	-300	-1,100
2024	-900	-5,500	0	-49,800	-56,200	-1,000	-8,600	-9,600
Average	**-900**	**-9,300**	**0**	**-36,300**	**-46,600**	**-500**	**-1,300**	**-1,800**

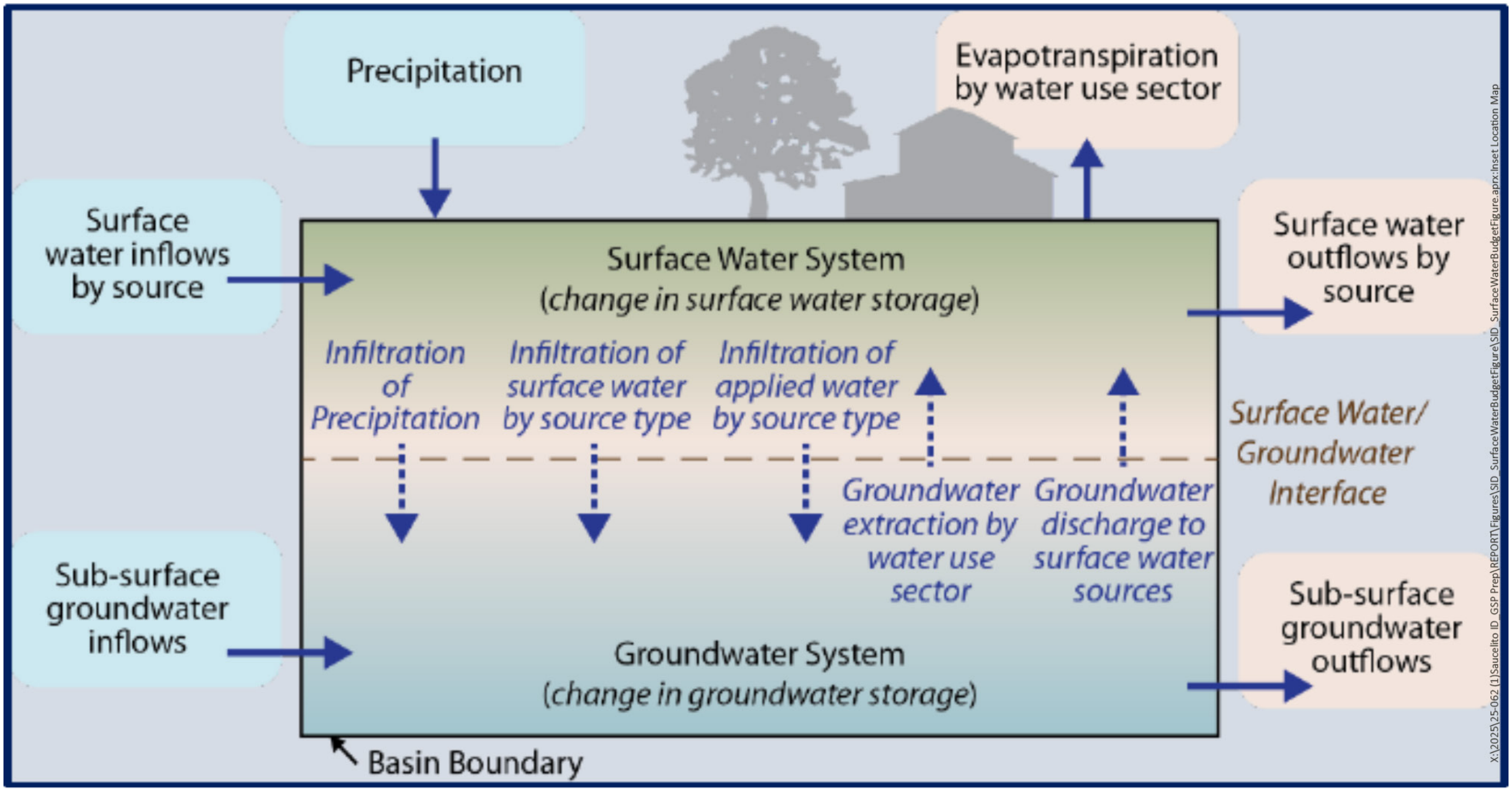
Groundwater Inflows to be Included in the Native Yield Estimate (light blue)

Surface Water or Groundwater Outflows Not Included in Native Yield Estimate (yellow)

Table 2-11. TBID Water Budget Projected

Water Year	Mountain-Block Recharge	Recharge (Deep Percolation, Streambed Infiltration, Artificial Recharge)	Agricultural Return Flows	Municipal Pumping	Agricultural Wells	Lateral Subsurface Flow	Vertical Flows (Top)	Vertical Flows (bottom)	IN	OUT	% Error	Total Pumping	Storage Change
2025	5,000	12,900	3,800	-900	-17,500	-3,700	13,300	-13,300	36,500	-36,600		-18,400	-300
2026	5,000	12,900	3,800	-900	-16,500	-4,300	13,200	-13,200	36,000	-36,000		-17,400	0
2027	5,000	12,900	3,800	-900	-15,600	-5,100	13,100	-13,100	35,600	-35,700		-16,500	100
2028	5,000	12,900	3,800	-900	-14,600	-5,900	13,000	-13,000	35,200	-35,300		-15,600	300
2029	4,900	12,900	3,800	-900	-13,700	-6,700	12,800	-12,800	34,700	-34,700		-14,600	200
2030	4,900	12,900	3,800	-900	-12,700	-6,500	12,200	-12,200	34,000	-34,000		-13,600	1,500
2031	4,900	12,800	3,800	-900	-12,700	-7,000	11,900	-11,900	33,500	-33,500		-13,700	900
2032	4,900	12,800	3,800	-900	-12,700	-7,200	11,800	-11,800	33,400	-33,400		-13,700	600
2033	4,900	12,800	3,800	-900	-12,700	-7,500	11,800	-11,800	33,300	-33,400		-13,700	500
2034	4,900	12,800	3,800	-900	-12,700	-7,500	11,700	-11,700	33,300	-33,300		-13,700	400
2035	4,900	12,800	3,800	-900	-12,700	-7,200	11,400	-11,400	33,100	-33,100		-13,600	800
2036	4,900	12,800	3,800	-900	-12,700	-7,300	11,400	-11,400	32,900	-32,900		-13,600	600
2037	4,900	12,800	3,800	-900	-12,700	-7,300	11,300	-11,300	32,900	-32,800		-13,600	600
2038	4,900	12,800	3,800	-900	-12,700	-7,400	11,300	-11,300	32,900	-32,900		-13,600	500
2039	4,900	12,800	3,800	-900	-12,700	-7,500	11,300	-11,300	32,800	-32,900		-13,600	400
2040	4,900	12,800	3,800	-900	-12,700	-7,600	11,300	-11,300	32,800	-32,900		-13,600	400
2041	4,900	12,800	3,800	-900	-12,700	-7,600	11,300	-11,300	32,800	-32,800		-13,600	400
2042	4,900	12,800	3,800	-900	-12,700	-7,700	11,200	-11,200	32,800	-32,800		-13,600	200
2043	4,900	12,800	3,800	-900	-12,700	-7,700	11,100	-11,100	32,700	-32,700		-13,600	300
2044	4,900	12,800	3,800	-900	-12,700	-7,700	11,100	-11,100	32,700	-32,700		-13,600	100
2045	4,900	12,800	3,800	-900	-12,700	-7,700	11,100	-11,100	32,600	-32,700		-13,700	200
2046	4,900	12,800	3,800	-900	-12,700	-7,900	11,000	-11,000	32,600	-32,700		-13,600	100
2047	4,900	12,800	3,800	-900	-12,700	-8,100	10,900	-10,900	32,800	-32,800		-13,600	-100
2048	4,900	12,800	3,800	-900	-12,700	-7,900	10,900	-10,900	32,500	-32,600		-13,600	100
2049	4,900	12,800	3,800	-900	-12,700	-7,900	10,800	-10,800	32,500	-32,500		-13,600	0
2050	4,900	12,800	3,800	-900	-12,700	-7,800	10,800	-10,800	32,400	-32,400		-13,600	100
2051	4,900	12,800	3,800	-900	-14,200	-6,700	10,800	-10,800	32,800	-32,700		-15,100	-400
2052	4,900	12,800	3,800	-900	-14,200	-6,500	10,900	-10,900	32,600	-32,700		-15,200	-100
2053	4,900	12,800	3,800	-900	-14,200	-6,400	10,900	-10,900	32,600	-32,500		-15,100	0
2054	4,900	12,800	3,800	-900	-14,200	-6,400	10,900	-10,900	32,500	-32,600		-15,100	0
2055	4,900	12,800	3,800	-900	-14,200	-6,300	10,900	-10,900	32,500	-32,500		-15,100	0
2056	4,900	12,800	3,800	-900	-14,200	-6,400	10,900	-10,900	32,600	-32,600		-15,200	0

Water Year	Mountain-Block Recharge	Recharge (Deep Percolation, Streambed Infiltration, Artificial Recharge)	Agricultural Return Flows	Municipal Pumping	Agricultural Wells	Lateral Subsurface Flow	Vertical Flows (Top)	Vertical Flows (bottom)	IN	OUT	% Error	Total Pumping	Storage Change
2057	4,900	12,800	3,800	-900	-14,200	-6,300	10,900	-10,900	32,500	-32,600		-15,100	100
2058	4,900	12,800	3,800	-900	-14,200	-6,300	10,900	-10,900	32,500	-32,500		-15,100	100
2059	4,900	12,800	3,800	-900	-14,200	-6,300	10,900	-10,900	32,500	-32,500		-15,100	0
2060	4,900	12,800	3,800	-900	-14,200	-6,300	10,900	-10,900	32,600	-32,500		-15,100	0
2061	4,900	12,800	3,800	-900	-14,200	-6,300	10,900	-10,900	32,600	-32,500		-15,100	0
2062	4,900	12,800	3,800	-900	-14,200	-6,300	10,900	-10,900	32,600	-32,500		-15,100	0
2063	4,900	12,800	3,800	-900	-14,200	-6,300	10,900	-10,900	32,500	-32,500		-15,100	0
2064	4,900	12,800	3,800	-900	-14,200	-6,300	10,900	-10,900	32,600	-32,500		-15,200	0
2065	4,900	12,800	3,800	-900	-14,200	-6,300	11,000	-11,000	32,600	-32,600		-15,100	100
2066	4,900	12,800	3,800	-900	-14,200	-6,400	11,000	-11,000	32,600	-32,600		-15,100	0
2067	4,900	12,800	3,800	-900	-14,200	-6,400	10,900	-10,900	32,600	-32,700		-15,100	100
2068	4,900	12,800	3,800	-900	-14,200	-6,400	11,000	-11,000	32,600	-32,700		-15,100	0
2069	4,900	12,800	3,800	-900	-14,200	-6,400	11,000	-11,000	32,600	-32,700		-15,100	0
2070	4,900	12,800	3,800	-900	-14,200	-6,400	11,000	-11,000	32,600	-32,700		-15,100	0
Historical Average	**5,100**	**6,800**	**3,100**	**-900**	**-9,700**	**-5,000**	**10,300**	**-10,300**	**34,200**	**-34,200**		**-10,600**	**-610**
Projected Average	**4,900**	**12,800**	**3,800**	**-900**	**-14,100**	**-6,500**	**11,500**	**-11,500**	**33,500**	**-33,500**		**-15,100**	**-40**



Data sources:
DWR (2016)

Figure 2-40. Surface Water Inflow and Outflow Components

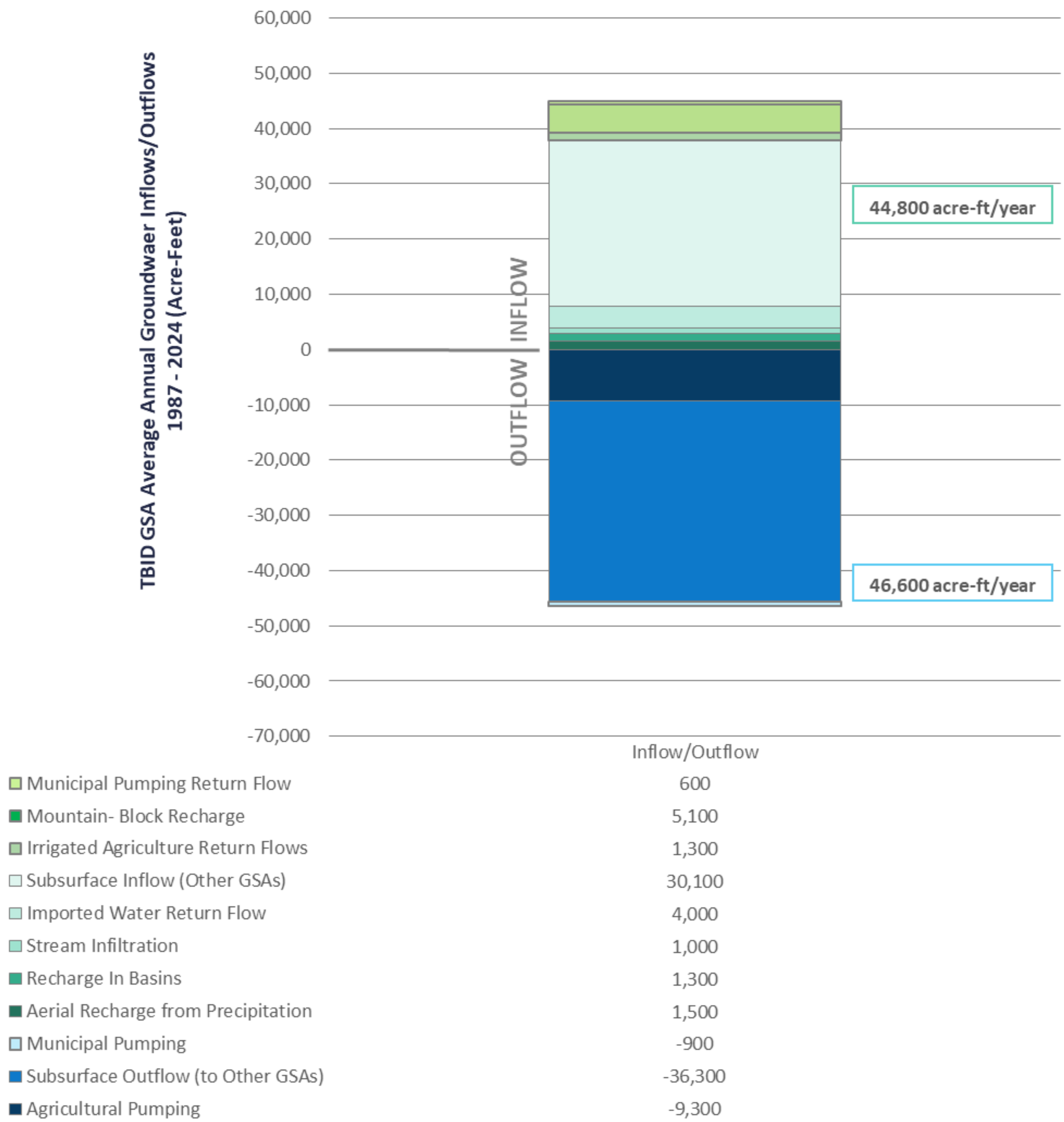


Figure 2-41. Terra Bella Irrigation District Groundwater Budget